

# Proyecto Fin de Carrera Ingeniería Aeroespacial

## Evaluación de herramienta para el análisis de prestaciones de un turbofán de doble eje

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Trabajo Fin de Grado  
Ingeniería Aeroespacial

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El tribunal nombrado para juzgar el Proyecto arriba indicado, compuesto por los siguientes miembros:

Presidente:

Vocales:

Secretario:

Acuerdan otorgarle la calificación de:

El Secretario del Tribunal:

Fecha:



# Resumen

Este documento versa sobre el estudio de métodos para la detección de la degradación en motores de aviones, analizando tanto la correcta localización de la turbomáquina afectada (fan, compresor, turbina...) como el acierto en el grado de degradación experimentado por dicho elemento. Para ello se analizarán y compararán dos métodos: el primero de ellos, basado en el uso de las series de Taylor, es conocido como Gas Path Analysis (GPA), concretamente se utilizará el método no lineal; mientras que el segundo, el método de optimización, se basa en el empleo de una función del software matemático Matlab. El motor para el cual se realizarán los distintos análisis y la obtención de los datos pertinentes será un turbofán biej de alta relación de derivación.

El desarrollo y los análisis necesarios para la realización de este trabajo han sido realizados de forma conjunta con el alumno de cuarto curso del Grado en Ingeniería Espacial de la Universidad de Sevilla, Sergio Román Mora; aunque centrando cada uno el objetivo de su trabajo en un aspecto distinto del estudio.





# Abstract

This document reviews several studies about the fault detection methods in plane engines, analyzing both the correct location of the affected components (fan, compressor, turbine...) and the right grade of deterioration experienced by each element. In order to do so, we will analyze and compare two of those methods: the first one, based on the use of the Taylor series, known as Gas Path Analysis(GPA), will use the non-linear method; whereas the second one, the optimizing method, is based on the use of a function from the Math software Matlab. The machine took for both analyzing and data recording will be a double shaft high bypass ratio engine.

The development and the analysis needed for the realization of this project have been done in equal partnership with the student of fourth Grade of Aerospace Engineering Degree of the University of Seville, Sergio Román Mora; eventhough each of us have targeted a different aspect from this assignment.



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# 1. Introducción

El motor de un avión es uno de sus elementos más importantes a la hora del diseño de la aeronave ya que es el encargado de generar la propulsión necesaria para su movimiento. Además, es una de las partes que requiere mayor inversión económica debido a su alto coste de adquisición y mantenimiento.

El deterioro de los distintos elementos del motor es un aspecto inevitable del mismo cuando se encuentra en servicio, es por esto que su detección y posterior reparación, si es que resulta necesaria, sea una gran área de estudio durante el mantenimiento del motor. Pudiendo así, tanto mejorar sus condiciones de operación, como aumentar la vida operativa del mismo. Este deterioro, también llamado degradación, puede tener efectos muy negativos sobre el motor llegando incluso a provocar su rotura.

La degradación puede aparecer en cualquiera de las distintas máquinas del motor: turbinas, compresores... Por lo tanto, sería muy interesante poder detectar en qué lugar se produce el fallo o los fallos, pudiendo de este modo centrar la reparación en el área dañada, ahorrando así tanto tiempo como dinero.

[1] Los motivos por los que puede aparecer la degradación pueden ser la erosión, la vibración, la corrosión, el desgaste debido a las altas temperaturas el cual es un problema muy importante en la turbina de alta ya que es donde se alcanzan las máximas temperatura, o problemas derivados del impacto de objetos externos o FOD (foreign object damage) o por el impacto de piezas que se desprenden del propio motor o DOD (doméstico object damage) como el que puede provocar la rotura de un álabe cuyo desprendimiento puede afectar a etapas posteriores del motor.

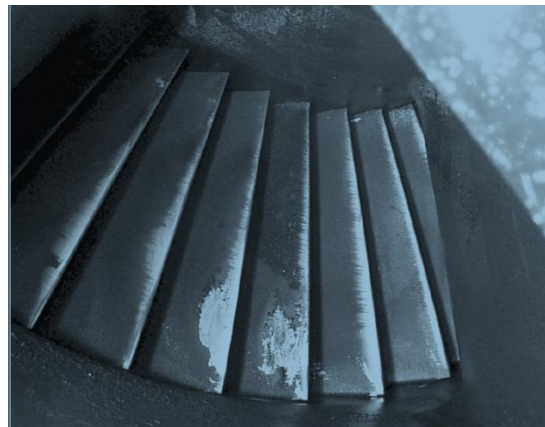


Ilustración 1.1: Álaves de compresor degradados [2]

[3] Los parámetros que se ven afectados principalmente por la degradación son el flujo, el rendimiento y la relación de compresión de cada una de las turbomáquinas. Normalmente la degradación provoca una disminución en cada uno parámetro de los presentados anteriormente, las únicas excepciones son el flujo y la relación de compresión de las turbinas, que si pueden aumentar su valor cuando aparece la degradación.

Degradación	Flujo	Rendimiento
Suciedad en el compresor	0 a -5%	0 a -2.5%
Erosión en el compresor	0 a -5%	0 a -2.5%
Suciedad en la turbina	0 a -5%	0 a -2.5%
Erosión en la turbina	+5 a -5%	0 a -2.5%
Foreign Object Damage (FOD)	0 a -5%	0 a -2.5%

Tabla.1.1: Degradación de los componentes del motor

Se van a presentar en este documento varios métodos para el análisis de la correcta detección de los fallos provocados por la degradación a partir de un modelo de motor del cual se obtienen los datos del mismo en distintas condiciones de vuelo, habiendo verificado previamente la bondad del modelo comparándolo con el software GSP (Gas Turbine Simulation Program).

[1] [2] Hay varios métodos mediante los cuales se puede analizar la detección de fallos derivados de la degradación de las distintas máquinas del motor, por lo que a continuación se expondrán varios. Los dos primeros son los que se van a analizar en este documento.

- El primero de ellos es el Gas Path Analysis (GPA) también llamado diagnóstico de fallos múltiples simultáneos y fue desarrollado por Louis A. Urban en 1967. Este método consiste en el uso de datos del avión en servicio y detectar en que turbomáquina se producen los errores a partir de los cambios que van apareciendo en las mediciones, así como el grado de degradación. Esto se obtiene gracias a las series de Taylor y a las derivadas de los distintos parámetros, a partir de las cuales se obtiene el jacobiano; este método será explicado en mayor profundidad en el [capítulo 5: Gas Path Analysis \(GPA\)](#). Existen dos formas de realizar este método, con el jacobiano constante o variándolo en las distintas iteraciones. En este documento se desarrollará el segundo de ellos ya que obtiene mejores resultados que el primero.
- El segundo método, que también será desarrollado más adelante en el [capítulo 6: Método de Optimización](#), se realizará mediante la función de Matlab *fmincon* gracias a las diferentes opciones que ofrece.

- Otro método interesante son las redes neuronales cuyo funcionamiento está basado en el del sistema nervioso del ser humano. Los efectores transforman los impulsos nerviosos (entradas) en respuestas (salidas). El esquema que se utiliza es el mostrado a la derecha formado por las entradas, las salidas y tres capas, la primera es la capa de entrada, la segunda es la capa oculta y la última la capa

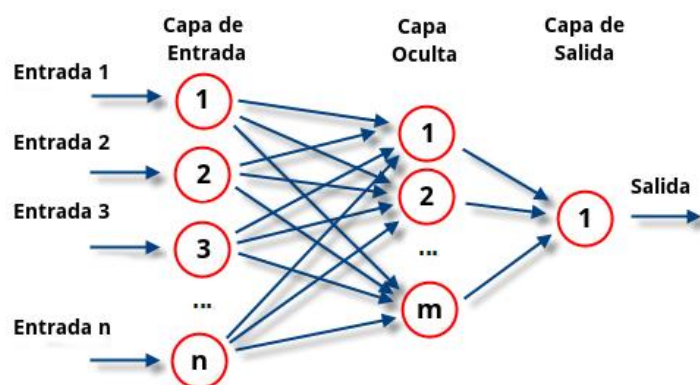


Ilustración 1.2: Esquema redes neuronales ([victoryepes.blogs.upv.es](http://victoryepes.blogs.upv.es))

de salida. El primer propósito con esto es la detección de fallos, las redes neuronales devuelven como respuesta '0' en caso de fallo en motor o '1' si no se detectan fallos. Con este método también se pueden aislar los fallos con una configuración similar a la de la detección de fallos mostrada en la *Ilustración 1.1*, pero con el mismo número de

salidas que de máquinas dispone el motor. El otro aspecto interesante de este método es su capacidad de cuantificación de fallos, que tiene la misma estructura que el aislamiento de fallos, aunque es algo más complejo.

- El último método es el análisis de componentes principales o PCA (*principal component analysis*) que al igual que el método de optimización se basa en el uso de una función de Matlab, en este caso *princomp* que realiza el análisis de componentes principales y devuelve dichos coeficientes.

Este trabajo ha sido realizado con el alumno de 4º curso del Grado en Ingeniería Espacial de la Universidad de Sevilla, Sergio Román Mora. Algunas partes en las que este documento se quede corto o no entre de lleno son completadas en el suyo, [Análisis de herramientas para la evaluación de la degradación en prestaciones de un turbofán de doble eje.](#)

## 2. GSP

[4] GSP (Gas Turbine Simulation Program) es un software desarrollado por el National Aerospace Laboratory (NLR) de los Países Bajos. Este programa permite simular el comportamiento de un motor en distintas condiciones, tanto en puntos de diseño como en casos fuera de diseño, permitiendo tanto elegir las distintas máquinas que van a formar el motor bajo ensayo (toma dinámica, compresor, cámara de combustión, turbina, etc) como ensayar motores de un amplio catálogo con el que cuenta este programa.

Durante la realización de este trabajo, este software ha sido empleado para la obtención de datos para una posterior comparación con los resultados del modelo realizado en Matlab del que se hablará más adelante.

Lo primero es la elección del motor que se va a ensayar, en este caso un turbofán biejé de alta relación de derivación, llamado BIGFAN en el catálogo de GSP. Las siguientes características de diseño del motor se muestran en la siguiente tabla.

Nombre	Bigfan
<b>Tipo de motor</b>	Turbofán con alta relación de derivación
<b>Número de ejes</b>	2
<b>Empuje [N]</b>	254.149
<b>Empuje específico, TSFC [kg/Nh]</b>	0.03529
<b>Relación de compresión de fan (flujo primario)</b>	1.65
<b>Relación de compresión de fan (flujo secundario)</b>	1.7
<b>Bypass</b>	5.05
<b>Número de compresores</b>	2
<b>Relación de compresión del compresor 1</b>	1.495
<b>Relación de compresión del compresor 2</b>	11.98
<b>Grado de calentamiento</b>	5.013

Tabla 2.1: Características principales del motor



El motor bajo estudio, cuyo esquema en la interfaz de GSP puede verse en la *Ilustración 2.1*, está compuesto por las siguientes máquinas y elementos.

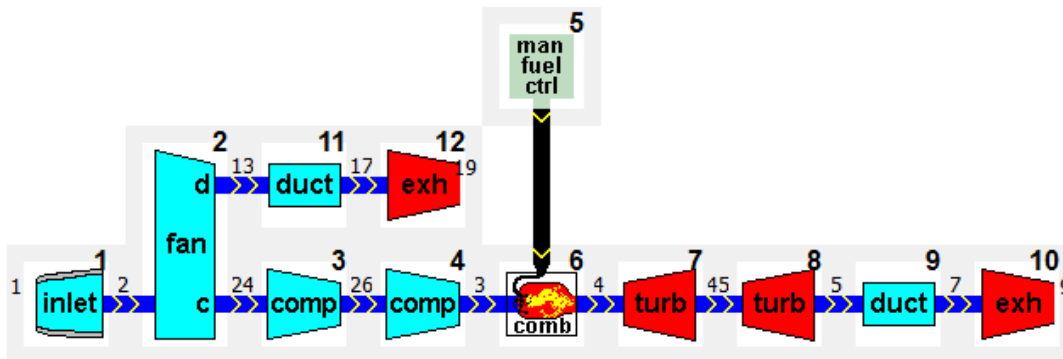


Ilustración 2.2: Esquema del motor en la interfaz de GSP

- **Difusor de entrada:** no provoca caída de presión.
- **Fan:** separa el flujo en dos, el primario (fancore) y el secundario (fanduct). Tiene una alta relación de derivación, definida esta como el cociente entre el flujo secundario entre el primario. En este caso su valor es de 5.05, lo que lo convierte en un fan con alta relación de derivación, por lo que la mayor parte del flujo que entra en el motor irá por el conducto secundario. La relación de compresión para el fan es de 1.65 para el fancore y de 1.7 para el fanduct. En cuanto a la eficiencia es del 93% tanto para el core como para el duct.
- **Compresor 1 (LP):** el compresor de baja se encarga de comprimir el flujo primario a la salida del fan. En el caso bajo estudio, este compresor está compuesto por una sola etapa por lo que la relación de compresión es bastante pequeña (1.495) y la eficiencia en el caso de diseño es del 91%.
- **Compresor 2 (HP):** este segundo compresor, el compresor de alta, es el que realmente se encargar de aumentar la presión del flujo primario para poder lograr una buena combustión, ya que tiene una relación de compresión de 11.95. Por otro lado, al ser una máquina más compleja que las anteriores debido a sus numerosas etapas, su rendimiento es menor, siendo del 84% en el caso de diseño.
- **Cámara de combustión:** es aquí donde se realiza el proceso de combustión. En la cámara hay una pérdida de presión del 4% y el proceso de combustión tiene una eficiencia del 99.5%. Este motor emplea como combustible Jet A/A1, JP-8, Avtur que es especialmente empleado por la U.S. Military y está principalmente compuesto por queroseno.
- **Turbina 1 (HP):** la turbina de alta es la encargada de mover el compresor de alta. Está situada a la salida de la cámara de combustión, por lo que tiene que estar preparada para resistir las altas temperaturas producidas por el proceso de combustión que pueden superar los 1400°K. Estos problemas se pueden solucionar mediante la refrigeración de los álabes de la turbina gracias al sangrado de aire del compresor de alta. La eficiencia de esta turbina es del 92%.
- **Turbina 2 (LP):** es la encargada de mover tanto el compresor de baja como el fan. Su eficiencia es también del 92%.
- **Conductos:** están situados antes de las toberas de salida, tanto de la primaria como de la secundaria. La que hay antes de la tobera secundaria provoca una caída de presión del 3.8%; mientras que la situada antes de la tobera primaria produce un 1.5% de caída.

- **Tobera primaria:** tiene un área de salida geométrica de  $0.63829\text{m}^2$  y un rendimiento del 97%.
- **Tobera secundaria:** tiene un área de salida geométrica de  $1.09274\text{m}^2$  y un rendimiento del 97%, al igual que la primera.

Como se dijo previamente, el motor es un turbofán bieje. El primero de los ejes es el que une el fan y el compresor de baja con la turbina de baja y tiene una velocidad de giro de diseño de 3390 rpm. Por otro lado, el segundo eje es el que une el compresor y la turbina de alta, y tiene una velocidad de giro de 10300 rpm, claramente superior a la del primer eje.

Se muestra a continuación la nomenclatura empleada en distintas etapas en las que se divide el motor. Estas serán utilizadas de aquí en adelante en los distintos cálculos necesarios.

(1) Entrada al motor.

(2) Salida del difusor de entrada/ entrada al fan.

(13) Salida del fan/duct/ entrada al conducto secundario.

(17) Salida del conducto secundario/ entrada a la tobera secundaria.

(19) Salida de la tobera secundaria.

(24) Salida del fan/duct/ entrada al compresor de baja (compresor 1).

(26) Salida del compresor de baja/ entrada al compresor de alta (compresor 2).

(3) Salida del compresor de alta/ entrada a la cámara de combustión.

(4) Salida de la cámara de combustión/ entrada a la turbina de alta (turbina 1).

(45) Salida de la turbina de alta/ entrada a la turbina de baja (turbina 2).

(5) Salida de la turbina de baja/ entrada al conducto primario.

(7) Salida del conducto primario/ entrada a la tobera primaria.

(9) Salida de la tobera primaria.

**Flujo secundario**

**Flujo primario**

GSP emplea una serie de mapas para el fan, los compresores y las turbinas que definen una relación entre los siguientes cinco parámetros:

- Flujo corregido.
- Velocidad de giro corregida.
- Relación de compresión.
- Eficiencia.
- Beta.

El flujo corregido se define de la siguiente forma, donde las simplificaciones se deben a que el motor no cambia durante el ensayo, por lo que el diámetro es el mismo y a que  $W_{ref}$  suele ser 1:

$$W_c = \frac{\frac{W\sqrt{TR}}{DP\sqrt{\gamma}}}{\frac{W_{ref}\sqrt{(TR)_{ref}}}{D_{ref}P_{ref}\sqrt{\gamma_{ref}}}} = \frac{\frac{W\sqrt{TR}}{P\sqrt{\gamma}}}{\frac{\sqrt{(TR)_{ref}}}{P_{ref}\sqrt{\gamma_{ref}}}} = \frac{W\sqrt{\frac{T}{T_{ref}}}}{\frac{P}{P_{ref}}\sqrt{\frac{R\gamma_{ref}}{R_{ref}\gamma}}} = \frac{W\sqrt{\theta}}{\delta}\sqrt{\frac{R\gamma_{ref}}{R_{ref}\gamma}}$$

*Ecuación 2.1: Cálculo del flujo corregido*

De forma similar se puede obtener la velocidad de giro corregida, aunque en este caso  $N_{ref}$  no es igual a la unidad por lo que no puede llevarse a cabo la simplificación.

$$N_c = \frac{\frac{N\sqrt{TR}}{DP\sqrt{\gamma}}}{\frac{N_{ref}\sqrt{(TR)_{ref}}}{D_{ref}P_{ref}\sqrt{\gamma_{ref}}}} = \frac{\frac{N\sqrt{TR}}{P\sqrt{\gamma}}}{\frac{N_{ref}\sqrt{(TR)_{ref}}}{P_{ref}\sqrt{\gamma_{ref}}}} = \frac{N\sqrt{\frac{T}{T_{ref}}}}{N_{ref}\frac{P}{P_{ref}}\sqrt{\frac{R\gamma_{ref}}{R_{ref}\gamma}}} = \frac{N\sqrt{\theta}}{N_{ref}\delta}\sqrt{\frac{R\gamma_{ref}}{R_{ref}\gamma}}$$

*Ecuación 2.2: Cálculo de la velocidad de giro corregida*

En cuanto a la relación de compresión y la eficiencia la definición es la empleada normalmente. La variable beta se utiliza para evitar problemas de convergencia durante las iteraciones del software en busca de la solución. Estos problemas aparecen debido a la presencia de curvas casi verticales u horizontales que provocan que haya varios valores del flujo corregido válidos para una relación de compresión y una velocidad de giro corregida dados. Las líneas de beta constante son líneas oblicuas, evitando así el problema citado previamente, los valores de beta son equidistantes variando su valor entre 0 y 1.

Se presentan a continuación los mapas que, por defecto, GSP emplea en el cálculo de los distintos casos que quieren analizar.

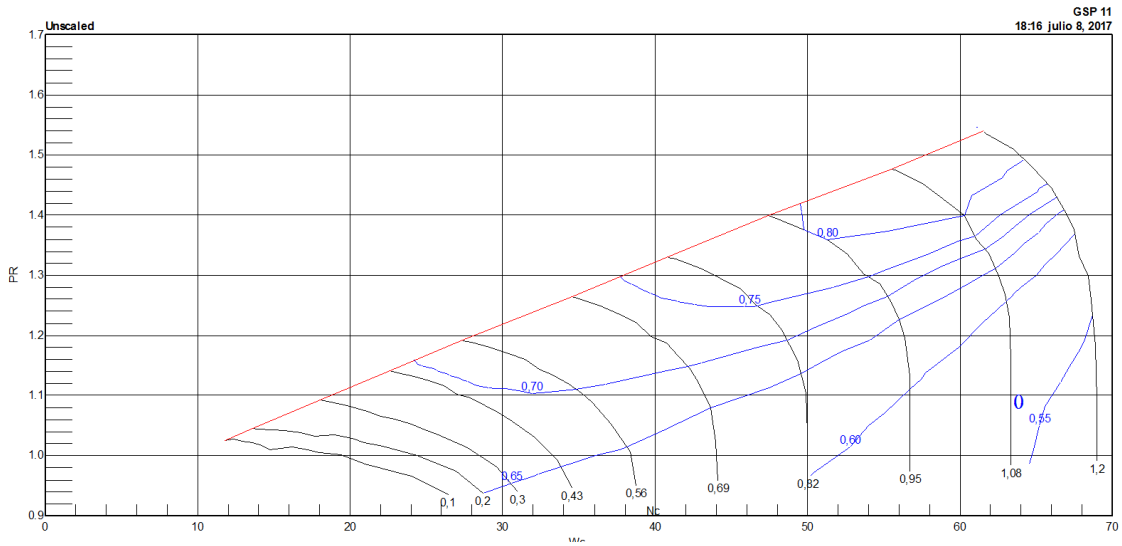


Ilustración 2.3: Mapa de operación fan y compresor 1

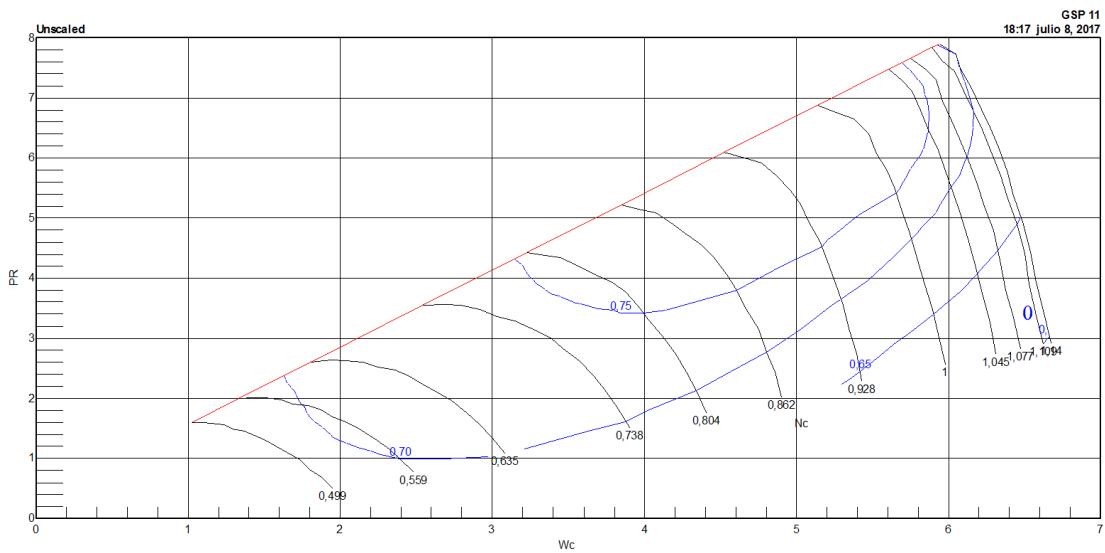


Ilustración 2.4: Mapa de operación compresor 2

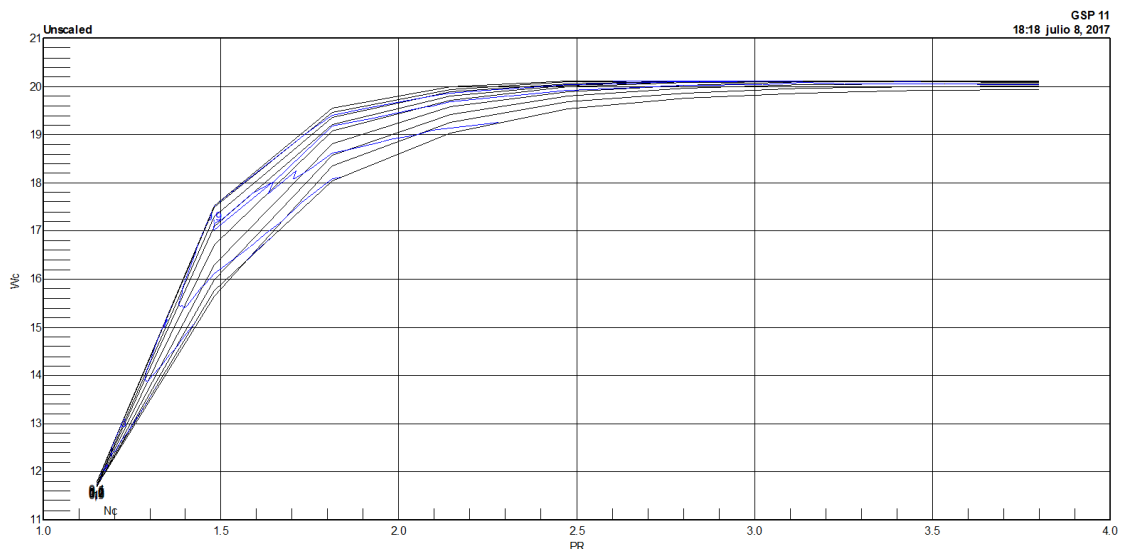


Ilustración 2.5: Mapa de operación turbina 1

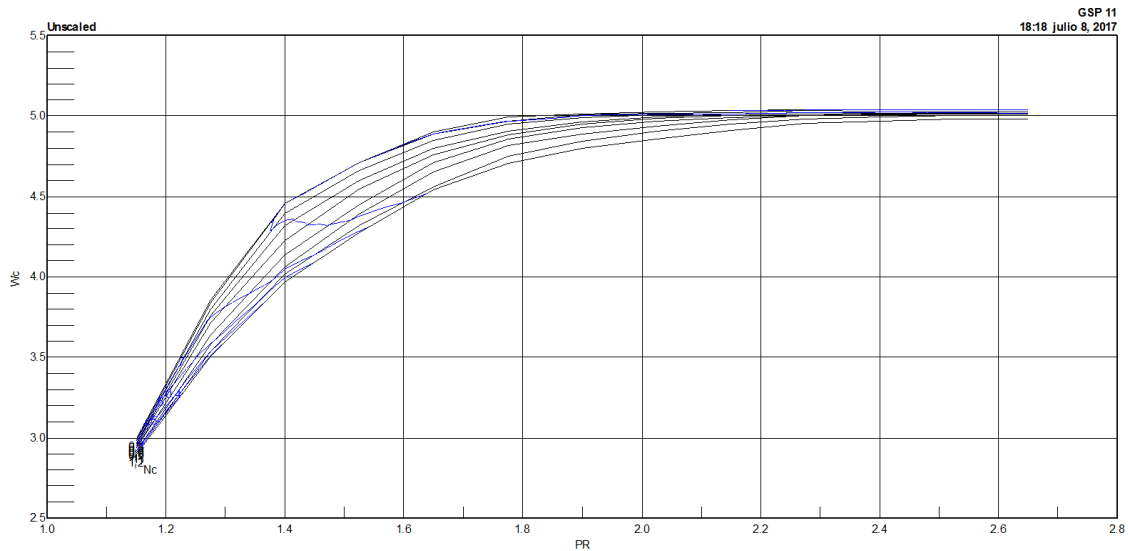


Ilustración 2.6: Mapa de operación turbina 2

La primera gráfica se emplea tanto como para el fancore y el fanduct como para el primer compresor, la segunda se emplea para el compresor de alta, la tercera es la empleada en la primera turbina mientras que la última gráfica es la que se utiliza por defecto en la turbina de baja.

[5] Para poder asegurar un correcto comportamiento del motor en las distintas condiciones en las que se va a estudiar hay que escalarlo, por lo tanto, se definen a continuación los factores de escalado que se utilizan para convertir los parámetros de entrada del mapa e invertir los de salida. Para calcularlos se emplean las siguientes definiciones:

$$\dot{m}_c = \dot{m}_{c,des} \frac{\dot{m}_{c,map}}{\dot{m}_{c,map,des}}$$

$$\eta = \eta_{c,des} \frac{\eta_{c,map}}{\eta_{c,map,des}}$$

$$PR = (PR_{des} - 1) \frac{PR_{map} - 1}{PR_{map,des} - 1} + 1$$

Donde los subíndices empleados indican:

*des*: valor buscado en el mapa de diseño

*map*: valor en el mapa escalado

*mapdes*: valor en el mapa original, es decir, valor de diseño

$$factor_{\dot{m}_c} = \frac{\dot{m}_c}{\dot{m}_{c,des}}$$

$$factor_{\eta_c} = \frac{\eta_c}{\eta_{c,des}}$$

$$factor_{PR} = \frac{PR}{PR_{des}}$$

Ecuación 2.3: Cálculo de los factores de escalado

Para realizar el escalado de los mapas de operación, se varían la velocidad de giro corregida y el valor de beta de diseño, teniendo en cuenta las siguientes tres restricciones que permiten obtener unos resultados más realistas y con sentido físico.

- Cualquier punto bajo estudio debe mantener un margen de seguridad superior al 20% con respecto a la línea de bombeo.
- La velocidad de giro de los ejes no excede la máxima permitida.
- Todos los valores del mapa tienen sentido físico, es decir, no hay puntos en los que el rendimiento es mayor que la unidad y no hay puntos del compresor en los que la relación de compresión es menor que la unidad.

Una vez hecho el análisis de estas tres restricciones, se ha obtenido que, para el caso del fancore, fanduct y compresor 1 los mapas que proporciona GSP no permiten alcanzar una situación de compromiso que satisfaga un margen de seguridad del 20% con respecto a la línea de bombeo, manteniendo a su vez la velocidad de giro por debajo de la máxima permitida en cada eje y logrando que los mapas escalados sigan teniendo unos valores con sentido físico. Esto ha provocado que, basándose en los mapas originales, haya habido que crear unos nuevos mapas de operación que si cumplan esas restricciones.

Los valores de la velocidad de giro corregida y beta de diseño obtenidos finalmente, con los cuales se obtienen los mejores resultados, se muestran en la siguiente tabla en la que, para mayor claridad, se muestran los valores que por defecto se tenían inicialmente.

	$N_c$ original	Beta original	$N_c$ definitiva	Beta definitiva
<b>Fancore</b>	1	0.571429	1.1	0.42857
<b>Fanduct</b>	1	0.571429	1.1	0.42857
<b>Compresor 1</b>	1	0.571429	1.08	0.35714
<b>Compresor 2</b>	1	0.60979	0.95	0.55
<b>Turbina 1</b>	1	0.864906	0.95	0.4
<b>Turbina 2</b>	1	0.7	0.95	0.4

Tabla 2.1: Valores de beta y  $N_c$

Conviene aclarar que, el que el mapa empleado para fancore, fanduct y compresor 1 sea el mismo, explica el parecido o incluso idéntico resultado obtenido para los valores de beta y del régimen de giro. Por otro lado, la coincidencia de los resultados en ambas turbinas, es simplemente debido a que son los parámetros que logran mejores resultados en cuanto a las restricciones comentadas previamente, aunque podrían ser distintos.

Una vez escalados los mapas como se explicó previamente con los parámetros mostrados en la tabla anterior, se obtienen los siguientes resultados de los factores de escalado.

	$factor_{PR}$	$factor_{\eta_c}$	$factor_{m_c}$
<b>Fancore</b>	1.9314	1.3286	2.1432
<b>Fanduct</b>	2.0800	1.3286	10.8229
<b>Compresor 1</b>	1.6548	1.4331	1.3885
<b>Compresor 2</b>	2.6363	1.0981	11.8022
<b>Turbina 1</b>	2.5435	0.9947	0.5690
<b>Turbina 2</b>	4.5465	1.0262	8.0764

Tabla 2.2: Factores de escalado

Con el modelo de motor elegido y los factores de escalado calculados, se realizan distintos ensayos variando condiciones como la altura, la velocidad, la temperatura de entrada al motor, la cantidad de combustible por unidad de tiempo o la temperatura de salida de la cámara de combustión. Estos parámetros son muy importantes y de ellos depende fuertemente el comportamiento del motor.

Debido al cambio del mapa del fancore, fanduct y compresor 1, los resultados obtenidos con el modelo de Matlab realizado, no se pueden comparar con los obtenidos con GSP. Por lo tanto, para posteriormente poder comparar la bondad del modelo, se realiza una recogida de datos con los mapas originales escalados para que, aunque las restricciones no se cumplan, estén lo más cerca posible de hacerlo. Para ello se han empleado los siguientes valores del régimen de giro y de beta.

	Fancore	Fanduct	Compresor 1	Compresor 2	Turbina 1	Turbina 2
$N_c$	1.05	1.05	1.06	0.95	0.95	0.95
Beta	0.56	0.58	0.55	0.55	0.4	0.4

Tabla 2.3: Valores de  $N_c$  y beta

Se ha realizado un análisis de los resultados obtenidos por GSP a distintas cotas de vuelo variando desde el nivel del mar hasta 15000m (49212ft). Se muestran a continuación una serie de tablas para las distintas cotas de vuelo, en las que representa la relación del consumo específico frente al empuje específico.

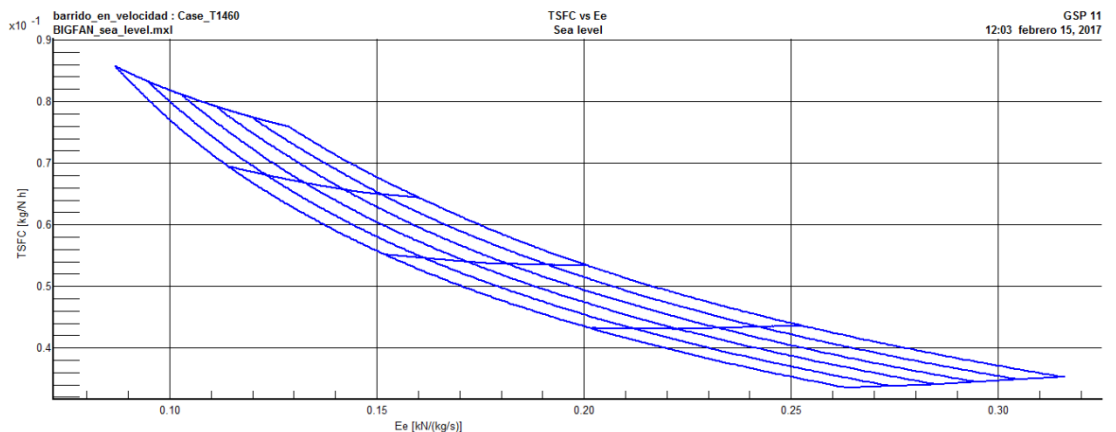


Tabla 2.4: Consumo específico frente a empuje específico a nivel del mar

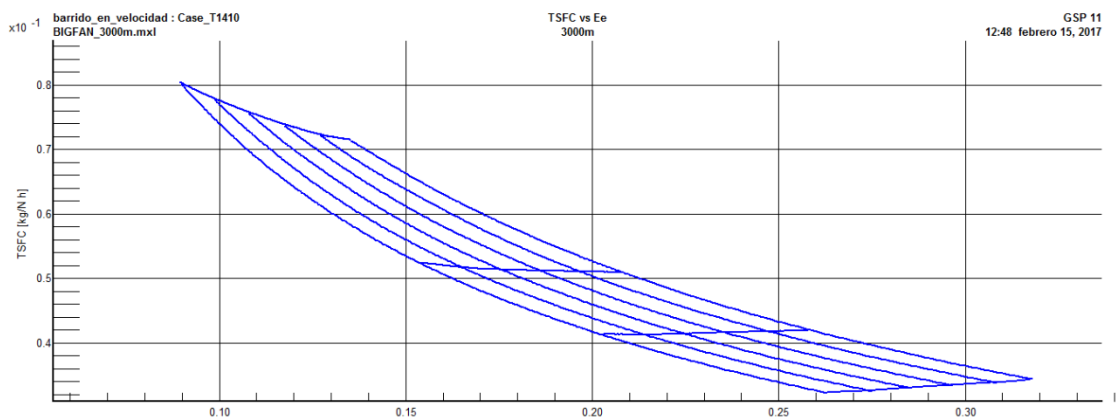


Tabla 2.5: Consumo específico frente a empuje específico a 3000m

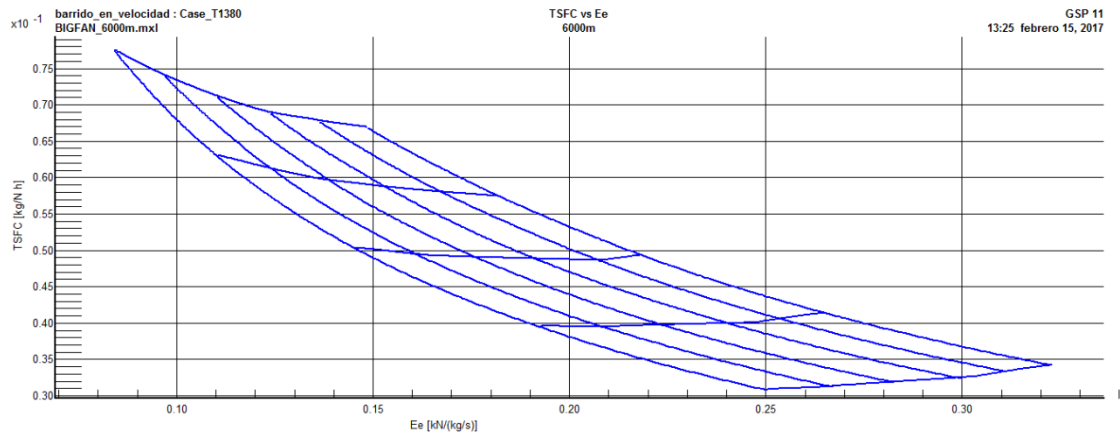


Tabla 2.6: Consumo específico frente a empuje específico a 6000m

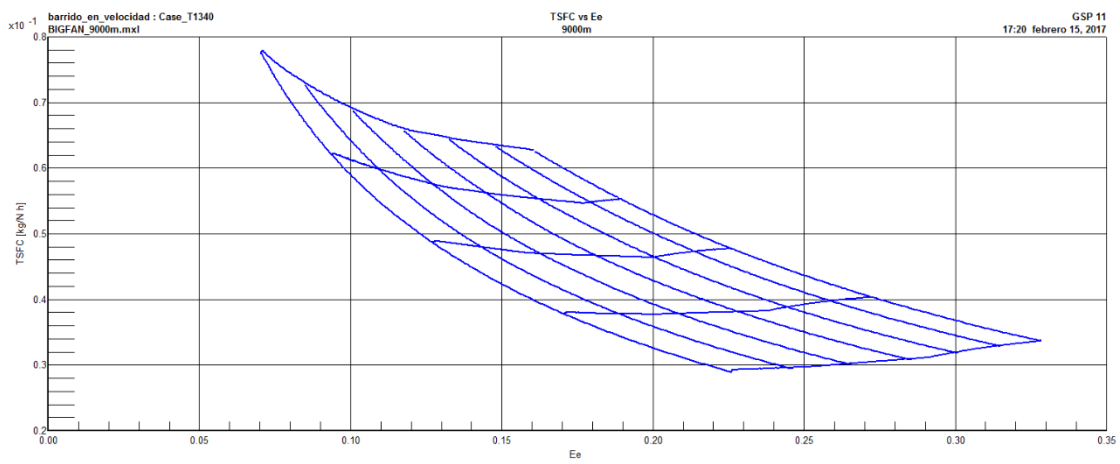


Tabla 2.8: Consumo específico frente a empuje específico a 9000m

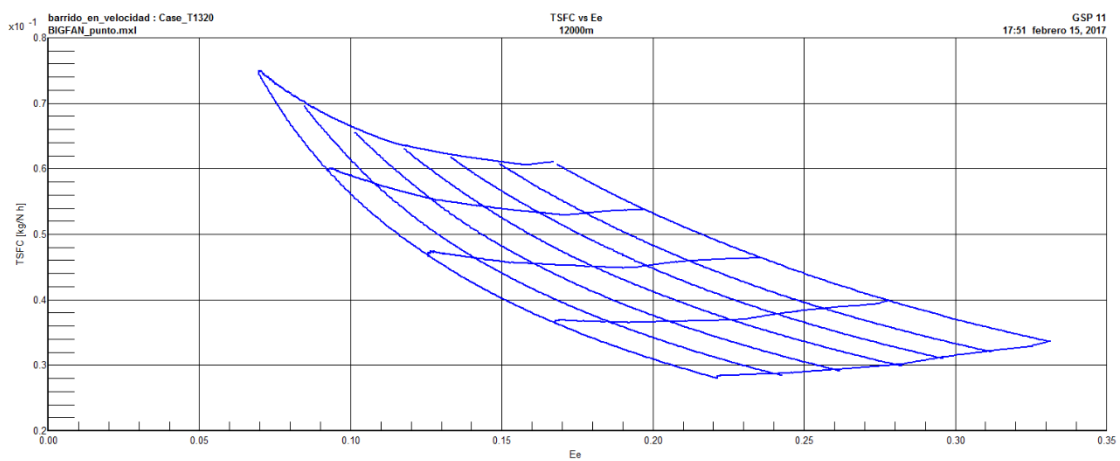


Tabla 2.9: Consumo específico frente a empuje específico a 12000m



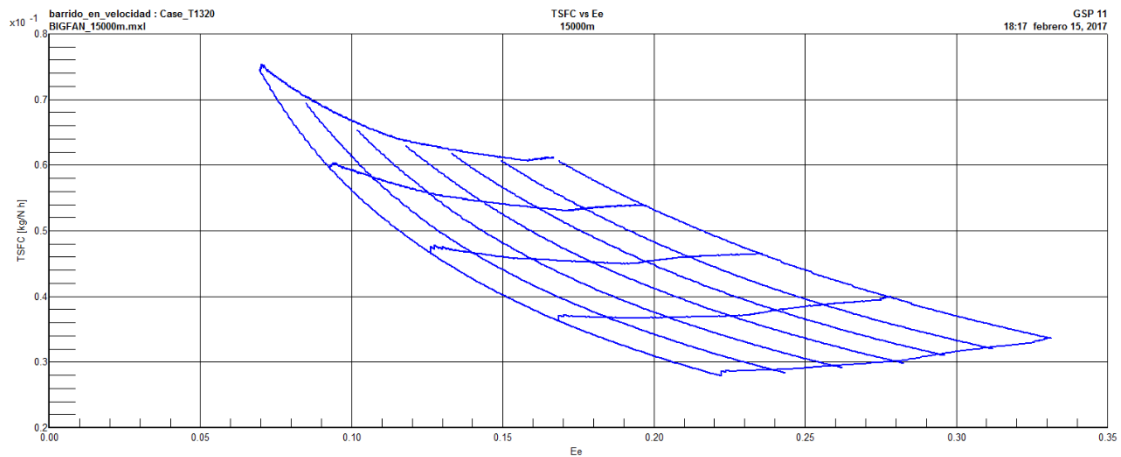


Tabla 2.10: Consumo específico frente a empuje específico a 15000m

Las cinco líneas ‘más verticales’ de cada caso corresponden a distintos valores de la velocidad de vuelo, comprendidas entre el caso en banco (línea situada más a la derecha) y  $M=0.8$  (línea situada más a la izquierda); mientras que las horizontales corresponde a distintos valores de la temperatura de salida de la cámara de combustión, y van desde una mayor temperatura línea situada más arriba, a una menor que se corresponde con la línea más baja.

Un análisis similar podría haberse realizado empleando el consumo de combustible en vez de la temperatura de entrada a la turbina, habiéndose optado por esta última por ser un parámetro más crítico en el diseño del motor debido a los altos valores que se suelen alcanzar.

Se presentan a continuación los distintos rangos de temperatura empleados en este análisis dependiendo de la cota de vuelo. Estos valores no son iguales debido a que al aumentar la altura las temperaturas de las distintas máquinas del motor van disminuyendo.

Altura [m]	Temperatura mínima [K]	Temperatura máxima [K]
Nivel de mar (0m)	1320	1460
3000	1260	1410
6000	1170	1380
9000	1050	1340
12000	1000	1320
15000	1000	1320

Tabla 2.11: Rangos de temperatura

### 3. Modelo de motor

Una vez se tienen unos datos de referencia, se puede pasar al desarrollo del modelo en Matlab para posteriormente realizar las distintas simulaciones necesarias para el análisis de la degradación con los distintos métodos presentados en el [capítulo 1: Introducción](#).

La necesidad del desarrollo de un modelo como este para la obtención de datos se debe a la gran dificultad para obtener los datos de máquinas reales.

Conviene presentar las distintas ecuaciones necesarias para la realización del modelo, en cuyo análisis se ha empleado la numeración mostrada previamente en la interfaz de GSP. Para la realización del mismo se ha empleado el siguiente modelo de fluido de trabajo, basado en el uso de una serie de constantes que se muestran a continuación para el cálculo de la capacidad calorífica a presión constante, la entalpía y la entropía.

$$\begin{aligned}\frac{\tilde{c}_{p,i}}{\tilde{R}} &= a_{i1} + a_{i1}T + a_{i1}T^2 + a_{i1}T^3 + a_{i1}T^4 \\ \frac{\tilde{h}_i}{\tilde{R}T} &= a_{i1} + \frac{a_{i2}}{2}T + \frac{a_{i3}}{3}T^2 + \frac{a_{i4}}{4}T^3 + \frac{a_{i5}}{5}T^4 + \frac{a_{i6}}{T} \\ \frac{\tilde{s}_i}{\tilde{R}} &= a_{i1}T + a_{i2} \ln T + \frac{a_{i3}}{2}T^2 + \frac{a_{i4}}{3}T^3 + \frac{a_{i5}}{4}T^4 + a_{i7}\end{aligned}$$

*Ecuación 3.1: Cálculo de  $c_p, h$  y  $s$  en el modelo de fluido*

Las unidades empleadas en las ecuaciones anteriores son.

$\tilde{h}_i$  en [kJ/kmol]  $\tilde{c}_p$  en [kJ/kmol K]

Mientras que  $\tilde{R}$  es la constante universal de los gases ideales, y su valor en estas unidades es  $\tilde{R} = 8.3143 \frac{\text{kJ}}{\text{kmol K}}$ .

Las constantes que aparecen en las ecuaciones anteriores son función tanto del compuesto químico como del rango de temperaturas del caso bajo estudio. Se muestra a continuación una tabla con las distintas constantes en función del rango de temperatura para los compuestos más habituales.

## ANALISIS PARAMÉTRICO DE CICLOS

## Coefficients for species thermodynamic properties

Species	T range, K	$a_{11}$	$a_{12}$	$a_{13}$	$a_{14}$	$a_{15}$	$a_{16}$	$a_{17}$
CO <sub>2</sub>	1000–5000	0.44608(+1)	0.30982(-2)	-0.12393(-5)	0.22741(-9)	-0.15526(-13)	-0.48961(+5)	-0.98636(0)
	300–1000	0.24008(+1)	0.87351(-2)	-0.66071(-5)	0.20022(-8)	0.63274(-15)	-0.48378(+5)	0.96951(+1)
H <sub>2</sub> O	1000–5000	0.27168(+1)	0.29451(-2)	-0.80224(-6)	0.10227(-9)	-0.48472(-14)	-0.29906(+5)	0.66306(+1)
	300–1000	0.40701(+1)	-0.11084(-2)	0.41521(-5)	-0.29637(-8)	0.80702(-12)	-0.30280(+5)	-0.32270(0)
CO	1000–5000	0.29841(+1)	0.14891(-2)	-0.57900(-6)	0.10365(-9)	-0.69354(-14)	-0.14245(+5)	0.63479(+1)
	300–1000	0.37101(+1)	-0.16191(-2)	0.36924(-5)	-0.20320(-8)	0.23953(-12)	-0.14356(+5)	0.29555(+1)
H <sub>2</sub>	1000–5000	0.31002(+1)	0.51119(-3)	0.52644(-7)	-0.34910(-10)	0.36945(-14)	-0.87738(+3)	-0.19629(+1)
	300–1000	0.30574(+1)	0.26765(-2)	-0.58099(-5)	0.55210(-8)	-0.18123(-11)	-0.98890(+3)	-0.22997(+1)
O <sub>2</sub>	1000–5000	0.36220(+1)	0.73618(-3)	-0.19652(-6)	0.36202(-10)	-0.28946(-14)	-0.12020(+4)	0.36151(+1)
	300–1000	0.36256(+1)	-0.18782(-2)	0.70555(-5)	-0.67635(-8)	0.21556(-11)	-0.10475(+4)	0.43053(+1)
N <sub>2</sub>	1000–5000	0.28963(+1)	0.15155(-2)	-0.57235(-6)	0.99807(-10)	-0.65224(-14)	-0.90586(+3)	0.61615(+1)
	300–1000	0.36748(+1)	-0.12082(-2)	0.23240(-5)	-0.63218(-9)	-0.22577(-12)	-0.10612(+4)	0.23580(+1)
OH	1000–5000	0.29106(+1)	0.95932(-3)	-0.19442(-6)	0.13757(-10)	0.14225(-15)	0.39354(+4)	0.54423(+1)
NO	1000–5000	0.31890(+1)	0.13382(-2)	-0.52899(-6)	0.95919(-10)	-0.64848(-14)	0.98283(+4)	0.67458(+1)
O	1000–5000	0.25421(+1)	-0.27551(-4)	-0.31028(-8)	0.45511(-11)	-0.43681(-15)	0.29231(+5)	0.49203(+1)
H	1000–5000	0.25(+1)	0.0	0.0	0.0	0.0	0.25472(+5)	-0.46012(0)

Source: NASA Equilibrium Code.<sup>9</sup>

Ar	300-5000	2.50003	-4.08999(-18)	1.01867(-20)	-1.0853(-23)	4.19052(-27)	-7.45384(2)	4.39173
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Condiciones estándar: 298,15 K y 100 kPa

Ilustración 3.1: Constantes del modelo fluido

Se van a presentar a continuación las ecuaciones necesarias para la resolución del modelo de motor, las cuales forman un sistema de 53 ecuaciones donde los parámetros de entrada son la cota y la velocidad de vuelo, y un tercer parámetro que puede ser el empuje (E), la temperatura de salida de la cámara de combustión (T<sub>04</sub>) o el flujo de combustible ( $\dot{m}_f$ ). Se van a exponer las ecuaciones del caso en el que el empuje es el tercer parámetro de entrada.

**-Fancore:**

$$\pi_{c,fc} = \pi_{c,fc}(\beta_{fc}, N_{c,fc})$$

$$\eta_{fc} = \eta_{fc}(\beta_{fc}, N_{c,fc})$$

$$\omega_{c,fc} = \omega_{c,fc}(\beta_{fc}, N_{c,fc})$$

$$\int_{T_{02}}^{T_{024s}} \frac{c_p}{RT} dT = \ln \pi_{c,fc}$$

$$\eta_{fc} = \frac{h_{024s} - h_{02}}{h_{024} - h_{02}}$$

$$P_{024} = \pi_{c,fc} P_{02}$$

Ecuación 3.2: Ecuaciones fancore

**-Fanduct:**

$$\pi_{c,fd} = \pi_{c,fd}(\beta_{fd}, N_{c,fd})$$

$$\eta_{fd} = \eta_{fd}(\beta_{fd}, N_{c,fd})$$

$$\omega_{c,fd} = \omega_{c,fd}(\beta_{fd}, N_{c,fd})$$

$$\int_{T_{02}}^{T_{013s}} \frac{c_p}{RT} dT = \ln \pi_{c,fd}$$

$$\eta_{fd} = \frac{h_{013s} - h_{02}}{h_{013} - h_{02}}$$

$$P_{013} = \pi_{c,fd} P_{02}$$

Ecuación 3.3: Ecuaciones fanduct

**-Compresor 1:**

$$\pi_{c,c1} = \pi_{c,c1}(\beta_{c1}, N_{c,c1})$$

$$\eta_{c1} = \eta_{c1}(\beta_{c1}, N_{c,c1})$$

$$\omega_{c,c1} = \omega_{c,c1}(\beta_{c1}, N_{c,c1})$$

$$\int_{T_{024}}^{T_{026s}} \frac{c_p}{RT} dT = \ln \pi_{c,c1}$$

$$\eta_{c1} = \frac{h_{026s} - h_{024}}{h_{026} - h_{024}}$$

$$P_{026} = \pi_{c,c1} P_{024}$$

Ecuación 3.4: Ecuaciones compresor 1

**-Compresor 2:**

$$\pi_{c,c2} = \pi_{c,c2}(\beta_{c2}, N_{c,c2})$$

$$\eta_{c2} = \eta_{c2}(\beta_{c2}, N_{c,c2})$$

$$\omega_{c,c2} = \omega_{c,c2}(\beta_{c2}, N_{c,c2})$$

$$\int_{T_{026}}^{T_{03s}} \frac{c_p}{RT} dT = \ln \pi_{c,c2}$$

$$\eta_{c2} = \frac{h_{03s} - h_{026}}{h_{03} - h_{026}}$$

$$P_{03} = \pi_{c,c2} P_{026}$$

Ecuación 3.5: Ecuaciones compresor 2

**-Cámara de combustión:**

$$(\dot{m}_c - \dot{m}_s + \dot{m}_f)(h_{04} - h_{ref,out}) - (\dot{m}_c - \dot{m}_s)(h_{03} - h_{ref,in}) = \eta_{cc} H_p \dot{m}_f$$

$$P_{04} = P_{03}(1 - \Delta P_{cc})$$

Ecuación 3.6: Ecuaciones cámara de combustión

\*Donde  $\dot{m}_c$ ,  $\dot{m}_s$  y  $\dot{m}_f$  son el flujo primario, el flujo de sangrado y el flujo de combustible respectivamente.

**-Turbina 1:**

$$\eta_{t1} = \eta_{t1}(\beta_{t1}, N_{c,t1})$$

$$\omega_{c,t1} = \omega_{c,t1}(\beta_{t1}, N_{c,t1})$$

$$(\dot{m}_c - \dot{m}_s + \dot{m}_f)(h_{045} - h_{04})\eta_{eje1} = \dot{m}_c(h_{03} - h_{026})$$

$$\eta_{c2} = \frac{h_{04} - h_{045}}{h_{04} - h_{045s}}$$

$$\int_{T_{04}}^{T_{045s}} \frac{c_p}{RT} dT = \ln \frac{P_{045}}{P_{04}}$$

$$\pi_{c,t1} = \pi_{c,t1}(\beta_{t1}, N_{c,t1}) = \frac{P_{04}}{P_{045}}$$

Ecuación 3.7: Ecuaciones turbina 1

**-Turbina 2:**

$$\eta_{t2} = \eta_{t2}(\beta_{t2}, N_{c,t2})$$

$$\omega_{c,t2} = \omega_{c,t2}(\beta_{t2}, N_{c,t2})$$

$$(\dot{m}_c - \dot{m}_s + \dot{m}_f)(h_{05} - h_{045})\eta_{eje2} = \dot{m}_c(h_{026} - h_{024}) + \dot{m}_c(h_{024} - h_{02}) + \dot{m}_F(h_{013} - h_{02})$$

$$\eta_{c1} = \frac{h_{045} - h_{05}}{h_{045} - h_{05s}}$$

$$\int_{T_{045}}^{T_{05s}} \frac{c_p}{RT} dT = \ln \frac{P_{05}}{P_{045}}$$

$$\pi_{c,t2} = \pi_{c,t2}(\beta_{t2}, N_{c,t2}) = \frac{P_{045}}{P_{05}}$$

Ecuación 3.8: Ecuaciones turbina 2

\*Donde  $\dot{m}_F$  es el flujo secundario.

Hasta ahora se han mostrado 38 ecuaciones, hay que añadir las igualdades de flujo y de velocidad de giro además de la definición de bypass.

$$\begin{aligned} bypass_d &= \frac{\omega_{13,in}}{\omega_{24,in}} \\ \omega_{24} &= \omega_{26} \\ \omega_{26} + \omega_f &= \omega_4 + \omega_s \\ \omega_4 &= \omega_{45} \\ \omega_{24,in}(1 + bypass_d) &= \omega_{24}(1 + bypass) \end{aligned}$$

Ecuación 3.9: Ecuaciones flujo

$$\begin{aligned} N_{c,fd}\sqrt{T_{013}\gamma_{13}} &= N_{c,t2}\sqrt{T_{05}\gamma_5} \\ N_{c,fc}\sqrt{T_{024}\gamma_{24}} &= N_{c,t2}\sqrt{T_{05}\gamma_5} \\ N_{c,c1}\sqrt{T_{026}\gamma_{26}} &= N_{c,t2}\sqrt{T_{05}\gamma_5} \\ N_{c,c2}\sqrt{T_{03}\gamma_3} &= N_{c,t1}\sqrt{T_{045}\gamma_{45}} \end{aligned}$$

Ecuación 3.10: Ecuaciones velocidad de giro

Donde  $bypass_d$  es el bypass de diseño y  $bypass$  es fuera de diseño. La diferencia entre ambos parámetros se ha definido del mismo modo que lo hace el software GSP, es decir, como sigue.

[5] Debido a la gran longitud de los álabes del fan las condiciones pueden ser muy distintas en la raíz con respecto a las puntas por lo que, se usan mapas de operación distintos para el flujo primario (fancore) y el secundario (fanduct). Se define entre estos dos flujos una línea imaginaria a partir de la cual se define el bypass de diseño. En los casos fuera de diseño la posición de esta línea varía con las condiciones operativas por lo que se define el siguiente parámetro que representa el flujo cruzado entre fancore y fanduct.

$$\Delta\dot{m}_{dbypass} = \dot{m}_{in} \left( \frac{bypass}{bypass + 1} - \frac{bypass_d}{bypass_d + 1} \right)$$

Ecuación 3.11: Flujo cruzado del bypass

Se define también el factor de influencia del bypass,  $C_f$  a partir del cual se pueden definir el flujo primario ( $\dot{m}_{core}$ ) y el secundario ( $\dot{m}_{duct}$ ).

$$\begin{aligned} \dot{m}_{core} &= \dot{m}_{in} \frac{bypass_d}{bypass_d + 1} + C_f \Delta\dot{m}_{dbypass} \\ \dot{m}_{core} &= \dot{m}_{in} \frac{1}{bypass_d + 1} - C_f \Delta\dot{m}_{dbypass} \end{aligned}$$

Ecuación 3.12: Flujos en función del bypass de diseño

Solo quedan las ecuaciones de las dos toberas de salida, y la de la definición del empuje. Estas ecuaciones varían ligeramente en función del parámetro de entrada.

Este sistema devuelve como salidas los siguientes parámetros.

$\pi_{c,fc}$	$\beta_{fc}$	$N_{c,fc}$	$\eta_{fc}$	$\omega_{c,fc}$	$T_{024s}$	$T_{024}$	$P_{024}$	$\pi_{c,fd}$	$\beta_{fd}$	$N_{c,fd}$
$\eta_{fd}$	$\omega_{c,fd}$	$T_{013s}$	$T_{013}$	$P_{013}$	$\pi_{c,c1}$	$\beta_{c1}$	$N_{c,c1}$	$\eta_{c1}$	$\omega_{c,c1}$	$T_{026s}$
$T_{026}$	$P_{026}$	$\pi_{c,c2}$	$\beta_{c2}$	$N_{c,c2}$	$\eta_{c2}$	$\omega_{c,c2}$	$T_{03s}$	$T_{03}$	$P_{03}$	$T_{04}$
$P_{04}$	$\eta_{t1}$	$\beta_{t1}$	$N_{c,t1}$	$\omega_{c,t1}$	$T_{045}$	$T_{045s}$	$P_{045}$	$\eta_{t2}$	$\beta_{t2}$	$N_{c,t2}$
$\omega_{c,t2}$	$T_{05}$	$T_{05s}$	$P_{05}$	$T_{9s}$	$T_9$	$T_{19s}$	$T_{19}$	E	$\dot{m}_f$	

Tabla 3.1: Parámetros de salida del modelo

En la tabla anterior se muestran 54 parámetros, aunque el sistema sólo devuelve 53. De los tres parámetros remarcados, sólo devuelve dos en función de la entrada, es evidente que, si el parámetro de entrada es el empuje, las salidas serán la temperatura de salida de la cámara de combustión y el flujo de combustible. Las otras dos posibilidades son análogas a esta.

Una vez se tiene un modelo como este, el último paso a realizar antes de empezar con los análisis que se quieren estudiar, es comparar la bondad del mismo en base a los datos obtenidos con GSP, pudiendo entonces si es que se confirma que los resultados son correctos, poder prescindir del software de simulación de motor, centrar así el estudio en el modelo desarrollado en Matlab.

[6] La comparación entre ambos modelos está expuesta en el documento de Sergio Román Mora, [Análisis de herramientas para la evaluación de la degradación en prestaciones de un turbofán de doble eje](#) de ella decir simplemente que los resultados obtenidos con el modelo de motor realizado en Matlab son suficientemente buenos como para poder considerar que se puede emplear este modelo para los realizar los análisis de la degradación del motor.

## 4. Caso bajo estudio

Los análisis que se realizarán en los próximos capítulos serán de un caso concreto, es decir, de unas condiciones de vuelo determinadas las cuales se muestran a continuación.

- Una **cota de vuelo de 11000m** (36089ft) que es la altura a la que vuelan aviones con este tipo de motor como pueden ser el A380 cuyo techo es de 13000m o el Boeing 747 que cuenta con unos 12000m de techo de vuelo.
- Una **velocidad de vuelo de Mach=0.8** que es también habitual en este tipo de aviones cuando realizan el crucero en el vuelo con los motores a máxima potencia.
- El otro parámetro de entrada será un **empuje de 51101.4N**, el cual se obtiene del caso de diseño a la cota de vuelo y velocidad de vuelo anteriores con una temperatura de salida de la cámara de combustión de 1390K.

Introduciendo estos tres parámetros en el modelo de motor, sin aplicar degradación a ninguna turbomáquina, se obtienen las siguientes salidas.

Parámetro	Valor	Caso de diseño
<b>T013</b>	292.6034	338.82
<b>P013</b>	0.616926	1.72252
<b>T024</b>	289.7506	335.77
<b>P024</b>	0.597509	1.671863
<b>T026</b>	328.4746	380.49
<b>P026</b>	0.889235	2.499434
<b>T03</b>	732.1479	822.5
<b>P03</b>	11.21126	29.943225
<b>T04</b>	1390	1458.91
<b>P04</b>	10.76281	28.745496
<b>T045</b>	1029.421	1081.53
<b>P045</b>	2.665528	7.049589
<b>T05</b>	748.498	782.15
<b>P05</b>	0.621127	1.598607
<b>N1</b>	3485.003	3390
<b>N2</b>	11920.19	10300
<b>wfd</b>	0.96796	2.4912

Tabla 4.1: Resultados caso sin degradación



En la tabla anterior se observa que la máxima temperatura se produce a la salida de la cámara de combustión, como cabía esperar. Por otro lado, el punto de mayor presión aparece a la salida del segundo compresor, el compresor de alta, ya que el proceso de combustión necesita que el fluido se encuentre a una presión alta.

Con respecto al caso de diseño tanto las temperaturas como las presiones disminuyen notablemente, especialmente la presión. En cuanto a la presión también disminuye claramente, pasando de 254149N del caso de diseño a ser prácticamente cinco veces menor en el caso bajo estudio, 51101.4N.

En cuanto a la degradación se ha realizado un análisis del efecto de cada uno de las distintas máquinas por separado, y para cada una se ha introducido degradación en el rendimiento, el flujo corregido y la relación de compresión.

Los rangos que se han empleado en este análisis son de 0 a -10% de degradación con saltos de 0.5% excepto para los casos de la relación de compresión y el flujo corregido, cuyo rango va de -10 a 10% con saltos de 1%, ya que, como se comentó en el [capítulo 1: Introducción](#), en estos parámetros el deterioro puede provocar una degradación positiva.

Se tienen por lo tanto 18x20 caso de degradación distintos, por lo que el volumen de datos comienza a ser importante.

En cuanto a la velocidad del modelo, requiere entre 3 y 15 segundos para cada uno de los casos anteriores, dependiendo esto del nivel de degradación aplicado. Cuanto más se aleje del caso sin degradación, el tiempo será mayor, ya que la convergencia será algo más lenta.

La aplicación de la degradación en el modelo de motor es muy sencilla, basta con multiplicar el parámetro que se quiere degradar por el grado de degradación necesario. Por ejemplo, si queremos degradar un 3% la eficiencia del compresor 1, simplemente multiplicamos el valor original de dicha eficiencia por 0.97 y ejecutamos el modelo. Realizando esto de forma iterativa para cada una de las degradaciones de cada turbomáquina, se obtienen los siguientes resultados en los que, para mayor claridad, se ha añadido el caso sin degradación.

prfancore	T013	P013	T014	P014	T016	P016	T018	P018	T020	P020	T022	P022	T024	P024	T026	P026	T028	P028	T030	P030	T032	P032	T034	P034	T036	P036	T038	P038	T040	P040	T042	P042	T044	P044	T046	P046	T048	P048	T050	P050	N1	N2	wfd	X
-10%	294.1232594	0.625366687	281.883252	0.544812221	315.7616955	0.77648602	734.579214	10.7145208	1447.23408	10.2859997	1073.58478	2.546239445	782.561527	0.594955112	3493.35729	12210.59997	0.984219137	1.57874767																										
-9.50%	294.0452696	0.624955542	282.2962993	0.54747664	316.4092008	0.782069742	734.3340366	10.74078609	1443.73953	10.31115465	1070.86644	2.552485283	780.4638766	0.595975012	3493.03422	12197.16785	0.983149329	1.580475111																										
-9%	293.9675185	0.624505664	282.7071724	0.550138125	317.0508921	0.787475051	734.0926268	10.76698123	1440.375093	10.33630198	1068.178414	2.558712803	778.3897666	0.597350963	3492.650503	12183.95968	0.982088263	1.594188153																										
-8.50%	293.8900029	0.624077032	283.115891	0.552796678	317.6868758	0.792064735	733.8549464	10.79310681	1436.85391	10.36138254	1065.570254	2.56492722	776.3388865	0.598872301	3492.29887	12170.96372	0.981035871	1.601892098																										
-8%	293.8127193	0.623649628	283.5224746	0.5554523	318.3172949	0.798238992	733.6209567	10.81916342	1433.47082	10.38639688	1062.891522	2.571113666	774.3107452	0.600091198	3491.948465	12158.17443	0.979992086	1.609587549																										
-7.50%	293.7356645	0.623232435	283.9269426	0.558104993	318.9421294	0.8039598013	733.3906185	10.84515162	1430.125254	10.41134556	1060.291786	2.577287386	772.3051568	0.601455572	3491.599229	12145.5865	0.978956838	1.617274511																										
-7%	293.6588355	0.622798433	284.329314	0.560754757	319.5615961	0.808949193	733.1638924	10.87107199	1426.816647	10.43622911	1057.720618	2.583443542	770.3211746	0.602816174	3491.251108	12133.19481	0.977930059	1.624952988																										
-6.50%	293.582229	0.622374606	284.7296076	0.563401595	320.1757494	0.814721082	732.9407386	10.89692507	1423.544447	10.46104806	1055.177601	2.589582313	768.3601712	0.604173046	3490.904049	12120.99442	0.976911679	1.632622985																										
-6%	293.5058423	0.621951937	285.1278419	0.566045509	320.7846805	0.819585483	732.7211171	10.92271141	1420.308111	10.48580295	1052.662322	2.595768872	766.4201283	0.605526228	3490.558	12108.98057	0.975901627	1.640284508																										
-5.50%	293.4296723	0.621530411	285.5240351	0.568686499	321.3884782	0.824885353	732.5049877	10.94843155	1417.107105	10.51049429	1050.174375	2.60180839	764.5012966	0.606875761	3490.212914	12097.14868	0.974899833	1.647937561																										
-5%	293.3537163	0.621110011	285.9182054	0.57132457	321.9872289	0.830170855	732.2923103	10.97408602	1413.940902	10.53512258	1047.71336	2.607896034	762.603366	0.608221682	3489.868742	12085.49432	0.973906226	1.655582151																										
-4.50%	293.2779714	0.62069072	286.3105705	0.573959721	322.5810163	0.835442145	732.0830445	10.99967533	1410.808987	10.55968832	1045.278885	2.613966967	760.7260315	0.609564031	3489.52544	12074.01323	0.972920735	1.663218283																										
-4%	293.2024351	0.620272528	286.7005479	0.576591957	323.1699221	0.840699377	731.8771501	11.02520002	1407.710853	10.58419202	1042.870564	2.620021347	758.8689929	0.610902843	3489.182963	12062.70128	0.971943288	1.670845965																										
-3.50%	293.1271048	0.619855417	287.0887551	0.579221278	323.7540256	0.84594698	731.6745868	11.05066057	1404.646001	10.60863415	1040.488016	2.626059333	757.0319551	0.612238155	3488.84127	12051.55449	0.970973814	1.678465202																										
-3%	293.0519777	0.619439372	287.4750091	0.581847687	324.333404	0.85117252	731.4753144	11.07605749	1401.613942	10.63301519	1038.130868	2.632081076	755.2146278	0.613570003	3488.500319	12040.56901	0.970012242	1.686076001																										
-2.50%	292.9770516	0.619024381	287.859268	0.584471187	324.9081325	0.856388177	731.2792929	11.10139127	1398.614194	10.65733562	1035.798752	2.638086727	753.4167254	0.61489842	3488.160072	12029.74112	0.969058501	1.693678369																										
-2%	292.8968935	0.618575253	288.2366078	0.587059769	325.4840476	0.86173686	731.092322	11.12547611	1396.519928	10.68045707	1034.230668	2.64406522	752.2074361	0.616248992	3487.815487	12018.84833	0.96868827	1.701179551																										
-1.50%	292.8222777	0.618155747	288.6169386	0.589671274	326.0637593	0.866968058	730.91587349	11.1473341	1394.832621	10.70144073	1032.982786	2.649533864	751.2449562	0.617491237	3486.895531	11984.37525	0.968491622	1.708747159																										
-1%	292.749107	0.61774465	288.9966685	0.592286613	327.6493996	0.872363386	730.74703379	11.16856022	1393.224142	10.72181781	1031.809142	2.654866427	750.3397272	0.618704051	3486.25227	11962.35584	0.968326944	1.716325879																										
-0.50%	292.6762046	0.617334989	289.3745743	0.594899462	328.2381869	0.877818869	730.582801413	11.18991895	1391.60811	10.74232219	1030.61251	2.660201212	749.4168357	0.619916286	3485.67798	11941.1149	0.968143965	1.723897384																										
0%	292.6034233	0.616926018	289.7505805	0.597509147	328.8284589	0.883294924	730.4248778	11.21126229	1390.000433	10.76281276	1029.421125	2.665528448	748.4980288	0.621126747	3485.002671	11920.19227	0.967960248	1.73145972																										

Tabla 4.2: Degradación relación de compresión fancore



mc fancore	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%																		
-9.50%																		
-9%																		
-8.50%																		
-8%																		
-7.50%																		
-7%	294.4407168	0.652429947	267.8968895	0.428590755	299.3226324	0.619423374	715.9714064	9.586410725	1527.179152	9.202954206	1203.404608	2.295965073	882.0874879	0.546640254	3533.833808	12366.31637	0.929931536	137.0019107
-6.50%	295.05457	0.648267811	267.5146285	0.435325423	298.4581708	0.615504301	718.3091127	9.580096086	1547.65016	9.198892177	1211.28259	2.294038025	888.2661943	0.5444005788	3527.176315	12391.48041	0.966277932	136.7122646
-6%	295.7242249	0.64599019	267.0235988	0.44006219	297.6040903	0.611471737	722.3131036	9.572921874	1572.017708	9.190004957	1220.650367	2.291220002	895.6107142	0.541732384	3519.6338	12456.05278	0.997595285	136.3798038
-5.50%	295.2397533	0.645566848	267.6792866	0.449099758	298.6147992	0.62075467	708.262094	9.727472959	1504.632119	9.338373957	1170.947569	2.328996801	857.0926793	0.549598619	3525.796432	12280.17486	0.959614616	136.7726669
-5%	296.4667865	0.642926255	267.2769775	0.452513552	294.9109088	0.605901523	713.9952958	9.66713891	1547.002085	9.280453313	1189.193983	2.312028216	871.3121337	0.542987205	3516.00639	12415.40507	1.002347368	136.2719231
-4.50%	297.1149787	0.641740227	266.2500881	0.445672659	293.339736	0.596231778	738.3397609	9.648315871	1613.852512	9.262417783	1220.059677	2.298716004	895.4729219	0.539811551	3505.031544	12830.08604	1.03800989	135.7598544
-4%	296.3489875	0.637546247	270.9469637	0.469722145	298.6077054	0.633287415	754.3381284	9.958209243	1591.632429	9.559880873	1184.627138	2.360892974	868.3286686	0.554223487	3499.223873	13069.45621	1.032098561	135.7821885
-3.50%	295.0634733	0.631606604	276.847264	0.506259127	307.4440251	0.700399863	743.7158676	10.3159602	1517.03671	9.903321793	1127.674119	2.450614623	824.3192796	0.573781113	3495.985125	12510.0548	1.008252802	136.030646
-3%	294.5275651	0.627582142	280.3798508	0.531384804	312.8559884	0.747311799	737.5015997	10.57253941	1470.549433	10.14963784	1091.689319	2.512369839	796.5335564	0.587214094	3494.319022	12300.86737	0.992343873	136.2742109
-2.50%	294.1273239	0.625383786	282.0413416	0.544731245	315.8795313	0.775990886	735.045255	10.71139634	1448.738589	10.28294049	1074.751909	2.545473452	783.4616652	0.594454974	3493.119146	12216.28722	0.984985882	136.3158948
-2%	293.7504762	0.623311867	283.6325739	0.557527838	318.645975	0.803044568	732.8901773	10.842333127	1429.08636	10.40863802	1053.557469	2.57664643	771.7470178	0.601278265	3491.984014	12142.00984	0.978294216	136.402042
-1.50%	293.3487813	0.621091306	285.6573446	0.571411505	321.7927748	0.831176469	731.5621596	10.97870465	1411.676131	10.53955647	1045.957504	2.609031924	761.250143	0.608424891	3490.276884	12076.8848	0.972698711	136.4705744
-1%	293.0085739	0.619207992	287.3980691	0.58328173	324.4225341	0.854914442	730.6148828	11.09388592	1397.739151	10.65013048	1035.123949	2.636331029	752.8973668	0.614463621	3488.761237	12026.10739	0.968259058	136.5294254
-0.50%	292.8005239	0.618037682	288.5777485	0.59042359	326.4770382	0.872329687	731.2864825	11.15484149	1393.38673	10.70864783	1031.901249	2.651469153	750.4114907	0.617910431	3486.908665	11972.25433	0.967902934	136.515437
0%	292.0334233	0.616926018	289.7505805	0.597509147	328.4745891	0.889234924	732.1478778	11.21126329	1390.000433	10.76281276	1029.421125	2.665528448	748.4980288	0.621126747	3485.002671	11920.19227	0.967960248	136.4983368

Tabla 4.4: Degradación flujo corregido fancore

prfanduct	T013	P013	T014	P014	T016	P016	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	292.3088269	0.602457798	298.8651739	0.646232716	345.6932517	1.025070157	746.0373921	11.808838	1387.791967	11.33648448	1029.072512	2.818183399	748.7731654	0.655604903	3551.12827	11675.3837	0.998808294	1.7457999
-9.50%	293.33558	0.603305755	298.3735656	0.643668596	344.7066668	1.017277051	745.1834016	11.7748627	1387.669184	11.30321882	1028.89722	2.809195909	748.5738886	0.653593138	3546.42244	11686.15	0.99685774	1.748257107
-9%	292.3617043	0.604147424	297.8868326	0.641126237	343.7246018	1.009585451	744.3370154	11.73981031	1387.557021	11.2702179	1028.72945	2.800274	748.3795883	0.651592799	3541.718405	11697.14896	0.994925215	1.750696092
-8.50%	292.3872099	0.604982877	297.4048945	0.638605355	342.7469742	1.001946961	743.4890634	11.70570802	1387.455002	11.2374797	1028.568202	2.791417122	748.190422	0.649609207	3537.016045	11708.38194	0.993011625	1.751117064
-8%	292.4121064	0.605812184	296.927673	0.636105671	341.7737033	0.99435618	742.6663782	11.67187732	1387.362659	11.20500223	1028.413706	2.782624729	748.0060998	0.647640405	3532.315238	11719.85041	0.991116023	1.755202028
-7.50%	292.4364034	0.606655417	296.4550913	0.633626912	340.8004703	0.986812709	741.8417958	11.63831618	1387.279525	11.17278354	1028.265381	2.773896282	747.826335	0.645686256	3527.615866	11731.5559	0.98927933	1.757905788
-7%	292.4601104	0.607452644	295.9870746	0.63116881	339.8399141	0.979316147	741.0241544	11.6030226	1387.205142	11.14082169	1028.122848	2.765231247	747.6508432	0.643746626	3522.917806	11743.50006	0.987376893	1.760273945
-6.50%	292.4832364	0.608263933	295.5235498	0.628731102	338.8792409	0.971866091	740.2132954	11.57199459	1387.139054	11.10911481	1027.985737	2.756629098	747.4793427	0.641821381	3518.22094	11755.68466	0.985522445	1.762624896
-6%	292.502306	0.609022189	295.0613766	0.626266937	337.9762014	0.96487259	739.4516825	11.54098309	1387.101108	11.07934377	1027.889743	2.746652283	747.3566981	0.640021185	3514.760702	11767.31853	0.98383258	1.764822167
-5.50%	292.5164196	0.609728146	294.5994515	0.62377459	337.1106219	0.958171828	738.729626	11.51163269	1387.069577	11.05116738	1027.878145	2.741265788	747.3408572	0.638337723	3512.21951	11778.80936	0.982318237	1.766867886
-5%	292.5297661	0.610427121	294.1415201	0.621307362	336.2485308	0.95150843	738.0139683	11.48254412	1387.043543	11.02323947	1027.878066	2.73395283	747.3378985	0.636670323	3509.096741	11790.52459	0.980828422	1.768893375
-4.50%	292.5422602	0.611120628	293.6877619	0.618857813	335.3910214	0.944891645	737.3045536	11.45369788	1387.023466	10.99554997	1027.881996	2.726699326	747.3380494	0.635016364	3507.199768	11802.4276	0.979352333	1.770903016
-4%	292.5528026	0.611796246	293.236048	0.616416476	334.5749137	0.938425864	736.6603341	11.4255093	1387.014113	10.96848893	1027.971655	2.719601137	747.4042219	0.633401693	3504.673879	11814.74961	0.977971402	1.772860818
-3.50%	292.5605449	0.612454938	292.7864979	0.613984151	333.7975817	0.932105103	736.0767511	11.39794499	1387.006698	10.94202719	1028.140247	2.712651392	747.5311819	0.631824399	3502.19231	11827.45492	0.976678469	1.774769574
-3%	292.5678632	0.613108552	292.344102	0.611572041	333.0241689	0.925830266	735.497907	11.37061708	1388.101627	10.9157924	1028.310083	2.705758534	747.6591203	0.630259823	3499.609108	11840.32185	0.975395978	1.776663615
-2.50%	292.5747704	0.613757156	291.8995608	0.609179899	332.2545863	0.919600659	734.9236706	11.34352292	1388.998637	10.88978201	1028.480947	2.698928661	747.7878694	0.628707804	3497.11518	11853.35168	0.974123358	1.778543137
-2%	292.5812793	0.614400816	291.4620674	0.606807482	331.4887458	0.913415595	734.3539109	11.31665594	1388.697464	10.86399354	1028.652621	2.692140683	747.9172615	0.627168183	3494.647121	11866.54576	0.97286064	1.780408334
-1.50%	292.5874023	0.615039599	291.0284879	0.604454552	330.7265599	0.907748396	733.7884978	11.2900256	1388.997843	10.83842458	1028.824885	2.685444321	748.0471277	0.625640803	3492.204615	11879.90551	0.971607459	1.782293996
-1%	292.5931515	0.615673569	290.5987711	0.602120875	329.9679418	0.901176394	733.2273019	11.26361742	1389.999509	10.81307273	1028.997521	2.678742109	748.1772985	0.624125511	3489.78735	11893.43237	0.970363551	1.784096511
-0.50%	292.5984778	0.616302261	290.1728088	0.599805727	329.2183081	0.895173147	732.6827389	11.2373484	1389.640773	10.78785447	1029.202091	2.672111463	748.3320844	0.622620574	3487.384958	11906.80111	0.969152505	1.785918333
0%	292.6034233	0.616926018	289.7505805	0.597509147	328.4745891	0.889234924	732.1478778	11.21126329	1390.000433	10.76281276	1029.421125	2.665528448	748.4890288	0.621126747	3485.002671	11920.19227	0.967960248	1.787752582

Tabla 4.5: Degradación relación de compresión fanduct



eff	fanduct	T03	P013	T04	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	296.8705165	0.610621538	288.8428934	0.591654988	321.8714751	0.829232338	747.6778823	11.23762675	1451.881231	10.78812168	1076.836021	2.666409082	784.980777	0.62344642	3478.732696	12233.37192	1.028558293	0.829752578	
-9.50%	296.6383173	0.610958914	288.8913112	0.591968266	322.1876394	0.832023525	741.0645358	11.23699511	1448.186766	10.78751551	1073.983886	2.666474308	782.7851532	0.623272763	3431.795852	12219.29722	1.025095598	0.834332682	
-9%	296.4082712	0.611294059	288.9393872	0.592279471	322.5010358	0.834799352	740.456305	11.2363764	1444.526438	10.78692134	1071.158112	2.666540632	780.6099107	0.623410975	3434.945102	12205.37204	1.021661394	0.838912791	
-8.50%	296.1803469	0.611626991	288.9871249	0.592588623	322.8117108	0.837560026	739.8631453	11.23577039	1440.89982	10.78633957	1068.358375	2.666608035	778.4547989	0.62329577	3437.87464	12191.59376	1.018255545	0.843492908	
-8%	295.9545139	0.611957733	289.0345276	0.59289574	323.11971	0.840305709	739.2550121	11.23517885	1437.306492	10.78576977	1065.594353	2.666676499	776.3195705	0.623181635	3440.884656	12177.95984	1.014877116	0.848073032	
-7.50%	295.7370742	0.612286304	289.0815988	0.593200842	323.4250775	0.843036558	738.6618607	11.23459556	1433.746038	10.78521174	1062.833573	2.666746006	774.2039815	0.623068562	3443.875341	12164.4678	1.01152638	0.852653162	
-7%	295.5090019	0.612612726	289.1283417	0.593503948	323.7278564	0.845757729	738.0736466	11.2340263	1430.21805	10.78466525	1060.112192	2.666816538	772.1077909	0.62295654	3446.846878	12151.11521	1.008202812	0.857233299	
-6.50%	295.2892647	0.612937017	289.1747597	0.593805075	324.0280887	0.848454373	737.4903232	11.23346886	1426.722123	10.7841301	1057.413431	2.666888077	770.0307611	0.622845559	3449.799454	12137.89971	1.004906094	0.861813443	
-6%	295.0715022	0.613259197	289.220856	0.594104243	324.3258154	0.851141638	736.9118522	11.23292303	1423.25786	10.78360611	1054.739143	2.666960606	767.9726578	0.622735609	3452.732348	12124.81901	1.001635911	0.866393594	
-5.50%	294.8556865	0.613579286	289.2666338	0.594401468	324.6210762	0.85381467	736.3381833	11.23238862	1419.824869	10.78309307	1052.089028	2.667034109	765.9332498	0.622626679	3455.648439	12111.87085	0.998391952	0.8707973752	
-5%	294.6417906	0.613897304	289.3120963	0.59469677	324.91391	0.856473613	735.7692742	11.23186541	1416.422762	10.7825908	1049.462789	2.667108569	763.912309	0.622518762	3458.545206	12099.05305	0.995173913	0.875553917	
-4.50%	294.4297877	0.614213268	289.357465	0.594990166	325.2043349	0.859118606	735.2050811	11.23135323	1413.05116	10.78209911	1046.860135	2.66718397	761.9096103	0.622411845	3461.423722	12086.36346	0.991981497	0.880134089	
-4%	294.2196517	0.614527199	289.4020875	0.595281673	325.4924478	0.861749786	734.64556	11.23085189	1409.709686	10.78161781	1044.280779	2.667260295	759.9249321	0.622305921	3464.284159	12073.80001	0.988814392	0.884714268	
-3.50%	294.0116279	0.614838847	289.4468682	0.59557106	325.7779643	0.864361974	734.0921409	11.23035178	1406.404853	10.78113771	1041.729737	2.667334753	757.9621317	0.622200616	3467.118715	12061.3869	0.985677526	0.889288846	
-3%	293.8054928	0.615148416	289.4914143	0.595858517	326.0611411	0.866959213	733.5437082	11.22985991	1403.131243	10.78066552	1039.202838	2.667409448	756.0180005	0.622096204	3469.933626	12049.10282	0.982566816	0.893861792	
-2.50%	293.5963377	0.615452646	289.5312092	0.596115945	326.4968025	0.870304741	733.2745122	11.22827527	1400.663405	10.77914426	1037.355669	2.667484229	754.5974965	0.622013047	3472.480272	12026.14653	0.979994647	0.898439791	
-2%	293.388536	0.615697989	289.5702795	0.596368835	326.9440248	0.875245236	733.0345417	11.22666067	1398.291721	10.77754244	1035.587496	2.667518587	753.2378595	0.621932845	3474.985876	12002.38425	0.977492031	0.903018299	
-1.50%	293.188652	0.616001907	289.6147763	0.596651044	327.3390718	0.878860154	732.8105792	11.22509388	1396.155445	10.77471012	1033.995259	2.667103287	752.0138637	0.621748631	3477.508898	11981.16873	0.9750701	0.907574834	
-1%	292.9918694	0.616311615	289.6602908	0.596938631	327.7196986	0.882325668	732.5910601	11.21918666	1394.082963	10.77041919	1032.450232	2.66658563	750.8262637	0.621541682	3480.024616	11960.72048	0.972678422	0.912126352	
-0.50%	292.7967365	0.616619156	289.7054971	0.597224205	328.1071534	0.886817385	732.3650194	11.21514541	1392.041738	10.76653959	1030.944134	2.666020085	749.6686531	0.621333584	3482.515135	11940.09802	0.970320117	0.916677102	
0%	292.6034233	0.616926018	289.7505805	0.597509147	328.4745891	0.889234924	732.1478778	11.21126329	1390.000433	10.76281276	1029.421125	2.665528448	748.4980288	0.621126747	3485.002671	11920.19277	0.967960248	0.921227802	

Tabla 4.6: Degradación eficiencia fanduct

mc funduct	T03	P013	T04	P024	T026	P016	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	282.757973	0.6446214	289.5556932	0.495522728	341.7127099	0.986251934	721.730229	10.87102443	1247.048601	10.43618327	1035.033623	2.631540295	754.30458	0.643710105	3656.082197	11168.58409	0.668158891	707.1405663
-9.50%	283.224482	0.641125149	290.988207	0.507099517	346.3591739	1.021264006	725.344802	10.93907528	1268.334055	10.50151209	1046.493735	2.650136196	761.9692107	0.646265634	3656.087601	11093.56147	0.692307031	704.9801366
-9%	283.3332582	0.637135254	293.0328055	0.542205971	351.9253881	1.061635362	730.338632	11.02415143	1297.232592	10.5831852	1060.908942	2.672578479	773.8571062	0.648980521	3656.148533	11026.79649	0.751326451	701.9625438
-8.50%	284.5986217	0.629005614	294.9913289	0.574113513	356.4611268	1.100339073	734.4792713	11.1735236	1316.294994	10.72658252	1064.301201	2.709813286	776.536672	0.653749106	3656.177806	10944.66495	0.803201913	699.4143152
-8%	285.8166595	0.619188776	298.5726778	0.619046449	362.5514562	1.144523866	742.7732003	11.36832267	1351.680161	10.91338966	1073.648192	2.755625353	783.6401001	0.65850976	3656.264862	10971.35403	0.885663916	694.4566519
-7.50%	286.8690037	0.610917721	301.565254	0.642072475	365.3074201	1.165524785	746.2736829	11.60066129	1365.71964	11.13663476	1065.492374	2.809411972	777.6110403	0.665450242	3656.287891	10999.81161	0.928354267	690.8515704
-7%	289.1646628	0.593722	308.0612108	0.690147272	369.0200965	1.196684179	764.1201754	12.19614535	1397.049975	11.7082953	1040.886605	2.891254411	759.1743651	0.680621262	3656.383055	11372.89649	1.017502001	682.3606914
-6.50%	289.3972056	0.595110253	307.0679334	0.684455533	364.9560668	1.165277497	762.5368152	12.17907519	1389.285924	11.69191218	1031.735825	2.921006378	752.1091853	0.677903395	3644.56307	11472.93532	1.009323761	683.0953811
-6%	289.6561037	0.596876876	305.6076559	0.678138526	362.0005246	1.144734575	759.2979846	12.10624311	1386.325936	11.62199339	1029.254924	2.90177008	750.0454844	0.673583921	3630.273683	11484.199	1.004050782	683.798249
-5.50%	289.8820137	0.59810774	304.047121	0.67299131	358.8979342	1.123185766	755.91958	12.08039204	1383.333549	11.54917636	1026.74373	2.8817296	747.9658443	0.669090652	3616.457566	11497.6204	0.998662776	684.5211443
-5%	290.1181326	0.600497365	302.5471234	0.66454051	355.8709545	1.10206786	752.6585431	11.95650295	1380.532725	11.47824283	1024.37774	2.86216653	745.9976656	0.664708787	3602.814849	11512.77496	0.999496633	685.2220095
-4.50%	290.3447836	0.602238109	301.1046489	0.658197717	352.9169811	1.081378326	749.509332	11.88458621	1377.908992	11.40915477	1022.145613	2.843169167	744.1323985	0.660435739	3589.347219	11529.62481	0.988539137	685.9021359
-4%	290.5714675	0.604000098	299.7761257	0.651501254	350.0170299	1.05975717	746.6264192	11.81047735	1376.123947	11.33805826	1020.550348	2.823539872	742.7465274	0.656049667	3576.024817	11552.77075	0.984049754	686.5466796
-3.50%	290.7915708	0.605739332	298.5125165	0.644855338	347.32109	1.039369824	744.2626154	11.73530153	1375.689389	11.26588947	1019.99919	2.803583608	742.141721	0.651629876	3562.631356	11580.4849	0.980396684	687.1177764
-3%	291.0115783	0.607197425	297.4164817	0.639061112	344.9882141	1.021752586	742.4271427	11.67013117	1376.113062	11.20332592	1020.127385	2.786159353	742.0611756	0.647802111	3550.338596	11609.09	0.977881696	687.5102002
-2.50%	291.2414856	0.608647731	296.3932543	0.633634947	342.669329	1.003482658	740.7710161	11.60400364	1377.197524	11.13398435	1020.738341	2.76944036	742.3629423	0.643924911	3538.518035	11642.98594	0.975793597	687.8508343
-2%	291.4791985	0.610128663	295.3668982	0.628162569	340.2736811	0.984437537	739.1552396	11.55590418	1378.646044	11.07446801	1021.659471	2.750280895	742.8710148	0.639934399	3527.021614	11681.38903	0.973862212	688.176241
-1.50%	291.7778914	0.611976802	293.9370101	0.620382276	337.1947004	0.960046108	737.1077099	11.44984754	1380.755101	10.99185364	1023.033229	2.727699614	743.4986279	0.634916015	3516.662355	11733.86712	0.971664483	688.5549672
-1%	292.070509	0.613768252	292.5334375	0.612732003	334.1166059	0.935855785	735.1008143	11.36599254	1383.001072	10.91135283	1024.506686	2.705720801	744.7362767	0.630027194	3506.421353	11790.153	0.969655651	688.9047766
-0.50%	292.3364222	0.615370702	291.1319408	0.605071613	331.2861174	0.9124106409	733.5788118	11.28772574	1386.377835	10.83621479	1026.875292	2.685423783	746.5489392	0.625529378	3495.68521	11853.23843	0.968701221	689.128372
0%	292.6034233	0.616926018	289.7505805	0.597509147	328.4745891	0.889234924	732.1478778	11.21126329	1390.000433	10.76281276	1029.421125	2.665528448	748.4980288	0.621126747	3485.002671	11920.19227	0.967902048	689.319126

Tabla 4.7: Degradación flujo corregido funduct

pt compresor1	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	292.9299981	0.618762	290.0603	0.599214	325.3037	0.860482	731.2214	11.11614	1397.013	10.67149	1034.588	2.641736	752.483	0.615713	3487.874	12015.53	0.968631	1.436017
-9.50%	292.9076177	0.618637	290.0391	0.599098	325.4983	0.862558	731.2208	11.12295	1396.308	10.67803	1034.06	2.643448	752.0765	0.616097	3487.725	12007.65	0.968461	1.439761
-9%	292.8923106	0.618552	290.0246	0.599019	325.6358	0.863959	731.2131	11.12756	1395.866	10.68246	1033.731	2.644604	751.8225	0.616357	3487.614	12002.5	0.968367	1.44229
-8.50%	292.8771316	0.618467	290.0102	0.59894	325.7717	0.865348	731.2177	11.13213	1395.427	10.68685	1033.404	2.645751	751.5702	0.616615	3487.504	11997.4	0.968274	1.444799
-8%	292.8620791	0.618383	289.9959	0.598862	325.9063	0.866727	731.2218	11.13667	1394.991	10.6912	1033.079	2.646889	751.3193	0.616871	3487.396	11992.35	0.96818	1.447291
-7.50%	292.8471516	0.618299	289.9817	0.598784	326.0394	0.868095	731.2254	11.14117	1394.558	10.69552	1032.755	2.648019	751.0701	0.617125	3487.288	11987.35	0.968086	1.449763
-7%	292.8323475	0.618217	289.9677	0.598707	326.1711	0.869454	731.2286	11.14564	1394.127	10.69981	1032.434	2.649139	750.8224	0.617377	3487.182	11982.39	0.967993	1.452218
-6.50%	292.8175007	0.618133	289.9536	0.59863	326.3081	0.870854	731.2258	11.14993	1393.719	10.70394	1032.146	2.650244	750.6002	0.617627	3487.065	11977.04	0.96792	1.454745
-6%	292.8029379	0.618052	289.9398	0.598555	326.437	0.872192	731.228	11.15433	1393.294	10.70816	1031.829	2.651347	750.3555	0.617875	3486.961	11972.18	0.967827	1.457164
-5.50%	292.7884941	0.617971	289.9261	0.59848	326.5647	0.87352	731.2299	11.1587	1392.872	10.71235	1031.513	2.652442	750.1123	0.618121	3486.858	11967.37	0.967733	1.459565
-5%	292.7741677	0.617891	289.9125	0.598405	326.691	0.874838	731.2313	11.16303	1392.452	10.71651	1031.2	2.653528	749.8707	0.618365	3486.757	11962.61	0.96764	1.461948
-4.50%	292.7599573	0.617812	289.899	0.598331	326.816	0.876146	731.2323	11.16733	1392.035	10.72064	1030.888	2.654606	749.6305	0.618607	3486.656	11957.89	0.967547	1.464315
-4%	292.7458616	0.617733	289.8857	0.598258	326.9397	0.877444	731.2329	11.1716	1391.621	10.72474	1030.579	2.655675	749.3918	0.618848	3486.557	11953.21	0.967455	1.466664
-3.50%	292.7297391	0.617642	289.8704	0.598174	327.0996	0.878845	731.2914	11.17626	1391.31	10.72921	1030.35	2.656838	749.2151	0.619113	3486.409	11948.74	0.96744	1.469213
-3%	292.7113595	0.617538	289.853	0.598077	327.2997	0.88036	731.4143	11.18136	1391.113	10.7341	1030.21	2.658105	749.1071	0.619406	3486.205	11944.51	0.967512	1.471983
-2.50%	292.6930932	0.617434	289.8356	0.597981	327.4986	0.881864	731.5371	11.18642	1390.919	10.73897	1030.072	2.659363	749.0011	0.619698	3486.003	11940.33	0.967586	1.474736
-2%	292.6749391	0.617331	289.8184	0.597886	327.6962	0.883358	731.6596	11.19146	1390.729	10.7438	1029.937	2.660613	748.8969	0.619987	3485.801	11936.2	0.967659	1.477471
-1.50%	292.6568961	0.617229	289.8013	0.597791	327.8926	0.884843	731.782	11.19646	1390.542	10.7486	1029.805	2.661854	748.7945	0.620275	3485.6	11932.13	0.967734	1.480188
-1%	292.6389631	0.617128	289.7843	0.597696	328.0878	0.886317	731.9041	11.20142	1390.358	10.75337	1029.675	2.663087	748.6939	0.620561	3485.4	11928.1	0.967809	1.482888
-0.50%	292.6211392	0.617026	289.7674	0.597602	328.2818	0.887781	732.0261	11.20636	1390.178	10.7581	1029.547	2.664312	748.5951	0.620845	3485.201	11924.12	0.967884	1.485571
0%	292.6034233	0.616926	289.7506	0.597509	328.4746	0.889235	732.1479	11.21126	1390	10.76281	1029.421	2.665528	748.498	0.621127	3485.003	11920.19	0.96796	1.488237

Tabla 4.8: Degradación relación de compresión compresor 1



eff compresor1	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	292.4282712	0.61582	289.5843	0.596482	333.0471	0.891765	741.5475	11.2294	1411.151	10.78022	1045.779	2.669212	761.0971	0.622621	3478.036	12002.93	0.981759	0.810834
-9.50%	292.4377082	0.615882	289.5933	0.596539	332.7924	0.891629	741.0238	11.2284	1409.964	10.77927	1044.86	2.66901	760.3891	0.622539	3478.429	11998.31	0.980983	0.815281
-9%	292.4470401	0.615943	289.6021	0.596596	332.5408	0.891494	740.5063	11.22743	1408.791	10.77833	1043.952	2.668811	759.6899	0.622457	3478.817	11993.75	0.980216	0.819728
-8.50%	292.4562684	0.616003	289.6109	0.596652	332.2921	0.891361	739.9949	11.22646	1407.633	10.77774	1043.055	2.668614	758.9992	0.622376	3479.201	11989.25	0.979459	0.824175
-8%	292.4653949	0.616062	289.6196	0.596707	332.0464	0.89123	739.4895	11.2255	1406.489	10.77648	1042.17	2.668419	758.3169	0.622296	3479.581	11984.79	0.978711	0.828622
-7.50%	292.4744213	0.616121	289.6281	0.596762	331.8036	0.891099	738.9899	11.22455	1405.358	10.77557	1041.295	2.668226	757.6428	0.622217	3479.957	11980.39	0.977972	0.833069
-7%	292.4833491	0.616179	289.6366	0.596816	331.5636	0.890971	738.4962	11.22361	1404.242	10.77467	1040.43	2.668035	756.9768	0.622139	3480.328	11976.03	0.977242	0.837516
-6.50%	292.4922115	0.616237	289.645	0.596869	331.3264	0.890843	738.0082	11.22268	1403.139	10.77377	1039.576	2.667846	756.319	0.622062	3480.695	11971.73	0.976521	0.841963
-6%	292.5013302	0.616293	289.6537	0.596922	331.0913	0.890707	737.5269	11.22176	1402.055	10.77289	1038.737	2.667657	755.6727	0.621986	3481.049	11967.53	0.975814	0.846409
-5.50%	292.5103508	0.616349	289.6622	0.596973	330.8589	0.890572	737.0511	11.22085	1400.984	10.77201	1037.908	2.66747	755.034	0.62191	3481.398	11963.38	0.975115	0.850855
-5%	292.5192747	0.616404	289.6707	0.597025	330.6292	0.890439	736.5808	11.21994	1399.925	10.77115	1037.088	2.667285	754.4028	0.621835	3481.744	11959.28	0.974425	0.855301
-4.50%	292.5281034	0.616459	289.6791	0.597076	330.4021	0.890308	736.1157	11.21905	1398.879	10.77029	1036.278	2.667102	753.7789	0.621761	3482.087	11955.22	0.973743	0.859747
-4%	292.5368386	0.616513	289.6874	0.597126	330.1776	0.890178	735.6559	11.21817	1397.845	10.76944	1035.478	2.666921	753.1624	0.621688	3482.426	11951.21	0.973068	0.864193
-3.50%	292.5454815	0.616567	289.6956	0.597176	329.9556	0.890049	735.2012	11.21729	1396.823	10.7686	1034.686	2.666742	752.553	0.621615	3482.761	11947.24	0.972402	0.868639
-3%	292.5540337	0.61662	289.7037	0.597225	329.7361	0.889922	734.7516	11.21642	1395.812	10.76777	1033.904	2.666565	751.9505	0.621543	3483.093	11943.31	0.971743	0.873085
-2.50%	292.5624966	0.616672	289.7117	0.597274	329.5191	0.889796	734.3069	11.21557	1394.813	10.76694	1033.131	2.666389	751.355	0.621472	3483.421	11939.43	0.971091	0.877532
-2%	292.5708715	0.616724	289.7197	0.597322	329.3045	0.889671	733.8672	11.21472	1393.826	10.76613	1032.367	2.666215	750.7663	0.621402	3483.746	11935.59	0.970447	0.881978
-1.50%	292.579062	0.616775	289.7275	0.597369	329.0976	0.889598	733.4247	11.21373	1392.865	10.76518	1031.639	2.666034	750.2058	0.621331	3484.057	11931.35	0.969828	0.886436
-1%	292.587266	0.616826	289.7352	0.597416	328.8877	0.889476	732.9945	11.2129	1391.9	10.76438	1030.891	2.665864	749.6301	0.621262	3484.375	11927.59	0.969198	0.890883
-0.50%	292.595386	0.616876	289.743	0.597463	328.68	0.889355	732.5689	11.21208	1390.945	10.76359	1030.152	2.665695	749.0609	0.621194	3484.691	11923.87	0.968576	0.895329
0%	292.6034233	0.616926	289.7506	0.597509	328.4746	0.889235	732.1479	11.21126	1390	10.76281	1029.421	2.665528	748.498	0.621127	3485.003	11920.19	0.96796	0.899776

Tabla 4.9: Degradación eficiencia compresor 1

mc compresor1	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	294.6124912	0.628067	291.6562	0.607855	311.6817	0.742486	736.4125	10.54918	1470.515	10.12721	1091.665	2.506871	796.5164	0.585913	3495.465	12301.61	0.991404	82.87751
-9.50%	294.5016236	0.627454	291.551	0.607285	312.6693	0.750103	736.1391	10.58603	1465.584	10.16259	1087.836	2.515643	793.5603	0.587857	3494.901	12281.99	0.989995	83.3329
-9%	294.3912058	0.626843	291.4462	0.606717	313.6411	0.757697	735.8617	10.62279	1460.699	10.19787	1084.042	2.524391	790.6316	0.589795	3494.345	12262.73	0.988586	83.78835
-8.50%	294.2812301	0.626234	291.3419	0.606152	314.5976	0.765269	735.5806	10.65946	1455.859	10.23308	1080.283	2.533115	787.7302	0.591727	3493.798	12243.81	0.987177	84.24387
-8%	294.1716889	0.625628	291.238	0.605589	315.5391	0.772819	735.2961	10.69604	1451.065	10.2682	1076.559	2.541816	784.8558	0.593654	3493.26	12225.22	0.985769	84.69945
-7.50%	294.0644912	0.625035	291.1363	0.605038	316.4487	0.780219	735.01	10.73191	1446.388	10.30264	1072.925	2.550345	782.0519	0.595542	3492.74	12207.24	0.98438	85.14741
-7%	293.9618838	0.624467	291.039	0.604511	317.3068	0.787317	734.7239	10.76634	1441.911	10.33568	1069.447	2.558526	779.3678	0.597352	3492.253	12190.14	0.983033	85.57861
-6.50%	293.859719	0.623902	290.9421	0.603986	318.1517	0.794393	734.4348	10.80066	1437.475	10.36863	1066	2.566682	776.708	0.599156	3491.773	12173.32	0.981686	86.00964
-6%	293.757991	0.623339	290.8456	0.603464	318.9837	0.801447	734.1429	10.83489	1433.079	10.40149	1062.583	2.574813	774.0723	0.600954	3491.301	12156.75	0.980341	86.44049
-5.50%	293.6566939	0.622778	290.7495	0.602943	319.803	0.808481	733.8484	10.86902	1428.723	10.43426	1059.198	2.582919	771.4607	0.602746	3490.837	12140.44	0.978996	86.87117
-5%	293.5558224	0.62222	290.6538	0.602425	320.6099	0.815493	733.5515	10.90306	1424.406	10.46694	1055.843	2.591001	768.8729	0.604532	3490.379	12124.36	0.977653	87.30167
-4.50%	293.455371	0.621665	290.5586	0.601909	321.4047	0.822485	733.2523	10.937	1420.129	10.49952	1052.519	2.599059	766.3087	0.606313	3489.929	12108.52	0.976311	87.73198
-4%	293.3553348	0.621111	290.4637	0.601395	322.1876	0.829456	732.951	10.97085	1415.89	10.53202	1049.224	2.607092	763.7679	0.608088	3489.485	12092.91	0.974971	88.16211
-3.50%	293.2557087	0.62056	290.3692	0.600884	322.959	0.836408	732.6477	11.00461	1411.69	10.56442	1045.96	2.615102	761.2503	0.609857	3489.048	12077.52	0.973632	88.59204
-3%	293.1564882	0.620011	290.2751	0.600374	323.7191	0.843341	732.3426	11.03827	1407.528	10.59674	1042.724	2.623088	758.7557	0.611621	3488.617	12062.34	0.972295	89.02179
-2.50%	293.0628516	0.619493	290.1863	0.599893	324.4179	0.849924	732.0182	11.07022	1403.523	10.62741	1039.611	2.630668	756.3555	0.613292	3488.236	12047.78	0.970977	89.4321
-2%	292.9705216	0.618983	290.0987	0.599419	325.0976	0.856431	731.6883	11.1018	1399.571	10.65773	1036.54	2.638159	753.9874	0.614943	3487.869	12033.46	0.969661	89.83883
-1.50%	292.871522	0.618429	290.0048	0.598905	325.9954	0.865085	731.761	11.13177	1396.786	10.6885	1034.452	2.645613	752.3778	0.616622	3487.138	12003.69	0.969094	90.22108
-1%	292.772097	0.617872	289.9105	0.598388	326.9115	0.874052	731.8831	11.16137	1394.18	10.71492	1032.513	2.653029	750.8825	0.618298	3486.364	11972.01	0.968628	90.59903
-0.50%	292.6816671	0.617365	289.8248	0.597917	327.748	0.882236	732.0025	11.1881	1391.888	10.74058	1030.824	2.659742	749.58	0.619816	3485.641	11943.55	0.968248	90.94023
0%	292.6034233	0.616926	289.7506	0.597509	328.4746	0.889235	732.1479	11.21126	1390	10.76281	1029.421	2.665528	748.498	0.621127	3485.003	11920.19	0.96796	91.23392

Tabla 4.10: Degradación flujo corregido compresor 1

pt compresor <sup>2</sup>	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	292.6548924	0.617285	289.7995	0.597842	326.1903	0.867526	728.5385	11.24983	1377.527	10.79984	1018.259	2.667925	739.9034	0.621256	3489.052	12242.32	0.959623	12.96771
-9.50%	292.6520814	0.617267	289.7968	0.597825	326.2755	0.868341	728.6339	11.24852	1377.885	10.79858	1018.606	2.667925	740.1699	0.62127	3488.907	12226.98	0.959888	12.95405
-9%	292.6491868	0.617248	289.7941	0.597808	326.3635	0.869182	728.7344	11.2472	1378.258	10.79731	1018.964	2.667925	740.4456	0.621284	3488.757	12211.45	0.960162	12.93997
-8.50%	292.646208	0.617229	289.7912	0.59779	326.4543	0.870052	728.8401	11.24585	1378.644	10.79601	1019.334	2.667924	740.7303	0.621298	3488.603	12195.75	0.960445	12.92549
-8%	292.6431445	0.617209	289.7883	0.597772	326.5478	0.87095	728.9509	11.24448	1379.046	10.7947	1019.716	2.667923	741.0244	0.621313	3488.444	12179.85	0.960738	12.91059
-7.50%	292.639996	0.617189	289.7853	0.597753	326.6443	0.871877	729.0669	11.24309	1379.461	10.79337	1020.11	2.667921	741.3278	0.621328	3488.281	12163.76	0.961041	12.89528
-7%	292.6367619	0.617168	289.7823	0.597734	326.7436	0.872833	729.1883	11.24169	1379.891	10.79202	1020.516	2.667919	741.6407	0.621343	3488.112	12147.48	0.961353	12.87954
-6.50%	292.6337804	0.617149	289.7794	0.597716	326.8355	0.87372	729.3061	11.24045	1380.296	10.79083	1020.894	2.667916	741.9313	0.621358	3487.957	12133.31	0.961644	12.86505
-6%	292.6309642	0.61713	289.7768	0.597699	326.9225	0.87456	729.4168	11.23927	1380.679	10.7897	1021.251	2.667913	742.2063	0.621371	3487.81	12119.78	0.961918	12.85135
-5.50%	292.6282688	0.617113	289.7742	0.597683	327.0058	0.875365	729.5214	11.23812	1381.043	10.7886	1021.593	2.66791	742.4695	0.621384	3487.669	12106.54	0.962181	12.83821
-5%	292.6256887	0.617096	289.7718	0.597667	327.0855	0.876138	729.6201	11.237	1381.391	10.78752	1021.92	2.667906	742.7215	0.621396	3487.534	12093.58	0.962433	12.82561
-4.50%	292.6232186	0.61708	289.7694	0.597652	327.1618	0.876878	729.7131	11.2359	1381.723	10.78647	1022.233	2.667903	742.9628	0.621407	3487.405	12080.9	0.962673	12.81353
-4%	292.6207169	0.617064	289.767	0.597637	327.2393	0.87763	729.8084	11.2348	1382.06	10.78541	1022.552	2.6679	743.2079	0.621419	3487.274	12068.16	0.962917	12.80129
-3.50%	292.6163694	0.617034	289.7629	0.59761	327.4202	0.879359	730.1159	11.23228	1383.048	10.78299	1023.415	2.667741	743.8723	0.621415	3486.958	12047.73	0.96357	12.77326
-3%	292.6143581	0.617018	289.761	0.597594	327.5795	0.880842	730.422	11.22912	1384.094	10.77995	1024.319	2.66741	744.5686	0.621372	3486.661	12028.52	0.964232	12.74816
-2.50%	292.6124041	0.617001	289.7591	0.597579	327.7358	0.8823	730.7226	11.22601	1385.122	10.77697	1025.207	2.667084	745.2526	0.621333	3486.371	12009.66	0.964882	12.72357
-2%	292.6105053	0.616986	289.7573	0.597564	327.8892	0.883734	731.0179	11.22296	1386.131	10.77404	1026.08	2.666763	745.9245	0.621288	3486.086	11991.13	0.96552	12.69948
-1.50%	292.6086598	0.61697	289.7556	0.59755	328.0396	0.885143	731.3079	11.21996	1387.124	10.77116	1026.937	2.666447	746.5847	0.621247	3485.807	11972.93	0.966147	12.67586
-1%	292.6068655	0.616955	289.7539	0.597536	328.1873	0.88653	731.5928	11.21701	1388.099	10.76833	1027.779	2.666136	747.2335	0.621206	3485.534	11955.04	0.966762	12.65272
-0.50%	292.6051206	0.61694	289.7522	0.597522	328.3323	0.887893	731.8728	11.21411	1389.058	10.76555	1028.607	2.66583	747.8712	0.621166	3485.266	11937.47	0.967366	12.63002
0%	292.6034233	0.616926	289.7506	0.597509	328.4746	0.889235	732.1479	11.21126	1390	10.76281	1029.421	2.665528	748.498	0.621127	3485.003	11920.19	0.96796	12.60776

Tabla 4.11: Degradación relación de compresión compresor 2

eff compresor2	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	292.5663954	0.616124	289.7146	0.596765	346.1222	1.024559	767.1382	10.88658	1520.216	10.45112	1142.464	2.616179	835.6783	0.613534	3454.394	11000.94	1.046505	0.758581
-9.50%	292.5379274	0.616003	289.6877	0.596652	345.1611	1.018423	764.8739	10.91551	1510.365	10.47889	1133.909	2.621554	829.0734	0.61452	3456.068	11039.55	1.041043	0.762909
-9%	292.5102467	0.615887	289.6615	0.596544	344.2088	1.012301	762.6487	10.94438	1500.675	10.5066	1125.48	2.626887	822.5674	0.615497	3457.758	11078.83	1.035635	0.767217
-8.50%	292.5047756	0.615896	289.6564	0.596553	343.0099	1.003877	760.3117	10.96776	1491.289	10.52905	1117.242	2.630786	816.209	0.616136	3459.745	11123.52	1.030096	0.771579
-8%	292.5038928	0.615932	289.6556	0.596586	341.7754	0.99506	757.9911	10.99015	1482.081	10.55055	1109.129	2.634392	809.9491	0.616707	3461.797	11170.06	1.024579	0.775934
-7.50%	292.5035845	0.615971	289.6554	0.596622	340.5525	0.986285	755.7148	11.01257	1473.02	10.57207	1101.127	2.637968	803.7748	0.617271	3463.862	11217.63	1.019117	0.780269
-7%	292.5038466	0.616013	289.6557	0.596662	339.3409	0.977549	753.4824	11.03503	1464.101	10.59362	1093.231	2.641512	797.6836	0.617829	3465.939	11266.24	1.013709	0.784585
-6.50%	292.5024305	0.616046	289.6544	0.596692	338.1661	0.969097	751.3062	11.05809	1455.302	10.61577	1085.429	2.645175	791.6654	0.618414	3468.001	11315.31	1.008368	0.78887
-6%	292.4985407	0.616065	289.6507	0.596709	337.0369	0.961013	749.1899	11.08197	1446.613	10.63869	1077.716	2.649008	785.7173	0.619041	3470.037	11364.59	1.003099	0.793122
-5.50%	292.4963489	0.616085	289.6487	0.596729	336.1243	0.954445	747.6814	11.10247	1439.858	10.65838	1071.554	2.652071	780.9657	0.619538	3471.715	11417.16	0.998904	0.796241
-5%	292.4970116	0.616122	289.6494	0.596763	335.2009	0.947649	746.2177	11.12224	1433.305	10.67735	1065.539	2.654916	776.3288	0.619988	3473.414	11471.28	0.994776	0.799318
-4.50%	292.511511	0.616227	289.6632	0.59686	334.3828	0.940881	744.6962	11.13197	1428.366	10.68669	1061.301	2.655993	773.0616	0.620085	3474.78	11518.9	0.991651	0.802561
-4%	292.5246086	0.616323	289.6756	0.596949	333.6426	0.934766	743.1364	11.14032	1423.713	10.69471	1057.455	2.656965	770.0975	0.620171	3476.01	11562.39	0.988777	0.80587
-3.50%	292.5379328	0.616419	289.6883	0.597038	332.907	0.928697	741.5929	11.1486	1419.114	10.70266	1053.652	2.657915	767.166	0.620253	3477.239	11606.09	0.98593	0.809165
-3%	292.5514799	0.616517	289.7012	0.597129	332.1759	0.922672	740.0657	11.15682	1414.57	10.71054	1049.889	2.658842	764.2666	0.62033	3478.467	11649.99	0.983108	0.812447
-2.50%	292.565246	0.616615	289.7142	0.597221	331.4491	0.916692	738.5544	11.16496	1410.078	10.71836	1046.167	2.659748	761.3987	0.620403	3479.694	11694.1	0.980312	0.815714
-2%	292.579275	0.616715	289.7275	0.597313	330.7267	0.910756	737.0589	11.17305	1405.638	10.72612	1042.485	2.660631	758.5617	0.620472	3480.919	11738.42	0.977541	0.818967
-1.50%	292.5852947	0.616768	289.7333	0.597363	330.1551	0.905275	735.8133	11.18263	1401.669	10.73533	1039.169	2.661865	756.007	0.620637	3481.946	11783.8	0.975114	0.822211
-1%	292.5911211	0.61682	289.7389	0.59741	329.5928	0.899866	734.5881	11.19227	1397.75	10.74458	1035.892	2.663105	753.4826	0.620804	3482.965	11829.32	0.972715	0.825442
-0.50%	292.5971966	0.616872	289.7446	0.597459	329.0308	0.894503	733.3689	11.20186	1393.855	10.75379	1032.634	2.664329	750.9725	0.620968	3483.987	11874.93	0.970325	0.82866
0%	292.6034233	0.616926	289.7506	0.597509	328.4746	0.889235	732.1479	11.21126	1390	10.76281	1029.421	2.665528	748.498	0.621127	3485.003	11920.19	0.96796	0.831873

Tabla 4.12: Degradación eficiencia compresor 2

mc compresor2	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	292.5074639	0.616189	289.6593	0.596824	335.0802	0.94665	750.5719	11.18383	1437.7	10.73647	1065.654	2.654689	776.4178	0.619932	3473.919	12278.26	0.995628	61.00177
-9.50%	292.5145062	0.616241	289.666	0.596873	334.6471	0.943066	749.428	11.18568	1434.702	10.73825	1063.352	2.655288	774.6436	0.619988	3474.619	12261.58	0.993873	61.25109
-9%	292.5216441	0.616293	289.6728	0.596921	334.2146	0.939491	748.2887	11.18753	1431.719	10.74003	1061.061	2.655881	772.8775	0.620043	3475.32	12245.22	0.992124	61.50159
-8.50%	292.5288022	0.616346	289.6796	0.59697	333.7869	0.935958	747.162	11.18931	1428.776	10.74174	1058.802	2.656462	771.1359	0.620097	3476.015	12228.85	0.990397	61.75084
-8%	292.5359739	0.616398	289.6864	0.597019	333.3643	0.932469	746.0485	11.19103	1425.874	10.74339	1056.575	2.65703	769.4193	0.620148	3476.705	12212.47	0.988693	61.99869
-7.50%	292.5432009	0.616451	289.6933	0.597068	332.9443	0.929003	744.9431	11.19273	1422.997	10.74502	1054.367	2.65759	767.718	0.620198	3477.392	12196.26	0.987002	62.24655
-7%	292.5504818	0.616504	289.7002	0.597117	332.5268	0.925562	743.846	11.19439	1420.146	10.74661	1052.179	2.658141	766.0317	0.620246	3478.078	12180.23	0.985324	62.49441
-6.50%	292.5578156	0.616557	289.7072	0.597166	332.1118	0.922144	742.7568	11.19602	1417.32	10.74818	1050.01	2.658683	764.3602	0.620293	3478.761	12164.37	0.983659	62.74227
-6%	292.5649953	0.616609	289.714	0.597215	331.7101	0.918838	741.6978	11.1975	1414.585	10.7496	1047.915	2.659204	762.7458	0.620337	3479.424	12148	0.982048	62.98362
-5.50%	292.5713073	0.616654	289.72	0.597257	331.3584	0.915944	740.7439	11.19842	1412.165	10.75048	1046.081	2.659658	761.3322	0.620375	3480.004	12128.86	0.980632	63.1961
-5%	292.5775836	0.6167	289.726	0.597299	331.0122	0.913099	739.8043	11.19927	1409.787	10.7513	1044.279	2.660101	759.944	0.620412	3480.576	12109.74	0.979239	63.40627
-4.50%	292.5835936	0.616743	289.7317	0.597339	330.6756	0.910312	738.8856	11.20012	1407.462	10.75212	1042.519	2.660544	758.5882	0.62045	3481.135	12090.67	0.97788	63.61377
-4%	292.5857768	0.616764	289.7338	0.597359	330.413	0.907763	738.0903	11.20165	1405.374	10.75359	1040.944	2.66115	757.3747	0.620533	3481.594	12072.03	0.976693	63.81337
-3.50%	292.5879791	0.616785	289.7359	0.597378	330.1542	0.90526	737.3059	11.20312	1403.319	10.75499	1039.396	2.661744	756.1819	0.620615	3482.046	12053.36	0.975525	64.01035
-3%	292.5901974	0.616805	289.738	0.597397	329.8993	0.902804	736.5324	11.20452	1401.299	10.75634	1037.875	2.662326	755.0099	0.620694	3482.493	12034.65	0.974376	64.20467
-2.50%	292.5924286	0.616826	289.7401	0.597416	329.6485	0.900396	735.7699	11.20586	1399.312	10.75762	1036.38	2.662895	753.8586	0.620772	3482.933	12015.9	0.973246	64.39627
-2%	292.5946696	0.616847	289.7422	0.597436	329.4017	0.898034	735.0184	11.20714	1397.359	10.75885	1034.913	2.663453	752.7282	0.620848	3483.367	11997.11	0.972135	64.58511
-1.50%	292.5969173	0.616867	289.7444	0.597455	329.159	0.895719	734.2781	11.20835	1395.44	10.76002	1033.473	2.663999	751.6187	0.620921	3483.795	11978.27	0.971043	64.77113
-1%	292.5990769	0.616887	289.7464	0.597473	328.9255	0.893501	733.5409	11.20936	1393.57	10.76098	1032.086	2.664524	750.551	0.620992	3484.206	11958.94	0.969988	64.95027
-0.50%	292.6013274	0.616907	289.7486	0.597492	328.6912	0.891281	732.8233	11.21044	1391.721	10.76203	1030.701	2.665047	749.4838	0.621062	3484.62	11939.99	0.968935	65.13045
0%	292.6034233	0.616926	289.7506	0.597509	328.4746	0.889235	732.1479	11.21126	1390	10.76281	1029.421	2.665528	748.498	0.621127	3485.003	11920.19	0.96796	65.29722

Tabla 4.13: Degradación flujo corregido compresor 2



pr turbina1	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	292.5832771	0.616773	289.7314	0.597367	329.5334	0.899316	729.7104	11.08681	1392.084	10.64334	1034.814	2.663625	752.6515	0.620893	3482.76	11823.19	0.971155	3.995811
-9.00%	292.5855961	0.616791	289.7336	0.597383	329.4087	0.898121	729.9921	11.1004	1391.83	10.65638	1034.176	2.663852	752.16	0.620921	3483.023	11834.49	0.970777	4.000366
-8%	292.5878458	0.616808	289.7358	0.597399	329.2883	0.89697	730.2636	11.11372	1391.585	10.66917	1033.56	2.664071	751.6858	0.620948	3483.277	11845.43	0.970411	4.004837
-7.00%	292.5899321	0.616824	289.7377	0.597414	329.1776	0.895912	730.5173	11.12663	1391.365	10.68157	1032.995	2.664271	751.2503	0.620973	3483.511	11855.54	0.970077	4.009189
-6%	292.5920522	0.61684	289.7398	0.597429	329.065	0.894838	730.7701	11.13944	1391.136	10.69387	1032.42	2.664475	750.8078	0.620998	3483.749	11865.79	0.969735	4.013499
-5.00%	292.5941114	0.616855	289.7417	0.597444	328.9562	0.893802	731.0141	11.15201	1390.914	10.70593	1031.865	2.664671	750.38	0.621022	3483.979	11875.71	0.969405	4.017732
-4%	292.5961121	0.616871	289.7436	0.597458	328.8508	0.8928	731.2499	11.16435	1390.7	10.71777	1031.328	2.66486	749.9661	0.621045	3484.202	11885.33	0.969085	4.021889
-3.00%	292.5980566	0.616885	289.7455	0.597471	328.7488	0.891831	731.4777	11.17645	1390.492	10.7294	1030.807	2.665043	749.5656	0.621068	3484.418	11894.65	0.968776	4.025974
-2%	292.5999404	0.6169	289.7473	0.597485	328.6505	0.8909	731.6993	11.18833	1390.295	10.7408	1030.307	2.665219	749.1806	0.621089	3484.626	11903.66	0.968478	4.029986
-1.00%	292.6017075	0.616913	289.7489	0.597497	328.561	0.890053	731.9267	11.1999	1390.144	10.75191	1029.856	2.665377	748.8333	0.621108	3484.818	11912.05	0.968215	4.033916
0%	292.6034233	0.616926	289.7506	0.597509	328.4746	0.889235	732.1479	11.21126	1390	10.76281	1029.421	2.665528	748.498	0.621127	3485.003	11920.19	0.96796	4.037778
1.00%	292.6050899	0.616939	289.7522	0.597521	328.391	0.888445	732.363	11.22242	1389.863	10.77352	1029.001	2.665675	748.1742	0.621144	3485.182	11928.08	0.967715	4.041575
2%	292.6067094	0.616951	289.7537	0.597532	328.3101	0.887682	732.5724	11.23338	1389.732	10.78404	1028.594	2.665816	747.8613	0.621161	3485.355	11935.74	0.967478	4.045307
3.00%	292.6082837	0.616963	289.7552	0.597543	328.2318	0.886944	732.7763	11.24414	1389.606	10.79438	1028.201	2.665952	747.5588	0.621178	3485.524	11943.17	0.967249	4.048976
4%	292.6093658	0.616971	289.7562	0.59755	328.1845	0.886499	732.9716	11.25742	1389.61	10.80713	1027.975	2.666029	747.3846	0.621187	3485.63	11948.35	0.96713	4.053643
5.00%	292.6099641	0.616972	289.7565	0.597552	328.1881	0.886532	733.1573	11.27523	1389.832	10.82422	1028.023	2.666006	747.4215	0.621183	3485.635	11949.89	0.967194	4.060087
6%	292.6099084	0.616974	289.7567	0.597553	328.1919	0.886566	733.3397	11.29279	1390.05	10.84108	1028.071	2.665984	747.4586	0.621179	3485.64	11951.4	0.967258	4.066444
7.00%	292.6101681	0.616975	289.757	0.597555	328.1957	0.886602	733.519	11.31011	1390.266	10.85771	1028.12	2.665962	747.4959	0.621176	3485.644	11952.87	0.967322	4.072717
8%	292.6104207	0.616977	289.7572	0.597556	328.1997	0.886639	733.6951	11.32721	1390.478	10.87412	1028.168	2.66594	747.5332	0.621172	3485.648	11954.3	0.967384	4.078907
9.00%	292.6106664	0.616978	289.7575	0.597557	328.2038	0.886676	733.8683	11.34408	1390.688	10.89032	1028.217	2.665917	747.5706	0.621168	3485.651	11955.71	0.967447	4.085017
10%	292.6109054	0.616979	289.7577	0.597559	328.2079	0.886715	734.0386	11.36073	1390.895	10.9063	1028.265	2.665895	747.6081	0.621165	3485.654	11957.08	0.967509	4.091047

Tabla 4.14: Degradación relación de compresión turbina 1

eff turbina1	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	292.6390329	0.616271	289.7832	0.5969	351.3729	1.055466	725.6385	10.59044	1514.072	10.16682	1180.822	2.590775	865.2919	0.608828	3442.128	10788.78	1.060509	0.806171
-9.50%	292.603679	0.616123	289.7497	0.596763	350.1409	1.048594	725.3499	10.63176	1504.162	10.20649	1170.067	2.597431	856.9849	0.610062	3444.254	10829.77	1.054362	0.812039
-9%	292.5691562	0.615979	289.717	0.59663	348.9206	1.041707	725.099	10.67331	1494.431	10.24637	1159.461	2.604066	848.795	0.611129	3446.411	10871.88	1.04826	0.81795
-8.50%	292.5368689	0.615848	289.6865	0.596508	347.7362	1.034446	724.9888	10.71436	1485.226	10.28578	1149.276	2.610484	840.9305	0.612474	3448.555	10916.9	1.042375	0.823914
-8%	292.5058454	0.615723	289.6571	0.596392	346.5645	1.027075	724.9358	10.75547	1476.256	10.32525	1139.279	2.616831	833.2126	0.613642	3450.724	10963.53	1.036564	0.829928
-7.50%	292.475751	0.615604	289.6287	0.596282	345.3988	1.019679	724.915	10.79682	1467.431	10.36495	1129.398	2.623156	825.5848	0.614804	3452.926	11011.4	1.030781	0.835991
-7%	292.4465843	0.61549	289.6011	0.596176	344.2385	1.012257	724.9266	10.83843	1458.748	10.4049	1119.628	2.62946	818.0442	0.615959	3455.164	11060.53	1.025024	0.842105
-6.50%	292.4421832	0.615517	289.597	0.596201	342.8038	1.00226	724.8006	10.87427	1450.381	10.4393	1110.061	2.634183	810.6623	0.616741	3457.745	11116.13	1.01911	0.848366
-6%	292.4462391	0.615593	289.6009	0.596271	341.2872	0.991435	724.6619	10.90851	1442.199	10.47217	1100.616	2.638392	803.3759	0.617401	3460.46	11175.21	1.013164	0.854725
-5.50%	292.4511309	0.615673	289.6056	0.596346	339.7776	0.980594	724.5665	10.94312	1434.14	10.50539	1091.256	2.642587	796.1557	0.618056	3463.211	11236.25	1.007242	0.861157
-5%	292.455539	0.615752	289.6099	0.596419	338.2892	0.969876	724.5226	10.97846	1426.187	10.53932	1081.967	2.646857	788.9919	0.618727	3465.983	11298.99	1.001349	0.867659
-4.50%	292.4553347	0.615804	289.6097	0.596467	336.8694	0.959731	724.557	11.0156	1418.305	10.57498	1072.733	2.651477	781.871	0.619477	3468.725	11362.37	0.995513	0.874212
-4%	292.4572878	0.615857	289.6117	0.596517	335.7733	0.951847	725.2818	11.04726	1413.048	10.60537	1065.765	2.654958	776.4992	0.620039	3470.916	11427.03	0.991203	0.880364
-3.50%	292.4675592	0.615948	289.6214	0.596601	334.8537	0.944775	725.919	11.07017	1409.328	10.62736	1060.587	2.657026	772.508	0.620331	3472.698	11481.86	0.987935	0.885249
-3%	292.4901404	0.616106	289.6429	0.596748	333.8542	0.936516	726.6253	11.08934	1406.179	10.64577	1055.846	2.658117	768.8545	0.620408	3474.541	11541.59	0.984854	0.890161
-2.50%	292.5132683	0.616268	289.6649	0.596898	332.8561	0.928281	727.3487	11.10853	1403.084	10.66419	1051.142	2.659173	765.2299	0.620477	3476.395	11602.13	0.981789	0.895092
-2%	292.5369462	0.616433	289.6874	0.597052	331.8592	0.92007	728.0894	11.12773	1400.041	10.68262	1046.474	2.660197	761.6334	0.620538	3478.257	11663.51	0.97874	0.900041
-1.50%	292.5611776	0.616602	289.7104	0.597208	330.8632	0.911881	728.8477	11.14695	1397.05	10.70107	1041.841	2.661186	758.0642	0.620591	3480.13	11725.73	0.975707	0.90501
-1%	292.5763339	0.616716	289.7248	0.597314	330.0414	0.904201	729.9	11.16805	1394.603	10.72133	1037.628	2.662583	754.8186	0.620756	3481.779	11789.85	0.973066	0.909993
-0.50%	292.5895613	0.616819	289.7374	0.59741	329.2632	0.896726	731.0181	11.18954	1392.305	10.74196	1033.539	2.664059	751.6696	0.620943	3483.376	11854.47	0.970527	0.914993
0%	292.6034233	0.616926	289.7506	0.597509	328.4746	0.889235	732.1479	11.21126	1390	10.76281	1029.421	2.665528	748.498	0.621127	3485.003	11920.19	0.96796	0.920016

Tabla 4.15: Degradación eficiencia turbina 1

mc turbina1	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	292.7765213	0.618051	289.915	0.598554	324.3113	0.849752	758.4507	12.50934	1405.251	12.00897	1015.643	2.665053	737.894	0.620426	3494.36	12398.22	0.962762	10.09369
-9.00%	292.7582938	0.617936	289.8977	0.598447	324.66	0.852997	755.3585	12.36898	1402.817	11.87422	1016.504	2.665583	738.5562	0.620544	3493.534	12353.19	0.962848	10.1962
-8%	292.7397633	0.617818	289.8801	0.598338	325.0238	0.856403	752.356	12.23137	1400.535	11.74212	1017.44	2.665703	739.2764	0.620661	3492.687	12307.01	0.963008	10.29891
-7.00%	292.7208486	0.617698	289.8621	0.598226	325.4054	0.859997	749.4494	12.09642	1398.418	11.61256	1018.464	2.666011	740.0641	0.620779	3491.816	12259.72	0.96325	10.40185
-6%	292.7013362	0.617574	289.8436	0.598111	325.8131	0.863862	746.6747	11.96421	1396.533	11.48565	1019.613	2.666305	740.9485	0.620899	3490.909	12213.67	0.963607	10.50493
-5.00%	292.6830131	0.617458	289.8262	0.598003	326.1902	0.867462	743.9142	11.83484	1394.58	11.36145	1020.65	2.666587	741.7459	0.621011	3490.057	12169.87	0.963888	10.60803
-4%	292.6657471	0.617348	289.8098	0.597901	326.5399	0.870822	741.1683	11.70819	1392.568	11.23987	1021.585	2.66686	742.4657	0.621117	3489.256	12128.09	0.9641	10.71115
-3.00%	292.6494254	0.617244	289.7943	0.597805	326.8652	0.873967	738.4371	11.58418	1390.505	11.12081	1022.431	2.667125	743.116	0.621217	3488.501	12088.13	0.964252	10.81443
-2%	292.6283935	0.61711	289.7743	0.59768	327.3457	0.878638	736.0237	11.46144	1389.267	11.00298	1023.937	2.667368	744.2753	0.621338	3487.492	12037.33	0.964934	10.91835
-1.00%	292.6153895	0.617015	289.762	0.597591	327.9257	0.884065	734.0817	11.33497	1389.68	10.88157	1026.745	2.666441	746.4374	0.621234	3486.216	11977.28	0.966494	11.02349
0%	292.6034233	0.616926	289.7506	0.597509	328.4746	0.889235	732.1479	11.21126	1390	10.76281	1029.421	2.665528	748.498	0.621127	3485.003	11920.19	0.96796	11.12868
1.00%	292.5915838	0.616837	289.7393	0.597427	329.0467	0.894665	730.3537	11.08962	1390.593	10.64604	1032.256	2.664545	750.6813	0.621009	3483.758	11862.9	0.969554	11.23419
2%	292.5803627	0.616753	289.7287	0.597349	329.5901	0.899865	728.5367	10.97063	1391.044	10.53181	1034.944	2.663607	752.751	0.620895	3482.572	11808.08	0.971041	11.33974
3.00%	292.5698804	0.616675	289.7187	0.597276	330.092	0.904704	726.6802	10.85448	1391.276	10.4203	1037.408	2.662744	754.6492	0.620791	3481.468	11756.52	0.97237	11.44524
4%	292.5593368	0.616596	289.7087	0.597202	330.6096	0.90973	724.8023	10.74903	1391.567	10.31906	1039.966	2.661839	756.6191	0.620679	3480.337	11704.33	0.973754	11.54115
5.00%	292.5427244	0.616481	289.6929	0.597096	331.2135	0.914762	723.1125	10.64824	1392.047	10.22231	1042.609	2.661303	758.6546	0.620658	3479.113	11656.02	0.975274	11.63592
6%	292.5266408	0.616371	289.6776	0.596994	331.7837	0.919451	721.4233	10.54975	1392.374	10.12776	1045.064	2.660839	760.5463	0.620646	3477.96	11610.84	0.976669	11.73064
7.00%	292.5116279	0.616269	289.6633	0.596899	332.3129	0.923808	719.7173	10.45333	1392.533	10.0352	1047.33	2.66041	762.2912	0.620634	3476.883	11568.33	0.977929	11.82531
8%	292.4975525	0.616173	289.65	0.59681	332.8057	0.927868	717.9968	10.35888	1392.544	9.94452	1049.424	2.660014	763.905	0.620624	3475.875	11528.16	0.979069	11.91995
9.00%	292.4843033	0.616082	289.6374	0.596726	333.266	0.931663	716.2641	10.26629	1392.422	9.85564	1051.367	2.659647	765.4016	0.620615	3474.928	11490.07	0.980103	12.01454
10%	292.4717863	0.615997	289.6255	0.596646	333.6972	0.935221	714.5209	10.1755	1392.182	9.76848	1053.173	2.659307	766.7928	0.620606	3474.034	11453.84	0.98104	12.10911

Tabla 4.16: Degradación flujo corregido turbina 1



pr turbina2	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	292.6266135	0.617106	289.7726	0.597676	326.6657	0.872113	734.456	11.2352	1386.529	10.78582	1022.078	2.619189	743.1791	0.621453	3487.791	12062.72	0.963722	4.214624
-9.00%	292.6294544	0.617122	289.7753	0.597691	326.8018	0.873408	734.2095	11.23431	1386.292	10.78493	1022.198	2.622334	743.1516	0.621407	3487.82	12053.13	0.963631	4.219998
-8%	292.6309223	0.61713	289.7767	0.597698	326.976	0.875074	734.0391	11.23312	1386.263	10.78379	1022.488	2.625423	743.2582	0.621367	3487.78	12040.88	0.963678	4.225234
-7.00%	292.6324082	0.617137	289.7781	0.597705	327.1466	0.876709	733.8719	11.23195	1386.233	10.78267	1022.77	2.628457	743.3608	0.621329	3487.742	12028.9	0.963722	4.230381
-6%	292.6292284	0.617115	289.7751	0.597685	327.3434	0.878614	733.6575	11.23054	1386.4	10.78132	1023.321	2.632742	743.7248	0.621329	3487.523	12014.36	0.964014	4.237277
-5.00%	292.6241744	0.617079	289.7703	0.597651	327.5429	0.880483	733.3916	11.22731	1387.015	10.77822	1024.377	2.638434	744.5532	0.621302	3487.075	11997.78	0.964703	4.246622
-4%	292.6196998	0.617046	289.7661	0.597621	327.7362	0.882289	733.1333	11.224	1387.637	10.77504	1025.426	2.644011	745.3753	0.621267	3486.64	11981.64	0.965384	4.255834
-3.00%	292.6153943	0.617015	289.762	0.597591	327.9259	0.884067	732.88	11.22074	1388.246	10.77191	1026.454	2.649507	746.1803	0.621232	3486.215	11965.82	0.96605	4.26492
-2%	292.6112509	0.616984	289.758	0.597563	328.1121	0.885816	732.6314	11.21753	1388.842	10.76883	1027.462	2.654924	746.9688	0.621197	3485.801	11950.31	0.966701	4.273881
-1.00%	292.6072627	0.616955	289.7542	0.597536	328.295	0.887539	732.3874	11.21438	1389.427	10.7658	1028.451	2.660264	747.7412	0.621162	3485.397	11935.11	0.967337	4.28272
0%	292.6034233	0.616926	289.7506	0.597509	328.4746	0.889235	732.1479	11.21126	1390	10.76281	1029.421	2.665528	748.498	0.621127	3485.003	11920.19	0.96796	4.29144
1.00%	292.5997264	0.616898	289.7471	0.597484	328.651	0.890905	731.9127	11.2082	1390.563	10.75987	1030.373	2.67072	749.2399	0.621091	3484.617	11905.56	0.96857	4.300044
2%	292.5961662	0.616872	289.7437	0.597459	328.8244	0.89255	731.6817	11.20518	1391.114	10.75697	1031.307	2.675839	749.9672	0.621055	3484.241	11891.2	0.969167	4.308534
3.00%	292.5928271	0.616847	289.7405	0.597435	328.9895	0.894121	731.4624	11.20235	1391.64	10.75425	1032.196	2.680898	750.6592	0.621021	3483.884	11877.54	0.969734	4.31692
4%	292.5895225	0.616822	289.7374	0.597412	329.157	0.895717	731.2395	11.19941	1392.17	10.75144	1033.096	2.685878	751.3587	0.620985	3483.525	11863.7	0.970307	4.325189
5.00%	292.5863388	0.616798	289.7343	0.59739	329.3217	0.897291	731.0204	11.19652	1392.691	10.74866	1033.979	2.69079	752.045	0.620949	3483.174	11850.11	0.970868	4.333351
6%	292.5832713	0.616774	289.7314	0.597368	329.4837	0.898842	730.805	11.19367	1393.203	10.74592	1034.847	2.695636	752.7185	0.620913	3482.83	11836.77	0.971417	4.341407
7.00%	292.5803155	0.616752	289.7286	0.597347	329.643	0.900371	730.5932	11.19086	1393.705	10.74323	1035.7	2.700418	753.3794	0.620877	3482.495	11823.65	0.971956	4.349361
8%	292.577467	0.61673	289.7259	0.597327	329.7997	0.901878	730.3849	11.18809	1394.198	10.74056	1036.538	2.705137	754.0283	0.620841	3482.166	11810.77	0.972484	4.357214
9.00%	292.5747217	0.616709	289.7233	0.597307	329.9539	0.903364	730.1801	11.18535	1394.683	10.73794	1037.361	2.709793	754.6654	0.620805	3481.845	11798.11	0.973002	4.364968
10%	292.5720757	0.616688	289.7208	0.597288	330.1056	0.904829	729.9786	11.18265	1395.158	10.73555	1038.171	2.714389	755.291	0.620769	3481.53	11785.66	0.97351	4.372626

Tabla 4.17: Degradación relación de compresión turbina 2

eff turbina2	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	290.8282877	0.605599	288.0656	0.586991	319.2222	0.807261	746.5143	11.26353	1486.654	10.81299	1104.842	2.683572	840.4758	0.639514	3421.065	12346.87	1.063668	0.80542
-9.50%	290.9148645	0.606147	288.1478	0.5875	319.6945	0.811213	745.6675	11.26207	1481.143	10.81159	1100.532	2.682954	835.3899	0.638659	3424.313	12326.51	1.058443	0.809827
-9%	291.0014974	0.606696	288.23	0.58801	320.1632	0.815153	744.8255	11.26063	1475.671	10.81021	1096.251	2.682332	830.3349	0.637802	3427.562	12306.37	1.053246	0.814237
-8.50%	291.088186	0.607246	288.3122	0.588521	320.6283	0.819084	743.9882	11.25922	1470.237	10.80885	1091.999	2.681707	825.3105	0.636944	3430.811	12286.43	1.048078	0.818649
-8%	291.1749296	0.607797	288.3946	0.589033	321.0899	0.823004	743.1558	11.25782	1464.841	10.80751	1087.776	2.681078	820.3163	0.636084	3434.061	12266.69	1.042939	0.823063
-7.50%	291.262461	0.608354	288.4776	0.58955	321.5409	0.826869	742.3254	11.25621	1459.498	10.80596	1083.595	2.680389	815.3622	0.635209	3437.321	12247.22	1.037828	0.827748
-7%	291.3521774	0.608925	288.5628	0.59008	321.9675	0.830588	741.4916	11.25393	1454.241	10.80377	1079.479	2.679534	810.4668	0.634294	3440.61	12228.1	1.032745	0.8319
-6.50%	291.4418347	0.609497	288.6479	0.59061	322.3917	0.834303	740.6627	11.25169	1449.016	10.80163	1075.389	2.678683	805.5986	0.63338	3443.898	12209.17	1.02769	0.836323
-6%	291.5314347	0.610069	288.7329	0.591141	322.8137	0.838014	739.8386	11.24951	1443.825	10.79953	1071.325	2.677834	800.7574	0.632466	3447.184	12190.4	1.022662	0.840748
-5.50%	291.6209789	0.610641	288.8179	0.591673	323.2334	0.841721	739.0195	11.24738	1438.667	10.79749	1067.285	2.676989	795.9428	0.631552	3450.469	12171.8	1.017661	0.845175
-5%	291.710469	0.611214	288.9029	0.592205	323.651	0.845426	738.2053	11.2453	1433.542	10.79549	1063.271	2.676148	791.1546	0.630638	3453.753	12153.37	1.012687	0.849606
-4.50%	291.7999067	0.611787	288.9878	0.592737	324.0664	0.849126	737.396	11.24327	1428.449	10.79354	1059.281	2.675309	786.3926	0.629724	3457.035	12135.1	1.007739	0.854039
-4%	291.8892938	0.61236	289.0726	0.59327	324.4797	0.852824	736.5916	11.24129	1423.388	10.79163	1055.316	2.674474	781.6565	0.62881	3460.316	12116.99	1.002818	0.858475
-3.50%	291.9786321	0.612934	289.1574	0.593803	324.891	0.856519	735.7921	11.23935	1418.358	10.78978	1051.375	2.673642	776.9461	0.627895	3463.597	12099.04	0.997922	0.862914
-3%	292.0679233	0.613509	289.2422	0.594336	325.3003	0.860212	734.9975	11.23747	1413.361	10.78797	1047.458	2.672813	772.2611	0.626981	3466.876	12081.24	0.993052	0.867357
-2.50%	292.1571694	0.614084	289.3269	0.59487	325.7077	0.863901	734.2078	11.23564	1408.394	10.78621	1043.565	2.671987	767.6012	0.626067	3470.154	12063.6	0.988208	0.871802
-2%	292.2456811	0.614655	289.411	0.595401	326.1358	0.867806	733.4638	11.23369	1403.575	10.78435	1039.794	2.671161	763.0423	0.625156	3473.394	12044.53	0.983465	0.876254
-1.50%	292.3274816	0.615183	289.4886	0.59589	326.5643	0.871713	732.6183	11.23205	1399.902	10.78259	1036.99	2.670311	759.2378	0.624274	3476.267	12010.33	0.979491	0.880734
-1%	292.4159821	0.615753	289.5727	0.59642	327.0000	0.875628	731.7737	11.23059	1396.016	10.78084	1034.377	2.669484	755.5851	0.623404	3479.206	11979.1	0.975589	0.885221
-0.50%	292.5072571	0.616341	289.6593	0.596966	327.4226	0.879551	730.9282	11.22922	1392.147	10.77918	1031.761	2.668637	752.0235	0.622517	3482.16	11948.88	0.971741	0.889712
0%	292.6034233	0.616926	289.7506	0.597509	327.8451	0.883476	730.1817	11.22796	1388.301	10.77751	1029.141	2.667781	748.498	0.621600	3485.003	11920.19	0.96796	0.894209

Tabla 4.18: Degradación eficiencia turbina 2

mc turbina2	T013	P013	T024	P024	T026	P026	T03	P03	T04	P04	T045	P045	T05	P05	N1	N2	wfd	X
-10%	293.6100154	0.622621	290.7054	0.602798	346.1343	1.028625	728.7302	11.0049	1406.622	10.5647	1065.147	2.860964	756.5623	0.604917	3495.624	11108.5	0.966299	35.26936
-9.00%	293.495383	0.621997	290.5967	0.602218	343.8485	1.012231	728.1737	11.0325	1400.157	10.59672	1057.133	2.841006	752.399	0.607095	3495.64	11186.08	0.963661	35.60524
-8%	293.3918626	0.621437	290.4985	0.601698	341.4548	0.994699	727.6296	11.06916	1393.84	10.62639	1049.157	2.820727	748.2354	0.609113	3495.84	11269.99	0.96091	35.94043
-7.00%	293.2869519	0.620863	290.399	0.601165	339.273	0.978642	727.1818	11.09645	1388.5	10.65259	1042.261	2.800412	744.8654	0.611072	3495.722	11349.89	0.95882	36.27643
-6%	293.1778892	0.62025	290.2956	0.600596	337.562	0.96603	727.1942	11.11637	1385.706	10.67172	1037.91	2.779439	743.4103	0.612891	3494.797	11421.55	0.958426	36.61541
-5.00%	293.0642586	0.6196	290.1878	0.599992	336.0362	0.954603	727.6434	11.13344	1384.834	10.68811	1035.244	2.760725	743.3391	0.614632	3493.268	11494.68	0.959299	36.92023
-4%	292.9768212	0.619094	290.1048	0.599522	334.3401	0.940496	728.2489	11.14158	1385.329	10.69591	1033.658	2.740826	744.1025	0.615884	3491.769	11578.21	0.960707	37.21425
-3.00%	292.8899793	0.61859	290.0224	0.599055	332.6987	0.926914	728.9415	11.15617	1386.047	10.70992	1032.262	2.721181	744.9828	0.617115	3490.236	11661.36	0.962228	37.50823
-2%	292.8041066	0.618092	289.941	0.598592	331.0893	0.913665	729.6703	11.17229	1386.85	10.7254	1030.944	2.701811	745.8956	0.618328	3488.707	11744.84	0.96378	37.80205
-1.00%	292.7031772	0.617505	289.8452	0.598047	329.7773	0.901377	730.8938	11.19177	1388.429	10.7441	1030.197	2.683528	747.2209	0.619734	3486.835	11831.78	0.965889	38.09659
0%	292.6034233	0.616926	289.7506	0.597509	328.4746	0.889235	732.1479	11.21126	1390	10.76281	1029.421	2.665528	748.498	0.621127	3485.003	11920.19	0.96796	38.39094
1.00%	292.5093846	0.616362	289.6613	0.596985	327.1506	0.877024	733.4157	11.23028	1391.591	10.78106	1028.631	2.647674	749.7399	0.622478	3483.173	12010.8	0.970002	38.68512
2%	292.4355917	0.615887	289.5913	0.596544	325.9855	0.866017	735.4582	11.23752	1396.148	10.78802	1030.232	2.627805	752.8042	0.623366	3480.857	12085.8	0.97361	38.98288
3.00%	292.3538426	0.61536	289.5137	0.596055	325.1234	0.858035	738.0511	11.24265	1402.198	10.79294	1033.076	2.608181	756.8118	0.624282	3478.085	12139.95	0.978189	39.28302
4%	292.2730227	0.614839	289.4369	0.595571	324.2697	0.850219	740.6366	11.24759	1408.228	10.79769	1035.912	2.588835	760.7975	0.625187	3475.343	12193.58	0.982748	39.58347
5.00%	292.1932345	0.614325	289.3612	0.595094	323.421	0.842534	743.2288	11.25244	1414.245	10.80234	1038.73	2.569759	764.7542	0.62608	3472.637	12247	0.987283	39.88421
6%	292.1148179	0.613821	289.2867	0.594626	322.5733	0.834951	745.8264	11.25706	1420.259	10.80678	1041.536	2.550921	768.6876	0.626955	3469.971	12300.23	0.991794	40.18525
7.00%	292.0428482	0.613358	289.2184	0.594196	321.6752	0.827141	748.4104	11.25977	1426.383	10.80938	1044.418	2.531934	772.6667	0.62772	3467.407	12353.68	0.996288	40.48664
8%	291.9719192	0.612903	289.1511	0.593773	320.7809	0.819449	751.0029	11.26237	1432.501	10.81187	1047.287	2.513204	776.6223	0.628473	3464.878	12406.98	1.000762	40.78833
9.00%	291.9020032	0.612454	289.0847	0.593357	319.8903	0.811871	753.6042	11.26485	1438.616	10.81426	1050.142	2.494725	780.5554	0.629213	3462.384	12460.11	1.005215	41.09031
10%	291.8149209	0.611895	289.002	0.592938	319.0452	0.804775	756.5602	11.26911	1446.11	10.81834	1054.082	2.478236	785.5881	0.630114	3459.212	12536.4	1.010823	41.36677

Tabla 4.19: Degradación flujo corregido turbina 2

En las tablas anteriores, la primera columna indica el grado de degradación del parámetro que se indica en el primer término de dicha columna. Las siguientes 17 columnas muestran los valores de los distintos términos cuyo comportamiento se quiere estudiar, es decir: temperaturas, presiones, velocidades de giro y flujo de combustible. Mientras que la última columna es el valor del parámetro degradado en cada caso.

En la tercera tabla, la referida al flujo corregido del fancore, las primeras 6 columnas aparecen sin contenido, esto se debe a que no ha sido posible llegar a que el método converja para casos en los que la degradación del flujo corregido del fancore sea menor que un -7%. Sin embargo, esto no debe suponer un gran problema ya que en un motor real es muy difícil alcanzar unos valores de degradación tan altos.

## 5. Análisis del efecto del ruido

[7] Se define aparato de medida como un dispositivo capaz de determinar el valor de una cantidad o variable. En la realidad los aparatos de medida cometen errores en las mediciones que realizan, por lo que la medida es igual al número de unidades que una magnitud de la misma especie que se quiere medir llamada unidad más una incertidumbre.

Existen dos tipos de error, el sistemático y el aleatorio los cuales, se definen a continuación.

-El **error sistemático** suele deberse a errores en el instrumento de medida y su principal ventaja es que se puede corregir, aunque no de forma exacta.

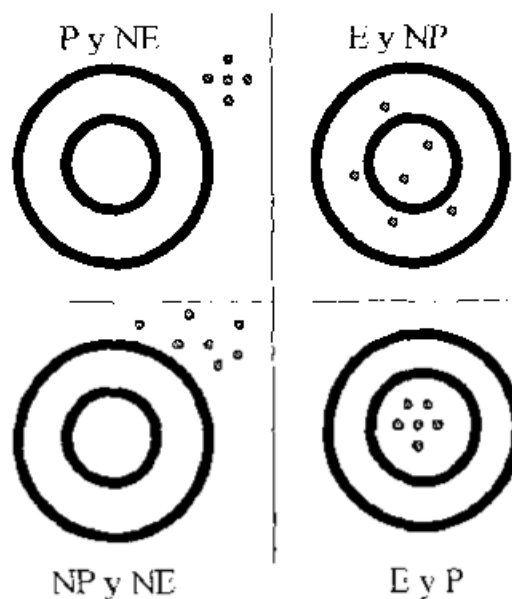
-El **error aleatorio** se caracteriza por tener media cero, aunque su valor no se puede estimar. Sin embargo, su variabilidad si es constante y se puede estimar.

Otras dos definiciones importantes son las de exactitud y precisión. En la imagen de la derecha se pueden ver cuatro casos que explican la diferencia entre ambos conceptos. La primera de ellas muestra un caso preciso ya que todas las medidas están en la misma zona, aunque no es exacto ya que, en media, el resultado no es el buscado. La imagen de arriba a la derecha,

muestra un caso exacto, ya que en media el valor de la medida es el buscado, pero no es preciso, ya que los resultados están distanciados entre sí. La imagen de abajo a la izquierda es el peor los cuatro casos, porque no es ni preciso ni exacto; mientras que la última sería el caso ideal, un aparato preciso y exacto.

Por último, está el concepto de la desviación típica, el cual es muy importante para el estudio del efecto del ruido y es una medida de la dispersión de un instrumento. Se calcula como la raíz de la varianza.

Una vez introducidos estos conceptos sobre los aparatos de medida, hay que aplicarlos al caso que se está estudiando. Para la obtención de los datos necesarios del motor para su posterior análisis, son necesarios varios tipos de sensores.



- Preciso; E :- Exacto; NP = No Preciso; NE  $\approx$  No exacto

Ilustración 5.1: Exactitud y precisión [7]

**Sensores de temperatura:** se sitúa en distintas partes del motor, en las entradas y las salidas de las distintas turbomáquinas, aunque también pueden situarse entre dos etapas de un compresor o una turbina. La desviación típica de este tipo de sensores suele estar entre 0.05 y 0.5%, dependiendo de la temperatura. Cuanto mayor es esta, es decir, a la salida de la cámara de combustión mayor es dicha desviación. Es difícil encontrar sensores que resistan las altas temperaturas que aparecen en la turbina de alta, por lo que no se emplearan sensores para medir la temperatura de salida de la cámara de combustión,  $T_{04}$ .



Ilustración 5.2: Sensor de temperatura ([aircraftspruce.com](http://aircraftspruce.com))



Ilustración 5.3: Sensor de presión y velocidad de giro ([aircraftspruce.com](http://aircraftspruce.com))

**Sensores de presión:** su uso es similar al de los sensores de temperatura, situándose en distintas posiciones dentro del motor. Su desviación típica suele estar entre 0.1 y 0.2%. Al igual que ocurría en el caso de los sensores de temperatura, no se emplearán sensores para de medida de presión a la salida de la cámara de combustión debido a las altas temperaturas.

**-Sensores de velocidad de giro:** se emplean para medir la velocidad de giro de los ejes que unen las turbinas con los compresores y el fan. En el caso bajo estudio, serían necesarios dos sensores, uno por cada eje, aunque podría emplearse alguno más por redundancia. Su desviación típica es de 1%.



Ilustración 5.4: Sensor de flujo ([aircraftspruce.com](http://aircraftspruce.com))

**Sensores de flujo:** por último, será necesario el uso de un sensor para medir el flujo de combustible que entra en el motor en la cámara de combustión. Su desviación típica está entre un 0.15 y 0.25%.



Para la realización de los cálculos posteriores, y con el propósito de simplificar los cálculos necesarios en los métodos de Gas Path Analysis y de optimización, se va a emplear una desviación típica del 0.1% para todos los sensores necesarios en el motor. Se van a utilizar los siguientes sensores.

Sensor	Temperatura	Presión	Velocidad de giro	Flujo
Número	6	6	2	1
Parámetros	T <sub>013</sub> , T <sub>024</sub> , T <sub>026</sub> , T <sub>03</sub> , T <sub>045</sub> , T <sub>05</sub>	P <sub>013</sub> , P <sub>024</sub> , P <sub>026</sub> , P <sub>03</sub> , P <sub>045</sub> , P <sub>05</sub>	N <sub>eje1</sub> , N <sub>eje2</sub>	wfd

Tabla 5.1: Sensores empleados en el motor

Una vez se tienen los sensores que se van a emplear, un total de 15, se puede pasar a la adición de ruido a los vectores de datos pudiendo así, con los métodos que se expondrán en los siguientes capítulos, comprobar si se obtienen buenos resultados con una situación más realista en la que se tienen en cuenta los posibles errores de los aparatos de medida.

Para añadir el ruido con Matlab se emplea la función *rand*, concretamente aquella que devuelve un número escalar aleatorio de una distribución normal estándar, lo cual se puede expresar como *rand(n)* o *randn*.

Sea  $\mu$  la media y  $\sigma$  la desviación típica y se quiere obtener un valor aleatorio X de una distribución normal con esos parámetros en Matlab, esto se realiza como sigue.

$$X = \mu + randn(1) * \sigma$$

Ecuación 5.1: Número aleatorio de un distribución normal

Donde el 1 que aparece entre paréntesis se refiere a la dimensión de los resultados que se quiere obtener, es decir, si se pretende obtener un matriz 3x2 de números aleatorios habría que poner *randn(3,2)*.

## 6. Gas Path Analysis (GPA)

El primero de los métodos que se va a implementar es, como se adelantó en la introducción el Gas Path Analysis (GPA). Con él se pretende analizar si el modelo es capaz de captar dónde se produce el fallo en un motor degradado e intentar cuantificarlo.

[3] Antes de proceder a su implementación, se va a explicar su funcionamiento así como la forma de realizarlo. En este apartado, como ya se dijo previamente, se va a realizar el método no lineal ya que obtiene mejores resultados que el método lineal.

El Gas Path Analysis necesita dos vectores como entrada que son:

- $\bar{z} \in R^M$  es el vector de medidas, donde el número de medidas es M. En el caso bajo estudio M=15
- $\bar{x} \in R^N$  es el vector de parámetros, donde el número de parámetros es N. En el caso bajo estudio N=18

El objetivo del método es lograr una función h tal que  $\bar{x} = h^{-1}(\bar{z})$  empleando para ello las series de Taylor en torno a  $x_0$ .

$$\bar{z} = h(\bar{x}_0) + \left. \frac{\partial h(\bar{x})}{\partial \bar{x}} \right|_0 (\bar{x} - \bar{x}_0) + \left. \frac{\partial^2 h(\bar{x})}{\partial \bar{x}^2} \right|_0 \frac{(\bar{x} - \bar{x}_0)^2}{2!} + \left. \frac{\partial^3 h(\bar{x})}{\partial \bar{x}^3} \right|_0 \frac{(\bar{x} - \bar{x}_0)^3}{3!} + \dots$$

Ecuación 6.1: Polinomio de Taylor en torno a  $x_0$

Despreciando en la ecuación anterior los términos de orden dos y mayor ya que no se obtienen mejores resultados manteniéndolos, se tiene.

$$\bar{z} = h(\bar{x}_0) + \left. \frac{\partial h(\bar{x})}{\partial \bar{x}} \right|_0 (\bar{x} - \bar{x}_0) \rightarrow \Delta \bar{z} = h \Delta \bar{x}$$

Ecuación 6.2: Polinomio de Taylor simplificado

Donde cada uno de los miembros de la última ecuación son:

$$\Delta \bar{z} = \bar{z} - \bar{z}_0 = \begin{pmatrix} \Delta \bar{z}_1 \\ \Delta \bar{z}_2 \\ \Delta \bar{z}_3 \\ \vdots \\ \Delta \bar{z}_M \end{pmatrix}$$

Ecuación 6.3: Vector de desviación de las medidas



$$\Delta \bar{x} = \bar{x} - \bar{x}_0 = \begin{pmatrix} \Delta \bar{x}_1 \\ \Delta \bar{x}_2 \\ \Delta \bar{x}_3 \\ \vdots \\ \Delta \bar{x}_M \end{pmatrix}$$

Ecuación 6.4: Vector de desviación de los parámetros

$$H = \begin{pmatrix} \frac{\partial z_1(\bar{x})}{\partial \bar{x}_1} & \frac{\partial z_1(\bar{x})}{\partial \bar{x}_2} & \dots & \frac{\partial z_1(\bar{x})}{\partial \bar{x}_N} \\ \frac{\partial z_2(\bar{x})}{\partial \bar{x}_1} & \frac{\partial z_2(\bar{x})}{\partial \bar{x}_2} & \dots & \frac{\partial z_2(\bar{x})}{\partial \bar{x}_N} \\ \frac{\partial z_M(\bar{x})}{\partial \bar{x}_1} & \frac{\partial z_M(\bar{x})}{\partial \bar{x}_2} & \dots & \frac{\partial z_M(\bar{x})}{\partial \bar{x}_N} \end{pmatrix}$$

Ecuación 6.5: Matriz de coeficientes de influencia o ICM (Influence Coefficient Matrix)

El método del GPA no lineal consiste en un proceso iterativo hasta que se llega a una convergencia. Este proceso se realiza como se muestra a continuación donde para mayor claridad la matriz de coeficientes de influencia se denota por  $J$ , ya que es el Jacobiano de la transformación; mientras que el vector de parámetros  $z$  se denota como  $f(x_0)$ .

$$\begin{aligned} f &= f(x_0) + J_{x_0}(x^{(1)} - x_0) \rightarrow \text{despejando} \rightarrow x^{(1)} = x_0 + J_{x_0}^{-1}(f - f(x_0)) \\ f &= f(x^{(1)}) + J_{x_1}(x^{(2)} - x^{(1)}) \rightarrow \text{despejando} \rightarrow x^{(2)} = x^{(1)} + J_{x_1}^{-1}(f - f(x^{(1)})) \\ f &= f(x^{(2)}) + J_{x_2}(x^{(3)} - x^{(2)}) \rightarrow \text{despejando} \rightarrow x^{(3)} = x^{(2)} + J_{x_2}^{-1}(f - f(x^{(2)})) \\ &\vdots \\ f &= f(x^{(j-1)}) + J_{x_{j-1}}(x^{(j)} - x^{(j-1)}) \rightarrow \text{despejando} \rightarrow x^{(j)} = x^{(j-1)} + J_{x_{j-1}}^{-1}(f - f(x^{(j-1)})) \end{aligned}$$

Ecuación 6.6: Proceso iterativo GPA no lineal

Una vez explicado el proceso, hay que programarlo en Matlab usando los datos obtenidos a partir del modelo de motor presentado anteriormente. El principal problema a la hora de llevarlo a cabo es el cálculo del Jacobiano ya que, gran parte de las opciones para que este método converja o para que al menos lo haga en un tiempo lógico, se basan en que el Jacobiano esté bien calculado, con la precisión adecuada. Hay que llegar a una solución de compromiso entre la precisión con la que se calcula el Jacobiano, ya que cuanto más precisión se quiera más tiempo se va a necesitar para su cálculo, pero si la precisión no es la suficiente el número de iteraciones necesarias para la convergencia de método también aumentará.

En el cálculo del Jacobiano, dependiendo del caso se han empleado dos métodos para el cálculo de la derivada.

- Cálculo de la derivada con **dos puntos**, que se ha realizado calculando los vectores  $x$  y  $f(x)$  en un punto muy cercano al punto inicial de cada iteración y aplicando la siguiente ecuación.

$$J = \frac{f(x_i) - f(x_{i-1})}{x_i - x_{i-1}}$$

*Ecuación 6.7: Cálculo del Jacobiano con dos puntos*

- Cálculo de la derivada con **tres puntos**, se calcula a partir de un punto muy cercano por la izquierda y otro por la derecha.

$$J = \frac{1}{2} \left( \frac{f(x_i) - f(x_{i-1})}{x_i - x_{i-1}} + \frac{f(x_{i+1}) - f(x_i)}{x_{i+1} - x_i} \right)$$

*Ecuación 6.8: Cálculo del Jacobiano con tres puntos*

El cálculo del Jacobiano con cualquiera de estos métodos requiere de un proceso iterativo calculando en cada iteración cada una de las 18 columnas del Jacobiano. Además, cada vez que se necesita calcular un punto para el Jacobiano, es necesario recurrir al modelo de motor de Matlab, de ahí que se requieran entre uno y dos minutos para el cálculo del mismo, dependiendo esto del método empleado para calcularlo.

Los resultados obtenidos con este método serán expuestos en el [capítulo 8: Análisis de los resultados](#).

## 7. Método de Optimización

El otro método que se va a analizar en este documento es el método de optimización cuyo funcionamiento se basa en el uso de una de las dos siguientes funciones de Matlab.

- La primera es ***lsqnonlin*** que requiere que el tamaño del vector de parámetros, 'x', sea igual al del vector de medidas, 'z', es decir,  $M=N$ . Pero en el caso bajo estudio  $15=M<N=18$ , es decir, hay más parámetros que medidas.
- La segunda función, ***fmincon***, permite realizar casos en los que el número de parámetros sea mayor que el de medidas, por lo que será el que se emplee en el método de optimización.

[8] *Fmincon* permite encontrar el mínimo de una función, la función objetivo, siendo ésta no lineal, estando sujeta a restricciones y con varias variables. La función tiene la siguiente sintaxis, cuyos parámetros de entrada y salida se explican a continuación.

$$[x, fval] = fmincon(fun, x0, A, b, Aeq, beq, lb, ub, nonlcon, options)$$

Ecuación 7.1: Sintaxis *fmincon*

Los parámetros de entrada de *fmincon* son los siguientes.

- **fun**: es la función de la cual se quiere encontrar el mínimo. Tiene que ser un fichero '.m'.
- **x**: es el valor o valores iniciales a partir de los cuales se quiere que la función comience a iterar.
- **A**: es una matriz formada por los coeficientes de la desigualdad lineal  $Ax \leq b$ .
- **b**: es el vector que contiene a los valores de la derecha de la desigualdad anterior.
- **Aeq**: es una matriz formada por los coeficientes de la igualdad lineal  $Aeqx \leq beq$ .
- **beq**: es el vector que contiene a los valores de la derecha de la igualdad anterior.
- **lb**: es el límite inferior para los valores del vector x.
- **ub**: es el límite superior para los valores del vector x.
- **nonlcon**: es la función en la que se computan las restricciones no lineales  $c(x)=0$  y  $ceq(x)=0$ . Al igual que *fun* tiene que ser un fichero '.m'.
- **options**: es donde se introducen los parámetros relacionados con la optimización como la precisión o el número de iteraciones máximo.

En cuanto a los parámetros de entrada, aunque la función `fmincon` permite usar más, sólo se van a necesitar los dos siguientes.

- **x**: es el valor mínimo buscado, la solución del problema.
- **fval**: es el valor de la función objetivo evaluada en  $x$ .

Se tiene por lo tanto una función que devuelve el mínimo de la función objetivo junto con dicha función evaluada en el mínimo buscado, estando la función sujeta a las restricciones  $Ax \leq b$  y  $A_{eq}x \leq b_{eq}$  y sujeta también a las inecuaciones no lineales  $c(x)=0$  y  $c_{eq}(x)=0$  sin exceder los límites superior ( $lu$ ) e inferior ( $lb$ ). En el caso bajo estudio no son necesarias las restricciones  $Ax \leq b$  y  $A_{eq}x \leq b_{eq}$  por lo que la sintaxis de `fmincon` será la siguiente.

$$[x, fval] = fmincon (fun, x0, [], [], [], [], lb, ub, nonlcon, options)$$

*Ecuación 7.2: Sintaxis `fmincon` para el caso bajo estudio*

Las opciones de optimización que se han empleado para la resolución del caso bajo estudio son las que se presentan a continuación.

$$options = otimoptions ('fmincon', 'Algorithm', 'sqp', 'MaxIter', 10, \\ 'MaxFunEvals', 100, 'TolX', 1e^{-3}, 'TolFun', 5e^{-4}, 'TolCon', 5e^{-4})$$

*Ecuación 7.3: Sintaxis `options` para el caso bajo estudio*

Los parámetros de entrada a esta función son los siguientes.

- **fmincon**: función objetivo a la que se pretenden varias las opciones.
- **Algorithm**: parámetro empleado para introducir el algoritmo de optimización. Matlab te permite escoger entre cinco algoritmos distintos: interior-point, trust-region-reflective, sqp, sqp-legacy y active-set.
- **sqp**: algoritmo elegido para la resolución del problema. Es un algoritmo de programación cuadrática secuencial para la optimización de ecuaciones no lineales.
- **MaxIter**: máximo número de iteraciones.
- **MaxFunEvals**: máximo número de evaluaciones de la función permitidas.
- **TolX**: tolerancia del vector  $x$ .
- **TolFun**: tolerancia de la función objetivo  $fun$ .
- **TolCon**: tolerancia de finalización en la violación de las restricciones.

Los parámetros mostrados en la *ecuación 7.3* no se han empleado en todos los casos ejecutados, se han variado en función del caso, siendo especialmente sensibles las tolerancias empleadas.

Al igual que el método GSP, los resultados del método de optimización se muestran en el [capítulo 8: Análisis de los resultados.](#)

## 8. Análisis de los resultados

En este capítulo se van a mostrar los resultados de los métodos de optimización y Gas Path Analysis además de una comparación entre ambos analizando así, las ventajas del uso de uno de ellos frente al otro, teniendo en cuenta tanto la bondad de los resultados como el tiempo empleado en la obtención de los resultados por cada método.

[9] Antes de realizar esta comparación es importante introducir una serie de conceptos que se emplearán posteriormente en el mencionado análisis.

- **Falso positivo:** ocurren cuando se detecta un fallo que en realidad no está ocurriendo. Esto provoca una pérdida de confianza en los resultados obtenidos por el modelo.
- **Falso negativo:** aparecen cuando no se detecta un fallo que si se está produciendo. Aunque ambos, falsos positivos y falsos negativos son problemas que no se desea que aparezcan, quizás sean los segundos, los falsos negativos, los que conlleven un mayor riesgo para la integridad del motor analizado ya que puede ocurrir que esos fallos no detectados continúen evolucionando y provoquen un fallo catastrófico en la máquina.

Una vez explicados estos conceptos, hay que decidir cuando se considera que el modelo ha acertado, así como cuando ha aparecido un falso positivo o un falso negativo. Para ello se han seguido las siguientes reglas.

- Se considerará que un fallo se ha detectado correctamente si se tiene un error menor que el 1% salvo para el caso de que el fallo sea del 1% que se considerará correcto un error menor del 0.5%.
- Se considerará falso positivo en caso de que se detecte un error mayor que el 0.8% en un parámetro.
- Se considerará un falso negativo en caso de que se detecte un error menor que el 0.8% en un parámetro en el que el error es mayor que el 1%. En el caso de que el error en el parámetro sea del 1% se considerará falso negativo si se detecta un error menor que el 0.5%.

Se pasa ahora a exponer los resultados, primero degradando solo un parámetro, pasando después a degradar dos y tres en el mismo caso.

## 8.1 Casos con un fallo

En primer lugar, se van a analizar los casos más simples, en los que sólo uno de los parámetros está degradado.

### 8.1.1 Gas Path Analysis

Se realizará en primer lugar el análisis de los resultados obtenidos con GPA, pero antes de introducir el ruido se muestran a continuación una serie de tablas para algunos de los 18 parámetros con una comparación entre los resultados obtenidos con GSP y la degradación realmente impuesta para comprobar que el método obtiene buenos resultados y poder pasar después al análisis con ruido. Esto se ha realizado para tres situaciones, una con poca degradación (-0.5%), otra con una degradación intermedia (-3%) y la última con una gran degradación (-8%).

EFICIENCIA FANCORE	Degradación -0.5%		Degradación -3%		Degradación -8%	
	Impuesto	GPA	Impuesto	GPA	Impuesto	GPA
Pr fancore	0	0	0	0.003709	0	0.014543
Eff fancore	-0.5	-0.5	-3	-2.9982	-8	-7.9953
Mc fancore	0	0	0	-0.00086252	0	-0.00292
Pr fanduct	0	0	0	-0.025657	0	0.031114
Eff fanduct	0	0	0	0	-8	-7.9986
Mc fanduct	0	0	0	0.00461	0	-0.0091779
Pr compresor 1	0	0	0	0.033138	0	0.021983
Eff compresor 1	0	0	0	0.00040771	0	-0.033946
Mc compresor 1	0	0	0	0	0	0
Pr compresor 2	0	0	0	-0.015954	0	1.3044
Eff compresor 2	0	0	0	0.0013085	0	-0.10396
Mc compresor 2	0	0	0	-0.0033885	0	0
Pr turbina 1	0	0	0	-0.16791	0	-1.498
Eff turbina 1	0	0	0	0.30541	0	0.49042
Mc turbina 1	0	0	0	-0.49239	0	-0.92622
Pr turbina 2	0	0	0	0.00030545	0	0.010143
Eff turbina 2	0	0	0	1.91E-06	0	-0.0021123
Mc turbina 2	0	0	0	0	0	0

Tabla 8.1.1.1: Degradación eficiencia fancore

RELACIÓN DE COMPRESIÓN COMPRESOR 1	Degradación -0.5%		Degradación -3%		Degradación -8%	
	Impuesto	GPA	Impuesto	GPA	Impuesto	GPA
Pr fancore	0	-0.0014849	0	-0.0027288	0	-0.014034
Eff fancore	0	-0.0004218	0	-0.000666	0	-0.0093255
Mc fancore	0	0.00005999	0	0.0001204	0	0.00036567
Pr fanduct	0	-0.0016111	0	-0.003041	0	-0.03596
Eff fanduct	0	-0.0003	0	-0.0004909	0	-0.00072118
Mc fanduct	0	0.0002809	0	0.00052791	0	0.0086614
Pr compresor 1	-0.5	-0.46284	-3	-2.9387	-8	-7.69
Eff compresor 1	0	-0.0017949	0	-0.0032405	0	-0.044985
Mc compresor 1	0	0	0	0	0	0
Pr compresor 2	0	0	0	0	0	-0.12037
Eff compresor 2	0	-0.000189	0	-0.0003446	0	0.0334
Mc compresor 2	0	-0.0000283	0	-0.0000537	0	0.00E+00
Pr turbina 1	0	-0.0115	0	-0.019963	0	-0.18163
Eff turbina 1	0	0.00302	0	0.004882	0	0.05618
Mc turbina 1	0	-0.0041805	0	-0.0069592	0	-0.070679
Pr turbina 2	0	0.0000138	0	0.0000278	0	0.0000515
Eff turbina 2	0	-0.0000034	0	-0.0000063	0	-0.00042025
Mc turbina 2	0	0	0	0	0	0

Tabla 8.1.1.2: Degradación relación de compresión compresor 1

FLUJO CORREGIDO TURBINA 1	Degradación -0.5%		Degradación -3%		Degradación -8%	
	Impuesto	GPA	Impuesto	GPA	Impuesto	GPA
Pr fancore	0	0.00039315	0	0.0002721	0	0.0074986
Eff fancore	0	-0.00017426	0	-0.0002369	0	0.0037809
Mc fancore	0	-0.0000491	0	-0.0000158	0	-0.0000886
Pr fanduct	0	-0.0013144	0	-0.0004497	0	0.0024908
Eff fanduct	0	-0.00016854	0	-0.000146	0	-0.0007076
Mc fanduct	0	0.00023127	0	0.0000478	0	-0.0006482
Pr compresor 1	0	-0.0017378	0	-0.00332	0	0.047156
Eff compresor 1	0	-0.00075542	0	-0.0006614	0	0.096942
Mc compresor 1	0	0	0	0	0	0
Pr compresor 2	0	0	0	0	0	-0.077124
Eff compresor 2	0	-0.00057795	0	-0.0009217	0	0.00052643
Mc compresor 2	0	0.0000937	0	0.0002497	0	0
Pr turbina 1	0	-0.19081	0	-0.055854	0	-0.04213
Eff turbina 1	0	0.042203	0	0.015453	0	0.010182
Mc turbina 1	-1	-1.0607	-3	-3.0227	-8	-7.9627
Pr turbina 2	0	-0.00000778	0	-0.0000215	0	0.00018728
Eff turbina 2	0	0.00000254	0	0.0000022	0	0.00011767
Mc turbina 2	0	0	0	0	0	0

Tabla 8.1.1.3: Degradación flujo corregido turbina 1



Los resultados obtenidos son suficientemente buenos como para poder realizar el mismo análisis añadiendo el ruido. Para ello, como se dijo en el apartado anterior, se ha empleado la función *randn* de Matlab e introduciendo en el modelo 50 medidas con ruido obteniendo las tablas que se muestran en el [Anexo A](#).

En las tablas de los anexos se muestran los resultados de las 50 medidas con ruido analizando los resultados en base a los conceptos expuestos previamente. Para cada caso hay dos tablas, la primera, en la que se muestra si existen o no falsos positivos o falsos negativos, apareciendo en rojo los casos afirmativos; se muestran en una segunda tabla los aciertos para los elementos degradados, si GPA acierta con el grado de degradación dichos casos aparecerán de color verde.

Se realizan tres degradaciones distintas para cada parámetro, una pequeña, del -1%; otra intermedia del -3%; y una grande del -7%. Esto se realiza para todos los parámetros excepto para aquellos que pueden también aumentar, para los cuales se han propuesto las siguientes degradaciones: -5, -2, 2 y 5%.

Hay parámetros para los cuales el modelo no convergía por lo que no se van a tener en cuenta en este análisis. Se marcan en la siguiente tabla los que si se han podido analizar.

	-1%	-4%	-7%
Pr fancore	x	x	x
Eff fancore	x	x	x
Mc fancore			
Pr fanduct	x	x	
Eff fanduct	x	x	x
Mc fanduct			
Pr compresor 1	x	x	x
Eff compresor 1	x	x	x
Mc compresor 1			
Pr compresor 2	x		
Eff compresor 2	x	x	x
Mc compresor 2	x	x	
Eff turbina 1	x	x	x
Eff turbina 2	x	x	x

	-2%	-5%	2%	5%
Pr turbina 1				
Mc turbina 1	x	x	x	x
Pr turbina 2				
Mc turbina 2				

Tabla 8.1.1.4: Casos analizados

Se van a presentar a continuación una serie de tablas en las que se puede ver un resumen de los resultados de las tablas de los anexos. Se muestra en ellas el número de falsos positivos, el número de aciertos o el error medio, entre otros parámetros de interés.

Relación de compresión fancore -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore		0
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	100	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>5.882352941</b>	<b>0</b>
<b>Acierto en el grado de degradación</b>		<b>100</b>

Tabla 8.1.1.5: Análisis relación de compresión fancore -1% (I)

Relación de compresión fancore -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.991104998	0.008895002	99.11049978
eff_fancore	-0.099980922	0.099980922	
mc_fancore	-0.100001805	0.100001805	
pr_fanduct	-0.100080708	0.100080708	
eff_fanduct	-0.099852895	0.099852895	
mc_fanduct	-0.099988482	0.099988482	
pr_compresor1	-0.099971492	0.099971492	
eff_compresor1	-1.003548473	1.003548473	
mc_compresor1	0	0	
pr_compresor2	-0.101602178	0.101602178	
eff_compresor2	-0.098895096	0.098895096	
mc_compresor2	-0.100422306	0.100422306	
pr_turbina1	-0.099995543	0.099995543	
eff_turbina1	-0.100001888	0.100001888	
mc_turbina1	0	0	
pr_turbina2	2.98337E-06	2.98337E-06	
eff_turbina2	-9.03521E-06	9.03521E-06	
mc_turbina2	0	0	
<b>Error máquinas degradadas</b>		<b>0.008895002</b>	
<b>Error máquinas no degradadas</b>		<b>0.123785518</b>	
<b>Error TOTAL</b>		<b>0.117402712</b>	

Tabla 8.1.1.6: Análisis relación de compresión fancore -1% (II)

Relación de compresión fancore -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore		0
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	4	
mc_compresor1	0	
pr_compresor2	70	
eff_compresor2	48	
mc_compresor2	4	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>7.411764706</b>	<b>0</b>
<b>Acierto</b>		<b>100</b>

Tabla 8.1.1.7: Análisis relación de compresión fancore -4% (I)

Relación de compresión fancore -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-3.496043648	0.503956352	87.4010912
eff_fancore	0.000588986	0.000588986	
mc_fancore	-0.000140672	0.000140672	
pr_fanduct	-0.000555407	0.000555407	
eff_fanduct	0.00090414	0.00090414	
mc_fanduct	5.69307E-05	5.69307E-05	
pr_compresor1	0.002771015	0.002771015	
eff_compresor1	-0.023005331	0.023005331	
mc_compresor1	0	0	
pr_compresor2	-0.118185843	0.118185843	
eff_compresor2	0.080647425	0.080647425	
mc_compresor2	-0.029367954	0.029367954	
pr_turbina1	-3.57838E-05	3.57838E-05	
eff_turbina1	0.000280647	0.000280647	
mc_turbina1	0	0	
pr_turbina2	-0.000129339	0.000129339	
eff_turbina2	0.000511542	0.000511542	
mc_turbina2	0	0	
<b>Error máquinas degradadas</b>		<b>0.503956352</b>	
<b>Error máquinas no degradadas</b>		<b>0.015128295</b>	
<b>Error TOTAL</b>		<b>0.042285409</b>	

Tabla 8.1.1.8: Análisis relación de compresión fancore -4% (II)

Relación de compresión fancore -7%	Falso positivo (%)	Falso negativo (%)
pr_fancore		0
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	2	
mc_compresor1	0	
pr_compresor2	54	
eff_compresor2	32	
mc_compresor2	4	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>5.411764706</b>	<b>0</b>
<b>Acierto</b>		<b>100</b>

Tabla 8.1.1.9: Análisis relación de compresión fancore -7% (I)

Relación de compresión fancore -7%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-6.152382896	0.847617104	87.89118423
eff_fancore	0.000478061	0.000478061	
mc_fancore	4.9129E-05	4.9129E-05	
pr_fanduct	0.001973865	0.001973865	
eff_fanduct	-0.003041435	0.003041435	
mc_fanduct	-0.000299477	0.000299477	
pr_compresor1	0.000358261	0.000358261	
eff_compresor1	-0.011991354	0.011991354	
mc_compresor1	0	0	
pr_compresor2	-0.070022516	0.070022516	
eff_compresor2	0.047527226	0.047527226	
mc_compresor2	-0.018698004	0.018698004	
pr_turbina1	0.000457451	0.000457451	
eff_turbina1	-0.000368711	0.000368711	
mc_turbina1	0	0	
pr_turbina2	0.000308284	0.000308284	
eff_turbina2	0.000125852	0.000125852	
mc_turbina2	0	0	
<b>Error máquinas degradadas</b>		<b>0.847617104</b>	
<b>Error máquinas no degradadas</b>		<b>0.009158802</b>	
<b>Error TOTAL</b>		<b>0.055739818</b>	

Tabla 8.1.1.10: Análisis relación de compresión fancore -7% (II)

Eficiencia fancore -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore	52	
eff_fancore		20
mc_fancore	2	
pr_fanduct	36	
eff_fanduct	40	
mc_fanduct	8	
pr_compresor1	30	
eff_compresor1	20	
mc_compresor1	0	
pr_compresor2	98	
eff_compresor2	70	
mc_compresor2	70	
pr_turbina1	30	
eff_turbina1	48	
mc_turbina1	30	
pr_turbina2	50	
eff_turbina2	48	
mc_turbina2	50	
<b>TOTAL</b>	<b>39.375</b>	<b>20</b>
<b>Acierto</b>		<b>80</b>

Tabla 8.1.1.11: Análisis eficiencia fancore -1% (I)

Eficiencia fancore -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-2.82627407	2.82627407	
eff_fancore	-0.689100464	0.310899536	68.91004636
mc_fancore	-0.067734337	0.067734337	
pr_fanduct	0.806361221	0.806361221	
eff_fanduct	-1.676099581	1.676099581	
mc_fanduct	-0.175994028	0.175994028	
pr_compresor1	0.310875709	0.310875709	
eff_compresor1	-0.104859637	0.104859637	
mc_compresor1	0	0	
pr_compresor2	8.756039955	8.756039955	
eff_compresor2	-3.946787093	3.946787093	
mc_compresor2	-0.482408382	0.482408382	
pr_turbina1	0.454465471	0.454465471	
eff_turbina1	-0.672823274	0.672823274	
mc_turbina1	0.355150645	0.355150645	
pr_turbina2	1.631383563	1.631383563	
eff_turbina2	1.139918832	1.139918832	
mc_turbina2	1.601127022	1.601127022	
<b>Error máquinas degradadas</b>		<b>0.310899536</b>	
<b>Error máquinas no degradadas</b>		<b>1.471076637</b>	
<b>Error TOTAL</b>		<b>1.406622353</b>	

Tabla 8.1.1.12: Análisis eficiencia fancore -1% (II)

Eficiencia fancore -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore	52	
eff_fancore		2
mc_fancore	2	
pr_fanduct	34	
eff_fanduct	38	
mc_fanduct	16	
pr_compresor1	24	
eff_compresor1	12	
mc_compresor1	0	
pr_compresor2	94	
eff_compresor2	66	
mc_compresor2	72	
pr_turbina1	24	
eff_turbina1	36	
mc_turbina1	24	
pr_turbina2	50	
eff_turbina2	46	
mc_turbina2	50	
<b>TOTAL</b>	<b>36.75</b>	<b>2</b>
<b>Acierto</b>		<b>82</b>

Tabla 8.1.1.13: Análisis eficiencia fancore -4% (I)

Eficiencia fancore -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-4.755570154	4.755570154	
eff_fancore	-3.481420949	0.518579051	87.03552373
mc_fancore	-0.117460763	0.117460763	
pr_fanduct	1.346651176	1.346651176	
eff_fanduct	-2.769700598	2.769700598	
mc_fanduct	-0.290564	0.290564	
pr_compresor1	-1.082073236	1.082073236	
eff_compresor1	0.38070214	0.38070214	
mc_compresor1	0	0	
pr_compresor2	0.306085671	0.306085671	
eff_compresor2	0.173173659	0.173173659	
mc_compresor2	0.160605556	0.160605556	
pr_turbina1	3.718361246	3.718361246	
eff_turbina1	-4.992253968	4.992253968	
mc_turbina1	2.414537338	2.414537338	
pr_turbina2	1.264679173	1.264679173	
eff_turbina2	0.912812896	0.912812896	
mc_turbina2	1.240035614	1.240035614	
<b>Error máquinas degradadas</b>		<b>0.518579051</b>	
<b>Error máquinas no degradadas</b>		<b>1.525015717</b>	
<b>Error TOTAL</b>		<b>1.469102569</b>	

Tabla 8.1.1.14: Análisis eficiencia fancore -4% (II)

Eficiencia fancore -7%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore		0
mc_fancore	0	
pr_fanduct	12	
eff_fanduct	40	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	78	
mc_compresor1	0	
pr_compresor2	90	
eff_compresor2	88	
mc_compresor2	78	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>24.125</b>	<b>0</b>
<b>Acierto</b>		<b>100</b>

Tabla 8.1.1.15: Análisis eficiencia fancore -7% (I)

Eficiencia fancore -7%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.011687843	0.011687843	
eff_fancore	-7.057219386	0.057219386	100.8174198
mc_fancore	0.00207155	0.00207155	
pr_fanduct	0.10549286	0.10549286	
eff_fanduct	-0.190553614	0.190553614	
mc_fanduct	-0.015166847	0.015166847	
pr_compresor1	-0.026059857	0.026059857	
eff_compresor1	0.393662472	0.393662472	
mc_compresor1	0	0	
pr_compresor2	1.660198046	1.660198046	
eff_compresor2	-1.145425775	1.145425775	
mc_compresor2	0.4403846	0.4403846	
pr_turbina1	-0.002975841	0.002975841	
eff_turbina1	-3.73828E-05	3.73828E-05	
mc_turbina1	0	0	
pr_turbina2	-0.004610781	0.004610781	
eff_turbina2	0.011922197	0.011922197	
mc_turbina2	0	0	
<b>Error máquinas degradadas</b>		<b>0.057219386</b>	
<b>Error máquinas no degradadas</b>		<b>0.235897039</b>	
<b>Error TOTAL</b>		<b>0.225970503</b>	

Tabla 8.1.1.16: Análisis eficiencia fancore -7% (II)

Relación de compresión fanduct -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct		0
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	72	
eff_compresor2	70	
mc_compresor2	22	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	9.647058824	0
Acierto		100

Tabla 8.1.1.17: Análisis relación de compresión fanduct -1% (I)

Relación de compresión fanduct -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.009586884	0.009586884	
eff_fancore	0.002336851	0.002336851	
mc_fancore	-0.000242063	0.000242063	
pr_fanduct	-1.010373278	0.010373278	101.037328
eff_fanduct	0.013777064	0.013777064	
mc_fanduct	0.000954798	0.000954798	
pr_compresor1	0.002338222	0.002338222	
eff_compresor1	-0.01150153	0.01150153	
mc_compresor1	0	0	
pr_compresor2	-0.042483888	0.042483888	
eff_compresor2	0.032581869	0.032581869	
mc_compresor2	-0.011555724	0.011555724	
pr_turbina1	0.000158224	0.000158224	
eff_turbina1	-0.000482517	0.000482517	
mc_turbina1	0	0	
pr_turbina2	0.000158368	0.000158368	
eff_turbina2	-0.000397977	0.000397977	
mc_turbina2	0	0	
Error máquinas degradadas		0.010373278	
Error máquinas no degradadas		0.007562116	
Error TOTAL		0.007718292	

Tabla 8.1.1.18: Análisis relación de compresión fanduct -1% (II)



Relación de compresión fanduct -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore	4	
eff_fancore	0	
mc_fancore	4	
pr_fanduct		0
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	100	
eff_compresor1	26	
mc_compresor1	100	
pr_compresor2	34	
eff_compresor2	0	
mc_compresor2	8	
pr_turbina1	40	
eff_turbina1	0	
mc_turbina1	74	
pr_turbina2	2	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	23.05882353	0
Acierto		2

Tabla 8.1.1.19: Análisis relación de compresión fanduct -4% (I)

Relación de compresión fanduct -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.397817145	0.397817145	
eff_fancore	-0.024902589	0.024902589	
mc_fancore	-0.021518479	0.021518479	
pr_fanduct	-2.923716564	1.076283436	73.0929141
eff_fanduct	-0.112701052	0.112701052	
mc_fanduct	-0.005416404	0.005416404	
pr_compresor1	-1.626250264	1.626250264	
eff_compresor1	0.661494789	0.661494789	
mc_compresor1	2.421796109	2.421796109	
pr_compresor2	-0.70286321	0.70286321	
eff_compresor2	-0.198968737	0.198968737	
mc_compresor2	-0.397137478	0.397137478	
pr_turbina1	0.770517145	0.770517145	
eff_turbina1	0.254071175	0.254071175	
mc_turbina1	0.940373218	0.940373218	
pr_turbina2	-0.001096199	0.001096199	
eff_turbina2	-0.018400343	0.018400343	
mc_turbina2	-0.010934714	0.010934714	
Error máquinas degradadas		1.076283436	
Error máquinas no degradadas		0.503897591	
Error TOTAL		0.535696805	

Tabla 8.1.1.20: Análisis relación de compresión fanduct -4% (II)

Eficiencia fanduct -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct		0
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	58	
eff_compresor2	38	
mc_compresor2	2	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	5.764705882	0
Acierto		100

Tabla 8.1.1.21: Análisis eficiencia fanduct -1% (I)

Eficiencia fanduct -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.000760489	0.000760489	
eff_fancore	-0.000445422	0.000445422	
mc_fancore	-6.36548E-05	6.36548E-05	
pr_fanduct	-0.005307253	0.005307253	
eff_fanduct	-0.978074432	0.021925568	97.8074432
mc_fanduct	0.000782528	0.000782528	
pr_compresor1	0.001552818	0.001552818	
eff_compresor1	-0.005214378	0.005214378	
mc_compresor1	0	0	
pr_compresor2	-0.014112854	0.014112854	
eff_compresor2	0.01114523	0.01114523	
mc_compresor2	-0.004116071	0.004116071	
pr_turbina1	0.000241854	0.000241854	
eff_turbina1	-0.000358948	0.000358948	
mc_turbina1	0	0	
pr_turbina2	0.000130706	0.000130706	
eff_turbina2	-0.000769102	0.000769102	
mc_turbina2	0	0	
Error máquinas degradadas		0.021925568	
Error máquinas no degradadas		0.002647136	
Error TOTAL		0.00371816	

Tabla 8.1.1.22: Análisis eficiencia fanduct -1% (II)

Eficiencia fanduct -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct		0
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	60	
eff_compresor2	34	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	5.529411765	0
Acierto		100

Tabla 8.1.1.23: Análisis eficiencia fanduct -4% (I)

Eficiencia fanduct -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.002944127	0.002944127	
eff_fancore	-0.003131159	0.003131159	
mc_fancore	0.000108582	0.000108582	
pr_fanduct	0.010417838	0.010417838	
eff_fanduct	-3.982048566	0.017951434	99.5512141
mc_fanduct	-0.001502993	0.001502993	
pr_compresor1	0.001087382	0.001087382	
eff_compresor1	-0.006235558	0.006235558	
mc_compresor1	0	0	
pr_compresor2	-0.08773152	0.08773152	
eff_compresor2	0.058438623	0.058438623	
mc_compresor2	-0.022048523	0.022048523	
pr_turbina1	0.000359526	0.000359526	
eff_turbina1	-0.000437852	0.000437852	
mc_turbina1	0	0	
pr_turbina2	-0.000201716	0.000201716	
eff_turbina2	0.001439718	0.001439718	
mc_turbina2	0	0	
Error máquinas degradadas		0.017951434	
Error máquinas no degradadas		0.011534419	
Error TOTAL		0.011890919	

Tabla 8.1.1.24: Análisis eficiencia fanduct -4% (II)

Eficiencia fanduct -7%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct		0
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	62	
eff_compresor2	42	
mc_compresor2	6	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>6.470588235</b>	<b>0</b>
<b>Acierto</b>		<b>100</b>

Tabla 8.1.1.25: Análisis eficiencia fanduct -7% (I)

Eficiencia fanduct -7%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.009625958	0.009625958	
eff_fancore	-0.002309679	0.002309679	
mc_fancore	-0.000107855	0.000107855	
pr_fanduct	0.009240161	0.009240161	
eff_fanduct	-6.963530479	0.036469521	99.4790068
mc_fanduct	-0.001378147	0.001378147	
pr_compresor1	0.003407433	0.003407433	
eff_compresor1	-0.006262277	0.006262277	
mc_compresor1	0	0	
pr_compresor2	-0.081798992	0.081798992	
eff_compresor2	0.056438819	0.056438819	
mc_compresor2	-0.017807522	0.017807522	
pr_turbina1	1.3458E-05	1.3458E-05	
eff_turbina1	-0.00045025	0.00045025	
mc_turbina1	0	0	
pr_turbina2	-0.000720037	0.000720037	
eff_turbina2	0.002166683	0.002166683	
mc_turbina2	0	0	
<b>Error máquinas degradadas</b>		<b>0.036469521</b>	
<b>Error máquinas no degradadas</b>		<b>0.011278075</b>	
<b>Error TOTAL</b>		<b>0.0126776</b>	

Tabla 8.1.1.26: Análisis eficiencia fanduct -7% (II)

Relación de compresión compresor 1 -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore	22	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	10	
mc_fanduct	0	
pr_compresor1		92
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	78	
eff_compresor2	72	
mc_compresor2	30	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>12.47058824</b>	<b>92</b>
<b>Acierto</b>		<b>8</b>

Tabla 8.1.1.27: Análisis relación de compresión compresor 1 -1% (I)

Relación de compresión compresor 1 -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.048632586	0.048632586	
eff_fancore	0.003795283	0.003795283	
mc_fancore	0.000516887	0.000516887	
pr_fanduct	0.017745365	0.017745365	
eff_fanduct	-0.033504532	0.033504532	
mc_fanduct	-0.002252233	0.002252233	
pr_compresor1	-0.365943415	0.634056585	36.59434145
eff_compresor1	0.008107144	0.008107144	
mc_compresor1	0	0	
pr_compresor2	-0.029469743	0.029469743	
eff_compresor2	0.010766749	0.010766749	
mc_compresor2	-0.00549384	0.00549384	
pr_turbina1	0.000350325	0.000350325	
eff_turbina1	-0.000489884	0.000489884	
mc_turbina1	0	0	
pr_turbina2	-0.000213376	0.000213376	
eff_turbina2	0.001332655	0.001332655	
mc_turbina2	0	0	
<b>Error máquinas degradadas</b>		<b>0.634056585</b>	
<b>Error máquinas no degradadas</b>		<b>0.009568859</b>	
<b>Error TOTAL</b>		<b>0.044262622</b>	

Tabla 8.1.1.28: Análisis relación de compresión compresor 1 -1% (II)

Relación de compresión compresor 1 -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore	42	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	14	
eff_fanduct	16	
mc_fanduct	0	
pr_compresor1		6
eff_compresor1	34	
mc_compresor1	0	
pr_compresor2	96	
eff_compresor2	74	
mc_compresor2	14	
pr_turbina1	28	
eff_turbina1	28	
mc_turbina1	28	
pr_turbina2	22	
eff_turbina2	16	
mc_turbina2	22	
<b>TOTAL</b>	<b>25.52941176</b>	<b>6</b>
<b>Acierto</b>		<b>4</b>

Tabla 8.1.1.29: Análisis relación de compresión compresor 1 -4% (I)

Relación de compresión compresor 1 -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.071909132	0.071909132	
eff_fancore	-0.001994257	0.001994257	
mc_fancore	-0.012232086	0.012232086	
pr_fanduct	0.045465122	0.045465122	
eff_fanduct	-0.09930794	0.09930794	
mc_fanduct	-0.017262029	0.017262029	
pr_compresor1	-2.123888152	1.876111848	53.0972038
eff_compresor1	-0.187320477	0.187320477	
mc_compresor1	0	0	
pr_compresor2	2.51213356	2.51213356	
eff_compresor2	-1.046955517	1.046955517	
mc_compresor2	0.265512571	0.265512571	
pr_turbina1	1.424961243	1.424961243	
eff_turbina1	-1.016086727	1.016086727	
mc_turbina1	1.082133176	1.082133176	
pr_turbina2	-0.17705616	0.17705616	
eff_turbina2	-0.146331638	0.146331638	
mc_turbina2	-0.177976978	0.177976978	
<b>Error máquinas degradadas</b>		<b>1.876111848</b>	
<b>Error máquinas no degradadas</b>		<b>0.487331683</b>	
<b>Error TOTAL</b>		<b>0.564486137</b>	

Tabla 8.1.1.30: Análisis relación de compresión compresor 1 -4% (II)

Relación de compresión compresor 1 -7%	Falso positivo (%)	Falso negativo (%)
pr_fancore	26	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	4	
eff_fanduct	14	
mc_fanduct	0	
pr_compresor1		0
eff_compresor1	56	
mc_compresor1	0	
pr_compresor2	54	
eff_compresor2	54	
mc_compresor2	14	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	78	
eff_turbina2	48	
mc_turbina2	68	
<b>TOTAL</b>	<b>24.47058824</b>	<b>0</b>
<b>Acierto</b>		<b>0</b>

Tabla 8.1.1.31: Análisis relación de compresión compresor 1 -7% (I)

Relación de compresión compresor 1 -7%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.257620654	0.257620654	
eff_fancore	0.027019288	0.027019288	
mc_fancore	0.002099171	0.002099171	
pr_fanduct	0.110925006	0.110925006	
eff_fanduct	-0.193892564	0.193892564	
mc_fanduct	-0.014950269	0.014950269	
pr_compresor1	-3.959053128	3.040946872	56.55790183
eff_compresor1	-0.315956558	0.315956558	
mc_compresor1	0	0	
pr_compresor2	0.621343398	0.621343398	
eff_compresor2	-0.624248133	0.624248133	
mc_compresor2	0.13482885	0.13482885	
pr_turbina1	-0.003252986	0.003252986	
eff_turbina1	0.021360731	0.021360731	
mc_turbina1	0	0	
pr_turbina2	0.911641775	0.911641775	
eff_turbina2	0.547563849	0.547563849	
mc_turbina2	0.767086829	0.767086829	
<b>Error máquinas degradadas</b>		<b>3.040946872</b>	
<b>Error máquinas no degradadas</b>		<b>0.267870004</b>	
<b>Error TOTAL</b>		<b>0.42192983</b>	

Tabla 8.1.1.32: Análisis relación de compresión compresor 1 -7% (II)

Eficiencia compresor 1 -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore	8	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	2	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1		22
mc_compresor1	0	
pr_compresor2	60	
eff_compresor2	52	
mc_compresor2	26	
pr_turbina1	2	
eff_turbina1	2	
mc_turbina1	2	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	9.058823529	22
Acierto		76

Tabla 8.1.1.33: Análisis eficiencia compresor 1 -1% (I)

Eficiencia compresor 1 -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.23765762	0.23765762	
eff_fancore	0.02275849	0.02275849	
mc_fancore	0.001137511	0.001137511	
pr_fanduct	0.038306138	0.038306138	
eff_fanduct	-0.099309851	0.099309851	
mc_fanduct	-0.003588029	0.003588029	
pr_compresor1	-0.147010221	0.147010221	
eff_compresor1	-0.819903275	0.180096725	81.99032745
mc_compresor1	0	0	
pr_compresor2	1.294781758	1.294781758	
eff_compresor2	-0.425308256	0.425308256	
mc_compresor2	0.147007805	0.147007805	
pr_turbina1	0.124610448	0.124610448	
eff_turbina1	-0.064783528	0.064783528	
mc_turbina1	0.095014982	0.095014982	
pr_turbina2	0.000463941	0.000463941	
eff_turbina2	-0.007709113	0.007709113	
mc_turbina2	0	0	
Error máquinas degradadas		0.180096725	
Error máquinas no degradadas		0.159379276	
Error TOTAL		0.160530245	

Tabla 8.1.1.34: Análisis eficiencia compresor 1 -1% (II)



Eficiencia compresor 1 -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1		0
mc_compresor1	0	
pr_compresor2	66	
eff_compresor2	20	
mc_compresor2	2	
pr_turbina1	14	
eff_turbina1	0	
mc_turbina1	4	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>6.235294118</b>	<b>0</b>
<b>Acierto</b>		<b>100</b>

Tabla 8.1.1.35: Análisis eficiencia compresor 1 -4% (I)

Eficiencia compresor 1 -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.003171062	0.003171062	
eff_fancore	0.000605994	0.000605994	
mc_fancore	-0.000121598	0.000121598	
pr_fanduct	-0.005513228	0.005513228	
eff_fanduct	0.007978957	0.007978957	
mc_fanduct	0.000955481	0.000955481	
pr_compresor1	-0.005767311	0.005767311	
eff_compresor1	-3.987575923	0.012424077	99.68939807
mc_compresor1	-0.001213766	0.001213766	
pr_compresor2	0.224649696	0.224649696	
eff_compresor2	-0.066785255	0.066785255	
mc_compresor2	0.004402559	0.004402559	
pr_turbina1	-0.091864513	0.091864513	
eff_turbina1	-0.005863427	0.005863427	
mc_turbina1	-0.07250777	0.07250777	
pr_turbina2	0.004546512	0.004546512	
eff_turbina2	-0.005156748	0.005156748	
mc_turbina2	0	0	
<b>Error máquinas degradadas</b>		<b>0.012424077</b>	
<b>Error máquinas no degradadas</b>		<b>0.029476699</b>	
<b>Error TOTAL</b>		<b>0.028529331</b>	

Tabla 8.1.1.36: Análisis eficiencia compresor 1 -4% (II)

Eficiencia compresor 1 -7%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1		0
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	0	0
Acierto		100

Tabla 8.1.1.37: Análisis eficiencia compresor 1 -7% (I)

Eficiencia compresor 1 -7%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.000125982	0.000125982	
eff_fancore	-7.95123E-06	7.95123E-06	
mc_fancore	1.27345E-05	1.27345E-05	
pr_fanduct	-9.31549E-05	9.31549E-05	
eff_fanduct	5.58582E-05	5.58582E-05	
mc_fanduct	5.46042E-06	5.46042E-06	
pr_compresor1	0.000111698	0.000111698	
eff_compresor1	-6.930171168	0.069828832	99.00244525
mc_compresor1	5.61764E-05	5.61764E-05	
pr_compresor2	-0.002046734	0.002046734	
eff_compresor2	0.000671968	0.000671968	
mc_compresor2	5.38236E-06	5.38236E-06	
pr_turbina1	0.001391991	0.001391991	
eff_turbina1	-0.000348659	0.000348659	
mc_turbina1	0.001063299	0.001063299	
pr_turbina2	0.011070868	0.011070868	
eff_turbina2	-0.021568346	0.021568346	
mc_turbina2	0	0	
Error máquinas degradadas		0.069828832	
Error máquinas no degradadas		0.002272721	
Error TOTAL		0.006025839	

Tabla 8.1.1.38: Análisis eficiencia compresor 1 -7% (II)

Eficiencia compresor 2 -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore	52	
eff_fancore	2	
mc_fancore	0	
pr_fanduct	26	
eff_fanduct	36	
mc_fanduct	0	
pr_compresor1	16	
eff_compresor1	24	
mc_compresor1	0	
pr_compresor2	88	
eff_compresor2		58
mc_compresor2	42	
pr_turbina1	24	
eff_turbina1	28	
mc_turbina1	24	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>21.29411765</b>	<b>58</b>
<b>Acierto</b>		<b>26</b>

Tabla 8.1.1.39: Degradación eficiencia compresor 2 -1% (I)

Eficiencia compresor 2 -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.093005215	0.093005215	
eff_fancore	-0.001494362	0.001494362	
mc_fancore	-0.018345392	0.018345392	
pr_fanduct	0.051368563	0.051368563	
eff_fanduct	-0.148098625	0.148098625	
mc_fanduct	-0.025892238	0.025892238	
pr_compresor1	0.045101416	0.045101416	
eff_compresor1	-0.276763877	0.276763877	
mc_compresor1	0	0	
pr_compresor2	-1.077168503	1.077168503	
eff_compresor2	-0.3042547	0.6957453	30.42547
mc_compresor2	-0.11155495	0.11155495	
pr_turbina1	2.167760035	2.167760035	
eff_turbina1	-2.067633994	2.067633994	
mc_turbina1	1.534084464	1.534084464	
pr_turbina2	0.041270908	0.041270908	
eff_turbina2	0.009370754	0.009370754	
mc_turbina2	0.033931169	0.033931169	
<b>Error máquinas degradadas</b>		<b>0.6957453</b>	
<b>Error máquinas no degradadas</b>		<b>0.453108498</b>	
<b>Error TOTAL</b>		<b>0.46658832</b>	

Tabla 8.1.1.40: Degradación eficiencia compresor 2 -1% (II)

Eficiencia compresor 2 -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore	60	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	8	
eff_fanduct	36	
mc_fanduct	0	
pr_compresor1	20	
eff_compresor1	22	
mc_compresor1	0	
pr_compresor2	68	
eff_compresor2		0
mc_compresor2	0	
pr_turbina1	90	
eff_turbina1	36	
mc_turbina1	88	
pr_turbina2	72	
eff_turbina2	26	
mc_turbina2	52	
<b>TOTAL</b>	<b>34</b>	<b>0</b>
<b>Acierto</b>		<b>44</b>

Tabla 8.1.1.41: Degradación eficiencia compresor 2 -4% (I)

Eficiencia compresor 2 -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.376536062	0.376536062	
eff_fancore	-0.038648405	0.038648405	
mc_fancore	-0.005347814	0.005347814	
pr_fanduct	-0.164389281	0.164389281	
eff_fanduct	0.318742809	0.318742809	
mc_fanduct	0.022774826	0.022774826	
pr_compresor1	-0.130790636	0.130790636	
eff_compresor1	-0.377273375	0.377273375	
mc_compresor1	0	0	
pr_compresor2	1.879468311	1.879468311	
eff_compresor2	-5.233680844	1.233680844	130.842021
mc_compresor2	0.248027646	0.248027646	
pr_turbina1	-0.072423646	0.072423646	
eff_turbina1	0.578267019	0.578267019	
mc_turbina1	-0.046785493	0.046785493	
pr_turbina2	0.24171588	0.24171588	
eff_turbina2	0.009954669	0.009954669	
mc_turbina2	0.078318151	0.078318151	
<b>Error máquinas degradadas</b>		<b>1.233680844</b>	
<b>Error máquinas no degradadas</b>		<b>0.269968472</b>	
<b>Error TOTAL</b>		<b>0.323508048</b>	

Tabla 8.1.1.42: Degradación eficiencia compresor 2 -4% (II)

Eficiencia compresor 2 -7%	Falso positivo (%)	Falso negativo (%)
pr_fancore	64	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	34	
eff_fanduct	58	
mc_fanduct	0	
pr_compresor1	84	
eff_compresor1	8	
mc_compresor1	0	
pr_compresor2	16	
eff_compresor2		0
mc_compresor2	66	
pr_turbina1	74	
eff_turbina1	26	
mc_turbina1	20	
pr_turbina2	86	
eff_turbina2	48	
mc_turbina2	66	
<b>TOTAL</b>	<b>38.23529412</b>	<b>0</b>
<b>Acierto</b>		<b>86</b>

Tabla 8.1.1.43: Degradación eficiencia compresor 2 -7% (I)

Eficiencia compresor 2 -7%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	1.201779926	1.201779926	
eff_fancore	-0.147024937	0.147024937	
mc_fancore	0.007955301	0.007955301	
pr_fanduct	-0.009524653	0.009524653	
eff_fanduct	-0.11131523	0.11131523	
mc_fanduct	0.00472023	0.00472023	
pr_compresor1	0.295567548	0.295567548	
eff_compresor1	0.091774869	0.091774869	
mc_compresor1	0	0	
pr_compresor2	0.264681478	0.264681478	
eff_compresor2	-7.16909008	0.16909008	102.415573
mc_compresor2	-0.053143252	0.053143252	
pr_turbina1	-0.327794071	0.327794071	
eff_turbina1	0.439263604	0.439263604	
mc_turbina1	-0.264820697	0.264820697	
pr_turbina2	0.02001325	0.02001325	
eff_turbina2	0.150617815	0.150617815	
mc_turbina2	0.038300735	0.038300735	
<b>Error máquinas degradadas</b>		<b>0.16909008</b>	
<b>Error máquinas no degradadas</b>		<b>0.201664564</b>	
<b>Error TOTAL</b>		<b>0.199854871</b>	

Tabla 8.1.1.44: Degradación eficiencia compresor 2 -7% (II)

Eficiencia turbina 1 -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore	40	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	20	
eff_fanduct	46	
mc_fanduct	0	
pr_compresor1	4	
eff_compresor1	58	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	6	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1		0
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>10.23529412</b>	<b>0</b>
<b>Acierto</b>		<b>100</b>

Tabla 8.1.1.45: Degradación eficiencia turbina 1 -1% (I)

Eficiencia turbina 1 -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.14071928	0.14071928	
eff_fancore	0.024711952	0.024711952	
mc_fancore	-0.003513379	0.003513379	
pr_fanduct	-0.10436226	0.10436226	
eff_fanduct	0.198187383	0.198187383	
mc_fanduct	0.013538131	0.013538131	
pr_compresor1	0.064333319	0.064333319	
eff_compresor1	-0.163599155	0.163599155	
mc_compresor1	0	0	
pr_compresor2	0.069818131	0.069818131	
eff_compresor2	0.120613319	0.120613319	
mc_compresor2	0.06929421	0.06929421	
pr_turbina1	0.00395383	0.00395383	
eff_turbina1	-1.089758937	0.089758937	108.975894
mc_turbina1	0	0	
pr_turbina2	0.004448418	0.004448418	
eff_turbina2	-0.011299897	0.011299897	
mc_turbina2	0	0	
<b>Error máquinas degradadas</b>		<b>0.089758937</b>	
<b>Error máquinas no degradadas</b>		<b>0.058376039</b>	
<b>Error TOTAL</b>		<b>0.060119533</b>	

Tabla 8.1.1.46: Degradación eficiencia turbina 1 -1% (II)

Eficiencia turbina 1 -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore	24	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	2	
eff_fanduct	32	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	40	
mc_compresor1	0	
pr_compresor2	50	
eff_compresor2	30	
mc_compresor2	68	
pr_turbina1	0	
eff_turbina1		0
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>14.47058824</b>	<b>0</b>
<b>Acierto</b>		<b>100</b>

Tabla 8.1.1.47: Degradación eficiencia turbina 1 -4% (I)

Eficiencia turbina 1 -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.103174875	0.103174875	
eff_fancore	-0.018059547	0.018059547	
mc_fancore	0.002351256	0.002351256	
pr_fanduct	0.043390034	0.043390034	
eff_fanduct	-0.080467199	0.080467199	
mc_fanduct	-0.005449531	0.005449531	
pr_compresor1	-0.035219942	0.035219942	
eff_compresor1	0.133060676	0.133060676	
mc_compresor1	0	0	
pr_compresor2	0.132474612	0.132474612	
eff_compresor2	-0.096531705	0.096531705	
mc_compresor2	0.251839407	0.251839407	
pr_turbina1	-0.001296242	0.001296242	
eff_turbina1	-4.30950774	0.30950774	107.737693
mc_turbina1	0	0	
pr_turbina2	-0.001127707	0.001127707	
eff_turbina2	0.001981964	0.001981964	
mc_turbina2	0	0	
<b>Error máquinas degradadas</b>		<b>0.30950774</b>	
<b>Error máquinas no degradadas</b>		<b>0.0533191</b>	
<b>Error TOTAL</b>		<b>0.067551802</b>	

Tabla 8.1.1.48: Degradación eficiencia turbina 1 -4% (II)

Eficiencia turbina 1 -7%	Falso positivo (%)	Falso negativo (%)
pr_fancore	2	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	30	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	4	
eff_compresor1	10	
mc_compresor1	0	
pr_compresor2	66	
eff_compresor2	26	
mc_compresor2	0	
pr_turbina1	88	
eff_turbina1		0
mc_turbina1	66	
pr_turbina2	2	
eff_turbina2	0	
mc_turbina2	2	
<b>TOTAL</b>	<b>17.41176471</b>	<b>0</b>
<b>Acierto</b>		<b>22</b>

Tabla 8.1.1.49: Degradación eficiencia turbina 1 -7% (I)

Eficiencia turbina 1 -7%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.193268427	0.193268427	
eff_fancore	0.058125272	0.058125272	
mc_fancore	-0.001095416	0.001095416	
pr_fanduct	-0.078525131	0.078525131	
eff_fanduct	-0.045290349	0.045290349	
mc_fanduct	0.020915942	0.020915942	
pr_compresor1	-0.234035452	0.234035452	
eff_compresor1	-0.481403246	0.481403246	
mc_compresor1	0	0	
pr_compresor2	0.275255106	0.275255106	
eff_compresor2	0.489494347	0.489494347	
mc_compresor2	-0.011370367	0.011370367	
pr_turbina1	1.453660363	1.453660363	
eff_turbina1	-9.031418433	2.031418433	129.020263
mc_turbina1	1.361102462	1.361102462	
pr_turbina2	0.013298708	0.013298708	
eff_turbina2	-0.025194388	0.025194388	
mc_turbina2	-0.019615566	0.019615566	
<b>Error máquinas degradadas</b>		<b>2.031418433</b>	
<b>Error máquinas no degradadas</b>		<b>0.280097091</b>	
<b>Error TOTAL</b>		<b>0.377392721</b>	

Tabla 8.1.1.50: Degradación eficiencia turbina 1 -7% (II)



Flujo corregido turbina 1 -2%	Falso positivo (%)	Falso negativo (%)
pr_fancore	12	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	4	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1		0
pr_turbina2	52	
eff_turbina2	46	
mc_turbina2	52	
<b>TOTAL</b>	<b>9.764705882</b>	<b>0</b>
<b>Acierto</b>		<b>100</b>

Tabla 8.1.1.51: Degradación flujo corregido turbina 1 -2% (I)

Flujo corregido turbina 1 -2%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.00135086	0.00135086	
eff_fancore	-0.00154187	0.00154187	
mc_fancore	1.74063E-05	1.74063E-05	
pr_fanduct	0.004280922	0.004280922	
eff_fanduct	-0.011914124	0.011914124	
mc_fanduct	-0.000422853	0.000422853	
pr_compresor1	0.064877809	0.064877809	
eff_compresor1	0.05976394	0.05976394	
mc_compresor1	0	0	
pr_compresor2	0	0	
eff_compresor2	0.037973284	0.037973284	
mc_compresor2	-0.001178999	0.001178999	
pr_turbina1	0	0	
eff_turbina1	0.005460856	0.005460856	
mc_turbina1	-1.403248233	0.596751767	70.1624117
pr_turbina2	0.21842489	0.21842489	
eff_turbina2	0.17412933	0.17412933	
mc_turbina2	0.226236583	0.226236583	
<b>Error máquinas degradadas</b>		<b>0.596751767</b>	
<b>Error máquinas no degradadas</b>		<b>0.047504337</b>	
<b>Error TOTAL</b>		<b>0.078018083</b>	

Tabla 8.1.1.52: Degradación flujo corregido turbina 1 -2% (II)

Flujo corregido turbina 1 -5%	Falso positivo (%)	Falso negativo (%)
pr_fancore	2	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	30	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1		0
pr_turbina2	40	
eff_turbina2	32	
mc_turbina2	42	
<b>TOTAL</b>	<b>8.588235294</b>	<b>0</b>
<b>Acierto</b>		<b>100</b>

Tabla 8.1.1.53: Degradación flujo corregido turbina 1 -5% (I)

Flujo corregido turbina 1 -5%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.00533964	0.00533964	
eff_fancore	-0.004615316	0.004615316	
mc_fancore	-3.77779E-06	3.77779E-06	
pr_fanduct	-0.006469628	0.006469628	
eff_fanduct	0.010534442	0.010534442	
mc_fanduct	0.000302666	0.000302666	
pr_compresor1	-0.185393169	0.185393169	
eff_compresor1	-0.053769585	0.053769585	
mc_compresor1	0	0	
pr_compresor2	0	0	
eff_compresor2	-0.065290994	0.065290994	
mc_compresor2	0.006003663	0.006003663	
pr_turbina1	0	0	
eff_turbina1	0.004231434	0.004231434	
mc_turbina1	-4.767660276	0.232339724	95.3532055
pr_turbina2	0.192709598	0.192709598	
eff_turbina2	0.161753421	0.161753421	
mc_turbina2	0.213660471	0.213660471	
<b>Error máquinas degradadas</b>		<b>0.232339724</b>	
<b>Error máquinas no degradadas</b>		<b>0.053533989</b>	
<b>Error TOTAL</b>		<b>0.063467641</b>	

Tabla 8.1.1.54: Degradación flujo corregido turbina 1 -5% (II)

Flujo corregido turbina 1 2%	Falso positivo (%)	Falso negativo (%)
pr_fancore	50	
eff_fancore	38	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	2	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1		0
pr_turbina2	56	
eff_turbina2	44	
mc_turbina2	60	
TOTAL	14.70588235	0
Acierto		100

Tabla 8.1.1.55: Degradación flujo corregido turbina 1 2% (I)

Flujo corregido turbina 1 2%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.18732281	0.18732281	
eff_fancore	0.11739226	0.11739226	
mc_fancore	-0.006087558	0.006087558	
pr_fanduct	0.006152809	0.006152809	
eff_fanduct	-0.010283087	0.010283087	
mc_fanduct	0.000879453	0.000879453	
pr_compresor1	-0.029239791	0.029239791	
eff_compresor1	0.001253241	0.001253241	
mc_compresor1	0	0	
pr_compresor2	0	0	
eff_compresor2	-0.015521326	0.015521326	
mc_compresor2	-0.000555519	0.000555519	
pr_turbina1	0	0	
eff_turbina1	0.002569649	0.002569649	
mc_turbina1	1.432559791	0.567440209	71.627989
pr_turbina2	-0.074403933	0.074403933	
eff_turbina2	-0.059914023	0.059914023	
mc_turbina2	-0.080078683	0.080078683	
Error máquinas degradadas		0.567440209	
Error máquinas no degradadas		0.034803185	
Error TOTAL		0.064394131	

Tabla 8.1.1.56: Degradación flujo corregido turbina 1 2% (II)

Flujo corregido turbina 1 2%	Falso positivo (%)	Falso negativo (%)
pr_fancore	44	
eff_fancore	24	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1		0
pr_turbina2	60	
eff_turbina2	50	
mc_turbina2	62	
<b>TOTAL</b>	<b>14.11764706</b>	<b>0</b>
<b>Acierto</b>		<b>96</b>

Tabla 8.1.1.57: Degradación flujo corregido turbina 1 5% (I)

Flujo corregido turbina 1 5%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.436549696	0.436549696	
eff_fancore	-0.273978767	0.273978767	
mc_fancore	0.020732627	0.020732627	
pr_fanduct	-0.015797104	0.015797104	
eff_fanduct	0.029943954	0.029943954	
mc_fanduct	-0.003189796	0.003189796	
pr_compresor1	-0.006116146	0.006116146	
eff_compresor1	0.003621473	0.003621473	
mc_compresor1	0	0	
pr_compresor2	0	0	
eff_compresor2	0.005280509	0.005280509	
mc_compresor2	-0.0050639	0.0050639	
pr_turbina1	0	0	
eff_turbina1	0.010347799	0.010347799	
mc_turbina1	4.513984238	0.486015762	90.2796848
pr_turbina2	0.149746859	0.149746859	
eff_turbina2	0.130789949	0.130789949	
mc_turbina2	0.177696387	0.177696387	
<b>Error máquinas degradadas</b>		<b>0.486015762</b>	
<b>Error máquinas no degradadas</b>		<b>0.074638527</b>	
<b>Error TOTAL</b>		<b>0.097492818</b>	

Tabla 8.1.1.58: Degradación flujo corregido turbina 1 5% (II)

Eficiencia turbina 2 -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	12	
eff_fanduct	34	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	66	
mc_compresor1	0	
pr_compresor2	92	
eff_compresor2	88	
mc_compresor2	74	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2		0
mc_turbina2	0	
TOTAL	21.52941176	0
Acierto		100

Tabla 8.1.1.59: Degradación eficiencia turbina 2 -1% (I)

Eficiencia turbina 2 -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.004310597	0.004310597	
eff_fancore	-0.010223878	0.010223878	
mc_fancore	0.000685649	0.000685649	
pr_fanduct	0.042315519	0.042315519	
eff_fanduct	-0.078702606	0.078702606	
mc_fanduct	-0.006024028	0.006024028	
pr_compresor1	-0.007340363	0.007340363	
eff_compresor1	0.167693968	0.167693968	
mc_compresor1	0	0	
pr_compresor2	0.716800722	0.716800722	
eff_compresor2	-0.491993979	0.491993979	
mc_compresor2	0.190736992	0.190736992	
pr_turbina1	-0.003108691	0.003108691	
eff_turbina1	0.000333827	0.000333827	
mc_turbina1	0	0	
pr_turbina2	-0.004449917	0.004449917	
eff_turbina2	-1.000508029	0.000508029	100.050803
mc_turbina2	0	0	
Error máquinas degradadas		0.000508029	
Error máquinas no degradadas		0.101454161	
Error TOTAL		0.095846042	

Tabla 8.1.1.60: Degradación eficiencia turbina 2 -1% (II)

Eficiencia turbina 2 -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	4	
eff_fanduct	22	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	64	
mc_compresor1	0	
pr_compresor2	96	
eff_compresor2	94	
mc_compresor2	70	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2		0
mc_turbina2	0	
TOTAL	20.58823529	0
Acierto		100

Tabla 8.1.1.61: Degradación eficiencia turbina 2 -4% (I)

Eficiencia turbina 2 -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.002795733	0.002795733	
eff_fancore	-0.001339794	0.001339794	
mc_fancore	-2.92006E-05	2.92006E-05	
pr_fanduct	0.002050868	0.002050868	
eff_fanduct	-0.00314649	0.00314649	
mc_fanduct	-0.000268217	0.000268217	
pr_compresor1	0.005103756	0.005103756	
eff_compresor1	-0.052789658	0.052789658	
mc_compresor1	0	0	
pr_compresor2	-0.306855322	0.306855322	
eff_compresor2	0.209519223	0.209519223	
mc_compresor2	-0.081878567	0.081878567	
pr_turbina1	0.001793354	0.001793354	
eff_turbina1	-0.001327286	0.001327286	
mc_turbina1	0	0	
pr_turbina2	0.000449021	0.000449021	
eff_turbina2	-3.995633892	0.004366108	99.8908473
mc_turbina2	0	0	
Error máquinas degradadas		0.004366108	
Error máquinas no degradadas		0.039373323	
Error TOTAL		0.037428478	

Tabla 8.1.1.62: Degradación eficiencia turbina 2 -4% (II)

Eficiencia turbina 2 -7%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	6	
eff_compresor1	24	
mc_compresor1	0	
pr_compresor2	26	
eff_compresor2	36	
mc_compresor2	0	
pr_turbina1	48	
eff_turbina1	22	
mc_turbina1	42	
pr_turbina2	80	
eff_turbina2		0
mc_turbina2	68	
TOTAL	20.70588235	0
Acierto		80

Tabla 8.1.1.63: Degradación eficiencia turbina 2 -7% (I)

Eficiencia turbina 2 -7%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.010715778	0.010715778	
eff_fancore	0.007385702	0.007385702	
mc_fancore	-0.001191756	0.001191756	
pr_fanduct	-0.003181949	0.003181949	
eff_fanduct	-0.028159165	0.028159165	
mc_fanduct	0.001920169	0.001920169	
pr_compresor1	0.144001224	0.144001224	
eff_compresor1	0.571310152	0.571310152	
mc_compresor1	-0.024609757	0.024609757	
pr_compresor2	-0.078656548	0.078656548	
eff_compresor2	-0.02681047	0.02681047	
mc_compresor2	0	0	
pr_turbina1	-0.358113651	0.358113651	
eff_turbina1	0.080042177	0.080042177	
mc_turbina1	-0.18148807	0.18148807	
pr_turbina2	-0.193064185	0.193064185	
eff_turbina2	-7.000580478	0.000580478	100.008293
mc_turbina2	-0.138121088	0.138121088	
Error máquinas degradadas		0.000580478	
Error máquinas no degradadas		0.108751285	
Error TOTAL		0.102741796	

Tabla 8.1.1.64: Degradación eficiencia turbina 2 -7% (II)

Para cada uno de los casos estudiados hay tres tablas:

- La primera es la que se encuentra el [Anexo A](#) en la que se muestran los resultados que se obtienen con GSP para 50 medidas con ruido. En ella aparecen el grado de degradación para cada parámetro del motor, así como una clasificación por colores de los resultados en función de las reglas presentadas anteriormente.
- La segunda tabla está formada por tres columnas, en la primera se indica el parámetro, en la segunda el tanto por ciento de falsos positivos de dicho parámetro, y en la tercera el porcentaje de falsos negativos en los parámetros degradados. También se muestran en las dos últimas filas el porcentaje total de falsos positivos y negativos, así como el de acierto del grado de degradación.
- Por último, la tercera tabla, formada por cuatro columnas, la primera de nuevo indica el parámetro, la segunda el valor medio de las 50 mediciones, la tercera muestra el error en valor absoluto de dicho valor medio, la última columna muestra el acierto del grado de degradación en tanto por ciento, considerando 0% si no se detecta degradación y 100% si detecta la degradación correctamente. Hay que tener en cuenta que este valor puede ser mayor que 100% si GPA detecta una degradación mayor de la que en realidad se tiene.

En cuanto a los resultados obtenidos con el Gas Path Analysis, excluyendo de este análisis los casos que, como se comentó anteriormente no lograron converger se puede decir:

- De los tres tipos de parámetros presentes en este análisis, es decir, relación de compresión, eficiencia y flujo corregido, los mejores resultados se obtienen para los casos en los que se está analizando la degradación en la eficiencia siendo en cambio malos cuando se quiere analizar el flujo corregido.
- Si se tiene en cuenta la turbomáquina que se degrada, es decir, fan, compresor o turbina, se puede ver que el fan y el fan duct son los que mejores resultados obtienen; mientras que el compresor de alta y la turbina de baja (compresor 2 y turbina 2 respectivamente) proporcionan los peores resultados.
- Por otro lado, teniendo en cuenta el grado de degradación, generalmente cuanto mayor es éste mejores son los resultados aunque hay casos en los que, al aumentar mucho la degradación, el programa no logra converger.
- Otro aspecto interesante es, que es habitual que al aumentar el grado de degradación aumente el número de falsos positivos aunque el porcentaje de acierto sea mayor.
- El número de iteraciones antes de converger está entre dos y cinco.
- Cada uno de los casos mostrados requiere en torno a dos horas, aunque esto depende del caso y sobretodo del número de iteraciones. Por lo tanto, las tablas mostradas hasta ahora requieren unas 64 horas de trabajo con Matlab.

Todos estos resultados pueden verse con mayor facilidad en las tablas resumen que se muestran a continuación.



Falsos Positivos (%)	-1%	-4%	-7%
Pr fancore	5.882352941	7.411764706	5.411764706
Eff fancore	39.375	36.75	24.125
Mc fancore	-	-	-
Pr fanduct	9.647058824	23.05882353	-
Eff fanduct	5.764705882	5.529411765	6.470588235
Mc fanduct	-	-	-
Pr compresor 1	12.47058824	25.52941176	24.47058824
Eff compresor 1	9.058823529	6.235294118	0
Mc compresor 1	-	-	-
Pr compresor 2	-	-	-
Eff compresor 2	21.29411765	34	38.23529412
Mc compresor 2	9.764705882	8	-
Eff turbina 1	10.23529412	14.47058824	17.41176471
Eff turbina 2	21.52941176	20.58823529	20.70588235

Falsos Positivos (%)	-2%	-5%	2%	5%
Pr turbina 1	-	-	-	-
Mc turbina 1	9.764705882	8.588235294	14.70588235	14.11764706
Pr turbina 2	-	-	-	-
Mc turbina 2	-	-	-	-

Tabla 8.1.1.65: Porcentaje de falsos positivos en función del caso

Acierto (%)	-1%	-4%	-7%
Pr fancore	99.11049978	87.4010912	87.89118423
Eff fancore	68.91004636	87.03552373	100.8174198
Mc fancore	-	-	-
Pr fanduct	101.037328	73.0929141	-
Eff fanduct	97.8074432	99.5512141	99.4790068
Mc fanduct	-	-	-
Pr compresor 1	36.59434145	53.0972038	56.55790183
Eff compresor 1	81.99032745	99.68939807	99.00244525
Mc compresor 1	-	-	-
Pr compresor 2	-	-	-
Eff compresor 2	30.42547	130.842021	102.415573
Mc compresor 2	53.4632745	88.2530698	-
Eff turbina 1	108.975894	107.737693	129.020263
Eff turbina 2	100.050803	99.8908473	100.008293

Acierto (%)	-2%	-5%	2%	5%
Pr turbina 1	-	-	-	-
Mc turbina 1	70.1624117	95.3532055	71.6279895	90.2796848
Pr turbina 2	-	-	-	-
Mc turbina 2	-	-	-	-

Tabla 8.1.1.66: Porcentaje de acierto en función del caso

## 8.1.2 Optimización

Una vez mostrados los resultados obtenidos se pasan a analizar algunos de los casos mostrados anteriormente mediante el método de optimización. Se han elegido cuatro casos para realizar dicho análisis, uno con el que se obtenían muy buenos resultados con GSP, la eficiencia del fanduct; dos con los que se obtenían resultados aceptables con GSP, la relación de compresión del fancore y la eficiencia del fancore; y uno con el que GSP no lograba converger, el flujo corregido de la turbina 2.

En cuanto al ruido, se ha seguido el mismo que para GSP. La única diferencia es que se ha reducido el número de medidas pasando de 50 a 30 debido a que, como se verá más adelante, este método requiere más tiempo para su ejecución.

Las tablas en las que se muestran las 30 medidas para cada caso se pueden encontrar en el [Anexo B](#).

Se presentan a continuación dos tablas con el mismo formato que en el caso del Gas Path Analysis con el porcentaje de falsos positivos, falsos negativos y aciertos para cada uno de los cuatro casos propuestos.

Relación de compresión fancore -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore		0
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	0	0
Acierto		100

Tabla 8.1.2.1: Degradación relación de compresión fancore -1% (I)

Relación de compresión fancore -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.958151301	0.041848699	95.8151301
eff_fancore	-0.339078039	0.339078039	
mc_fancore	-0.256592377	0.256592377	
pr_fanduct	0.014995474	0.014995474	
eff_fanduct	0.002216601	0.002216601	
mc_fanduct	0.001919069	0.001919069	
pr_compresor1	0.021525666	0.021525666	
eff_compresor1	0.013736775	0.013736775	
mc_compresor1	-0.011051944	0.011051944	
pr_compresor2	0.012456093	0.012456093	
eff_compresor2	-0.006151881	0.006151881	
mc_compresor2	0.011452622	0.011452622	
pr_turbina1	-0.017883721	0.017883721	
eff_turbina1	0.029822646	0.029822646	
mc_turbina1	0.009262295	0.009262295	
pr_turbina2	-0.002331688	0.002331688	
eff_turbina2	-0.01421329	0.01421329	
mc_turbina2	-0.005518344	0.005518344	
Error máquinas degradadas		0.041848699	
Error máquinas no degradadas		0.045306384	
Error TOTAL		0.04511429	

Tabla 8.1.2.2: Degradación relación de compresión fancore -1% (II)

Relación de compresión fancore -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore		0
eff_fancore	100	
mc_fancore	96.66666667	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	11.56862745	0
Acierto		100

Tabla 8.1.2.3: Degradación relación de compresión fancore -4% (I)

Relación de compresión fancore -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-3.781242254	0.218757746	94.5310563
eff_fancore	-1.437013164	1.437013164	
mc_fancore	-0.967038407	0.967038407	
pr_fanduct	0.011139235	0.011139235	
eff_fanduct	-0.001021618	0.001021618	
mc_fanduct	-0.007755901	0.007755901	
pr_compresor1	-0.091039165	0.091039165	
eff_compresor1	0.058011388	0.058011388	
mc_compresor1	-0.161965826	0.161965826	
pr_compresor2	0.124973836	0.124973836	
eff_compresor2	-0.406477526	0.406477526	
mc_compresor2	-0.283275973	0.283275973	
pr_turbina1	-0.003866458	0.003866458	
eff_turbina1	-0.007213284	0.007213284	
mc_turbina1	-0.012703408	0.012703408	
pr_turbina2	0.016601754	0.016601754	
eff_turbina2	-0.057981016	0.057981016	
mc_turbina2	-0.038116805	0.038116805	
Error máquinas degradadas		0.218757746	
Error máquinas no degradadas		0.216834986	
Error TOTAL		0.216941806	

Tabla 8.1.2.4: Degradación relación de compresión fancore -4% (II)

Relación de compresión fancore -7%	Falso positivo (%)	Falso negativo (%)
pr_fancore		0
eff_fancore	100	
mc_fancore	100	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	100	
mc_compresor2	26.66666667	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>19.21568627</b>	<b>0</b>
<b>Acierto</b>		<b>30</b>

Tabla 8.1.2.5: Degradación relación de compresión fancore -7% (I)

Relación de compresión fancore -7%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-5.954063988	1.045936012	85.058057
eff_fancore	-2.4014417	2.4014417	
mc_fancore	-1.721608484	1.721608484	
pr_fanduct	-0.017642375	0.017642375	
eff_fanduct	0.004180321	0.004180321	
mc_fanduct	-0.020092824	0.020092824	
pr_compresor1	-0.152646547	0.152646547	
eff_compresor1	0.311256142	0.311256142	
mc_compresor1	-0.400245217	0.400245217	
pr_compresor2	0.321890579	0.321890579	
eff_compresor2	-1.334864113	1.334864113	
mc_compresor2	-0.719705036	0.719705036	
pr_turbina1	-0.00198586	0.00198586	
eff_turbina1	0.012876739	0.012876739	
mc_turbina1	-0.029759304	0.029759304	
pr_turbina2	-0.004457292	0.004457292	
eff_turbina2	-0.14666479	0.14666479	
mc_turbina2	-0.06500037	0.06500037	
<b>Error máquinas degradadas</b>		<b>1.045936012</b>	
<b>Error máquinas no degradadas</b>		<b>0.450959864</b>	
<b>Error TOTAL</b>		<b>0.484014095</b>	

Tabla 8.1.2.6: Degradación relación de compresión fancore -7% (II)

Eficiencia fanduct -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct		0
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	0	0
Acierto		100

Tabla 8.1.2.7: Degradación eficiencia fanduct -1% (I)

Eficiencia fanduct -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.003523995	0.003523995	
eff_fancore	-0.002730703	0.002730703	
mc_fancore	-0.024409908	0.024409908	
pr_fanduct	-0.016832832	0.016832832	
eff_fanduct	-0.9753348	0.0246652	97.53347998
mc_fanduct	0.015358192	0.015358192	
pr_compresor1	0.196501262	0.196501262	
eff_compresor1	0.000318436	0.000318436	
mc_compresor1	-0.049734568	0.049734568	
pr_compresor2	-0.012504361	0.012504361	
eff_compresor2	0.002982758	0.002982758	
mc_compresor2	-0.006513357	0.006513357	
pr_turbina1	0.021845134	0.021845134	
eff_turbina1	-0.011445358	0.011445358	
mc_turbina1	-0.007491461	0.007491461	
pr_turbina2	-0.006598476	0.006598476	
eff_turbina2	0.000219343	0.000219343	
mc_turbina2	0.005020633	0.005020633	
Error máquinas degradadas		0.0246652	
Error máquinas no degradadas		0.022590046	
Error TOTAL		0.022705332	

Tabla 8.1.2.8: Degradación eficiencia fanduct -1% (II)

Eficiencia fanduct -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct		0
mc_fanduct	0	
pr_compresor1	73.33333333	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	4.31372549	0
Acierto		100

Tabla 8.1.2.9: Degradación eficiencia fanduct -4% (I)

Eficiencia fanduct -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.010387806	0.010387806	
eff_fancore	0.026039352	0.026039352	
mc_fancore	0.017231412	0.017231412	
pr_fanduct	-0.011810339	0.011810339	
eff_fanduct	-4.008405901	0.008405901	100.2101475
mc_fanduct	0.012544184	0.012544184	
pr_compresor1	0.862079657	0.862079657	
eff_compresor1	-0.001512065	0.001512065	
mc_compresor1	-0.161799025	0.161799025	
pr_compresor2	-0.013112762	0.013112762	
eff_compresor2	-0.031650199	0.031650199	
mc_compresor2	-0.005520889	0.005520889	
pr_turbina1	-0.026104915	0.026104915	
eff_turbina1	-0.00426524	0.00426524	
mc_turbina1	0.023576894	0.023576894	
pr_turbina2	0.00167148	0.00167148	
eff_turbina2	0.007971227	0.007971227	
mc_turbina2	0.006579192	0.006579192	
Error máquinas degradadas		0.008405901	
Error máquinas no degradadas		0.071991567	
Error TOTAL		0.06845903	

Tabla 8.1.2.10: Degradación eficiencia fanduct -4% (II)

Eficiencia fanduct -7%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	50	
eff_fanduct		0
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
<b>TOTAL</b>	<b>2.941176471</b>	<b>0</b>
<b>Acierto</b>		<b>0</b>

Tabla 8.1.2.11: Degradación eficiencia fanduct -7% (I)

Eficiencia fanduct -7%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.005216543	0.005216543	
eff_fancore	-0.006825112	0.006825112	
mc_fancore	0.023569593	0.023569593	
pr_fanduct	0.837367419	0.837367419	
eff_fanduct	-7.062136923	0.062136923	100.8876703
mc_fanduct	-0.005810088	0.005810088	
pr_compresor1	-0.031449808	0.031449808	
eff_compresor1	0.009786415	0.009786415	
mc_compresor1	-0.293941182	0.293941182	
pr_compresor2	-0.002434215	0.002434215	
eff_compresor2	-0.013780888	0.013780888	
mc_compresor2	-0.00692	0.00692	
pr_turbina1	-0.001121245	0.001121245	
eff_turbina1	-0.002807917	0.002807917	
mc_turbina1	0.028201741	0.028201741	
pr_turbina2	0.007948238	0.007948238	
eff_turbina2	-0.003285805	0.003285805	
mc_turbina2	-0.016320435	0.016320435	
<b>Error máquinas degradadas</b>		<b>0.062136923</b>	
<b>Error máquinas no degradadas</b>		<b>0.076281567</b>	
<b>Error TOTAL</b>		<b>0.075495754</b>	

Tabla 8.1.2.12: Degradación eficiencia fanduct -7% (II)



Eficiencia compresor 1 -1%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1		0
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	0	0
Acierto		100

Tabla 8.12.13: Degradación eficiencia compresor 1 -1% (I)

Eficiencia compresor 1 -1%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.000674952	0.000674952	
eff_fancore	0.0005835	0.0005835	
mc_fancore	0.000562802	0.000562802	
pr_fanduct	0.0006416	0.0006416	
eff_fanduct	0.000266869	0.000266869	
mc_fanduct	4.02323E-05	4.02323E-05	
pr_compresor1	0.206229195	0.206229195	
eff_compresor1	-0.966814792	0.033185208	96.68147918
mc_compresor1	-0.041858177	0.041858177	
pr_compresor2	-0.000873659	0.000873659	
eff_compresor2	0.000557789	0.000557789	
mc_compresor2	0.000743804	0.000743804	
pr_turbina1	0.001430885	0.001430885	
eff_turbina1	-0.000542899	0.000542899	
mc_turbina1	0.000318661	0.000318661	
pr_turbina2	0.000936277	0.000936277	
eff_turbina2	-0.000147179	0.000147179	
mc_turbina2	0.000527225	0.000527225	
Error máquinas degradadas		0.033185208	
Error máquinas no degradadas		0.015113865	
Error TOTAL		0.016117829	

Tabla 8.12.14: Degradación eficiencia compresor 1 -1% (II)

Eficiencia compresor 1 -4%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	100	
eff_compresor1		0
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	5.882352941	0
Acierto		100

Tabla 8.12.15: Degradación eficiencia compresor 1 -4% (I)

Eficiencia compresor 1 -4%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.002932998	0.002932998	
eff_fancore	0.001856689	0.001856689	
mc_fancore	-0.0012815	0.0012815	
pr_fanduct	-0.001688288	0.001688288	
eff_fanduct	-0.000159971	0.000159971	
mc_fanduct	-0.000154264	0.000154264	
pr_compresor1	0.84943899	0.84943899	
eff_compresor1	-4.001038591	0.001038591	100.0259648
mc_compresor1	-0.1759525	0.1759525	
pr_compresor2	0.002064491	0.002064491	
eff_compresor2	0.001404844	0.001404844	
mc_compresor2	0.000736281	0.000736281	
pr_turbina1	-0.003139656	0.003139656	
eff_turbina1	0.002383196	0.002383196	
mc_turbina1	-0.000554261	0.000554261	
pr_turbina2	-0.002314297	0.002314297	
eff_turbina2	0.000541316	0.000541316	
mc_turbina2	-0.000656841	0.000656841	
Error máquinas degradadas		0.001038591	
Error máquinas no degradadas		0.061603552	
Error TOTAL		0.058238832	

Tabla 8.12.160.1: Degradación eficiencia compresor 1 -4% (II)

Eficiencia compresor 1 -7%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	100	
eff_compresor1		0
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2	0	
TOTAL	5.757651	0
Acierto		100

Tabla 8.12.17: Degradación eficiencia compresor 1 -7% (I)

Eficiencia compresor 1 -7%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.003198991	0.003198991	
eff_fancore	-0.004722108	0.004722108	
mc_fancore	-0.0019099	0.0019099	
pr_fanduct	-0.000567604	0.000567604	
eff_fanduct	-0.002056837	0.002056837	
mc_fanduct	-0.000909023	0.000909023	
pr_compresor1	1.53705821	1.53705821	
eff_compresor1	-7.23258692	0.23258692	103.3226703
mc_compresor1	-0.316248445	0.316248445	
pr_compresor2	0.000372201	0.000372201	
eff_compresor2	0.000322934	0.000322934	
mc_compresor2	-0.000233953	0.000233953	
pr_turbina1	-0.005679488	0.005679488	
eff_turbina1	0.001802282	0.001802282	
mc_turbina1	-0.001219423	0.001219423	
pr_turbina2	-0.003313976	0.003313976	
eff_turbina2	-0.000760605	0.000760605	
mc_turbina2	-0.001630807	0.001630807	
Error máquinas degradadas		0.23258692	
Error máquinas no degradadas		0.110706282	
Error TOTAL		0.117477428	

Tabla 8.12.180.2: Degradación eficiencia compresor 1 -7% (II)

Flujo corregido turbina 2 -2%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2		0
TOTAL	0	0
Acierto		100

Tabla 8.12.19: Degradación flujo corregido turbina -2% (I)

Flujo corregido turbina 2 -2%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.001516424	0.001516424	
eff_fancore	-0.000430999	0.000430999	
mc_fancore	-0.000434487	0.000434487	
pr_fanduct	-0.000401485	0.000401485	
eff_fanduct	-0.002734384	0.002734384	
mc_fanduct	-3.34986E-06	3.34986E-06	
pr_compresor1	-0.012536036	0.012536036	
eff_compresor1	0.062295024	0.062295024	
mc_compresor1	0.005154535	0.005154535	
pr_compresor2	-0.010494814	0.010494814	
eff_compresor2	-0.001090463	0.001090463	
mc_compresor2	-0.065799731	0.065799731	
pr_turbina1	-0.000952415	0.000952415	
eff_turbina1	0.022532611	0.022532611	
mc_turbina1	0.005716081	0.005716081	
pr_turbina2	0.487812021	0.487812021	
eff_turbina2	0.073768427	0.073768427	
mc_turbina2	-1.898558692	0.101441308	94.92793461
Error máquinas degradadas		0.101441308	
Error máquinas no degradadas		0.044333723	
Error TOTAL		0.047506366	

Tabla 8.12.20: Degradación flujo corregido turbina -2% (II)

Flujo corregido turbina 2 -5%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	100	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	100	
eff_turbina2	0	
mc_turbina2		0
<b>TOTAL</b>	<b>11.76470588</b>	<b>0</b>
<b>Acierto</b>		<b>100</b>

Tabla 8.12.21: Degradación flujo corregido turbina -5% (I)

Flujo corregido turbina 2 -5%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	0.005200206	0.005200206	
eff_fancore	-0.001540853	0.001540853	
mc_fancore	-0.004217402	0.004217402	
pr_fanduct	-0.011489563	0.011489563	
eff_fanduct	-0.020625556	0.020625556	
mc_fanduct	0.00073072	0.00073072	
pr_compresor1	0.302343484	0.302343484	
eff_compresor1	-1.268496587	1.268496587	
mc_compresor1	0.11830715	0.11830715	
pr_compresor2	-0.061133359	0.061133359	
eff_compresor2	-0.008500661	0.008500661	
mc_compresor2	-0.436882367	0.436882367	
pr_turbina1	-0.000881343	0.000881343	
eff_turbina1	0.07396234	0.07396234	
mc_turbina1	-0.0716603	0.0716603	
pr_turbina2	1.242529229	1.242529229	
eff_turbina2	0.189978	0.189978	
mc_turbina2	-4.854493993	0.854493993	121.3623498
<b>Error máquinas degradadas</b>		<b>0.854493993</b>	
<b>Error máquinas no degradadas</b>		<b>0.224616419</b>	
<b>Error TOTAL</b>		<b>0.259609617</b>	

Tabla 8.12.22: Degradación flujo corregido turbina -5% (II)

Flujo corregido turbina 2 2%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	0	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	0	
eff_turbina2	0	
mc_turbina2		96.66666667
TOTAL	0	96.66666667
Acierto		100

Tabla 8.12.23: Degradación flujo corregido turbina 2% (I)

Flujo corregido turbina 2 2%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.004410892	0.004410892	
eff_fancore	-0.016890408	0.016890408	
mc_fancore	0.00458421	0.00458421	
pr_fanduct	-0.004847581	0.004847581	
eff_fanduct	-0.01782118	0.01782118	
mc_fanduct	0.004545161	0.004545161	
pr_compresor1	-0.024875522	0.024875522	
eff_compresor1	-0.020213979	0.020213979	
mc_compresor1	-0.14675785	0.14675785	
pr_compresor2	0.060243417	0.060243417	
eff_compresor2	-0.2617977	0.2617977	
mc_compresor2	-0.106751547	0.106751547	
pr_turbina1	-0.001125462	0.001125462	
eff_turbina1	0.023298268	0.023298268	
mc_turbina1	0.005009026	0.005009026	
pr_turbina2	-0.475044562	0.475044562	
eff_turbina2	-0.075271018	0.075271018	
mc_turbina2	1.846475854	0.153524146	92.32379271
Error máquinas degradadas		0.153524146	
Error máquinas no degradadas		0.073734576	
Error TOTAL		0.078167329	

Tabla 8.12.24: Degradación flujo corregido turbina 2% (II)

Flujo corregido turbina 2 5%	Falso positivo (%)	Falso negativo (%)
pr_fancore	0	
eff_fancore	0	
mc_fancore	0	
pr_fanduct	0	
eff_fanduct	0	
mc_fanduct	0	
pr_compresor1	0	
eff_compresor1	0	
mc_compresor1	0	
pr_compresor2	0	
eff_compresor2	100	
mc_compresor2	0	
pr_turbina1	0	
eff_turbina1	0	
mc_turbina1	0	
pr_turbina2	100	
eff_turbina2	0	
mc_turbina2		96.66666667
<b>TOTAL</b>	<b>11.76470588</b>	<b>96.66666667</b>
<b>Acierto</b>		<b>100</b>

Tabla 8.12.25: Degradación flujo corregido turbina 5% (I)

Flujo corregido turbina 2 5%	Valor medio	Error medio absoluto	Acierto (%)
pr_fancore	-0.004687128	0.004687128	
eff_fancore	-0.045091392	0.045091392	
mc_fancore	0.010295834	0.010295834	
pr_fanduct	-0.016204408	0.016204408	
eff_fanduct	-0.045977634	0.045977634	
mc_fanduct	0.013337478	0.013337478	
pr_compresor1	-0.098813417	0.098813417	
eff_compresor1	0.037251882	0.037251882	
mc_compresor1	-0.433811207	0.433811207	
pr_compresor2	0.419872765	0.419872765	
eff_compresor2	-1.658686146	1.658686146	
mc_compresor2	-0.528072607	0.528072607	
pr_turbina1	-0.011958213	0.011958213	
eff_turbina1	0.122334175	0.122334175	
mc_turbina1	0.020714954	0.020714954	
pr_turbina2	-1.16483539	1.16483539	
eff_turbina2	-0.208876753	0.208876753	
mc_turbina2	4.513799036	0.486200964	90.27598073
<b>Error máquinas degradadas</b>		<b>0.486200964</b>	
<b>Error máquinas no degradadas</b>		<b>0.284754199</b>	
<b>Error TOTAL</b>		<b>0.295945686</b>	

Tabla 8.12.26: Degradación flujo corregido turbina 5% (II)

En la siguiente tabla se muestra una comparación entre el porcentaje de falsos positivos y de aciertos para los casos propuestos.

Caso	Falsos positivos GPA	Falsos positivos optimización	Acierto GPA	Acierto optimización
-1% pr fancore	5.882352941	0	99.11049978	95.8151301
-4% pr fancore	7.411764706	11.56862745	87.4010912	94.5310563
-7% pr fancore	5.411764706	19.21568627	87.89118423	85.058057
-1% eff fanduct	5.764705882	0	97.8074432	97.53347998
-4% eff fanduct	5.529411765	4.31372549	99.5512141	100.2101475
-7% eff fanduct	6.470588235	2.941176471	99.4790068	100.8876703
-1% eff compresor 1	9.058823529	0	30.42547	96.68147918
-4% eff compresor 1	6.235294118	5.882352941	130.842021	100.0259648
-7% eff compresor 1	0	5.757651	102.415573	103.3226703
-2% mc turbina 2	-	0	-	94.92793461
-5% mc turbina 2	-	11.76470588	-	121.3623498
2% mc turbina 2	-	0	-	92.32379271
5% mc turbina 2	-	11.76470588	-	90.27598073

Tabla 8.1.2.27: Comparación entra GPA y optimización

Una vez expuestos estos resultados se puede decir lo siguiente.

- Los cuatro casos propuestos convergen, incluso el flujo corregido de la turbina 2 que no convergía con el Gas Path Analysis.
- En cuanto al porcentaje de falsos positivos, aunque hay casos para los que se obtenían mejores resultados con GPA, en general el método de optimización proporciona un porcentaje menor de falsos positivos.
- Ocurre algo similar con el porcentaje de acierto, en general se obtienen mejores resultados con el método de optimización.
- El número de iteraciones necesarios para la convergencia está entre dos y cuatro, siendo en general menor que con el método del Gas Path Analysis.
- El tiempo necesario para la ejecución de cada caso está en torno a las tres horas, por lo que teniendo en cuenta además que el número de medidas se ha bajado de 50 a 30, se puede ver que el método de optimización es bastante más lento que GPA.
- En general se puede decir que los resultados obtenidos para los casos en los que sólo un parámetro es degradado con el método de optimización son mejores que los obtenidos con el Gas Path Analysis, además el número de iteraciones necesarios para la convergencia es menor; el principal inconveniente es que el tiempo necesario para dicha convergencia es mayor. Por lo tanto, a la hora de elegir entre ambos métodos hay que decidir entre la velocidad y la bondad de los resultados.



## 8.2 Casos con dos fallos

Se analizan ahora algunos casos en los que la degradación aparece en dos parámetros simultáneamente. Como la casuística en el caso de dos fallos simultáneos es enorme, se analizarán sólo ciertas situaciones.

### 8.2.1 Gas Path Analysis

Se realiza primero el análisis con GPA. Se van a analizar 25 casos variando los distintos parámetros analizados en el apartado anterior.

Para cada una de las 25 combinaciones se analizan tres casos, uno en el que uno de los parámetros se degrada mucho mientras que el otro se degrada poco (-2% y -5%), otro que se hace al contrario (-5% y -2%), y un tercero en el que ambos parámetros se degradan por igual (-4% y -4%). Para las situaciones en los que uno de los parámetros sea la relación de compresión o el flujo corregido de una de las turbinas, a los tres casos anteriores se añade un cuarto (4% y -4%). Algunas de las tablas con 50 medidas de ruido para casos con dos fallos simultáneos se muestran en el [Anexo C](#).

<b>Caso 1:</b> Pr fancore Pr fanduct	<b>Caso 2:</b> Pr fancore Eff fanduct	<b>Caso 3:</b> Pr fancore Pr compresor 1	<b>Caso 4:</b> Pr fancore Eff compresor 1	<b>Caso 5:</b> Pr fancore Eff turbina 1
<b>Caso 6:</b> Pr fancore Eff turbina 2	<b>Caso 7:</b> Eff fancore Pr fanduct	<b>Caso 8:</b> Eff fancore Eff fanduct	<b>Caso 9:</b> Eff fancore Pr compresor 1	<b>Caso 10:</b> Eff fancore Eff compresor 1
<b>Caso 11:</b> Eff fancore Eff turbina 1	<b>Caso 12:</b> Eff fancore Eff turbina 2	<b>Caso 13:</b> Pr fanduct Pr compresor 1	<b>Caso 14:</b> Pr fanduct Eff compresor 1	<b>Caso 15:</b> Pr fanduct Eff turbina 1
<b>Caso 16:</b> Pr fanduct Eff turbina 2	<b>Caso 17:</b> Eff fanduct Pr compresor 1	<b>Caso 18:</b> Eff fanduct Eff compresor 1	<b>Caso 19:</b> Eff fanduct Eff turbina 1	<b>Caso 20:</b> Eff fanduct Eff turbina 2
<b>Caso 21:</b> Pr compresor 1 Eff turbina 1	<b>Caso 22:</b> Pr compresor 1 Eff turbina 2	<b>Caso 23:</b> Eff compresor 1 Eff turbina 1	<b>Caso 24:</b> Eff compresor 1 Eff turbina 2	<b>Caso 25:</b> Eff compresor 1 Mc turbina 1

Tabla 8.2.1.1: Casos GPA con dos fallos

Se muestran a continuación una serie de tablas con el porcentaje de falsos positivos, de falsos negativos y el de acierto. Estas tablas están simplificadas respecto a las mostradas en los apartados anteriores debido al gran volumen de datos que supondría mostrarlas todas.

Caso	Falsos positivos [%]	Falsos negativos [%]	Acierto 1 <sup>er</sup> parámetro [%]	Acierto 2 <sup>o</sup> parámetro [%]
Caso 1 (-2 y -5%)	11.625	0	111.25	80.17
Caso 1 (-5 y -2%)	9.875	0	104.43	76.32
Caso 1 (-4 y -4%)	19.375	0	102.46	101.89
Caso 2 (-2 y -5%)	10.125	0	89.97	102.68
Caso 2 (-5 y -2%)	7	0	88.79	107.3
Caso 2 (-4 y -4%)	13.375	0	93.24	107.3
Caso 3 (-2 y -5%)	8.125	0	108.01	96.12
Caso 3 (-5 y -2%)	7	1	96.22	94.35
Caso 3 (-4 y -4%)	12.125	0	74.15	106.39
Caso 4 (-2 y -5%)	7.75	0	96.61	97.37
Caso 4 (-5 y -2%)	6.625	1	87.36	95.25
Caso 4 (-4 y -4%)	7.5	0	86.81	94.46
Caso 5 (-2 y -5%)	27.75	0	95.14	127.29
Caso 5 (-5 y -2%)	10	0	93.81	111.09
Caso 5 (-4 y -4%)	24.625	0	88.96	104.49
Caso 6 (-2 y -5%)	22.875	0	110.27	124.26
Caso 6 (-5 y -2%)	26.75	0	97.06	106.89
Caso 6 (-4 y -4%)	35.125	0	100.34	105.22
Caso 7 (-2 y -5%)	8.75	0	112.23	99.62
Caso 7 (-5 y -2%)	8.375	0	104.76	99.39
Caso 7 (-4 y -4%)	8.875	0	109.31	97.91
Caso 8 (-2 y -5%)	8.5	0	100.14	101.64
Caso 8 (-5 y -2%)	9.25	0	100.38	104.99
Caso 8 (-4 y -4%)	10.75	0	100.2	103.56
Caso 9 (-2 y -5%)	8.125	0	99.74	58.6
Caso 9 (-5 y -2%)	8.25	0	100.11	97.36
Caso 9 (-4 y -4%)	12.875	0	100.04	61.76
Caso 10 (-2 y -5%)	7.25	0	100.5	95.45
Caso 10 (-5 y -2%)	7.125	0	100.44	93.37
Caso 10 (-4 y -4%)	7.375	0	100.12	96.36
Caso 11 (-2 y -5%)	13.875	0	100.49	137.13
Caso 11 (-5 y -2%)	9.625	0	99.97	110.02
Caso 11 (-4 y -4%)	14	0	100.24	136.41
Caso 12 (-2 y -5%)	8.875	0	93.78	119.68
Caso 12 (-5 y -2%)	15.5	0	99.18	101.43
Caso 12 (-4 y -4%)	6	0	98.08	99.56
Caso 13 (-2 y -5%)	23.75	30	31.84	56.04
Caso 13 (-5 y -2%)	46.125	57	30.16	30.97
Caso 13 (-4 y -4%)	25.875	100	12.32	1.12
Caso 14 (-2 y -5%)	17.5	50	1.18	105.19
Caso 14 (-5 y -2%)	25.375	5	21.46	103.58
Caso 14 (-4 y -4%)	18.75	29	13.11	88.74
Caso 15 (-2 y -5%)	29.375	50	18.95	108.21
Caso 16 (-2 y -5%)	32.5	14	59.51	289.37
Caso 16 (-5 y -2%)	45.625	29	18.72	139.89
Caso 16 (-4 y -4%)	32.625	12	20.51	58.43

Caso 17 (-2 y -5%)	19.875	43	110.61	50.39
Caso 17 (-5 y -2%)	23.334	30	101.08	31.6
Caso 17 (-4 y -4%)	21.5	0	101.05	40.49
Caso 18 (-2 y -5%)	8.625	0	102.59	92.43
Caso 18 (-5 y -2%)	6	1	100.36	83.28
Caso 18 (-4 y -4%)	8.25	0	103.02	84.35
Caso 19 (-2 y -5%)	27	0	73.7	126.6
Caso 19 (-5 y -2%)	38	15	101.5	14.25
Caso 19 (-4 y -4%)	34.37	4	95.11	88.36
Caso 20 (-2 y -5%)	14.625	9	60.24	130.92
Caso 20 (-5 y -2%)	39	0	98.68	159.22
Caso 20 (-4 y -4%)	46	0	60.55	198.78
Caso 21 (-2 y -5%)	40	0	65.82	115.73
Caso 21 (-5 y -2%)	11.875	3	29.12	108.07
Caso 21 (-4 y -4%)	56.25	0	57.7	109.97
Caso 22 (-2 y -5%)	37.75	0	61.13	99.58
Caso 22 (-5 y -2%)	9.5	18	25.28	103.2
Caso 22 (-4 y -4%)	12.875	1	63.09	111.53
Caso 23 (-2 y -5%)	30.74	0	361.85	116.71
Caso 23 (-5 y -2%)	14.375	0	113.44	108.79
Caso 23 (-4 y -4%)	23	0	166.9	110.01
Caso 24 (-2 y -5%)	44	0	109.84	99.42
Caso 24 (-5 y -2%)	15.375	0	93.72	99.58
Caso 24 (-4 y -4%)	36.125	0	59.28	99.65
Caso 25 (-2 y -5%)	13.375	1	89.11	95.36
Caso 25 (-5 y -2%)	11.375	0	99.49	70.12
Caso 25 (-4 y -4%)	7	0	110.52	104
Caso 25 (-4 y 4%)	56.125	57	54.99	179.72

Tabla 8.2.1.2: Casos de degradación de dos parámetros (GPA)

Observando estos resultados y los de las tablas presentadas posteriormente en el [Anexo C](#), se puede decir que los resultados obtenidos con el método GPA para casos con dos fallos simultáneos:

- Se han excluido de este análisis los parámetros del apartado [8.1.1](#) para los que se obtenían resultados muy malos o que directamente no convergían.
- Los peores resultados se obtienen cuando alguno de los parámetros implicados es una relación de compresión o un flujo corregido.
- Los mejores resultados se obtienen cuando uno de los parámetros degradados pertenece al fancore (flujo primario); mientras que se obtienen peores resultados si uno de los parámetros degradados pertenece al compresor 2 (compresor de alta) y a la turbina 2 (turbina de baja).

- Se obtienen mejores resultados cuando las degradaciones son importantes al igual que ocurría en los casos en los que sólo había un parámetro degradado.
- El número de falsos positivos aumenta, siendo este problema especialmente delicado en los parámetros relacionados con el compresor 2 (compresor de alta) y a la turbina 2 (turbina de baja).
- La aparición de falsos negativos también aumenta con respecto al caso de un solo parámetros degradado.
- El número de iteraciones para converger no aumenta con respecto al caso de un único parámetro degradado.
- Por otro lado, el tiempo necesario para la obtención de los resultados aumenta. Se produce un ligero incremento en el tiempo necesario para la convergencia de cada una de las 50 medidas que provoca un aumento total de unos 15 minutos para la convergencia de cada caso.
- En el caso 15, degradación de la relación de compresión del fancore y de la eficiencia de la turbina 1, sólo aparece uno de las tres situaciones, ya que en las otras dos no se ha logrado la convergencia.
- En general los resultados empeoran frente a los obtenidos con un único fallo, ya que aumenta el número de falsos positivos y falsos negativos; mientras que la precisión en el acierto del grado de degradación de los parámetros afectados disminuye. Por otro lado, los peores resultados continúan obteniéndose para el compresor 2 y la turbina 2.
- Se puede decir que el método del Gas Path Analysis, aunque hay casos logra acertar tienen bastantes carencias a la hora de detectar los fallos en casos con dos degradaciones simultáneas.

## 8.2.2 Optimización

En este apartado se compara el método de optimización con el Gas Path Analysis para casos en los que se produce la degradación simultánea en dos parámetros. No se van a comparar todos los casos expuestos en el apartado anterior, sino que se han elegido cuatro: caso 10, caso 16 y caso 19; mientras que el cuarto caso no se había analizado con GSP ya que no convergía, pero se va a probar si el método de optimización logra que converja, este caso es el de la degradación simultánea de la relación de compresión del fancore y del flujo corregido de la turbina 1. Este caso será denotado como caso 26.

Al igual que se hizo en el apartado [8.1.2](#), se introducen 30 medidas de ruido debido a que este método es más lento que GSP.

Caso	Falsos positivos [%]	Falsos negativos [%]	Acierto 1 <sup>er</sup> parámetro [%]	Acierto 2 <sup>o</sup> parámetro [%]
Caso 10 (-2 y -5%)	6.25	0	82.47	100.27
Caso 10 (-5 y -2%)	6.25	0	85.07	94.81
Caso 10 (-4 y -4%)	12.08	3.33	81.15	94.83
Caso 16 (-2 y -5%)	0	0	62.92	99.53
Caso 16 (-5 y -2%)	0	0	71.25	98.89
Caso 16 (-4 y -4%)	0	0	63.65	99.13
Caso 19 (-2 y -5%)	6.25	0	71.24	100
Caso 19 (-5 y -2%)	6.66	0	84.91	101.88
Caso 19 (-4 y -4%)	6.66	0	83.76	101.09
Caso 26 (-2 y -5%)	29.16	0	90.18	99.95
Caso 26 (-5 y -2%)	22.7	0	45.63	127.88
Caso 26 (-4 y -4%)	37.08	3.33	25.91	108.25
Caso 26 (-4 y 4%)	18.75	50	25.6	92.53

Tabla 8.2.2.1: Casos de degradación de dos parámetros (optimización)

De los resultados obtenidos se puede decir:

- Son mejores que los obtenidos con el método de Gas Path Analysis, al igual que ocurría en los casos de un único parámetro degradado.
- El caso que no convergía con GSP converge con este método
- El número de falsos positivos y falsos negativos disminuye.
- Aumenta el porcentaje de acierto de los parámetros degradados.
- En cuanto al tiempo necesario para la ejecución de cada caso sigue siendo superior al del GSP; mientras que el número de iteraciones es similar.

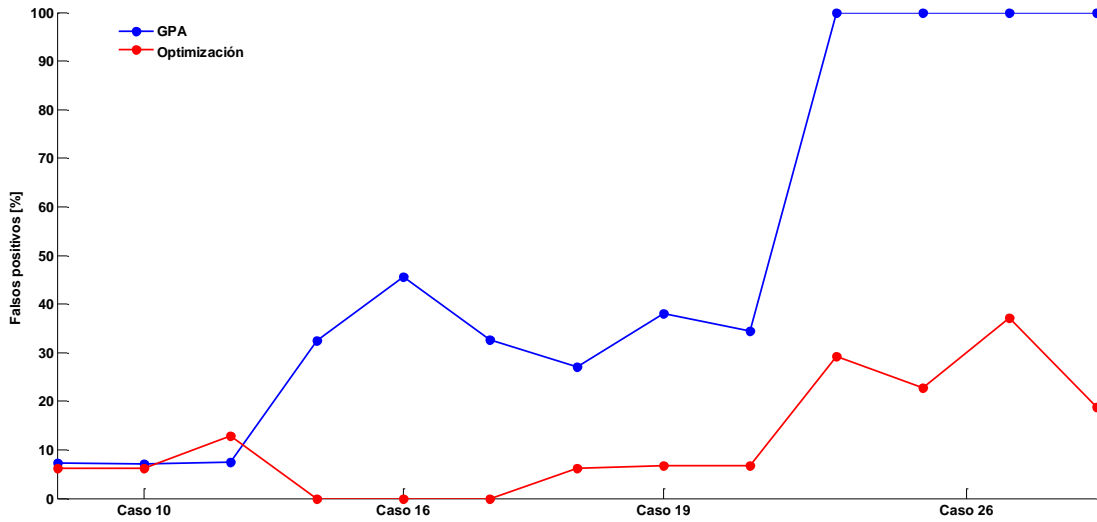


Ilustración 8.2.2.1: Comparación falsos positivos GPA y optimización para dos parámetros degradados

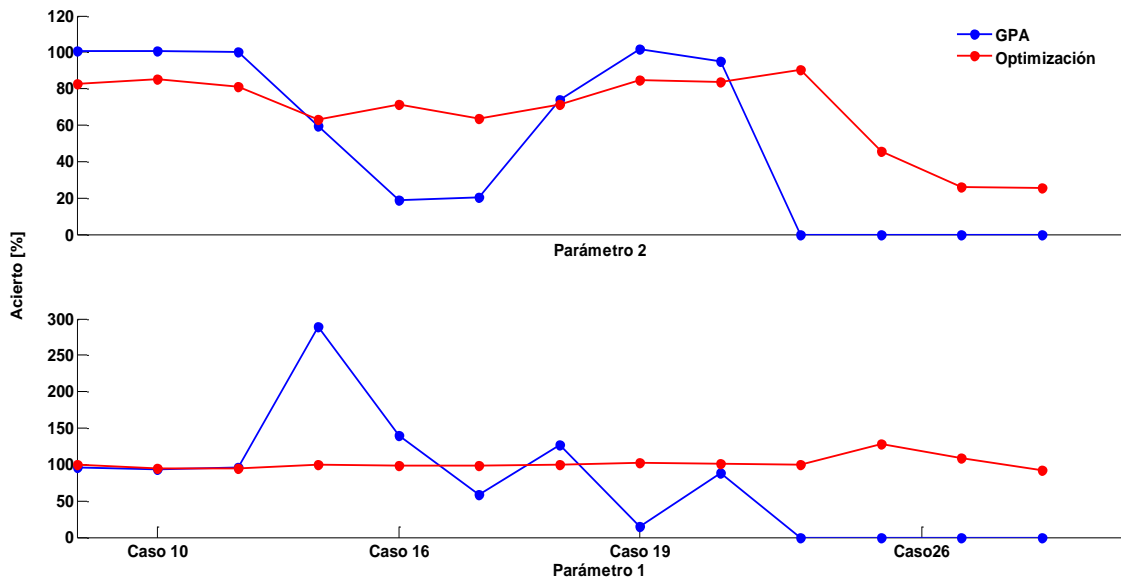


Ilustración 8.2.2.2: Comparación acierto GPA y optimización para dos parámetros degradados

- Se muestran sobre estas líneas dos gráficas en las que se puede ver que el método de optimización es el que logra mejores resultados. En la primera gráfica se muestra el porcentaje de falsos positivos, cuanto más cercana a cero esté esta línea, indica que se han obtenido mejores resultados al número de falsos positivos; la segunda gráfica muestra el porcentaje de acierto de cada parámetro, cuanto más cerca de la recta verde (acierto del 100%) se encuentre la línea, indica que se han obtenido mejores resultados en cuanto al porcentaje de acierto.
- En estas gráficas se puede ver, por un lado, que aparecen menos falsos positivos, y por el otro, que el porcentaje de acierto está más cercano al 100% que en el caso del Gas Path Analysis.

## 8.3 Casos con tres fallos

### 8.3.2 Gas Path Analysis

Para terminar con este estudio, se van a analizar varios casos en los que son tres los parámetros en los que aparece degradación simultáneamente. Los casos analizados son los siguientes:

- Caso A: relación de compresión fancore, eficiencia fancore y eficiencia fanduct.
- Caso B: eficiencia fancore, eficiencia fanduct y eficiencia compresor 1.
- Caso C: relación de compresión fancore, relación de compresión compresor 1 y eficiencia turbina 2.
- Caso D: eficiencia fancore, relación de compresión compresor 1 y eficiencia turbina 2.

Para cada uno de estos casos se analizan cuatro combinaciones de las posibles degradaciones que son: [-2, -5 y -5%], [-5, -2 y -5%], [-5, -5 y -2%] y [-4, -4 y -4%].

En el [Anexo E](#) se muestran las tablas de resultados de 50 medidas con ruido.

Realizando un análisis análogo al expuesto para las situaciones con uno o dos parámetros degradados se obtienen los siguientes resultados, los cuales se muestran resumidos.

Caso	Falsos positivos [%]	Falsos negativos [%]
Caso A (-2, -5 y -5%)	32.667	4
Caso A (-5, -2 y -5%)	21.8667	24
Caso A (-5, -5 y -2%)	25.334	5.334
Caso A (-4, -4 y -4%)	19.8667	6
Caso B (-2, -5 y -5%)	42.5334	0
Caso B (-5, -2 y -5%)	35.2	0
Caso B (-5, -5 y -2%)	37.4667	0
Caso B (-4, -4 y -4%)	31.334	0
Caso C (-2, -5 y -5%)	20.5334	43.334
Caso C (-5, -2 y -5%)	26	9.334
Caso C (-5, -5 y -2%)	25.4667	16.667
Caso C (-4, -4 y -4%)	40.9334	32.667
Caso D (-2, -5 y -5%)	14.13334	8
Caso D (-5, -2 y -4%)	19.8667	0.667
Caso D (-5, -5 y -2%)	13.0667	12
Caso D (-4, -4 y -4%)	21.0667	0.667

Tabla 8.3.1.1: Falsos positivos y falsos negativos casos tres degradaciones simultáneas (GSP)

Caso	Acierto 1 <sup>er</sup> parámetro	Acierto 2 <sup>o</sup> parámetro	Acierto 3 <sup>er</sup> parámetro
Caso A (-2, -5 y -5%)	117.57	97.51	128.59
Caso A (-5, -2 y -5%)	13.9	77.04	109.82
Caso A (-5, -5 y -2%)	64.18	101.69	144.11
Caso A (-4, -4 y -4%)	65.75	100.54	110.69
Caso B (-2, -5 y -5%)	71.72	120.56	108.1
Caso B (-5, -2 y -5%)	98.85	130.58	90.13
Caso B (-5, -5 y -2%)	121.79	120.69	129.99
Caso B (-4, -4 y -4%)	100.26	99.82	111.86
Caso C (-2, -5 y -5%)	361.25	92.77	29.66
Caso C (-5, -2 y -5%)	126.81	115.11	103.97
Caso C (-5, -5 y -2%)	19.5	67.67	117.71
Caso C (-4, -4 y -4%)	282.51	36.04	47.7
Caso D (-2, -5 y -5%)	75.08	82.56	47.35
Caso D (-5, -2 y -4%)	101.58	121.87	116.96
Caso D (-5, -5 y -2%)	104.53	81.97	70.38
Caso D (-4, -4 y -4%)	102.67	54.96	104.87

Tabla 8.3.1.2: Porcentaje de acierto casos tres degradaciones simultáneas (GSP)

En la tabla superior el orden de los parámetros es el mismo que se utilizó cuando se presentaron los cuatro casos, por ejemplo: para el caso A el primer parámetro es la relación de compresión del fancore, el segundo la eficiencia del fancore y el tercero la eficiencia del fanduct.

En cuanto a los resultados obtenidos, se ha producido un aumento tanto del número de falsos negativos como el de falsos positivos con respecto a las situaciones con uno o dos parámetros degradados. Esto demuestra que el método del Gas Path Analysis obtiene resultados aceptables cuando sólo hay un parámetro degradado, pero que al aumentar el número de parámetros degradados los resultados comienzan a empeorar claramente. Por otro lado, el porcentaje de acierto no es nada bueno, existiendo parámetros cuyos errores son superiores el 100%, lo cual es totalmente inaceptable cuando se trabaja con elementos tan delicados como el motor de un avión.



### 8.3.3 Optimización

Queda por último, estudiar el comportamiento del método de optimización para los casos en los que aparece degradación en tres parámetros simultáneamente para posteriormente compararlo con GPA.

Para realizar este estudio, se van a analizar dos de los casos estudiados con el método del Gas Path Analysis, estos son los casos B y D. En el [Anexo F](#) se encuentran las tablas correspondientes a ambos casos en las que aparecen las 30 medidas con ruido empleadas en este análisis.

Se presentan a continuación unas tablas similares a las mostradas en el apartado anterior en las que se muestran los porcentajes de falsos positivos, falsos negativos y acierto de los casos bajo estudio.

Caso	Falsos positivos [%]	Falsos negativos [%]
Caso B (-2, -5 y -5%)	13.334	0
Caso B (-5, -2 y -5%)	14	0
Caso B (-5, -5 y -2%)	13.334	0
Caso B (-4, -4 y -4%)	6.667	0
Caso D (-2, -5 y -5%)	0	0
Caso D (-5, -2 y -5%)	0	0
Caso D (-5, -5 y -2%)	0	0
Caso D (-4, -4 y -4%)	0	0

Tabla 8.3.2.1: Falsos positivos y falsos negativos casos tres degradaciones simultáneas (optimización)

Caso	Acierto 1 <sup>er</sup> parámetro	Acierto 2 <sup>o</sup> parámetro	Acierto 3 <sup>er</sup> parámetro
Caso B (-2, -5 y -5%)	81.64	84.84	92.61
Caso B (-5, -2 y -5%)	84.77	82	95.2
Caso B (-5, -5 y -2%)	95.77	95.08	99.28
Caso B (-4, -4 y -4%)	99.63	106.42	99.91
Caso D (-2, -5 y -5%)	97.97	63.81	99.79
Caso D (-5, -2 y -5%)	98.88	56.65	99.97
Caso D (-5, -5 y -2%)	93.22	63.83	99.62
Caso D (-4, -4 y -4%)	99.17	77.13	99.79

Tabla 8.3.2.2: Porcentaje de acierto casos tres degradaciones simultáneas (optimización)

Los resultados obtenidos con este método para los casos con tres degradaciones simultáneas son, de nuevo, mejores que los obtenidos con GPA. Esto se puede ver claramente en las dos gráficas mostradas bajo estas líneas en las que se ve que con el método de optimización se obtienen unos resultados mucho más aceptables, el problema es de nuevo el mismo, la necesidad de más tiempo para la obtención de los mismo respecto a GPA.

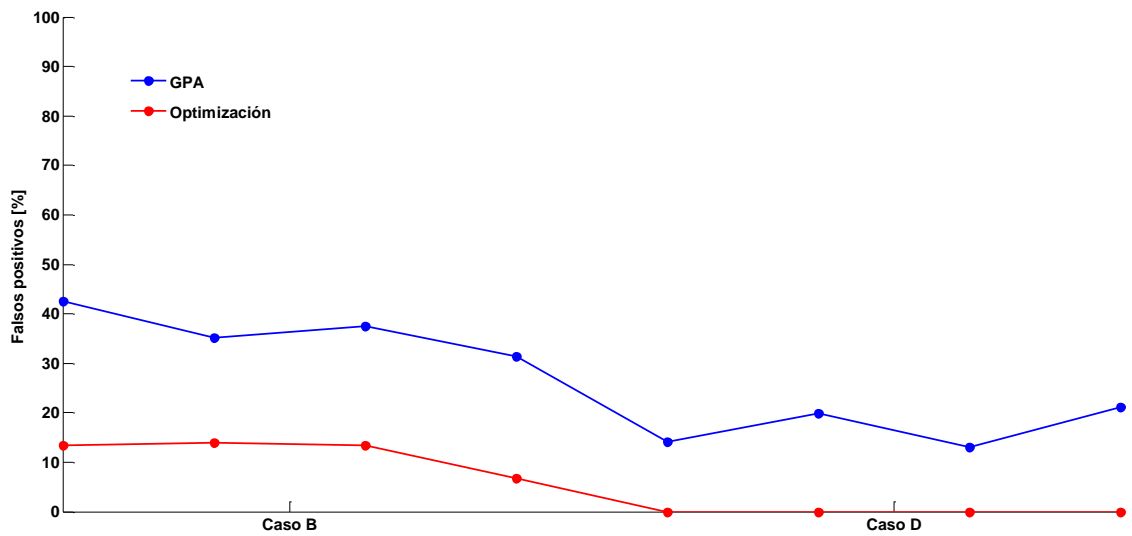


Ilustración 8.3.2.1: Comparación falsos positivos GPA y optimización para tres parámetros degradados

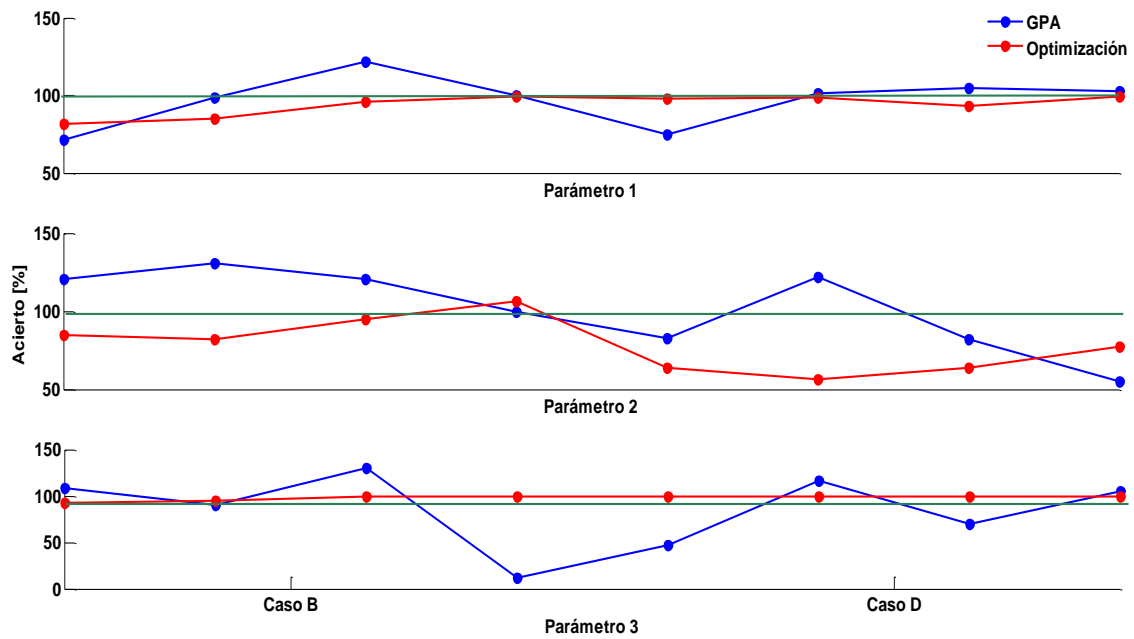


Ilustración 8.3.2.2: Comparación falsos positivos GPA y optimización para tres parámetros degradados

## 9. Conclusiones

Con la realización de este documento se han alcanzado una serie de conclusiones basadas en la necesidad de la búsqueda de un método para detección de la degradación de las distintas turbomáquinas que forman el motor del avión.

Para ello se han analizado dos métodos, el conocido como Gas Path Analysis o GPA y el método de optimización basado en la función *fmincon* de Matlab, habiéndose realizado este análisis para un motor turbofán biejé.

Una vez realizados los análisis necesarios y habiendo obtenido los resultados pertinentes teniendo en cuenta parámetros como la cantidad de falsos positivos y los falsos negativos o el acierto en el grado de degradación de cada turbomáquina, se ha llegado a la conclusión de que el método de optimización logra mejores resultados que el Gas Path Analysis; sin embargo, este método necesita más tiempo para la obtención de los resultados.

Por otro lado, en cuanto al número de parámetros degradados, cuando es únicamente uno el parámetro en el que aparece algún tipo de degradación, tanto los resultados del método de optimización como los del GPA son igual de correctos, por lo que si sólo un parámetro se viera afectado por la degradación habría que optar por el método del Gas Path Analysis, ya que es más rápido; en cambio, cuando la degradación aparece en más de un parámetro de forma simultánea, es el método de optimización el que proporciona unos resultados mucho más aceptables. Por lo tanto, ya que a priori no se puede saber la cantidad de parámetros que se van a ver afectados por la degradación, el método más aconsejable a emplear es el de optimización.

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## 11. Anexos

### 11.1 Anexo A

En este anexo se muestran los resultados obtenidos con GSP al degradar cada uno de los 18 parámetros del motor para el caso de tener 50 medidas con ruido.

Debido al gran tamaño de las tablas es necesario emplear dos páginas por cada tabla.

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
Degradación																									
pr_fancore	-0.99067741	-0.99063197	-0.99143479	-0.991672281	-0.99288831	-0.99111292	-0.99138847	-0.99841794	-0.99991867	-0.99961937	-0.991208198	-0.991046593	-0.991594073	-0.991986871	-0.991162004	-0.991468003	-0.99077892	-0.99126832	-0.99105988	-0.99198575	-0.993232072	-0.992578452	-0.99055717	-0.991135165	-0.9924281
eff_fancore	-0.099895411	-0.10008926	-0.09997867	-0.100181031	-0.0999663	-0.09947044	-0.10002715	-0.099682989	-0.099746257	-0.10002518	-0.09999888	-0.10005769	-0.099996261	-0.100032147	-0.100079391	-0.10009191	-0.100049507	-0.099833929	-0.10019739	-0.099961966	-0.09999256	-0.09980797	-0.099894778	-0.1001502	-0.10023502
mc_fancore	-0.10070752	-0.099994837	-0.1000005	-0.09999882	-0.09999755	-0.10000484	-0.09998724	-0.100025918	-0.10002158	-0.100018469	-0.09999888	-0.10005769	-0.099996261	-0.100032147	-0.10009191	-0.10009191	-0.09999872	-0.09998472	-0.100011884	-0.100006809	-0.10001055	-0.099898934	-0.09998097	-0.09996595	
pr_fenduct	-0.099350018	-0.10052952	-0.09993806	-0.10128247	-0.09989542	-0.099547497	-0.100211386	-0.09789463	-0.098094925	-0.10013893	-0.099402996	-0.100325749	-0.10036222	-0.09919398	-0.09891398	-0.100673308	-0.10016112	-0.098756468	-0.10129369	-0.0999927	-0.09922693	-0.09949319	-0.099189357	-0.100937843	-0.10171507
eff_fenduct	-0.099948252	-0.10003882	-0.09999647	-0.10000043	-0.09999207	-0.099663912	-0.100016075	-0.09981913	-0.099859641	-0.10000845	-0.099953894	-0.100023945	-0.100025445	-0.0999385	-0.099916081	-0.100054031	-0.10009973	-0.099980656	-0.10009973	-0.100001654	-0.09999798	-0.099936558	-0.100071126	-0.10013579	-0.10025394
pr_compressor1	-0.099869745	-0.10005624	-0.10001911	-0.100111373	-0.1000078	-0.099931836	-0.10003236	-0.099636238	-0.099704955	-0.09997301	-0.099901819	-0.10005696	-0.10006394	-0.099836319	-0.099836319	-0.10006685	-0.10001115	-0.099836493	-0.1002914	-0.100065485	-0.09979253	-0.09983656	-0.10001917	-0.10025394	-0.10025394
eff_compressor1	-1.01444703	-0.98951119	-0.9895288	-0.977321548	-0.9869108	-1.00616476	-0.98653882	-1.051045339	-1.037497766	-0.99786813	-1.014820829	-0.995648986	-0.992415888	-1.023570962	-1.024681644	-0.990793527	-0.996661018	-1.022574182	-0.96937042	-0.999129723	-1.022888413	-1.029351193	-1.02857516	-0.982828288	-0.9688254
mc_compressor1	-0.106511318	-0.0954522	-0.09912074	-0.091601896	-0.09892924	-0.10252562	-0.09890482	-0.122366491	-0.116039192	-0.09925372	-0.106816677	-0.098100276	-0.096633443	-0.111012848	-0.09651636	-0.09854394	-0.09595919	-0.08629561	-0.099326527	-0.110457745	-0.10356621	-0.109627056	-0.092756643	-0.0855322	-0.0855322
pr_compressor2	-0.09558842	-0.10315567	-0.10051053	-0.106462818	-0.10075113	-0.098417841	-0.101082254	-0.084583468	-0.08917942	-0.10050476	-0.095322311	-0.102321237	-0.09427314	-0.10011251	-0.09427314	-0.10247314	-0.09427314	-0.09427314	-0.09427314	-0.1047215	-0.092788654	-0.09759817	-0.09337347	-0.105033044	-0.10595951
eff_compressor2	-0.10172403	-0.09879816	-0.099931	-0.097488467	-0.099762	-0.100604136	-0.099620421	-0.10589782	-0.10429137	-0.09815158	-0.101815237	-0.095507578	-0.09913481	-0.09073136	-0.098617575	-0.102510238	-0.06395717	-0.102510238	-0.06395717	-0.09819667	-0.10271902	-0.10098155	-0.102501358	-0.098105306	-0.09620693
pr_turbina1	-0.09988449	-0.10006502	-0.0999926	-0.10002723	-0.09999084	-0.10001185	-0.10000445	-0.09994004	-0.09966618	-0.10000704	-0.099985797	-0.09999704	-0.09999582	-0.099962455	-0.09997084	-0.10008848	-0.099983644	-0.1000396	-0.10002919	-0.099967884	-0.09999653	-0.099967427	-0.100017473	-0.10002488	-0.10002488
eff_turbina1	-0.10000049	-0.099996449	-0.1000092	-0.099997187	-0.10000757	-0.099986531	-0.099997303	-0.10001774	-0.100001528	-0.09999838	-0.09999665	-0.10000495	-0.100003497	-0.100021609	-0.100007478	-0.100013025	-0.099995945	-0.099996793	-0.09998828	-0.100016298	-0.099996137	-0.100015204	-0.100000846	-0.10000545	-0.10000545
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	2.2528E-05	-4.5298E-06	-9.6384E-06	-2.9903E-05	-7.5203E-07	6.35654E-06	-4.3618E-07	6.2981E-05	4.4092E-05	-1.0058E-06	2.90832E-05	2.1124E-06	3.2282E-06	2.35975E-05	3.26639E-05	-1.24329E-05	-6.7258E-06	2.76112E-05	-3.7969E-05	-2.82748E-06	2.8088E-05	6.5737E-06	1.43427E-05	-2.51333E-05	-3.9697E-05
eff_turbina2	-4.27129E-05	3.2306E-05	5.1405E-06	8.8928E-05	-8.2875E-06	-3.1705E-06	-3.1705E-06	-0.000146622	-0.000129912	4.5282E-06	-4.07655E-05	2.0553E-05	2.0553E-05	-3.7672E-05	-6.51614E-05	4.67384E-05	2.00579E-06	8.07391E-05	7.744E-05	1.8189E-06	-4.0464E-05	5.2575E-05	-4.15608E-05	5.89307E-05	0.00011271
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Acierito	-0.99067741	-0.99063197	-0.99143479	-0.991672281	-0.99288831	-0.99111292	-0.99138847	-0.99841794	-0.99991867	-0.99961937	-0.991208198	-0.991046593	-0.991594073	-0.991986871	-0.991162004	-0.991468003	-0.99077892	-0.99126832	-0.99105988	-0.99198575	-0.993232072	-0.992578452	-0.99055717	-0.991135165	-0.9924281
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Tabla O.1: Degradación relación de compresión fancore 1% (l)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-0.99132085	-0.99155404	-0.99061716	-0.99069719	-0.99876604	-0.99101994	-0.99061793	-0.99083597	-0.99176538	-0.99012432	-0.98963807	-0.99179137	-0.99041753	-0.991594283	-0.99151763	-0.99136813	-0.99174046	-0.991063606	-0.990311652	-0.992018132	-0.991967521	-0.989863842	-0.99000015	-0.99030463	-0.99188423
-0.99993265	-0.99999985	-0.999595635	-0.999868247	-0.9999641	-0.99948654	-0.100041856	-0.9996258	-0.100001957	-0.9994632	-0.998660018	-0.100154157	-0.99964289	-0.100074267	-0.99990279	-0.10032409	-0.9994725	-0.100046197	-0.100019111	-0.99998872	-0.999902294	-0.99911161	-0.9998334	-0.10009292	-0.9998881
-0.100010564	-0.99999943	-0.100005688	-0.10001134	-0.10000682	-0.100003867	-0.99997291	-0.10000385	-0.99997013	-0.10000876	-0.10001557	-0.999986276	-0.100003636	-0.99992776	-0.100000592	-0.9997887	-0.100020253	-0.99996871	-0.10001203	-0.999999908	-0.100005024	-0.100010486	-0.10001655	-0.999983199	-0.10000552
-0.10056975	-0.9999298	-0.100220121	-0.100556693	-0.10024758	-0.10017843	-0.09971183	-0.10010701	-0.999897118	-0.100342998	-0.100649077	-0.99278963	-0.100083287	-0.999638876	-0.100662157	-0.9986384	-0.100292815	-0.999945603	-0.99946696	-0.999978573	-0.1000954953	-0.100412844	-0.10073585	-0.999603679	-0.10030384
-0.99957145	-0.10003519	-0.999568781	-0.99991608	-0.99955259	-0.99965764	-0.100524427	-0.99981044	-0.100187251	-0.999385062	-0.998812669	-0.101311107	-0.99985541	-0.100650251	-0.999889704	-0.10189206	-0.99956138	-0.10028518	-0.10009715	-0.100239842	-0.999357141	-0.99925255	-0.99866574	-0.100726491	-0.9994513
-0.999920635	-0.10000323	-0.99996524	-0.99992054	-0.99996289	-0.99975084	-0.100043045	-0.9998622	-0.10001519	-0.999950709	-0.100018311	-0.100103811	-0.999998463	-0.100051667	-0.999991049	-0.1001435	-0.99996509	-0.100020802	-0.100007373	-0.10000509	-0.999499661	-0.99940527	-0.99989557	-0.100055972	-0.9994513
-0.99973286	-0.9999756	-0.99987471	-0.99983028	-0.99989052	-0.999950498	-0.100025086	-0.9999706	-0.10007545	-0.99984811	-0.99738292	-0.100190459	-0.999933275	-0.100105471	-0.99993448	-0.10023595	-0.99995511	-0.100036489	-0.99952111	-0.100028406	-0.999992506	-0.999812904	-0.99974894	-0.10021764	-0.99955388
-1.02271089	-1.02027213	-1.012547088	-1.020832864	-1.00842574	-1.008334819	-0.993720217	-1.00662951	-0.996307857	-1.012179129	-1.030931622	-0.97631769	-1.0073564	-0.988306454	-0.99966291	-0.95986876	-1.00304171	-0.939805497	-0.999128634	-0.999240884	-1.001644249	-1.021576082	-1.02956859	-0.975450147	-1.0107837
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0.109917828	-0.10149119	-0.106183772	-0.108881029	-0.10345785	-0.103743867	-0.097752458	-0.09985439	-0.098129411	-0.10550802	-0.114238833	-0.090188183	-0.103556689	-0.09500071	-0.099815432	-0.08280324	-0.10066385	-0.097948195	-0.999843858	-0.99975946	-0.10161657	-0.110167976	-0.11313733	-0.088114331	-0.10445271
-0.093176987	-0.0939986	-0.095750618	-0.093861239	-0.0973824	-0.0974298	-0.101534015	-0.10006701	-0.101285341	-0.096176785	-0.09019278	-0.10679439	-0.097520646	-0.103462673	-0.100131322	-0.111869	-0.9995536	-0.102025951	-0.10090837	-0.100181194	-0.099854555	-0.093000375	-0.09952667	-0.108175442	-0.0969291
-0.10261297	-0.10039735	-0.101623664	-0.102344102	-0.1008897	-0.100975432	-0.099384551	-0.99992078	-0.999552456	-0.101444391	-0.103731008	-0.097409444	-0.099468692	-0.09546347	-0.100719595	-0.09925286	-0.0992786	-0.100439392	-0.99997894	-0.99999786	-0.100439392	-0.102666917	-0.10345628	-0.096906618	-0.10117929
-0.99973068	-0.9999042	-0.99978677	-0.99975691	-0.10000114	-0.999991061	-0.100017257	-0.10000664	-0.100010931	-0.100008272	-0.999863003	-0.100028125	-0.999927491	-0.100002651	-0.100002651	-0.10003212	-0.9999936	-0.100014496	-0.99998004	-0.999991356	-0.999993138	-0.999663109	-0.9999668	-0.100034126	-0.10000243
-0.100005721	-0.10000543	-0.100015195	-0.100006871	-0.10000638	-0.999993882	-0.100002681	-0.9999969	-0.999991128	-0.999987969	-0.100013707	-0.999996787	-0.10000893	-0.99999904	-0.999991294	-0.99999881	-0.10000339	-0.999993134	-0.10000832	-0.100002378	-0.10000097	-0.100017124	-0.10001395	-0.999984134	-0.99989797
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.22159E-05	-4.7507E-06	1.48553E-06	2.74093E-05	-5.2041E-06	1.61030E-05	-2.99502E-05	-5.1386E-06	8.7076E-09	1.25612E-05	3.35121E-05	-4.08146E-05	5.90964E-06	-5.53938E-06	7.96966E-06	-4.3803E-05	-1.5013E-06	-8.77864E-06	-1.2351E-05	2.69394E-06	4.78132E-06	2.96533E-05	2.9096E-05	-2.78757E-05	1.5634E-05
-6.6315E-05	-2.2192E-06	-2.48479E-05	-6.29928E-05	-5.548E-05	-2.29338E-05	3.76664E-05	-1.0553E-05	1.21528E-05	-3.64406E-05	-6.47453E-05	8.95504E-05	4.35424E-07	4.27716E-05	-7.2989E-06	0.00011527	-0.0472E-05	1.10555E-05	4.93779E-06	2.85445E-06	-4.39409E-05	-3.3411E-05	7.7288E-05	3.10547E-05	-3.2382E-05
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

-0.99132085	-0.99155404	-0.99061716	-0.99069719	-0.99876604	-0.99101994	-0.99061793	-0.99083597	-0.99176538	-0.99012432	-0.98963807	-0.99179137	-0.99041753	-0.991594283	-0.99151763	-0.99136813	-0.99174046	-0.991063606	-0.990311652	-0.992018132	-0.991967521	-0.989863842	-0.99000015	-0.99030463	-0.99188423
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Tabla 0.2: Degradación relación de compresión fancorc 1% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fancore	-3.495193002	-3.485162178	-3.44405734	-3.49312442	-3.44934267	-3.558660428	-3.515876511	-3.505554871	-3.42402635	-3.48383994	-3.44077221	-3.49001871	-3.45761866	-3.484664657	-3.49068893	-3.49307546	-3.530888309	-3.542063719	-3.472929	-3.587836235	-3.476813586	-3.487024224	-3.473466892	-3.532752893	-3.51578009	
eff_fancore	-0.012206494	-0.009094938	-0.0038615	0.002032973	-0.0045517	0.048450512	-0.02739631	0.01598859	-0.02239844	-0.02550988	-0.014643464	0.06835763	-0.07239649	-0.01793202	-0.04405821	0.011008334	0.0103019	-0.02768876	0.04122823	0.019211555	0.022864152	-0.036653518	-0.023964188	0.069164789	0.02768996	
mc_fancore	0.052003164	-0.004600852	0.03942118	-0.030207894	0.08085125	-0.160894159	0.074983964	-0.026599376	0.059161627	0.15555154	-0.000262981	0.004948005	0.002970077	0.000953801	0.04972087	-0.020680044	-0.038647625	-0.111064789	-0.12002806	-0.05376779	-0.127452491	0.158338891	0.144998387	-0.235175408	-0.10588204	
pr_fanduct	-0.095556275	-0.008505363	-0.06731386	0.055249127	-0.05143991	0.293681399	-0.137007135	0.04810223	-0.107513896	-0.28054547	-0.13038614	0.475937255	-0.463797007	-0.081749329	0.038756483	0.064631072	0.046481072	-0.20071559	0.2198879	0.102410188	0.231037578	-0.283586658	-0.207926243	0.427168979	0.18963135	
eff_fanduct	-0.007532579	-0.000731041	-0.00607899	0.004363131	-0.00451273	0.022863178	-0.010776688	0.003901903	-0.008560017	-0.02219228	-0.010849772	0.03685245	-0.036600922	-0.01212449	-0.00711357	0.00821286	0.005279328	-0.01568789	0.01681281	0.007851408	0.018075942	-0.016424878	-0.065424951	0.033658888	0.0011047	
mc_compressor1	-0.01327707	0.05180799	0.030069	0.015021201	0.02174255	0.011863249	-0.01734729	0.008991808	0.023188488	-0.01829074	0.021055224	0.03108953	-0.022146849	-0.004762665	-0.005394632	0.01548359	-0.00951557	-0.038000357	0.04239922	-0.03151308	0.038790702	-0.029279486	-0.007510548	0.03055044	0.0011047	
eff_compressor1	0.256470303	0.06377115	-0.28065947	-0.188298048	-0.18535888	-0.35306704	0.286010872	0.25883148	-0.111867433	-0.828453879	0.612129523	0.151841505	0.113663286	-0.18132829	0.0449462	0.452823725	-0.6272676	0.115765736	-0.6272676	0.115765736	-0.442299536	0.454898525	0.20612208	-0.689564306	-0.06515977	
mc_compressor2	1.143310686	0.22070788	-1.74665979	-0.96992278	-1.72486627	-1.15312213	1.17567416	-0.634301521	-0.65196948	0.808953	-1.025805763	-3.33539543	2.13844516	0.3982358	0.407571557	-0.830766315	0.506181734	2.032621031	-2.88725173	0.98659582	-1.92680031	1.872183811	0.64141238	-2.54162894	0.2674579	
pr_compressor2	-0.783018874	-0.150581281	1.1985724	0.66304577	0.83096083	0.80259134	-0.81148019	0.43291883	0.443201522	-0.57180724	0.60386373	2.305230219	-1.480517912	-0.281575075	-0.284275861	0.56847796	-0.338780627	-1.401972908	1.98528005	-0.66823943	1.330397475	-1.294805911	-0.48451658	1.759404341	-0.16585333	
eff_compressor2	0.306654473	0.064388816	-0.44475881	-0.25794796	-0.30972908	-0.320038777	0.309125408	-0.174025762	-0.48236841	0.22212325	-0.251649903	-0.883335724	0.589518021	0.11348885	0.11348885	-0.244787884	0.17971387	0.526640126	-0.75498718	0.2802509	-0.501018402	0.50073275	0.178310515	-0.684997519	0.06374893	
pr_turbina1	-0.00718129	-0.00246236	0.00551204	0.002992693	0.00248421	0.00240741	-0.00258886	0.002358746	-0.00239652	0.00010496	0.004580067	0.007771945	-0.003984007	-0.002275749	-0.002929775	0.009556635	-0.002990215	-0.0053892537	0.00746418	-0.000829344	0.002483725	-0.005868683	-0.000993674	0.007675136	-0.00313735	
eff_turbina1	0.002813707	0.002634887	-0.00404803	-0.000573446	0.0043202	0.002625832	0.0008831091	-0.001305155	-0.000282722	-0.00249488	-0.004581146	0.001757426	4.13221E-05	7.28137E-05	0.00117715	-0.001807986	0.001820639	0.000891968	-0.00557306	0.003376177	0.001238867	0.000986635	-0.002505884	0.000298471	0.0024542	
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_turbina2	-0.002787586	-0.002346778	-0.0021612	0.002317379	0.00114861	0.006970046	-0.003294564	0.00545714	-0.001339248	-0.00453958	-0.004456223	0.009433121	-0.013639241	-0.005586975	-0.002854025	-6.226E-05	-0.00065889	-0.004805332	0.00337926	0.003895246	0.004467807	-0.00730267	-0.004491087	0.013130749	0.00144605	
eff_turbina2	0.005466682	-0.000138112	0.00840762	-0.001283396	0.00489121	-0.026042042	-0.0217503	-0.003746198	0.014180873	0.02117576	0.010614609	-0.031818824	0.034937664	0.010389046	0.007937326	-0.00912119	-0.002588964	0.010135452	-0.01477396	-0.01367246	0.017832752	-0.01367246	0.017832752	-0.015709315	-0.027479816	-0.01262656
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Acierro	-3.495193002	-3.485162178	-3.44405734	-3.49312442	-3.44934267	-3.558660428	-3.515876511	-3.505554871	-3.42402635	-3.48383994	-3.44077221	-3.49001871	-3.45761866	-3.484664657	-3.49068893	-3.49307546	-3.530888309	-3.542063719	-3.472929	-3.587836235	-3.476813586	-3.487024224	-3.473466892	-3.532752893	-3.51578009
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Tabla 0.3: Degradación relación de compresión fancore 4% (I)



	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	-3.49503331	-3.49266016	-3.44408857	-3.47838575	-3.48020059	-3.49783772	-3.51105583	-3.49748951	-3.49136334	-3.53228493	-3.42623797	-3.50482073	-3.48751059	-3.511818283	-3.510450869	-3.49375636	-3.49491839	-3.524051258	-3.516677347	-3.465145666	-3.481661033	-3.455120646	-3.52235576	-3.546900715	-3.53680172
	-0.077106306	-0.01723072	0.026119315	-0.00265677	-0.03455547	0.021139219	0.015421601	-0.02181704	0.021538856	0.040307156	-0.021533022	0.005618718	-0.026513934	-0.039232372	0.052265049	0.02606654	0.02896947	-0.001644229	0.0366134	0.005964594	-0.013883178	-0.013625055	-0.01546872	0.019882322	0.00461338
	0.005131609	0.00099444	-0.000547737	-0.000544656	0.00204402	-0.001692089	-0.00143336	0.00126557	-0.001887022	-0.001646119	-0.000393407	8.66171E-05	0.001183281	0.00274386	-0.002777217	-0.00223311	-0.00218503	1.71011E-05	-0.00253047	-0.002018424	0.001262451	0.000110877	0.000212854	-0.000190171	0.000609111
	0.302756663	0.06601602	-0.091432012	0.00433332	0.13476003	-0.095543959	-0.094083988	0.07361695	-0.129783073	0.086170731	-0.004770996	0.009577997	-0.15327404	-0.253946728	0.304708872	0.21517594	-0.10937454	-0.036755253	-0.156477635	-0.059886519	0.09276381	0.063628391	0.08179219	-0.075602155	-0.01724828
	-0.548676877	-0.12635937	0.159339795	-0.004297932	-0.24040234	0.165677852	0.175659988	-0.13333215	0.176968874	0.22977529	-0.153460736	0.003577997	-0.15327404	-0.253946728	0.304708872	0.21517594	-0.10937454	-0.036755253	0.057549497	0.28362396	-0.170548087	-0.116369857	-0.15025288	0.132820762	0.02640409
	-0.048213817	-0.00939415	0.013102879	-0.000761914	-0.01893687	0.01349631	0.01345332	-0.01039822	0.01346385	0.018394602	-0.012536139	0.000826478	-0.012649081	0.01545449	0.01549885	0.01545449	0.005466782	0.022114662	0.008345966	-0.013030061	-0.090197374	-0.011466436	-0.009194635	0.00230078	
	-0.059728516	-0.00981275	-0.0130129	0.016882676	-0.02702853	0.016985559	0.013356993	-0.0147717	0.026025742	0.01075677	0.00851071	-0.013718191	-0.003725011	-0.036533138	0.038485395	0.02902234	0.038241633	-0.012543825	0.038241633	0.038598111	-0.01895052	0.005685564	-0.032950567	-0.009595497	-0.01756234
	0.973956065	0.20620895	0.089943484	-0.208635118	0.4562519	-0.167238077	-0.283090153	0.30844625	-0.324907796	-0.327577346	-0.046106966	0.086107376	0.124843054	0.568531467	-0.656122554	-0.40940209	-0.39474849	0.185862462	-0.609938389	-0.447020577	0.287947443	0.044575137	0.39513973	0.018055379	0.10889159
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3.979821134	0.86676748	0.89595833	-1.239117727	1.90706172	-0.567800463	1.141653846	1.43027729	-1.441269713	-1.099517626	-0.72756412	0.575826628	0.21144952	2.498812386	-2.784345757	-1.69150875	-1.63299861	1.171248289	-2.771131629	-2.274783082	1.332624414	-0.045248896	1.87609767	0.581849168	0.64203148
	-2.750581764	-0.59676703	-0.60034481	0.84262266	-1.31487897	0.399728331	0.792269215	-0.92280126	0.99369168	0.7633218	0.46445704	-0.391687545	-0.159897943	-1.716470951	1.91456529	1.16880714	1.12765488	-0.73075536	1.902136018	1.55856956	-0.859443382	0.025805757	-1.29016033	-0.38555234	-0.44102538
	1.053060496	0.29424967	0.221399653	-0.320917154	0.50967282	-0.154578157	-0.306093415	0.38167429	-0.381165113	-0.299637799	-0.168787571	0.147525967	0.064315712	0.65966972	-0.739662651	-0.44765326	-0.472859	0.299895956	-0.7401037	-0.598092913	0.332589001	0.002753393	0.49983341	0.140231088	0.15986411
	-0.010830677	-0.00308184	-0.005883574	0.005656544	-0.00353046	0.001199914	0.005392366	-0.00636782	0.005897684	0.002059083	0.00174111	-0.000637155	0.001290277	-0.00833487	0.006464761	0.004921636	0.002189277	-0.00539092	0.010559517	0.008684794	-0.003416878	-0.000652073	-0.00511888	-0.003687136	-0.00121689
	0.001610056	-0.00208133	0.007890969	-0.003128348	0.00210173	0.002805813	-0.00432715	-0.002091403	0.002308798	-0.00447766	0.00037392	0.00071392	0.00032183	-0.00162468	0.0005132331	-0.001122045	-0.001116725	-0.001825476	-0.001825476	-0.001825476	-0.001825476	-0.001825476	-0.001825476	-0.001825476	-0.001825476
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.014105213	-0.00396691	0.001443471	0.000865529	-0.0045025	0.003817368	0.004618348	-0.00422183	0.004866712	0.006515852	-0.008097767	0.002579301	-0.001933782	-0.006164788	0.007888168	0.00463028	0.002413564	0.000569715	0.009113289	0.003781397	-0.005143179	-0.002360657	-0.00281305	0.001477872	0.00137341
	0.096983849	0.01180553	-0.013550663	0.001610331	0.01435977	-0.010439769	-0.013463863	0.00825759	-0.015185657	-0.013105466	-0.011517673	0.003218381	0.00988155	0.016612086	-0.027445919	-0.01507133	-0.01166624	-0.008661389	-0.018788778	-0.001667832	0.013956994	0.009748613	0.00811939	-0.009188089	-0.00206231
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

-3.49503331	-3.49266016	-3.44408857	-3.47838575	-3.48020059	-3.49783772	-3.51105583	-3.49748951	-3.49136334	-3.53228493	-3.42623797	-3.50482073	-3.48751059	-3.511818283	-3.510450869	-3.49375636	-3.49491839	-3.524051258	-3.516677347	-3.465145666	-3.481661033	-3.455120646	-3.52235576	-3.546900715	-3.53680172
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Tabla 0.4: Degradación relación de compresión fancore 4% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
Degradación																									
pr_fancore	-6.19842106	-6.190652727	-6.1103869	-6.197451308	-6.17423764	-6.150070078	-6.12248745	-6.16418616	-6.204524724	-6.2151134	-6.116898611	-6.116848689	-6.21606655	-6.180562388	-6.18137884	-6.12662962	-6.165880204	-6.149242484	-6.15731066	-6.15695143	-6.117897086	-6.17668371	-6.133762917	-6.14785239	-6.11087887
eff_fancore	0.016745029	0.007586578	-0.000328432	-0.00079285	0.0002853633	0.036186855	-0.00244788	-0.000795721	0.001651207	0.001898477	-0.001889477	-0.001889477	-0.001889477	-0.001889477	-0.001889477	-0.001889477	-0.001889477	-0.001889477	-0.001889477	-0.001889477	-0.001889477	-0.001889477	-0.001889477	-0.001889477	-0.001889477
mc_fancore	-0.04747492	-0.042735615	0.0174701	-0.118052117	-0.03447089	-0.188489276	-0.002667081	0.075379936	-0.07728108	-0.13259465	0.38664978	0.11513846	-0.20492886	-0.032787446	0.167668664	0.22628027	-0.038291658	-0.064582777	-0.06395992	0.116784817	0.041791996	0.017005517	0.050955863	0.06266777	-0.4487831
pr_fanduct	0.075822117	0.07266429	-0.0401972	0.209481322	0.06564029	0.34141465	0.004274897	-0.13483273	0.30046638	0.23664195	-0.33215618	-0.051632773	0.362493986	0.055390777	-0.30776152	-0.39888394	0.072051754	0.109157956	0.11325489	-0.211812861	-0.073053121	-0.06552863	-0.097885248	-0.107716978	0.2819277
eff_fanduct	0.06795137	0.06310606	-0.0026401	0.01676242	0.0047998	0.026792659	0.000385234	-0.01072576	0.00278861	0.01807333	-0.032688961	-0.001757115	0.0029161769	0.004763803	-0.02378656	-0.0331846901	0.005337629	0.009012355	0.03902153	-0.016612082	-0.005266931	-0.005184614	-0.005184614	-0.008689004	0.02100761
mc_compressor1	-0.01616051	-0.008024615	0.01543233	0.004932226	-0.00983109	0.037993592	0.03434359	-0.015666298	-0.03631711	0.00310697	-0.020088833	0.013491332	0.015942637	-0.00270751	-0.04492523	-0.02166444	0.004515745	0.012381108	0.00017816	-0.018298242	0.00426178	-0.01998148	0.000599639	-0.009148788	0.05497563
eff_compressor1	0.155573356	0.019338985	-0.00886449	-0.196694908	0.01947144	-0.572882815	-0.125562776	0.280910096	0.387105869	-0.101651668	0.325264719	-0.15934983	-0.402013544	0.05335994	0.54213588	0.391874022	-0.10379707	-0.220108955	-0.0482938	0.361506608	0.028580483	0.221795842	0.082520897	0.15246817	-0.77327317
mc_compressor2	1.106013311	0.40819161	-0.5757087	-0.605947099	0.3445569	-2.354439971	-0.71765579	1.132846942	1.688859415	-0.01579814	0.93323679	-0.89779454	-1.29135893	0.59441403	2.80714336	1.44768895	-0.319545638	-0.928667652	0.07494513	1.46053242	-0.119576749	1.04651135	0.218779345	0.543850009	-3.61036147
pr_turbina1	-0.039494767	-0.00589508	0.0015116	0.004520329	-0.0203774	0.009446332	0.002743097	-0.0030857	-0.0370074	-0.0006152	0.001588554	0.00320876	0.007167518	-0.002467366	-0.002888843	-0.00271638	-0.001102062	-0.00140591	-0.006576265	0.00128951	-0.004578131	-0.001818383	-0.0001884045	0.01236672	
eff_turbina1	0.00383899	-0.001338315	-0.00578472	-0.001853633	0.0035681	-0.007166803	-0.001645062	4.68594E-05	0.002598001	0.00255134	-0.000852684	-0.005139378	-0.00530204	0.00163216	0.004707335	-0.00244568	-0.0000106794	0.002378499	0.00077567	0.003765106	0.001487486	0.00335082	-0.003804837	0.000296991	-0.00179322
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	3.5646E-06	0.004122869	-0.0041976	0.005545684	4.893E-05	0.008524244	0.00673879	-0.004542479	0.001875881	0.00444523	-0.006587211	0.00201962	0.009783487	0.001448924	-0.008588825	0.000724782	0.002315253	0.002464609	-0.000655391	-0.001196751	-0.001066551	-0.008191666	-0.002696342	0.00942223	
eff_turbina2	-0.00376462	-0.004981529	0.00866002	-0.01392614	-0.00375123	-0.020891936	0.002462509	0.00599043	-0.004751656	-0.0187754	0.0055713	-0.02280278	-0.002522891	0.008058887	0.028706465	-0.007218628	-0.005066026	-0.007004	0.013259308	0.004842391	0.002510033	0.011131399	0.0004063721	-0.01855624	
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Aguero	-6.19842106	-6.190652727	-6.1103869	-6.197451308	-6.17423764	-6.150070078	-6.12248745	-6.16418616	-6.204524724	-6.2151134	-6.116898611	-6.116848689	-6.21606655	-6.180562388	-6.18137884	-6.12662962	-6.165880204	-6.149242484	-6.15731066	-6.15695143	-6.117897086	-6.17668371	-6.133762917	-6.14785239	-6.11087887
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Tabla 0.5: Degradación relación de compresión fancore 7% (I)

caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-6.11087987	-6.123189283	-6.1954857	-6.13048592	-6.10661716	-6.13086866	-6.065214828	-6.16362172	-6.09656766	-6.211920385	-6.15347914	-6.15792979	-6.18326278	-6.10688727	-6.130687187	-6.142893497	-6.1300957	-6.20811114	-6.15403071	-6.097125735	-6.16242619	-6.172531259	-6.133360339	-6.13359293	-6.09984242	-6.16988132
0.03960098	-0.02085848	-0.05744278	0.01623452	-0.0657563	0.00572945	-0.021991414	-0.01155114	0.02902627	-0.00289226	0.00214484	0.02728079	-0.00715539	-0.005180038	-0.01539359	0.020166664	-0.01593493	0.03832116	-0.026566529	-0.006356492	0.001120186	0.007175947	0.026462997	-0.03751303	0.014102569	0.02459344
-0.00377506	0.01190048	0.00509962	-0.00459528	0.001352224	-0.00081286	-0.000669511	0.01265102	-0.00278962	0.001264516	0.001361742	-0.001817671	0.000238244	-0.00033172	0.000368259	-0.002470236	0.0062035	-0.00181621	0.001940456	-0.000691101	0.000240773	0.000275372	-0.001868587	0.0025824	-0.00457828	-0.00082779
-0.1487931	-0.102547301	0.22036988	-0.05053887	0.090036098	-0.02529223	0.082102298	0.0574488	-0.07694654	-0.080799513	0.06402454	-0.109962757	0.031549602	0.049113734	0.052587053	-0.115688919	0.06533556	-0.1887789	0.096483868	0.046013868	-0.007837346	-0.014597959	-0.137344178	0.163025	-0.004807641	-0.07784098
0.28192277	-0.18343766	-0.40096771	0.090587468	-0.055530399	0.04221034	-0.138460468	0.15661452	-0.08088897	0.15661452	0.201940041	-0.061899455	-0.089178586	-0.0924788	0.208000473	0.016204082	-0.10462616	0.34562327	-0.17065145	-0.079738513	0.006647504	0.02689479	0.253093587	-0.2944007	0.01448516	-0.13787157
0.02100761	-0.04562309	-0.03134741	0.0038338	-0.004341901	0.0038338	-0.011725986	-0.008231009	0.01083904	0.001171103	-0.008916903	0.015672641	-0.004548443	-0.007115359	-0.00550191	-0.016204082	-0.009395674	0.02770924	-0.013546118	-0.006683195	0.001363697	-0.00212333	0.01927028	-0.002310023	0.000448823	0.01093445
0.05497533	-0.005166509	-0.06237671	0.018548024	-0.015485693	0.0093715	0.021511337	-0.0149618	0.04443429	-0.008383896	-0.02106209	0.019734285	-0.011712118	0.014597449	0.06500191	0.047481141	-0.0295629	0.00994517	-0.012493686	0.02253507	-0.002208015	-0.00972822	0.023523103	-0.0243546	0.026621571	0.00840507
-0.7737917	0.173432624	0.80046413	-0.21273707	0.124713609	-0.0680701	-0.067747738	0.773038658	-0.58276406	-0.000491266	0.10798377	-0.36206136	-0.98822156	-0.034551681	0.094520008	-0.381679253	0.06895427	-0.35973895	0.182465292	-0.44386801	0.317164547	0.010305429	-0.433839324	-0.36205928	-0.332953414	-0.3151572
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-3.61036147	0.514120403	3.54187473	-0.903896777	0.543846097	-0.15656833	-0.768424288	1.15907733	-2.86218481	-0.12269385	0.40649307	-1.435549423	1.06871614	-0.50012575	-0.027645042	2.853991905	0.0985264	-1.13268938	0.496762677	-1.063969942	1.905605538	0.218330067	-1.780200048	1.3339525	-1.770984396	-1.29627342
2.4761261	-0.364041471	-2.45714829	0.625336154	-0.375289169	0.11292355	0.510156954	-0.79987974	1.95987159	0.083348541	-0.28834314	0.992966599	-0.728101558	0.332322657	0.057509321	1.956250727	-0.07569017	0.755665631	-0.355133429	-0.719897961	-1.294443822	-0.48013055	1.232754579	-0.91800489	1.20502425	0.80077799
-0.9452536	0.146026317	0.93039842	-0.23637804	0.136203214	-0.09828217	-0.177008279	0.304256481	-0.7437959	-0.051908201	-0.104840476	-0.3828286901	0.290180806	-0.120994023	-0.016589626	-0.75164484	0.0340286	-0.32141033	0.127389937	-0.265532629	0.500876554	0.049997238	-0.478209873	0.355355869	-0.45404552	-0.35131003
0.01236472	-0.00447043	-0.00990389	-0.000479624	0.001731339	0.00086823	0.001774788	-0.00394741	0.00774115	0.005284851	0.002829806	0.003758845	-0.005546211	0.000327238	0.00105084	0.008369293	8.296E-05	0.00505969	0.002123018	0.003362929	-0.00676692	-0.001541349	0.006475752	-0.00272478	0.003570639	0.00509515
-0.0017932	-0.001147	-0.00147061	-0.000574172	-0.00184428	-0.00261502	0.000412866	0.004686926	-0.00483783	-0.003138866	-0.002146963	-0.000299299	2.1598E-05	0.001886125	-0.003416501	-0.002720955	0.00001503	0.001010851	-0.001370567	-0.003173401	0.003874726	0.003938091	-0.002390562	-0.000509838	-0.00029665	-0.00120148
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0945223	-0.004589138	-0.00988112	0.0007758	0.001201904	-0.00044003	-0.000683378	-0.004596604	0.00312875	0.002139128	0.000425005	0.006634685	-0.004689314	-0.00100536	-0.002999451	0.006767257	-0.02026116	0.00962305	-0.002907467	-0.000633803	0.002350067	0.00215788	0.008840269	-0.00432611	0.001696517	0.00487461
-0.01853624	0.012481262	0.0258482	-0.005430998	0.002779821	-4.8457E-05	0.010995691	0.004502531	-0.01329304	-0.005682303	0.006713569	-0.012678564	0.00395537	0.007616959	0.005500845	-0.01179316	0.0030761	-0.02718835	0.008957122	0.008388295	0.002331765	-0.00278849	-0.017900094	0.02039661	0.00045865	-0.00996024
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

-6.11087987	-6.123189283	-6.1954857	-6.13048592	-6.10661716	-6.13086866	-6.065214828	-6.16362172	-6.09656766	-6.211920385	-6.15347914	-6.15792979	-6.18326278	-6.10688727	-6.130687187	-6.142893497	-6.1300957	-6.20811114	-6.15403071	-6.097125735	-6.16242619	-6.172531259	-6.133360339	-6.13359293	-6.09984242	-6.16988132
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Tabla 0.6: Degradación relación de compresión fancore 7% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	0.631142025	-3.23842803	-0.09336078	0.032894161	-0.4207569	-0.071941989	-0.00619338	-1.060139175	1.8589445	-1.91805102	0.638889395	0.801643807	0.72987233	-0.30880457	0.28935455	-0.078158731	-9.23949146	0.494353894	0.92307088	2.51689452	0.86924294	-0.60786758	1.284545131	-1.368107352	-48.3116131	
eff_fanorc	-1.06340039	-0.72989463	-0.54604889	-1.24362081	-1.05515109	-0.066631511	-1.255192	-0.889290441	-1.202694028	-1.2320049	-1.061652576	-1.10307632	-1.07505544	-0.99068379	-1.045280071	-1.036686124	0.06255274	-1.066181574	-1.07436759	-1.30959937	-1.039274208	-0.923806162	-1.101189273	-0.809416679	4.5242813	
mc_fanorc	-0.02523367	0.000222984	-0.09674116	0.0163865069	0.00798053	-0.092512563	0.020515494	-0.017153214	-0.055388946	-0.0520574	-0.025811963	-0.029670322	-0.017277772	0.004927274	-0.0404016907	0.000220739	-0.166568648	-0.013363239	-0.08449682	-0.071084375	-0.019515486	0.009064105	-0.0351027982	0.010888191	-1.2126942	
pr_fanduct	-0.65342597	0.938538742	0.5758241	0.983527739	0.2086974	2.982807689	1.055715847	0.45534786	-1.08758811	-0.92800761	-0.76909338	-0.78790558	0.696910019	0.282979477	-0.5259458	0.04553406	2.88706439	-0.22077249	-0.79982205	-1.05901221	-0.598460732	0.263516152	-0.732167	-0.17941532	14.6404005	
eff_fanduct	0.502134949	-1.310325743	-0.26653515	-1.790255477	-0.32204474	-4.830243965	-1.924066538	-0.4043833	1.12357988	0.9678758	0.62553462	0.70106082	0.799847052	-0.358769598	0.162447365	0.08545387	-5.57626378	0.162447365	0.0545387	0.68545387	0.65975948	-0.430610964	0.77165963	-0.426375568	30.3643999	
mc_fanduct	0.075398083	-0.121705383	-0.08238699	-0.140927124	-0.02245135	-0.607221571	-0.14847387	-0.07076252	0.09355695	0.09422124	0.086672947	0.08740708	0.083224697	-0.037874111	0.019269882	-0.00104822	-0.591610802	0.029427709	0.0647627	0.10104217	0.065405142	-0.036780344	0.070000666	0.074369792	-3.3703081	
pr_compressor	-0.166756236	-0.4953587	34.0369384	-0.221807056	-0.02194877	4.463697804	-0.26453225	-1.41364924	-0.30967806	-0.14864675	-0.185430358	-0.137044958	0.027464454	0.07740047	-0.2180416516	-4.312659347	-0.19165913	-0.27059589	-0.2010195	-0.031175644	-0.130615625	-0.144474044	-0.538651625	-0.44474044	-0.31940436	-9.3576736
eff_compressor	-0.325184396	2.401830548	-12.48498	3.516989545	0.0227106	0.454735221	3.688151764	-0.460622075	-0.395416212	-0.15865004	-0.372178131	-0.231623916	0.610138389	0.100751386	0.02592145	-0.29338836	-0.42519732	-0.497968611	-0.36277455	-0.138758438	-0.284908912	-0.464181651	-0.555642771	11.0270597		
mc_compressor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-8.82144458	0.55138819	165.170619	15.0435319	-1.1167889	6.082557124	15.08824287	94.45994555	-12.3607511	-9.81107652	-10.96868496	-9.388075401	-4.299410385	-1.073399998	0.59991176	-1.740420535	6.76703104	-4.759881354	-10.4437441	-10.33422906	-11.83342768	-1.207757193	-10.65271545	-14.48646565	13.176942	
eff_compressor2	2.143441048	-5.524888392	-82.3009496	-10.36474304	0.9061621	0.258455248	-10.91320286	-42.50876496	4.533005404	3.66295783	3.72994702	2.316088846	1.057422841	0.43864724	-0.253466452	-0.23937034	-0.303742871	1.555489926	3.37391064	3.131290528	5.059948643	0.217945375	4.126559564	5.961829492	0.4642705	
mc_compressor2	2.263605369	1.890301291	-9.13109231	4.019907514	-0.15076127	0.60869596	4.169872381	-0.165786135	-3.739441161	-2.11951891	-2.856936165	-2.475646775	-0.824657889	-0.166615978	0.177989491	-0.314813817	1.678554328	-0.83167463	-2.72946878	-2.691599677	-1.88778276	-0.15400589	-1.559428407	-3.614455628	4.32314081	
pr_turbina1	0.65102847	0.08102161	-40.9226788	-0.049303462	-0.0653915	10.10771372	-0.04493277	-20.76162695	0.19442441	0.05979361	0.09322167	0.087943726	-0.005827855	-0.013251248	-0.00462178	0.00483973	11.96084878	0.012473369	0.07033884	0.059136887	0.09624182	-0.00468723	0.028698667	0.116707465	24.3437833	
eff_turbina1	-0.743535013	-0.01126788	55.9100567	0.012313524	0.0073933	-11.97733825	0.011793015	24.95900345	-0.86051582	-0.66909965	-0.875161467	-0.883469229	0.042833625	0.002111958	0.002135577	-14.52523338	0.02395155	-0.88211842	-0.881929874	-1.039246661	0.006868981	0.05515191	-0.823091462	-37.8948339		
mc_turbina1	0	0	-26.006747	0	0	6.693634482	0	-13.36434502	0	0	0	0	0	0	0	7.974404749	0	0	0	0	0	0	0	0	15.2876635	
pr_turbina2	4.432094598	-0.09588944	-0.0314616	-0.05355809	0.4054678	-0.020730196	-0.043241317	-0.028227829	5.335118068	4.143693	4.8060452	4.53015462	1.814196044	-0.009096086	-0.013476888	1.234489352	-0.00584141	1.640384405	4.54330392	4.54949803	3.662796216	0.48327604	3.056888864	6.301247177	-0.03480896	
eff_turbina2	2.958262089	0.04787802	0.00539859	0.12187397	0.32639496	0.006166659	0.12126065	0.000781179	3.66915243	2.81301056	3.22169341	3.026318665	1.27826504	0.015675443	-0.0116773	0.921994029	-0.009672871	2.223228253	3.06182545	3.103185861	2.636702887	0.391140654	1.979359307	4.27549991	0.00318227	
mc_turbina2	4.296437403	0	0	0	0	0	0	0	5.236834007	4.02366691	4.687556432	4.395179968	1.739376606	0	1.194435281	0	1.610226978	4.44872222	4.455716418	3.534746799	0.485044431	2.946481574	6.154388842	0	0	

Acuerdo	-1.06340039	-0.72989463	-0.54604889	-1.24362081	-1.05515109	-0.066631511	-1.255192	-0.889290441	-1.202694028	-1.2320049	-1.061652576	-1.10307632	-1.07505544	-0.99068379	-1.045280071	-1.036686124	0.06255274	-1.066181574	-1.07436759	-1.30959937	-1.039274208	-0.923806162	-1.101189273	-0.809416679	4.5242813
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Tabla 0.7: Degradación eficiencia fancore -1% (I)

caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-48.311631	-0.74747053	-5.15765808	-0.73226976	-5.79440312	-2.542344	-19.92241056	-0.14986653	-3.21783215	0.05192949	-19.025692	-1.37764978	-4.82596563	-0.17693866	-1.76633609	-0.2581529	-0.4828302	-0.4938877	-1.37802939	-0.25604486	-1.997642976	-0.0832626	-0.7849792	-1.4775888	-0.53906499	-0.8546796
4.5242913	-0.33765939	-0.4071764	-0.90079088	-0.35423298	-0.7308936	1.21875478	-0.99510807	-0.24634395	-0.75209771	1.11421556	-0.83406835	-0.46951485	-1.06257122	-1.138015339	-1.212421037	-0.9697261	-0.9869728	-0.439338813	-0.95288454	-1.1926134	-0.99240393	-0.935265677	-0.88560636	-0.961190011	-1.10408413
-1.12126942	0.00700184	-0.03781388	-0.00898399	-0.034708182	-0.0593753	-0.484489379	0.00226916	-0.05103915	-0.018438899	-0.44586283	-0.026328134	-0.028838488	0.00189385	-0.03182599	0.01964874	0.00541613	0.00650421	-0.266318123	-0.011799584	-0.05021722	-0.002736423	0.010987126	0.02565651	0.00496449	-0.01805164
14.6404605	-0.162910406	2.14711706	0.3927083	2.120404754	0.3670719	6.33569377	-0.13898516	2.75979514	-0.939602695	5.85460395	0.36200625	1.691694233	0.029996356	-0.598288648	0.76499741	0.1113835	0.27171877	3.982139405	-0.482738806	-1.00055389	-0.18840485	0.069407905	0.37108657	-0.11640028	-0.3726067
-30.3634999	0.027865187	-3.54894795	-0.11601454	-3.467599413	0.11938259	-11.61995324	0.18784112	-4.057616	1.69740643	-10.85373286	0.028133239	-3.023089391	-0.123885481	0.955173711	-1.39783102	-0.3454652	-0.54742196	-7.419418274	-0.366308874	0.993336684	0.083213121	-0.34729099	-0.80303955	-0.14092483	0.4247964
-3.3703081	-0.0243201	-0.39692509	-0.06567695	-0.356040489	-0.05907655	-1.251378612	0.023231049	-5.2206442	-0.13160802	-1.160394409	-0.060137687	-0.337575319	-0.00177166	0.062676718	-0.10813216	-0.00456827	-0.02418467	-0.6133154758	0.124673088	0.097519586	0.026460123	0.01563609	-0.00680157	0.031838235	0.6534537
-9.35167736	0.024821868	4.20640373	-3.3498332	3.346636765	1.13186274	-2.1663650596	-0.027495262	5.0324653	0.5544721	-3.917637316	-1.88185763	3.44311422	-0.361024268	-0.84316197	-0.27400085	-0.18323552	-0.07519549	-6.451133093	-0.217836554	-0.44671796	-0.314010269	-0.201331544	-0.19261908	-0.20895095	-0.43401563
11.0210997	-0.38284995	-0.08535672	0.16463467	-0.854712784	-1.49973887	-1.043331281	0.024695541	0.37137375	-3.648665465	-0.57625964	-0.2957105	-0.300888577	-0.299576561	-0.295379427	3.591993025	-0.3492228	-0.20560286	0.060252303	-0.472189428	-0.247095875	-0.449749957	-0.395769461	-0.38498789	-0.261922097	-0.50812827
13.176942	-3.192709387	2.9373238	75.5052103	3.12050758	110.041955	8.359930183	2.743148616	5.43993262	-16.05864708	8.2555073	89.28148115	3.942020243	-1.64598824	-0.85235343	16.38964715	-4.3287425	-3.7794185	7.483405802	-15.18947758	-10.6500442	-3.456827364	-8.865518021	-8.74637582	-11.44550448	-1.7785787
0.462705	0.54673902	3.143563	-33.399156	2.092638034	-50.194788	-0.079199026	-1.37526525	2.31611344	11.0680066	-0.156778411	-40.0104499	2.092638917	0.19380466	4.201743889	-11.2735269	1.4259971	1.13361535	-0.258800699	6.28568379	3.483519895	0.70736327	3.297066516	3.2135454	4.61387081	-0.05260654
4.3314281	-0.02978181	1.31918865	1.14791683	1.62421888	-1.6942833	2.37754929	0.46342678	1.80663192	-4.244798553	2.28442746	0.154927676	1.24096895	-0.22121521	-1.571899957	4.274479023	-0.76457856	-0.66337361	1.991042173	-3.882271113	-2.788240081	-0.643703482	-1.408981034	-1.41149589	-1.809477866	-0.30645768
24.3437833	0.0051689	11.7108713	-16.79718793	15.51587944	-25.2051075	17.4298273	-0.01240182	11.8697042	0.036560267	16.8023585	-19.37048299	10.62089855	0.00453529	-0.063197359	-0.03551399	-3.53836-05	-0.01065205	14.40741655	0.084018384	0.09502871	0.005254874	0.008782914	0.00533008	0.0515212	-0.01885059
-37.8948839	0.027848674	-13.8946824	19.01408378	-12.3345804	31.3252816	-22.38846537	0.01430018	-13.5855683	-0.007588236	-21.63414805	22.97558828	-12.14089936	0.016581301	0.054206083	0.00269237	0.0245278	0.02029046	-17.92607006	-8.183272316	-0.889059494	0.032294838	0.050295888	0.04827321	-0.501954017	0.02571465
15.2876455	0	7.92890467	-10.91206209	11.49697041	-16.1466608	11.36546523	0	8.03234677	0	11.04453359	-12.49798771	7.344447165	0	0	0	0	0	9.507332956	0	0	0	0	0	0	0
-0.05408936	1.61075997	-0.0151944	-0.012973631	-0.010961473	-0.01080084	-0.059450134	0.00770392	-0.03075649	0.043487253	-0.01226016	-0.029588281	-0.023455187	0.84653437	3.07190679	-0.043438983	1.5246349	1.40831638	-0.017552504	6.72598002	4.64061489	1.633497547	2.50222392	2.46397896	3.435997596	1.9642805
0.0031827	1.19501341	0.00348413	0.005682395	-0.002076776	0.00032223	0.006153577	-0.009524585	0.01839963	-0.02018895	0.000808471	-0.000157478	-0.03817334	0.64940282	1.990652779	0.07732589	1.17978398	1.11397688	-0.00280966	4.689960636	3.145393332	1.21340803	1.862594611	1.86491545	2.7282481	0.88380684
0	1.56020592	0	0	0	0	0	0	0	0	0	0	0	0.83085451	2.978082049	0	1.51067153	1.4059569	0	6.615515935	4.538179427	1.583119071	2.481327531	2.41979045	3.32895435	1.17590954

4.5242913	-0.33765939	-0.4071764	-0.90079088	-0.35423298	-0.7308936	1.21875478	-0.99510807	-0.24634395	-0.75209771	1.11421556	-0.83406835	-0.46951485	-1.06257122	-1.138015339	-1.212421037	-0.9697261	-0.9869728	-0.439338813	-0.95288454	-1.1926134	-0.99240393	-0.935265677	-0.88560636	-0.961190011	-1.10408413
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Tabla 0.8: Degradación eficiencia fancore -1% (II)



	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	0.79945691	0.13319464	2.00257305	-0.51252672	0.8275143	0.24107615	0.57285414	1.427610074	-16.22944629	-23.354983	-3.32125448	-14.76262164	-76.14366603	-1.27477519	-0.39750215	-1.18549318	-5.83818726	-0.642811432	-0.10748026	1.916250144	-0.976677084	-7.07852269	-21.32838651	-1.535199838	-10.9977726	
eff_fanorc	-4.099217619	-4.022187248	-4.2244135	-3.978085598	-4.0937911	-4.03344455	-4.0771935	-4.1889751	-2.55857906	-1.42149207	-3.873419068	-2.424213886	4.657970491	-3.877489276	-3.20256025	-3.856668965	-3.39345307	-3.910773569	-4.03393881	-4.251142338	-3.05288896	-3.133202177	-1.646432018	-3.846328749	-2.76464651	
mc_fanorc	-0.027349106	-0.0781805	-0.05803893	0.0050675	-0.01129872	-0.015997948	-0.01653458	-0.025746594	-0.37700525	-0.58188149	0.011830198	-0.335798866	-2.208129399	0.018646018	0.083079219	0.006277537	-0.064373289	0.00532025	0.00114377	-0.054318141	-0.173433869	-0.091997107	-0.527293548	0.003456206	-0.22413843	
pr_fanduct	-0.50197229	-0.344517306	-1.3712664	0.224076619	-0.46670927	-0.48965242	-0.37908772	-0.581492921	4.398789069	6.56990178	0.507086363	4.6466698	19.38833181	0.3588745	-0.0271733	0.65785533	2.518491563	-0.069209917	-0.12807666	-1.158082136	3.231441662	3.093338877	6.144030577	0.394877687	3.6728884	
eff_fanduct	0.352382025	0.25904289	1.52522346	-0.482807974	0.6808499	0.28739712	0.29606594	0.771133569	9.77975189	-12.4276759	-0.730182646	-8.6506155	43.11661706	-0.67887133	-0.065990858	-0.898400732	-4.120658298	-0.245294632	0.13169421	1.233711483	-5.654387902	-4.967249595	-11.57065219	-0.635739474	-6.76518	
mc_fanduct	0.066411006	0.002794085	0.1187589	-0.015588957	0.06412233	0.067005689	0.046359645	0.071665306	-1.055353689	-1.3297669	-0.065933598	-0.039044809	-0.039944836	-0.08911281	-0.482724074	0.02815355	0.02054885	0.108831747	-0.678988095	-4.181744337	5.148276666	-5.03194742	-0.314940433	-0.052598964	-0.76886991	
pr_compressor1	-0.018108995	-0.0447895	-0.1133166	0.012717094	-0.014656528	-0.045561205	-0.165178601	-7.803335407	-4.0287765	-0.15778825	-7.552344649	-4.88148849	-0.57143467	-0.16854085	-0.240735461	4.881548949	-0.16017702	-0.19309965	-0.04553969	-0.04553969	-4.181744337	5.148276666	-5.03194742	-0.314940433	-0.052598964	
eff_compressor1	0.003868136	-0.132663172	-0.04075301	-0.051333369	-0.18409554	-0.057642618	-0.02128166	-0.407527823	0.25599503	-0.8460770	0.069990079	-0.180191157	12.77505373	-0.094220271	0.410587778	0.598343924	-0.05924436	-0.13785005	0.051280518	-0.079126329	0.326012688	-0.48616334	1.312824997	-0.30699469	0	
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-8.4716094	-7.382524821	-10.9532974	-3.998295985	-0.11891734	-9.120167459	-9.12952532	-4.306632792	8.079355961	8.58897827	3.420981679	7.889229969	25.78482291	-3.443603638	6.05931087	6.61147652	5.645916258	-11.29848441	-0.87945687	-10.65589468	6.981013946	5.992459543	8.48687335	8.614508713	7.29898558	
eff_compressor2	2.315232011	2.807816319	3.7750632	1.433775112	0.2080577	2.487094094	3.573884554	1.306557944	-0.243565114	-0.1581626	-1.907452798	-0.2980578	-9.64243567	1.9914973	-3.069524884	-3.494214137	2.43131538	4.56876303	0.0889749	3.586540898	-0.23145278	2.675633885	-0.156704938	-4.427341745	-0.334786	
mc_compressor2	-2.1385575	-1.191642136	-2.907392	-0.69104568	-0.02907658	-2.368884421	-1.39107243	-0.792146071	2.19266877	2.374411	0.635292458	2.121736329	3.87787633	-0.628088786	1.016445793	1.253878753	1.76395985	-1.785494269	-0.15537281	-2.791135407	1.753252333	1.785029077	2.359545484	1.453710212	1.86164597	
pr_turbina1	0.40135357	0.01680829	0.07681966	0.00868257	0.0073723	0.080166248	-0.022395101	-0.025747739	16.0555338	17.320816	0.029472389	15.42119373	19.50167015	0.041209747	0.010604729	0.104625089	0.052096055	0.0682854	0.104625089	12.48259471	12.51712284	17.5257753	-0.0077833	13.3723625		
eff_turbina1	-0.513678319	0.4320682	-0.8388182	0.018975584	0.01213258	-0.871171488	0.063442751	0.084544335	-20.48251719	-22.9408647	-0.015048888	-19.47971419	-35.97070861	-0.017354474	-0.003048413	-0.005534798	-14.0424892	-0.397625073	0.01049333	-0.848556691	-15.24633215	-14.46332875	-22.59446608	0.007673881	-16.5246105	
mc_turbina1	0	0	0	0	0	0	0	0	10.5532635	11.5354829	0	10.14043746	11.56781141	0	0	0	8.350236379	0	0	0	8.3111529	8.428219465	11.40417429	0	8.84763798	
pr_turbina2	4.05186942	2.45186072	4.2668232	1.41117064	0.02980766	4.191969793	2.553729249	1.621265351	-0.08419577	-0.0163549	0.00053451	-0.0177979	-0.090417279	1.379680964	0.014988717	0.006377795	3.00673976	0.55658465	4.751074747	-0.01780893	-9.2395E-05	-0.0193632484	0.003904587	-0.00615304		
eff_turbina2	2.89367676	1.637988704	3.4084138	1.074709903	-0.01329024	2.973433106	1.85677548	1.148766145	0.003342441	-0.00365136	0.003084827	-0.002782304	0.094987725	1.035311813	-0.05164092	0.011984195	2.287894546	0.3892387	3.147723775	0.001346423	0.005110253	0.001576513	0.00279436	-0.00470186		
mc_turbina2	3.944634	2.200579757	4.76968173	1.400292004	0	4.091668445	2.484386205	1.99121032	0	0	0	0	0	1.347545454	0	0	2.959704137	0.52768987	4.603833261	0	0	0	0	0		

Acerto	-4.099217619	-4.022187248	-4.2244135	-3.978085598	-4.0937911	-4.03344455	-4.0771935	-4.1889751	-2.55857906	-1.42149207	-3.873419068	-2.424213886	4.657970491	-3.877489276	-3.20256025	-3.856668965	-3.39345307	-3.910773569	-4.03393881	-4.251142338	-3.05288896	-3.133202177	-1.646432018	-3.846328749	-2.76464651
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Tabla 0.9: Degradación eficiencia fancore -4% (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-0.70278976	-0.41265228	0.96904939	1.624064029	-0.4998676	-0.406839836	16.12600103	-0.42572658	-0.19151675	-12.02916006	-0.62618691	-0.79945347	-1.001872087	-1.001872087	-1.99244688	-0.29532369	-1.09244603	0.04547791	0.063381152	-18.76011273	-0.56731281	0.344522871	1.61939199	-2.882350089	0.0689521
-3.945976892	-3.9992433	-0.01347746	-4.170462947	-3.95871664	-3.962694076	-2.181599806	-3.98169611	-3.99287766	-2.64046731	-3.96848782	-3.951546111	-3.927876315	-4.36037919	-3.8329996	-3.95969173	-3.89742107	-4.032548622	-4.036282907	-1.96706661	-3.944570762	-4.013057601	-4.18967403	-3.678642169	-3.9741113
0.010907897	0.0204246	-0.03795434	-0.017167892	-0.07277313	0.168442514	5.193344555	0.12340593	-0.233003629	-0.256471188	0.00857504	0.009440055	0.015082361	0.026508688	0.003596514	0.00413088	0.01733748	-0.003939606	-0.006651809	-0.474121113	0.007478801	-0.01639884	-0.04852077	0.010362591	-0.00502337
0.161015555	-0.13795434	-0.17167892	-0.07277313	0.168442514	5.193344555	0.12340593	-0.233003629	-0.256471188	-0.09450574	0.00857504	0.009440055	0.015082361	0.026508688	0.003596514	0.00413088	0.01733748	-0.003939606	-0.006651809	6.012707451	0.193891166	-0.629152568	-0.77671957	1.188040508	-0.39294633
-0.359843904	-0.00840182	0.07524292	1.074160329	0.04737756	-0.246663567	9.494013049	-0.41338745	0.17345176	7.498364958	0.03669532	-0.326629215	-0.568236188	-2.508373085	-0.584141301	-0.29234487	-0.94878168	0.026412881	-0.253164348	-10.99377942	-0.373054983	0.539536687	0.67675211	-1.648950249	0.30847226
-0.015722089	0.02402926	0.02426717	0.103064839	0.04682809	-0.022099576	-1.07507411	0.00829892	0.03349776	-0.055647313	0.003687356	0.004088818	-0.023594401	-0.19376437	-0.04697607	-0.0272669	-0.08210102	0.026802782	-0.022943955	-1.222029945	-0.075101378	0.071511122	0.08606483	-0.158214258	0.04744792
-0.08682542	-0.18539713	-0.11977447	-0.065027096	-0.13288269	-0.138862895	-7.879064394	-0.0269096	-0.173755455	-6.695568426	-0.68075457	-0.051064199	-0.033360899	-0.334997034	-0.33374083	0.04000288	0.05561872	-0.05449114	0.043359986	-6.371714575	-0.143598573	-0.174406711	-0.02943779	-0.477055065	-0.18383305
-0.128184899	-0.31275567	-0.258756746	-0.0726912672	0.01497744	0.5814216339	0.288914227	-0.08132427	-0.216104768	-0.1501671659	-0.05753283	-0.125987714	-0.119033474	5.244053017	1.2428348375	0.018775593	0.05132775	-0.179639968	0.165634188	-0.011774633	-0.133600554	-0.000902424	-0.05490361	1.066248003	-0.28836651
-1.574538616	-4.997077	-0.07521387	-10.59242381	-11.3624154	6.746866845	8.155533462	-7.28937325	-2.113480561	7.521699114	-0.30314371	-4.996416655	-2.928511445	22.76310218	8.484355197	-0.48483558	-1.54846868	5.69359831	4.610428999	8.45427709	-1.217145388	-11.28667901	-10.7596688	7.623232054	-7.55407549
-0.117012864	1.82068898	1.322655607	3.617464218	4.73951919	-3.437329263	-0.21511883	2.7915922	0.011769204	-0.315507639	0.16728463	1.871489928	0.827545024	-15.68320621	-4.372066297	0.17281022	0.10311547	2.092672841	-2.364291141	-0.097905832	-0.060018144	4.827601436	3.74879284	-4.167452872	2.88600666
-0.320393791	-0.87619542	-0.71243028	-2.767100928	-1.88809512	1.209016116	2.2115925951	-1.15516623	-0.438995262	1.942540207	-0.852930327	-0.508657536	6.016291878	1.438860261	-0.07345786	-0.26059828	-0.915178507	0.92491395	0.902491395	2.392890939	-0.201304279	-1.92860955	-2.76828147	1.379449685	-1.23484073
0.002342872	0.0021283	-0.00713054	0.07051815	0.08831107	0.005541465	16.3946362	0.00501366	0.01474487	14.11950463	0.005318883	0.0153675	0.00727532	-0.082546703	-0.010755824	0.01208108	0.0435487	0.025942108	-0.002143987	17.65016842	-0.004819908	0.08828527	0.05134482	0.000362841	0.01045269
0.01920931	0.0329053	0.029607328	-0.853815723	-0.78372225	-0.001373531	20.89468448	0.02626197	0.002838097	-17.58681206	-0.01427902	0.02679709	-0.004042327	0.02470529	0.009611783	-0.00761358	0.00781599	0.025024755	-0.005439446	-22.7815558	0.0203688979	-1.06535468	-0.85097253	-0.000552443	0.0453238
0	0	0	0	0	0	10.74198227	0	0	9.318704893	0	0	0	0	0	0	0	0	0	11.52568262	0	0	0	0	0
1.14944869	1.7541805	1.532068538	4.670593757	3.24026131	0.004343388	-0.02623297	2.11560136	1.41448701	-0.01087482	0.010001365	1.657693638	1.316371366	-0.076114402	0.0104106	-0.00094733	0.9026783	1.837423068	-0.013916891	-0.046923277	0.847782189	3.42394255	4.65463744	-0.000341982	2.34059183
0.84674009	1.27254535	1.126259025	3.125610164	2.38475144	0.00201747	0.004885763	1.62732379	1.027596648	-0.002902755	0.00385252	1.241387215	0.991138475	0.15999604	-0.011188577	0.01078558	0.68885488	1.356897833	0.00335786	0.006840339	0.637133935	2.471168302	3.1817208	0.005350646	1.69416358
1.11594908	1.69204165	1.507829945	4.558016333	3.14124633	0	0	2.10577863	1.37048023	0	0	1.63213851	1.299017915	0	0	0	0.87686127	1.806937476	0	0	0.827099151	3.336924687	4.55804444	0	2.2730553

-3.945976892	-3.9992433	-0.01347746	-4.170462947	-3.95871664	-3.962694076	-2.181599806	-3.98169611	-3.99287766	-2.64046731	-3.96848782	-3.951546111	-3.927876315	-4.36037919	-3.8329996	-3.95969173	-3.89742107	-4.032548622	-4.036282907	-1.96706661	-3.944570762	-4.013057601	-4.18967403	-3.678642169	-3.9741113
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Tabla 0.10: Degradación eficiencia fancore -4% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
Degradación																									
pr_fanorc	0.04122218	0.04168874	0.04279601	0.04379421	0.04481815	0.04586584	0.04694511	0.04807042	0.04924216	0.05046093	0.05172685	0.05304003	0.05440061	0.05580864	0.05726412	0.05876708	0.06031752	0.06192555	0.06359118	0.06531551	0.06710864	0.06897057	0.07089131	0.07287085	0.07490919
eff_fanorc	-6.98720151	-6.89642154	-6.80741122	-6.720249073	-6.634048595	-6.549048595	-6.465248595	-6.382448595	-6.300548595	-6.219548595	-6.139448595	-6.060148595	-5.981648595	-5.903948595	-5.827048595	-5.751948595	-5.678648595	-5.606148595	-5.534448595	-5.463548595	-5.393448595	-5.324148595	-5.255648595	-5.187948595	-5.121048595
mc_fanorc	-0.003294158	-0.010832323	-0.01861574	-0.026561692	-0.03467439	-0.042954432	-0.051402504	-0.060028993	-0.068742715	-0.077546744	-0.086443173	-0.095435173	-0.104515739	-0.113688933	-0.122959774	-0.132333333	-0.141804774	-0.151379074	-0.161052304	-0.170820544	-0.180689874	-0.190656304	-0.200725834	-0.210894464	-0.221159194
pr_fanduct	-0.118701845	-0.418395276	-0.13861554	-0.301097598	0.831307	-0.41071556	0.680669083	-0.162317739	0.945927715	0.49811044	-0.393880478	0.12025731	0.414198957	0.597387172	0.85257598	-0.19205897	0.016622454	-0.179238946	0.41273447	-0.145076538	0.679705802	0.015055513	0.174622945	0.74830026	-0.11690293
eff_fanduct	0.22119851	0.76596202	0.2595888	-0.544526979	-1.51206208	0.75207661	-1.241316007	0.295620057	-1.710247805	-0.90565325	0.724665757	-0.229457894	-0.76393926	-1.095341317	-0.35285003	0.34219664	-0.026264828	0.326744924	-0.75700001	0.266627993	-1.26704788	-0.024639374	-0.325075865	-1.323079591	0.2144676
mc_fanduct	0.016920776	0.05560712	0.09432393	-0.11812981	0.05986992	-0.096459006	0.024478505	-0.024478505	-0.07177919	0.055007333	-0.06144214	-0.057315883	-0.08431186	-0.07429384	-0.02732903	-0.003933136	-0.003933136	0.04315681	-0.05750019	0.029403261	-0.096599075	-0.00265074	-0.025648281	-0.102448582	0.01608871
pr_compressor1	0.05221871	0.45229551	0.08912203	-0.01067327	-0.7873962	0.065140296	-0.174397603	0.082285563	-0.09715003	-0.1257338	0.102928589	-0.008344695	-0.111229638	-0.085725794	0.024963366	-0.01737296	0.04315681	0.04315681	-0.09083613	0.104728198	-0.334487732	0.018559147	-0.128173737	-0.193228128	0.02713738
eff_compressor1	-1.097833958	-2.1349013	-0.97168754	0.652428883	2.70575263	-1.163801717	2.64668227	-1.0044752	3.191685518	1.67349569	-1.891676024	0.574678044	1.790453181	2.177343694	0.64782842	-0.380412035	0.011878822	-0.273108335	1.94634253	-1.003410198	3.013153745	0.057665614	1.302444359	2.647900212	-0.15488273
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-5.370141633	-10.11091127	-4.4921105	1.803987687	10.9715051	-4.574486592	11.34765184	-4.849578161	13.0237121	7.04010307	-8.83307361	2.49485425	7.974575357	9.201811792	2.85701169	-1.091151757	0.038570301	-0.71804068	8.80355269	-5.117815527	13.6294741	-0.07596197	6.462144026	11.51337571	-0.35708083
eff_compressor2	3.673919767	6.94070294	3.0893032	-1.2344055	-7.5917392	3.124578425	-7.815789896	3.314032725	-9.01815525	-4.8649162	6.657107341	-1.7206616	-5.47562381	-6.335451548	-1.874651548	0.77122454	-0.022668078	0.518933372	-6.0509555	3.50070843	-9.380412852	0.66019007	-4.43257821	-7.945626078	0.77295676
mc_compressor2	-1.415668373	-6.61929232	-1.1525711	0.487288497	2.8920898	-1.204894955	2.973130813	-1.262430367	3.446968888	1.89074891	-2.3517073	0.675482981	2.111962287	2.441501739	0.709891438	-0.28717244	0.001526288	-0.186657108	2.34915888	-1.331039685	3.591301777	-0.023279548	1.679303385	3.077683422	-0.09159272
pr_turbina1	0.01694678	0.024786182	0.0072852	-0.000445429	-0.01986121	0.01846083	-0.024942331	0.02333794	-0.026303202	-0.0185285	0.038865801	-0.008591564	-0.022020619	0.02488232	-0.00942926	-0.00784278	-0.005445385	-0.02575217	0.010021254	-0.038715246	0.011532895	-0.009777825	-0.009777825	-0.012775979	-0.0174118
eff_turbina1	-0.006390507	-0.00765025	-0.0097613	-0.008708891	0.0077122	-0.00462276	0.000398294	-0.010519095	0.003166315	0.00081481	-0.01740047	-0.002944602	0.011530518	0.004689794	-0.010490653	0.004239096	0.001942789	0.00729158	0.006660941	-0.003210248	0.018579178	-0.014383165	0.009817852	-0.003442788	0.00265441
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	0.016111159	0.07156723	0.00445951	-0.011284232	-0.02034962	0.020413526	-0.033724298	0.04761882	-0.04189861	-0.02678814	0.023594808	-0.04783869	-0.027027453	-0.002780779	-0.008045318	0.002194055	-0.0264784	0.003905496	-0.027286509	-0.003715563	-0.01037401	-0.03006688	-0.00540004	-0.00454474	-0.0878112
eff_turbina2	-0.004564474	-0.0878112	-0.00583887	0.039342552	0.0877813	-0.05423988	0.071993788	-0.013548692	0.108439571	0.06086374	-0.035342577	0.03445712	0.046010947	0.075724072	0.015354021	-0.026705407	0.001980797	-0.028487251	0.04453398	-0.014230933	0.075301716	0.00720845	0.016626085	0.08651886	-0.01333934
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tabla 0.11: Degradación eficiencia fancore -7% (I)

Acierto	-6.98720151	-6.89642154	-6.80741122	-6.720249073	-6.634048595	-6.549048595	-6.465248595	-6.382448595	-6.300548595	-6.219548595	-6.139448595	-6.060148595	-5.981648595	-5.903948595	-5.827048595	-5.751948595	-5.678648595	-5.606148595	-5.534448595	-5.463548595	-5.393448595	-5.324148595	-5.255648595	-5.187948595	-5.121048595
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caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-0.229251566	-0.13141437	0.00276872	0.015440895	0.03018536	0.018360447	-0.123141576	0.12802992	-0.029339918	-0.04928652	0.00338342	0.05397304	-0.149650524	0.133455259	0.081318192	-0.05627419	-0.03954823	-0.030043916	-0.093213742	-0.049405667	-0.06261946	-0.127409452	-0.10529736	-0.034058617	-0.178202933
-7.05948463	-6.77527296	-7.17360862	-6.89787856	-6.92222229	-7.14969737	-7.124155515	-7.13622306	-7.129575004	-7.112221136	-6.932525953	-6.990241525	-6.899518963	-6.92590175	-6.925143809	-7.1317759	-6.82048428	-6.9998607	-7.266639022	-7.071614208	-7.057918829	-7.127294601	-7.23374616	-7.126481839	-6.94252716
0.009581642	-0.02237436	0.009914491	-0.009916886	-0.00880643	0.007618992	0.010207417	0.00514684	0.009357017	0.005922257	-0.008095885	-0.005755258	-0.006548267	-0.013089409	-0.009390064	0.00973361	-0.01539855	-0.0022835	0.02691279	0.004292029	0.003254259	0.009789457	0.01785673	0.009188617	-0.00227863
0.237096909	-1.10993318	0.55049933	-0.535651377	-0.39179781	0.457386448	0.493689054	0.45003106	0.48259295	0.32534154	-0.36168552	-0.29419935	-0.513786206	-0.5349918354	-0.37163971	0.47236	-0.86678995	-0.185912385	0.993816253	0.189145323	0.143057087	0.346680669	0.86246196	0.492721708	-0.32622063
-0.429297366	2.00569028	-1.005214009	0.969215024	0.71313221	-0.826013919	-0.783334508	-0.82256385	-0.87477814	-0.5833963128	0.664678803	0.518694595	0.93949802	0.976939011	0.881870751	0.85872496	1.57630629	0.344244293	-1.801309206	-0.340879117	-0.246994943	-0.621365985	1.56700775	-0.89527262	0.59722457
-0.034251965	0.15849377	-0.07808769	0.076195214	0.05402965	-0.065261002	-0.063103127	-0.06420133	-0.069167849	-0.046327325	0.049187746	0.043487446	0.07751618	0.076762799	0.051494675	-0.06756666	0.12156989	0.077221894	-0.140827251	-0.027343437	-0.02178098	-0.048314176	-0.12315092	-0.071219251	0.04540805
-0.187387506	0.29823928	-0.095200663	0.107110452	0.10678436	-0.073940578	-0.133882574	-0.05975951	-0.139338289	-0.079457039	0.102458901	0.072229421	0.040321696	0.199370426	0.12768822	-0.13008464	0.18021237	0.051023527	-0.248507728	-0.073025398	-0.024552575	-0.151074616	-0.2222002	-0.147189135	0.0010274
1.524863645	-3.97164665	1.969977716	-1.745051432	-1.37665353	1.305932893	1.543388429	1.34724157	1.729271013	1.066213712	-1.486476209	-0.575000032	-1.18632548	-2.728087903	-1.931930046	1.70254285	-2.56840265	-0.829574314	3.410201634	0.994768497	0.02511082	1.875407897	3.18538175	1.735361807	-0.74545188
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.611835395	-16.9793007	8.209691189	-7.212103107	-5.90760193	5.10177892	6.41850701	5.56620487	7.53835284	4.384722208	-6.715611558	-1.694145972	-4.252943814	-10.30021101	9.034710155	7.8933623	-10.4678476	-3.667477239	14.3165945	4.63544474	-0.613583998	8.917157353	13.5373541	7.504678566	-2.72728932
-5.224894259	1.7135013	-5.654605395	4.975586747	4.08559185	-3.52973372	4.43730488	-3.82051459	-5.213049357	-3.034781393	4.612268143	1.204615129	2.963187876	7.10007619	6.21067321	-5.08120473	7.2470155	2.515589044	-9.894904768	-3.17352509	0.385702305	-6.132288104	-9.3440523	-5.177689611	1.88420199
1.9478723	-4.4856479	2.172530428	-1.900385805	-1.53929233	1.36210084	1.672209023	1.51687692	2.004068661	1.170385644	-1.73574801	-0.444391294	-1.166762449	-2.649595469	1.94897837	-2.76908212	-0.985804642	3.76182954	1.20857416	-0.159521872	2.33080496	3.57527644	1.996586675	-0.76509092	
-0.007695047	0.04418716	-0.028365203	0.018174852	0.01462154	-0.013067046	-0.0051863	-0.02661447	-0.023449662	-0.001319723	0.018071511	0.001205885	0.002772398	0.029841197	-0.01058186	-0.00750156	0.02436511	0.011100461	-0.033731029	-0.024137086	0.014813945	-0.01492352	-0.031221	-0.019422444	0.01838843
-0.000248571	-0.01533372	0.006778777	-0.000545322	-0.00806649	-0.004058612	-0.00390969	0.00457075	0.007919792	0.002274615	0.002671647	0.00143569	0.008339161	-0.0122249023	-0.005606206	-0.00570878	0.0011465	-0.00444639	0.003224938	0.010964044	-0.004981366	0.005148057	0.00559899	0.004424895	0.00159332
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0.008014677	0.0402492	-0.03245881	0.022918708	0.00395603	-0.025719215	-0.011908462	-0.02836284	-0.028739073	0.001381724	0.026262033	0.01500732	0.027298777	0.024943755	0.019393346	-0.01962615	0.05595663	0.011937126	-0.043971357	-0.01816794	0.009878244	-0.013655865	-0.03989743	-0.027453641	0.02728077
0.015549434	-0.13120207	0.05931931	-0.065450859	-0.04492846	0.053019716	0.048226998	0.05593051	0.051851487	0.040366628	-0.035657579	-0.032798093	-0.064504755	-0.060050013	-0.037093322	0.05493993	-0.09911568	-0.026230452	0.10641067	0.021047215	-0.029050679	0.09746415	0.029050679	0.063467119	-0.04336847
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

-7.05948463	-6.77527296	-7.17360862	-6.89787856	-6.92222229	-7.14969737	-7.124155515	-7.13622306	-7.129575004	-7.112221136	-6.932525953	-6.990241525	-6.899518963	-6.92590175	-6.925143809	-7.1317759	-6.82048428	-6.9998607	-7.266639022	-7.071614208	-7.057918829	-7.127294601	-7.23374616	-7.126481839	-6.94252716
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Tabla 0.12: Degradación eficiencia fancore -7% (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fanorc	-0.0547968	0.0390861	-0.0674903	0.1740769	-0.1159192	-0.2523994	-0.3075731	-0.0754508	-0.1850465	-0.4840109	-0.2637158	0.3651378	0.3416482	0.1882625	0.1949752	0.1418532	-0.0579181	0.0265512	0.0458050	-0.1088631	0.2119638	0.2392174	0.3529596	0.1874694	-0.0737646
eff_fanorc	-0.0109321	0.0231398	-0.0048072	0.0351367	-0.0233987	-0.0370472	-0.0626236	-0.0165077	-0.0383185	-0.0607827	-0.0391197	0.0523254	0.0461751	0.0362376	0.0337224	0.0368488	-0.0264389	0.0003354	0.0100777	-8.9731E-05	0.0187275	0.0354126	0.0538106	0.0268807	-0.0070678
mc_fanorc	0.0008104	-0.0046197	0.0012345	-0.0041446	0.0031914	0.0055873	0.0080097	0.0018406	0.0046952	0.0152077	0.0057097	-0.0081864	-0.0077426	-0.0045186	-0.0047762	-0.0040583	0.0101650	-0.0007918	-0.0007514	0.0019282	-0.0043094	-0.0054306	-0.0078710	-0.0042739	0.0016599
pr_fanduct	-1.0377180	-1.0993978	-1.1046898	-1.1066319	-0.8812416	-0.9067451	-0.7337597	-0.9653038	-0.8564893	-0.7170311	-0.9043595	-1.1684138	-1.1751663	-1.1185979	-1.1311965	-1.1689389	-0.9362659	-1.0235582	-1.0001365	-1.0246377	-1.0514989	-1.1063091	-1.1689029	-1.0925439	-0.9611629
eff_fanduct	0.0508524	0.1829241	0.0001129	0.2010969	-0.2534649	-0.1876426	-0.5119632	-0.0704429	-0.2738693	-0.5453778	-0.1898784	0.3193882	0.3289471	0.2322087	0.2482289	0.3084945	-0.1259447	0.0444981	-0.0029689	0.0428469	0.0959032	0.2042839	0.3155485	0.1758789	-0.0820715
mc_fanduct	0.0048145	0.0123482	0.0002829	0.0136794	-0.0115883	-0.0121959	-0.094937	-0.0046441	-0.0190123	-0.0388679	-0.0127067	0.0213054	0.022343	0.0148426	0.0165035	0.0215505	-0.0086532	0.0025103	-0.0002518	0.0307527	0.0062308	0.0130613	0.0215275	0.0114631	-0.0051953
pr_compressor1	-0.0381799	0.0963945	-0.0062001	0.0700271	-0.0326691	-0.1061570	-0.1384406	-0.0083524	-0.0632009	-0.1801568	-0.0966408	0.1197769	0.1046919	0.0891258	0.0959845	0.0423283	-0.0039653	0.0149364	0.0178641	-0.0498123	0.0561411	0.0975834	0.1185394	0.0724933	-0.0015417
eff_compressor1	0.1996216	-0.3369490	-0.0016389	-0.2716562	0.0844128	0.3837959	0.5001373	0.0195512	0.2018607	0.5594031	0.3415075	-0.4231214	-0.3396499	-0.3607424	-0.3362335	-0.1279428	0.0339051	-0.0275074	-0.0389419	0.1525481	-0.1709456	-0.3630223	-0.3854069	-0.2733068	0.0190963
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	1.9967865	-3.0219287	0.0162791	-2.0192139	0.2972957	3.3538784	3.7137114	-0.0489785	1.294062	4.3474451	2.838994	-3.3886218	-2.4102055	-2.9029183	-2.7591623	-0.4517453	-0.1288001	-0.2407438	-0.4657581	1.7198503	-1.3658705	-3.1376691	-2.8702401	-2.2453797	0.0884787
eff_compressor2	-1.3773934	2.1238818	-0.0194573	1.4394453	-0.2436577	-2.3620970	-2.6509308	0.0144719	-0.9458060	-3.1191873	-2.0095446	2.4201828	1.7459476	2.0468633	1.9491407	0.3636259	0.0670695	0.1794361	0.3278552	-1.1973404	0.9821233	2.2140134	2.0686484	1.5895304	-0.0746516
mc_compressor2	0.5004401	-0.7843162	-0.0020162	-0.5303962	0.0965604	0.8674093	0.9975809	-0.009572	0.3552382	1.1511789	0.7354234	-0.8857394	-0.6377604	-0.7545263	-0.1453874	-0.1453874	-0.0209049	-0.0642967	-0.1116218	0.0289455	-0.3493087	-0.8145636	-0.7546445	-0.5847431	0.0272949
pr_turbina1	-0.0049369	0.0047652	0.0028974	0.0026386	0.0024212	-0.0050208	-0.0091688	3.842E-05	0.0021891	-0.0082819	0.0038715	0.0099174	0.0036557	0.0073627	0.0061440	-0.0016483	-0.0011052	-0.0002189	0.0017638	-0.0032905	0.0020881	0.0057244	0.0027879	0.0061915	-0.0007295
eff_turbina1	0.0029545	0.0001942	-0.0043138	-0.0028084	-0.0061589	-0.0022667	-0.0131622	-0.0023484	-0.0036091	-0.0034507	-0.0037682	0.0014069	-0.0019493	0.0042178	0.0064139	-0.0009006	0.000554	-0.0024349	0.0023076	0.0009695	0.0005753	0.0018131	0.0001923	-0.0005217	
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	-0.0011816	0.0042568	0.0005152	0.0046288	-0.0040316	-0.0041528	-0.0128624	-0.0010949	-0.0053087	-0.0109969	-0.0043583	0.0083062	0.0068204	0.0625175	0.0061291	0.0074371	-0.0072694	-0.0006936	0.0005410	0.0014673	0.0008569	0.0039515	0.0054952	0.0051796	-0.0015055
eff_turbina2	-0.0003357	-0.0087047	-0.0001494	-0.0110429	0.0137763	0.009775	0.0332572	0.0022473	0.0116754	0.0318145	0.0083024	-0.0146041	-0.0173101	-0.0136394	-0.0160304	-0.0189749	0.0089425	-0.0052562	-0.0008708	-0.0070841	-0.0018777	-0.0132512	-0.0178125	-0.0098837	0.0060657
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Acierro	-1.0377180	-1.0993978	-1.1046898	-1.1066319	-0.8812416	-0.9067451	-0.7337597	-0.9653038	-0.8564893	-0.7170311	-0.9043595	-1.1684138	-1.1751663	-1.1185979	-1.1311965	-1.1689389	-0.9362659	-1.0235582	-1.0001365	-1.0246377	-1.0514989	-1.1063091	-1.1689029	-1.0925439	-0.9611629
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Tabla 0.13: Degradación relación de compresión fanduct -1% (I)

0.24028219	-0.29463803	-0.39653813	-0.00939707	-0.05711632	-0.17472324	-0.17731146	-0.14493579	-0.13881273	0.00571055	-0.1024192	0.35032485	-0.22109317	-0.17680958	-0.03132428	0.0588084	0.2095318	-0.43171532	0.09587736	0.01898078	-0.15283352	0.3972823	0.32912837	0.11706133	0.06462442
0.04927258	0.03232431	-0.05098032	0.00722016	-0.008834	-0.01862448	-0.02066515	-0.01671359	-0.02335858	0.01551043	-0.03301182	0.06613908	-0.02638648	-0.0198367	0.00470666	0.00142444	0.02617889	-0.04464643	-0.00131198	0.00056383	-0.00264635	0.06173916	0.04160409	0.01702798	-0.00316902
-0.00552375	-0.00493766	0.00875469	-0.00049879	0.00149556	0.00832781	0.00402511	0.00803635	0.00332216	-0.00043935	0.00321285	-0.00867614	0.00463597	0.00381489	0.00041302	-0.00120906	-0.00446846	0.00886605	-0.00071677	-0.00018359	0.00308818	-0.00918617	-0.00749873	-0.00284583	-0.00083825
-1.11578045	-1.02435412	-0.83021229	-1.07013974	-0.95341856	-0.94088929	-0.90894847	-0.97466323	-0.92204264	-1.05548471	-0.85116739	-1.24031666	-0.93603879	-0.93850192	-1.02530545	-1.01941936	-1.0830602	-0.90151949	-1.00710022	-0.98222027	-0.98011145	-1.21333092	-1.15940188	-1.07622203	-0.96505579
0.21942092	0.0463399	-0.32847932	0.123379	-0.09048506	-0.12301327	-0.17513001	-0.0547059	-0.15603756	0.10154827	-0.2913779	0.44050194	-0.13304825	-0.12218019	0.03964749	0.02980335	0.16053508	-0.20042375	0.00107478	-0.04773273	-0.044969	0.39633955	0.30268535	0.13765277	-0.06068843
0.01431824	0.0023686	-0.02237981	0.00859296	-0.00639876	-0.00788931	-0.01225494	-0.00332705	-0.01036676	0.00709017	-0.0197367	0.03045592	-0.0085936	-0.00829641	0.00304943	0.00217711	0.01028019	-0.01288374	0.00044511	-0.00273592	-0.00276382	0.02711207	0.02009408	0.00940145	-0.00499002
0.07268647	0.11117052	-0.13766533	0.0113582	-0.03661975	-0.08723053	-0.05180014	-0.0758023	-0.06892168	0.0019422	-0.05492637	0.13749575	-0.08307512	-0.08140538	-0.02803558	0.0337544	0.07709952	-0.16038799	0.01620158	0.01149033	-0.06796121	0.1437598	0.11923091	0.02949654	0.04610114
-0.28975098	-0.41870537	0.44092533	-0.04774866	0.10997586	0.28217386	0.16241846	0.26562665	0.24484625	-0.03550551	0.20823697	-0.46065471	0.29744134	0.28290515	0.12341457	-0.03370418	-0.27389192	0.5433725	-0.05667231	-0.01340698	0.19292388	-0.48009887	-0.39710312	-0.07824101	-0.19424141
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-2.0287337	-4.07584053	3.52950957	-0.19915304	1.01317344	2.63326564	1.10893386	2.68623092	2.20576504	0.04797034	1.35350083	-3.47379855	-2.58660698	2.48517978	1.36138002	-0.25133201	-2.17074282	4.96404683	-0.43139575	-0.24579029	2.13978462	-3.76766004	-3.21852981	-0.43957069	-2.11028737
1.45541218	2.84542878	-2.52332926	0.44829675	-0.71129174	-1.8477578	-0.80885099	-1.8734273	-1.55149857	-0.02431109	-0.97391669	2.48910703	-1.81402245	-1.74985285	-0.93666069	0.1851405	1.54235695	-3.50003868	0.30256635	0.16751423	-1.49689209	2.6919961	2.2962065	0.33462486	1.45250018
-0.52931402	-1.09517902	0.92198524	-0.0657485	0.26743269	0.68123339	0.29553737	0.68746534	0.57712921	-0.00072054	0.37717087	-0.92483955	0.66276076	0.64212301	0.34167437	-0.06220413	-0.56064013	1.27257153	-0.10951145	-0.05812358	0.54666399	-0.99026329	-0.84162881	-0.12131278	-0.52882443
0.00338689	0.01080213	-0.00657291	-0.0002575	0.00122981	-0.00430052	6.6283E-05	-0.00433643	-0.00496151	-0.00231333	0.00475468	-0.00377552	-0.00452051	-0.00382597	0.00283355	0.00165021	-0.00783322	-0.00093224	-0.00233209	-0.00403133	0.00554924	0.00746084	0.00055229	0.00364725	0.000364725
0.00138023	-0.00351999	0.000596499	0.00089441	-0.00453714	-0.0027802	-0.00306298	0.00039931	-0.00176851	0.00299575	-0.00238983	0.00265234	-0.00077535	0.00133628	0.00225815	-0.00156933	-0.00062214	-0.00131602	0.00129333	0.00046486	-0.00206026	0.00204275	-0.00129835	0.00365465	-0.00072446
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00395167	0.0043178	-0.00643091	0.0025362	-0.0020917	-0.00215897	-0.0027955	-0.00035692	-0.00619095	0.00227947	-0.00730082	0.00954467	-0.00638216	-0.00345757	-0.00114712	0.00048292	0.00125692	-0.00643228	-0.00130805	-0.00320281	-0.00107872	0.00806185	0.00699624	0.00286264	-0.00077357
-0.01150851	0.00401787	0.01785767	-0.00795898	0.00593954	0.00759303	0.00767245	0.00147626	0.01040864	-0.00818339	0.02296966	-0.02328298	0.00683311	0.00391484	-0.00440045	0.00122222	-0.00959297	0.00692334	0.00313251	0.00714461	0.0006638	-0.01999442	-0.0156021	-0.00427222	0.0033314
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

-1.11578045	-1.02435412	-0.83021229	-1.07013974	-0.95341856	-0.94088929	-0.90894847	-0.97466323	-0.92204264	-1.05548471	-0.85116739	-1.24031666	-0.93603879	-0.93850192	-1.02530545	-1.01941936	-1.0830602	-0.90151949	-1.00710022	-0.98222027	-0.98011145	-1.21333092	-1.15940188	-1.07622203	-0.96505579
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Tabla 0.14: Degradación relación de compresión *funduct* -1% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
Degradación																									
pr_fanore	0.38185798	0.38154036	0.09338215	0.80096683	0.17783806	0.79656259	0.08575232	0.14745451	0.67049981	0.18777573	0.50335911	0.19310639	0.38011779	0.16585108	0.53839252	0.35176291	0.65523476	0.45274433	0.64933963	0.08348486	0.52985071	0.37196994	0.31815642	0.53290387	0.48873388
eff_fanore	-0.04897749	-0.04720849	0.21152416	-0.17064484	0.12153925	-0.03678902	0.00118203	-0.36758125	-0.45350732	0.39801327	0.19440942	-0.02571768	0.11439219	0.235625	0.05172195	-0.46916361	-0.14440616	-0.33263644	-0.04687499	-0.69430793	-0.1915553	0.25475948	-0.09627193	0.01286313	0.36055489
mc_fanore	0.00325743	0.00476802	0.28523973	-0.37117491	0.32346525	-0.03765728	-0.35705299	0.22288331	-0.03808046	-0.05353452	0.00664778	0.25257342	-0.10312662	0.01085018	-0.02969441	0.1265196	-0.14822442	-0.20977669	-0.07295574	-0.11208588	-0.33749036	0.11603493	-0.03003446	-0.07096957	0.35549352
pr_fanduct	-2.92039957	-2.92023556	-3.25290817	-2.90422655	-2.89566057	-2.90267475	-2.91256675	-2.92641078	-2.91788016	-2.91958838	-2.90425196	-2.93894465	-2.92567835	-2.91916389	-2.92381149	-2.91347093	-2.91055967	-2.90754625	-2.90473187	-2.92847319	-2.9241336	-2.87577685	-2.98757514	-2.93430078	-2.94311439
eff_fanduct	-0.14839228	-0.14887504	-0.24014462	-0.08784083	-0.03269085	-0.72561711	-0.22023236	-0.41812716	-0.28898074	-0.33342292	-0.33623892	0.26535086	-0.2821233	-0.08558622	0.32470417	-0.3672872	-0.12530995	-0.25907033	0.48955173	-0.06770468	-0.10687752	0.15085197	-0.02156439	0.00660314	-0.2902275
mc_fanduct	-0.00736014	-0.00620797	-0.22429883	-0.26660376	-0.19653066	-0.11237565	-0.14336448	-0.14009551	0.16786522	0.05979003	-0.46684473	-0.20938623	0.12248815	0.166698	-0.09350319	0.06568229	-0.09078248	-0.20046855	0.7838605	0.08507016	0.15718521	-0.40369646	0.31248969	-0.13230708	0.10350014
pr_compresor1	-1.63139654	-1.63254304	-1.58603274	-1.76000698	-1.38517071	-1.0724097	-1.57827775	-1.8237556	-1.48241801	-1.81575054	-1.28076211	-1.67514827	-1.5939428	-1.80132694	-1.6908773	-1.64112644	-1.73709478	-1.64112644	-1.85302898	-1.64112644	-1.73709478	-2.05063197	-1.49521472	-1.65026083	
eff_compresor1	0.66348797	0.66416167	0.88327381	0.47745358	0.43186589	0.55505553	0.73907595	0.85967096	0.62835622	0.66455714	0.61764804	0.90488793	0.29731021	0.60323354	0.44757951	0.93008463	0.32310421	0.4407111	0.47791993	0.40078739	0.51575909	0.95148976	0.17189219	1.01481696	1.48278479
mc_compresor1	2.3997882	2.39911671	2.42922357	2.66831681	2.25875637	2.27091027	2.64222238	2.509572	2.27158132	2.4718661	2.31405101	2.7040973	2.41202551	2.00172862	2.21268948	2.42931508	2.43500133	2.61658053	2.56202628	2.65605485	2.59402223	2.49286977	2.60037248	1.67335162	2.54144683
pr_compresor2	-0.73456413	-0.73498645	-0.71543097	-0.58837992	-0.88612571	-1.01665162	-1.18989497	-0.66503051	-0.57885007	-0.45750918	-0.9294595	-0.85558669	-0.83493963	-0.5046734	-0.86879644	-0.49548876	-0.80747815	-0.88582425	-0.89029888	-0.85793245	-0.77123382	-0.002096	-1.22149392	-0.15171704	-0.5924591
eff_compresor2	-0.20069533	-0.20136713	0.34981625	-0.14486336	-0.39233807	-0.01831674	-0.63019461	-0.105668	-0.00555692	-0.5264197	0.10686942	-0.19510289	-0.13629361	-0.41407463	0.19249551	-0.22755269	-0.12734413	-0.52081933	-0.12367739	-0.64339427	0.05997356	-0.2161639	-0.74314222	-0.40465083	-0.4726467
mc_compresor2	-0.38145014	-0.38087451	-0.3537866	-0.32614032	-0.29446891	-0.86673644	-0.80289195	-0.37156593	-0.27350949	-0.33417053	-0.75320311	-0.41879462	-0.36199079	-0.09540868	-0.4712467	-0.53055843	-0.71645586	-0.11115407	-0.13007598	-0.37812084	-0.41045643	-0.88270224	-0.12861083	0.04836586	-0.80377349
pr_turbina1	0.76929848	0.76852039	0.38788524	0.58035339	0.51276968	0.5854376	0.96447467	0.55106224	0.71414869	0.31132345	0.65618043	0.62999843	0.93699586	0.63371608	0.61058345	0.7605628	1.07332042	0.92256488	1.06783864	0.83533313	0.76726612	0.91273739	0.55796528	1.27046272	1.02580658
eff_turbina1	0.23549648	0.23443292	0.16249789	0.46391227	0.38886199	0.36590076	0.32888955	0.36006641	0.44723214	0.24203054	0.01255712	0.29798873	0.4426697	0.57863728	0.13240572	0.18965178	0.34755339	0.63994606	0.42546503	0.10273525	0.20882549	-0.05902101	0.63760016	-0.23896083	0.17778028
mc_turbina1	0.96522595	0.96577893	0.79560395	1.044891674	1.14815249	0.96489408	0.80366106	0.77636645	0.75664323	1.40924449	0.85618113	1.04771393	0.66032914	0.7985099	1.12953251	1.16801002	0.60490191	0.67690883	1.41028872	1.17955621	0.66766598	0.98119334	0.54782454	1.02237704	1.17490231
pr_turbina2	-0.01854144	-0.01896487	-0.17149211	-0.07860215	0.22008169	0.12496123	0.32623915	-0.2650796	0.0146799	0.19792007	-0.17175912	-0.09957392	-0.36919457	-0.27443922	-0.32115963	-0.03145458	0.22458228	-0.30771502	0.57939775	0.05438619	-0.31794678	0.32946738	-0.21897729	1.0016651	-0.28710763
eff_turbina2	-0.01588829	-0.01552671	-0.24142776	-0.05837226	-0.02058747	0.0131931	0.01580453	-0.26292937	0.30528578	-0.01748092	0.09413788	0.01455449	0.09997137	0.20420781	0.12834979	-0.20937323	-0.15103119	0.08531598	-0.62883401	-0.08465662	-0.32656257	0.08865345	0.06217926	-0.08521273	0.7350487
mc_turbina2	0	0	0.00035189	0.01563778	-0.02339905	0.14235921	0.15659959	-0.36496892	0.19999715	-0.04463071	0.61492381	0.07047003	-0.31355087	-0.30618781	-0.31355087	0.06951097	-0.21545171	-0.57454499	-0.04422317	0.57650004	0.09678325	0.17749377	0.15706927	-0.5875611	

Agierto	-2.92039957	-2.92023556	-3.25290817	-2.90422655	-2.89566057	-2.90267475	-2.91256675	-2.92641078	-2.91788016	-2.91958838	-2.90425196	-2.93894465	-2.92567835	-2.91916389	-2.92381149	-2.91347093	-2.91055967	-2.90754625	-2.90473187	-2.92847319	-2.9241336	-2.87577685	-2.98757514	-2.93430078	-2.94311439
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Tabla 0.15: Degradación relación de compresión fanduct -4% (II)

	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	0.88789574	0.30763027	0.43406678	0.28748519	0.32801978	0.55028597	0.54001297	0.40519387	0.26611378	0.41943635	0.7281875	0.53331157	0.40086936	0.23968806	0.56091397	0.30589127	0.42455759	0.23028620	0.50091627	0.40236555	0.10338862	0.39749125	0.20141075	0.20702644	0.68091397
	0.27444223	-0.52111719	0.58988551	-0.0549623	-0.06049903	-0.02145155	-0.01971607	-0.05844208	-0.12517612	0.0276878	-0.31309706	-0.14139615	-0.06631789	-0.00145013	0.16726093	-0.01417907	-0.09621056	-0.00291463	-0.04524456	0.26304154	-0.16008164	0.21092379	-0.06175672	-0.08228271	0.28726093
	0.03883745	-0.92773714	0.26012849	-0.05421104	0.18545744	0.03858637	-0.11550342	0.0825809	-0.02177252	0.15560462	-0.04535756	0.00185455	0.00185455	-0.14147447	-0.07887032	-0.06652284	0.03085261	-0.28831801	0.16944231	0.28537351	0.368571	0.06983301	-0.05796091	0.057336	0.04132968
	-2.94826601	-2.9215388	-2.89550277	-2.90598102	-2.94061464	-2.93240333	-2.90964021	-2.91080518	-2.9368872	-2.91463133	-2.91843988	-2.90618682	-2.92652696	-2.95028237	-2.92077007	-2.90020643	-2.9105573	-2.91978451	-2.92148595	-2.92171823	-2.92041134	-2.92105466	-2.91997459	-2.92090572	-2.80077007
	-0.27699631	-0.19361676	0.37229248	0.09477752	0.02624046	0.07025604	-0.10563716	0.05735674	0.05420859	-0.01165323	0.1306723	-0.11026021	0.05634227	0.02776226	0.06138677	-0.07331089	0.05946078	0.09336027	-0.13604043	0.11408785	-0.11658602	-0.03674658	0.0882446	0.04208574	0.05861323
	-1.24128055	-1.90464432	-1.50292638	-1.64537959	-1.61656903	-1.7694008	-1.55731938	-1.56814152	-1.66906396	-1.75562284	-1.7254429	-1.61074531	-1.62390714	-1.71862469	-1.45964616	-1.5542512	-1.63789638	-1.37955323	-1.55529427	-1.88637879	-1.68304453	-1.8524298	-1.59371012	-1.56507146	-1.33964616
	0.32965403	0.0765209	1.2937413	0.65533286	0.48509996	0.77631597	0.57941621	0.8538156	0.59368444	0.61289138	0.73957478	0.7975991	0.77581469	0.62367525	0.74546888	0.5845386	0.6014781	0.62366741	0.82400718	0.81650318	0.74891111	0.88805537	0.52676587	0.5737256	0.8654688
	2.81811823	2.23126684	2.10758182	2.5256105	2.42629258	2.64632978	2.36483874	2.2837827	2.43019807	2.43237096	2.4235787	2.53057348	2.42542941	2.40537391	2.40157464	2.4219625	2.27917912	2.52557523	2.36101136	2.37976724	2.42491072	2.36076522	2.3667607	2.5233791	2.5233791
	0.15935961	-0.68242094	-0.9548929	-0.58771073	-0.66159094	-0.89035585	-0.73160093	-0.76929506	-0.62445614	-0.84576647	-0.75540147	-0.6630536	-0.7443389	-0.71256158	-0.76987666	-0.66911061	-0.78117775	-0.58946913	-0.99475617	-0.56245997	-0.7220702	-0.87766181	-0.63150702	-0.62748052	-0.64987666
	-0.36069246	-0.54366024	0.45121285	-0.19740124	-0.29470882	-0.40736011	-0.00545798	-0.37020179	-0.24535612	-0.15387689	-0.19822141	-0.03885774	-0.25635732	-0.37183939	-0.0313804	-0.07492545	-0.2390402	-0.09066165	-0.11684268	-0.30892074	-0.20289192	-0.18386032	0.09775991	-0.16001178	0.0886196
	-0.30039888	-0.23594067	-0.2346973	-0.21220233	-0.40737884	-0.38871001	-0.33554779	-0.28951154	-0.42812137	-0.34918886	-0.38425925	-0.31528577	-0.44930004	-0.50202567	-0.3103451	-0.47415814	-0.28896866	-0.39903061	-0.3803789	-0.49494746	-0.49557038	-0.5590029	-0.42464345	-0.54724144	-0.1903451
	0.55699159	0.6811847	0.75569883	0.81687134	0.647944	0.84520963	0.72956729	0.7714516	0.62571642	0.77930062	0.78333439	0.79203313	0.9297538	0.59200712	0.70602209	0.75231071	0.91400103	0.69630161	0.8104141	1.05397004	0.91355558	0.84092704	0.93927979	0.95966671	0.82602209
	-0.31908071	0.20272673	0.38848452	0.27234951	0.39795145	0.22733007	0.21295802	0.20556245	0.13772487	0.2665994	0.2592551	0.21293887	0.31234603	0.22824732	0.27476912	0.18832924	0.9338026	0.82626272	0.76215488	0.92712453	0.90822644	0.97039315	0.99067348	0.87930172	0.99742979
	1.44020362	0.50362473	0.87990739	1.18442602	1.00257719	0.94837862	0.93719766	0.79312437	1.02581541	0.96760831	0.89807108	0.86862661	0.9739193	0.79311447	0.87742979	0.9338026	1.17055301	0.82626272	0.76215488	0.92712453	0.90822644	0.97039315	0.99067348	0.87930172	0.99742979
	0.205649	-0.26544569	-0.11285264	0.13502707	-0.04363062	-0.01789164	0.11213102	-0.00019825	-0.02990689	-0.02074691	-0.12304144	-0.00903965	0.15189447	0.05164668	-0.00564669	0.0840725	-0.17466647	-0.10418	0.09127213	-0.14559603	0.00544228	0.02596512	-0.0440636	-0.19364363	0.1163531
	-0.18084342	0.11658613	-0.14082409	0.07483773	-0.10843388	-0.12234907	-0.04432581	-0.04186152	0.06056786	-0.01676409	0.08088837	-0.04156154	-0.01352491	-0.11643509	0.13729952	-0.0774982	-0.01361954	-0.09435302	-0.07825613	0.11982385	-0.02412271	0.0891186	0.02596632	-0.02937307	0.25729952
	0.03662412	-0.25514828	-0.17893972	0.04022596	0.00996603	-0.16439151	-0.07917105	-0.13547889	0.06698975	0.09294651	-0.02197565	0.23101314	0.02900428	-0.11064268	0.05318478	0.08001151	0.00952948	-0.10077884	-0.04056431	0.0420794	-0.06414821	-0.09960196	-0.06126779	-0.01263359	0.17318478

Tabla 0.16: Degradación relación de compresión funduct -4% (II)

-2.94826601	-2.9215388	-2.89550277	-2.90598102	-2.94061464	-2.93240333	-2.90964021	-2.91080518	-2.9368872	-2.91463133	-2.91843988	-2.90618682	-2.92652696	-2.95028237	-2.92077007	-2.90020643	-2.9105573	-2.91978451	-2.92148595	-2.92171823	-2.92041134	-2.92105466	-2.91997459	-2.92090572	-2.80077007
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Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fanore	0.0080772	-0.00744451	0.00226356	-0.047197	0.0231195	0.02353159	0.03293918	0.013666	0.06667769	-0.00835481	-0.01134697	0.01222826	-0.00975996	-0.01159437	-0.04324102	-0.07682101	-0.02049471	-0.01358912	-0.0222149	0.02318575	-0.00307935	-0.08880516	-0.02150179	-0.01614532	-0.04024499
eff_fanore	0.02384475	-0.00345065	0.02398855	-0.00677495	-0.0084085	-0.02002436	-0.00947409	-0.01023055	0.02744995	-0.00708308	0.00400737	-0.00357776	0.00262861	0.05174537	-0.00742276	0.01678411	0.01053872	0.03392838	-0.00755293	-0.02239355	0.00993464	-0.02246549	0.02202915	0.02002869	-0.01323298
mc_fanore	-0.00149181	-0.00038877	-0.00174152	0.00061421	-0.00023759	5.0502E-05	-0.00014922	0.00138365	-0.00402219	0.00060881	6.3955E-05	7.5211E-06	-0.00038274	-0.00400662	0.00088912	0.00069715	-0.00029432	-0.00267341	0.00088737	0.00065761	-0.00060979	0.00219125	-0.00068217	-0.00072794	0.00166569
pr_fanduct	-0.08329772	-0.03275158	-0.0949899	0.01513626	0.02357539	0.04286529	0.036606381	0.07289808	-0.12217708	0.01957003	-0.00761635	0.02979115	-0.04105677	-0.24066994	-0.00992816	-0.07141617	-0.04858901	-0.16593677	0.01865425	0.0747067	-0.04492366	0.05558616	-0.07621997	-0.067472	0.03239235
eff_fanduct	-0.83531948	-0.9260966	-0.80585177	-0.10469586	-1.03041902	-1.06119055	-1.0471952	-1.1181681	-0.75200857	-1.02701992	-0.96684122	-1.03975181	-0.91297516	-0.54680415	-0.97013169	-0.86017741	-0.89814908	-0.67818335	-1.02350973	1.12159902	-0.91208306	-1.09864967	-0.84270899	-0.86373811	-1.05051561
mc_fanduct	0.02212621	0.00479927	0.01357023	-0.00209916	-0.00355659	-0.00638517	-0.00518925	-0.01020169	0.01708226	-0.00068722	0.00096265	-0.00450365	0.00608756	0.03440008	0.00148635	0.01033738	0.00703664	0.02365021	-0.00262593	-0.01098827	0.00661032	-0.00757948	0.0111366	0.00978682	-0.00441802
pr_compresor1	0.02588802	0.00960545	0.03275185	-0.006576165	0.01243352	0.01378078	0.00847747	-0.03752208	0.08751883	-0.00087697	0.00384427	0.01002782	0.0088702	0.08223166	-0.01460616	-0.01564413	0.00274245	0.04640314	-0.02046463	-0.0200765	0.00806144	-0.05334638	0.00877994	0.01394325	-0.03101809
eff_compresor1	-0.17838074	-0.00631474	-0.3322862	0.06749293	-0.13209755	-0.20463928	-0.15317244	0.33406231	-0.78468923	0.11099925	-0.10583353	-0.11042349	-0.01613246	-0.66397183	0.19506613	0.11519225	0.01094054	-0.38411348	0.21615704	0.16381212	-0.0570778	0.54575498	-0.08327947	-0.16397768	0.3014572
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	-0.59843858	0.0769658	-1.412043	0.37249394	-0.88645293	-1.45342708	-1.04547267	1.56218996	-3.86107377	0.56813905	-0.63300504	-0.80380364	0.05148945	-2.70557661	1.02747191	0.97888006	0.25309091	-1.46632871	1.12830278	0.47938767	-0.02779893	2.75549598	-0.00765206	-0.61046592	1.47536528
eff_compresor2	0.42486341	-0.0451888	0.98119601	-0.21667051	0.5990659	0.9788972	0.70472647	-1.08066422	2.66203645	-0.39372298	0.43307581	0.54195664	-0.02558512	1.89347605	-0.68989043	-0.65615003	-0.16135079	1.03283594	-0.77175046	0.34036534	0.03137908	-1.89315493	0.02122347	0.42917936	-1.01729791
mc_compresor2	-0.15939138	0.01629946	-0.37300393	0.07859513	-0.22580115	-0.37621461	-0.2669479	0.41170307	-0.9818544	0.151138	-0.17171806	-0.20806671	0.00870628	-0.71861164	0.25807754	0.25990088	0.05894109	-0.39231678	0.2919621	0.13224249	-0.00905081	0.77410568	-0.00751988	-0.16939311	0.37621412
pr_turbina1	0.00073078	-0.00190812	0.00639406	0.00237987	0.00234787	0.00621129	0.00513365	-0.00234631	0.01084828	-0.00030221	0.034877	0.0018753	-0.00081643	0.00493082	-0.00212841	-0.0022548	-0.00073639	0.04940226	0.00490226	-0.00104348	-0.00196705	-0.0074253	-0.00039123	0.02828283	-0.0045355
eff_turbina1	0.0263786	-0.00439112	-0.00035561	-0.00075458	-0.00195959	-0.00404902	-0.00499555	0.00064284	-0.00457639	0.00144896	-0.00011465	-0.00195956	0.00119694	0.00258832	0.00117393	0.00475586	0.00188805	0.00410488	0.00145245	-0.00136506	0.00064777	0.00516705	0.00144264	0.00077861	0.00421629
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	0.00177448	0.00159179	0.00648389	0.00149848	-0.00194965	-0.00026389	0.00019532	-0.00366402	0.00563215	0.00059619	0.00354915	0.00023868	0.00233834	0.00936212	-0.00010044	0.00500203	0.00223664	0.00717771	-0.00176913	-0.00359972	0.00287668	-0.00367985	0.00033776	0.00561654	-0.00169428
eff_turbina2	-0.0025703	-0.00312478	-0.01384802	0.00158873	0.00552852	0.00634852	0.00429511	0.00462008	-0.0126525	0.00326267	-0.00451952	0.00301236	-0.00673952	-0.02815013	-0.00507373	-0.01248752	-0.00881697	-0.02123536	0.00041336	0.0091767	-0.0024923	0.00555893	-0.01349408	-0.0081861	0.00180391
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Acierto	-0.83531948	-0.9260966	-0.80585177	-0.10469586	-1.03041902	-1.06119055	-1.0471952	-1.1181681	-0.75200857	-1.02701992	-0.96684122	-1.03975181	-0.91297516	-0.54680415	-0.97013169	-0.86017741	-0.89814908	-0.67818335	-1.02350973	1.12159902	-0.91208306	-1.09864967	-0.84270899	-0.86373811	-1.05051561
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Tabla 0.17: Degradación eficiencia fanduct -1% (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
0.01793141	-0.05039891	-0.01961043	-0.01360888	0.00093984	0.038	-0.03494115	0.02316529	0.00571507	-0.03231712	0.00546082	-0.03891162	0.01259776	0.04398506	0.02607098	-0.004279	-0.03786252	-0.03355889	0.03578082	0.02195623	0.02410108	0.06218816	-0.003668	-0.03367326	-0.00837824
-0.0392906	-0.02768122	0.01662174	0.01573322	-0.00634752	0.00247665	-0.01309136	0.04021352	0.00352392	-0.00276261	-0.02686764	-0.024074	-0.05197967	0.00994676	0.02680477	-0.00608225	0.03369926	0.00994676	-0.01991001	0.02762222	-0.03026908	-0.00940575	-0.02617701	-0.03660818	0.00987999
0.00237454	0.0004972	-0.00119428	-0.00031904	-0.00174047	-0.00104663	0.00119114	0.00068111	-0.00285587	0.00054771	0.00062297	0.00311613	0.00144419	0.00170876	-0.00257578	0.00058045	-0.00230887	-0.00081105	-0.00066208	-0.0018856	0.00199603	-0.00069634	0.00239219	0.00325212	0.00016257
0.1617085	0.10391224	-0.09817711	-0.09298148	-0.09407208	-0.00660236	0.0102866	0.0714123	-0.15518068	-0.01960957	0.03930097	0.12051253	0.09776421	0.15198233	-0.09700484	0.0705116	-0.382664	-0.04897627	0.01413476	-0.07400211	0.13686679	0.02871052	0.13642954	0.12732323	0.00235277
-1.28906084	-1.18442375	-0.80698201	-0.92836772	-0.81221012	-0.97580398	-1.0045168	-1.11682885	-0.69301	-0.95956726	-1.05723514	-1.2157485	-1.16900425	-1.26782175	-0.80721162	-1.03503405	-0.65927771	-0.90210607	-1.0140397	-0.8579465	-1.24166759	-1.04603009	-1.23835413	-1.2335672	-0.98540216
-0.02313897	-0.01508073	0.01422704	0.00455736	0.01338364	0.00093732	-0.00116517	-0.0102462	0.02223486	0.00307679	-0.0055469	-0.0178943	-0.01387536	-0.02161023	0.01347014	-0.00391039	0.0361187	0.00693029	-0.00214904	0.01046609	-0.01929999	-0.00398115	-0.01969933	-0.01791127	-0.00049204
-0.03751501	-0.01106791	0.0246256	-0.00128872	0.03180597	0.02574984	-0.02314855	-0.00618667	0.05077068	-0.017765	-0.012056	-0.06395999	-0.03425215	-0.02587413	0.04859185	-0.00729348	0.03676501	0.01877788	0.02027418	0.03371042	-0.03852434	0.01712698	-0.04739116	-0.0640476	-0.00526078
0.36340505	0.10640407	-0.13709808	-0.02612119	-0.26446743	-0.19261129	0.24957138	0.05251004	-0.48215453	0.19996791	0.02888049	0.56938077	0.373753	0.29325886	-0.44958335	0.02860883	-0.30074412	-0.15682474	-0.0979888	-0.28372938	0.30658045	-0.08497317	0.38245821	0.62703819	-0.05073993
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.33641754	0.12856741	-0.35758994	0.07385506	-1.25066515	-1.09824386	1.36951155	0.01994407	-1.88368203	1.24560435	0.07330494	2.69739632	1.59444818	0.82707267	-2.1247996	0.0410931	-0.85810287	-0.63790095	-0.72740226	-1.1123869	1.19785175	-0.6909492	1.53995554	2.88393719	-0.15587331
-0.94225476	-0.10442141	0.26011521	-0.0409448	0.86991405	0.75434529	-0.93677891	0.02826142	1.31811786	-0.84385548	-0.05788209	-1.86122464	-1.10442021	-0.59350977	1.47123001	-0.03488162	0.62476092	0.4519306	0.49449297	0.77938002	-0.84461745	0.46673872	-1.07913877	-1.99113926	0.0569309
0.3609685	0.05109514	-0.09877063	0.01611079	-0.33225291	-0.27901678	0.35014233	0.01410503	-0.49450442	0.31720056	0.01953996	0.70262448	0.42203004	0.2297539	-0.5516796	0.01012012	-0.2366095	-0.16812916	-0.17993361	-0.28435928	0.3217804	-0.17156044	0.40793762	0.74905567	-0.04157925
-0.00190213	-0.00074752	0.00194786	-0.00036188	0.00501498	0.00458514	-0.00369273	-0.00264551	0.00611861	-0.00272214	0.00156009	-0.0042056	-0.00481588	-3.9654E-05	0.00569293	-0.00011086	0.00020297	0.00013818	0.00064447	-0.00179425	-0.00342131	9.4536E-06	-0.00482267	-0.00739391	0.0012521
-0.00572389	-0.00510994	0.00149265	-0.00150605	0.00164578	-0.00595263	0.00110943	-0.00055081	-0.00035439	0.00028206	-0.00211166	-0.00543158	0.0003255	-0.00459177	-0.004162	0.00013891	0.00155703	0.00079246	-0.00126472	-0.00190329	-0.00157288	-0.00166815	0.00123878	-0.00265791	-0.00061593
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0.0075358	-0.00547198	0.0046743	-0.00153304	0.00625982	0.00070411	-0.00369836	-0.00379076	0.00709111	0.00083535	0.00024541	-0.00778714	-0.00462189	-0.00614156	0.00094966	-0.00395904	0.00707393	0.00097868	-0.00351423	-0.00081521	-0.00423755	-0.00191741	-0.00632396	-0.0070058	0.0005827
0.02108532	0.01936851	-0.01330835	-0.00207593	-0.01213852	0.00217366	-0.00619944	0.00798345	-0.02138887	-0.00183255	0.00454324	0.01232304	0.01270328	0.02000513	-0.0099261	0.0015057	-0.01860622	-0.00438594	0.00371556	-0.00486738	0.01882976	0.00712184	0.0157474	0.01552273	-0.00220451
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

-1.28916084	-1.18442375	-0.80698201	-0.92836772	-0.81221012	-0.97580398	-1.0045168	-1.11682885	-0.69301	-0.95956726	-1.05723514	-1.2157485	-1.16900425	-1.26782175	-0.80721162	-1.03503405	-0.65927771	-0.90210607	-1.0140397	-0.8579465	-1.24166759	-1.04603009	-1.23835413	-1.2335672	-0.98540216
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Tabla 0.18: Degradación eficiencia fanduct -1% (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fanore	0.05834423	-0.02916185	-0.02089898	0.04226644	-0.02231206	0.04483407	0.01767177	-0.02894963	0.07354013	0.00011362	-0.04019571	0.04726705	0.00617948	-0.05419641	0.01023524	0.04508722	0.02974759	0.00641469	0.01586491	0.00644669	-0.024439	0.03048766	-0.02162919	0.02499856	0.01285552
eff_fanore	-0.05160678	-0.00756563	0.03601298	-0.02452135	-0.00789902	-0.00782266	-0.02601587	-0.00591567	-0.01211756	0.02518278	0.00271175	0.02485999	-0.00820179	-0.00423265	-0.00848804	-0.01480773	-0.00029875	0.03076653	0.01819594	0.01985901	0.00141483	-0.00586932	-0.01721111	0.00372041	0.00511552
mc_fanore	0.00151333	0.00114562	-0.00113799	-8.739E-05	0.00140742	-9.6867E-05	0.001141	0.00049266	-0.0015835	-0.00249589	0.00069485	-0.00174465	0.00010165	0.00061972	-0.0003966	7.004E-05	-0.00069247	-0.00214778	-0.00184713	-0.00203336	0.00023792	-0.00065666	0.00067385	-0.00129398	-7.7707E-05
pr_fanduct	0.16615775	0.0228828	-0.08997501	0.05567323	0.04140108	0.06005795	0.09302761	-0.0147884	0.023088397	-0.13291705	-0.02045345	-0.02561926	0.01798758	-0.03991203	-0.01611922	0.06946691	0.0025602	-0.11374374	-0.08055596	-0.10187631	-0.02241252	0.004125	0.11832964	-0.08098931	0.01580743
eff_fanduct	-4.2614765	-4.01014929	-3.80362158	-4.05632263	-4.0445195	-4.07540247	-4.1240712	-3.93175512	-4.0010614	-3.7265879	-3.99461654	-3.92464597	-3.99137091	-3.8960703	-3.93364743	-4.00296174	-3.96756426	-3.79536787	-3.8178689	-3.78309239	-3.92203371	-3.97253237	-4.17945396	-3.91228466	-3.99925178
mc_fanduct	-0.0276205	-0.00316812	0.01277564	-0.00806067	-0.00573401	-0.00875981	-0.01340592	0.00220165	-0.0036102	0.01881795	0.00307489	0.00338886	-0.00264613	0.00577522	0.00254427	-0.01003936	-0.00040991	0.0162974	0.01136796	0.01442873	0.00358842	-0.00048529	-0.01682862	0.00427164	-0.00233051
pr_compresor1	-0.00908801	-0.01937039	0.00461649	0.02452399	-0.02560678	0.01415458	0.00644434	-0.01107509	0.03807398	0.045343	-0.02027919	0.02718071	0.00446331	-0.01990439	0.00342151	0.02026029	0.01511373	0.02369403	0.01664496	0.02032737	-0.00804631	0.02000274	-0.03479356	0.02062556	0.00475042
eff_compresor1	0.39437387	0.2690434	-0.20792768	-0.13883652	0.32271098	-0.07984594	0.03260047	0.11248797	-0.2864248	-0.58861056	0.171931179	-0.32802242	0.00678951	0.16165243	0.0155123	-0.14072044	-0.17963025	-0.3651894	-0.24116186	-0.30190241	0.0723447	-0.11215693	0.40357462	-0.19802638	-0.04713679
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	1.31870594	1.13162415	-0.61271794	-1.15079399	1.64109658	-0.62048065	-0.34123011	0.65886764	-1.7770909	2.69124298	1.0424756	-1.5186604	-0.08150679	1.05182997	0.16132566	-1.05301792	-1.06450524	-1.44247508	-0.94215771	-1.23490738	0.53424381	-0.73769282	1.6380195	-1.0414377	-0.25052951
eff_compresor2	-0.91499423	-0.72726077	0.42866877	0.77515407	-1.21646976	0.42041787	0.21504052	-0.44473088	1.21553503	1.8510197	-0.70939963	1.0427303	0.05332355	-0.71167392	-0.10487218	0.70868719	0.72438521	0.99926757	0.85673971	0.65529869	-0.36281516	0.50017558	-1.2836521	0.71326007	0.1696258
mc_compresor2	0.3690674	0.2894502	-0.16796556	-0.29000859	0.42706728	-0.14723853	-0.08387176	0.16866371	0.44419317	-0.71212132	0.26317881	-0.38488079	-0.01859427	0.26261895	0.04369267	-0.26120211	-0.272953	-0.38074801	-0.24434715	-0.3252988	0.13284602	-0.18798132	0.48985004	-0.2684839	-0.06011521
pr_turbina1	-0.0027862	-0.00606601	0.00294179	0.00380602	-0.00639144	-0.00035772	-0.00075801	-0.00047303	0.0065315	-0.00349425	0.00016862	-0.00158286	-0.00014476	-0.00254777	0.00185112	0.00516938	0.00356336	0.00157308	0.00323402	-0.00161658	0.00066678	-0.00449751	0.00209032	0.00113263	
eff_turbina1	-0.00302523	-0.00277855	-0.00100473	-0.00026274	0.00544035	-0.00469991	0.00462058	-0.00117074	-0.00932613	-0.0032321	0.00213828	-0.00111336	0.002029658	-0.0013412	0.00190812	-0.00212616	-0.00318387	-0.00320777	-0.00154632	-0.00048538	0.00060086	0.00211166	-0.00021464	0.0005589	-0.00363102
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	-0.01019865	-0.00074794	0.00343911	-0.0015057	-0.00374946	-0.00354566	-0.00185146	0.00081448	-0.00110895	0.0061382	0.00129454	0.00110977	-0.00170433	0.00082965	0.00215947	-0.00265291	0.0011403	0.00413246	0.0003471	0.0051992	0.00061645	0.00044761	-0.00079325	0.00175994	-0.00385721
eff_turbina2	0.02238778	0.00297181	-0.01038263	0.00659295	0.00476689	0.01138005	0.00878914	-0.00668182	0.00691332	-0.01302893	-0.01151505	0.00517594	0.00110737	-0.00432634	-0.00147926	0.01048743	0.00230332	-0.01251784	-0.00852139	-0.00842347	-0.00321744	0.00153117	0.01061675	0.00059945	0.00684144
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tabla 0.19: Degradación eficiencia fanduct -4% (I)

Acierto	-4.2614765	-4.01014929	-3.80362158	-4.05632263	-4.0445195	-4.07540247	-4.1240712	-3.93175512	-4.0010614	-3.7265879	-3.99461654	-3.92464597	-3.99137091	-3.8960703	-3.93364743	-4.00296174	-3.96756426	-3.79536787	-3.8178689	-3.78309239	-3.92203371	-3.97253237	-4.17945396	-3.91228466	-3.99925178
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caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-0.0597195	-0.01839153	-0.00602022	0.059027	0.02923827	0.01834893	-0.07300828	0.01770128	-0.00080995	-0.04753933	0.0049402	0.0014548	-0.01486981	-0.00927225	0.03376362	0.03546531	0.0014852	-0.04144725	-0.01573585	0.0283022	-0.02525062	-0.06085837	-0.04015247	0.05684114	0.02705869
0.01840624	-0.00228051	-0.03676837	-0.00770762	-0.01679067	-0.01726815	0.00156971	-0.00355638	-0.03752385	0.02708911	-0.00295173	0.00236807	0.02930138	0.00744813	-0.04839629	0.00012014	-0.00166018	0.00016174	-0.02834023	-0.02324123	-0.00085762	-1.449E-05	0.01039641	-0.01314077	0.02194991
0.00074634	0.00073956	0.0027805	-0.00037439	0.00033678	0.00066186	0.00035645	-0.0004083	0.00318312	-0.00058408	4.633E-05	-0.00012598	-0.00187151	0.00012942	0.00282891	-0.0007736	0.00014405	-4.208E-05	0.00267299	0.00091027	-6.093E-05	0.00191377	0.00074435	-0.00133776	-0.000188987
-0.0419658	0.01908578	0.14871281	0.06075224	0.06730882	0.06452815	-0.03791807	-0.01231624	1.7033688	-0.09614697	0.01098512	-0.01018324	-0.12639451	-0.00034809	0.22440947	0.0035082	0.0126125	-0.05692709	1.9006227	0.08924344	-0.03344782	0.02614728	-0.03066855	0.00830112	-0.06829129
-3.8854802	-3.99469982	-4.24503978	-4.06841521	-4.07909801	-4.08897599	-3.89631484	-3.9259708	-4.278829	-3.79427455	-3.97539315	-3.9520726	-3.74170009	-3.96387329	-3.6627306	-3.97125524	-3.98374203	-3.85496452	-4.20214338	-4.11729565	-3.89744099	-4.00512814	-3.90850963	-3.97480049	-3.83102394
0.00618671	-0.00285737	-0.0212215	-0.00907244	-0.00993011	-0.00830513	0.00387321	0.00179645	-0.02412011	0.001363208	-0.00168483	0.00165938	0.01802431	-8.754E-05	-0.03183661	-0.00054416	-0.00191872	0.0081317	-0.01863001	-0.01271039	0.00467532	-0.03808063	0.00490513	-0.00136649	0.00977365
-0.01889626	-0.00746722	-0.0383022	-0.00759489	0.00531085	-0.0072102	-0.03490824	0.02094429	-0.0382281	-0.00831608	0.00568432	-0.00304464	0.01449075	-0.00532086	-0.01663802	0.0259116	0.00457276	-0.00295946	-0.02048207	0.00230519	0.00131692	-0.04146983	-0.02727992	0.03466869	0.03102784
0.07671942	0.00453367	0.64104962	-0.44331464	0.00047391	0.18857328	0.27480862	-0.25870029	0.546465027	-0.15125378	-0.07144297	0.15096886	-0.29998217	-0.00513459	0.39044707	-0.2763311	-0.13734487	0.05007769	0.29985793	0.07311754	-0.13737855	0.30287027	0.19954112	-0.28496281	-0.39459087
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.69217522	-0.05196699	2.7975428	-1.69880025	-0.35126272	0.69627679	1.7095772	-1.48846843	2.25113321	-0.27458541	-0.4778359	0.87701773	-0.99474808	-0.0002679	1.10735038	-1.53650844	-0.87194079	0.38322101	0.61651671	-0.08717949	-0.57219888	1.6128566	1.3977574	-1.72158676	-1.84273799
-0.47080314	0.03196414	-1.92288107	0.74296532	0.2327891	-0.48116454	-1.16488086	1.01475953	-1.55692714	0.19416472	0.320769	-0.59424571	0.69868433	0.0018573	-0.78603242	1.04632042	0.58878623	-0.25466844	-0.44207017	0.04662476	0.39399993	-1.10634604	-0.94995812	1.17533818	1.26555161
0.16399644	-0.01882419	0.74001753	-0.27124384	-0.08112444	0.191919236	0.42527191	-0.39268609	0.59703855	-0.08381428	-0.1256394	0.23141975	-0.26992186	-0.00288755	0.30784832	-0.39513764	-0.23069499	0.08791344	0.15919325	-0.01443086	-0.15535442	0.4112837	0.35242312	-0.43824228	-0.48263273
-0.00015256	0.00076878	-0.01179172	0.00375823	-0.00084668	-0.00831843	-0.00284744	0.0071004	-0.00554595	0.00063391	0.0001765	-0.00463513	0.00149408	0.00052483	-0.00354279	0.00888722	0.00483189	-2.9523E-05	0.0013266	0.00262479	0.00669072	-0.02273858	-0.0022084	0.00588542	0.00325652
0.00186614	-0.00181389	0.0047027	-0.00555188	-0.00025388	0.00099886	0.0050439	-0.00255196	0.00019124	0.0039953	0.00329918	0.0024169	-0.00217249	-0.0014825	0.00173554	-0.00020083	-0.00075134	0.00224177	-0.00319915	-0.00246901	-0.00618882	0.0024519	0.00370556	-0.00405717	0.00082303
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00132128	-0.00049365	-0.00757613	-0.00488888	-0.00245337	-0.00450632	0.00459502	0.0037921	-0.00753386	0.00564975	-0.00112703	-0.00250753	0.00527528	0.00158941	-0.00779246	0.00135079	0.00391096	0.00270209	-0.00285693	-0.00417611	0.00397307	-0.00083148	0.00260243	0.00057094	0.00654416
-0.01076295	0.00062682	0.02195986	0.0092959	0.00652683	0.01283088	-0.01000129	-0.0073291	0.01928676	-0.01013915	-0.0021357	-0.00078122	-0.01195719	0.00043702	0.02760275	0.00349637	0.00135697	-0.01417517	0.01675317	0.00878235	-0.00430831	-0.02233192	-0.00778649	0.00447595	-0.01008829
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

-3.88554802	-3.99469982	-4.24503978	-4.06841521	-4.07909801	-4.08897599	-3.89631484	-3.9259708	-4.278829	-3.79427455	-3.97539315	-3.9520726	-3.74170009	-3.96387329	-3.6627306	-3.97125524	-3.98374203	-3.85496452	-4.20214338	-4.11729565	-3.89744099	-4.00512814	-3.90850963	-3.97480049	-3.83102394
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Tabla 0.20: Degradación eficiencia fanduct -4% (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fanorc	-0.0084487	-0.0485627	-0.01249845	-0.01039425	0.07245317	0.0232087	-0.0395607	0.0627955	0.01876843	-0.0068851	-0.01227792	0.0237423	0.02176875	-0.00815725	-0.01651753	0.02216837	0.02111632	0.0625733	0.0070455	0.00721101	0.02427671	0.04635294	0.00479619	0.02631506	0.04116584
eff_fanorc	0.04641094	0.00780554	0.00567885	0.00886349	-0.0353778	-0.04258541	-0.0427034	0.00207832	-0.01103079	-0.00039747	0.054802397	0.00774065	-0.05582505	-0.00881466	-0.00026361	-0.03911875	-0.02859898	-0.00452507	0.0120451	-0.05177191	-0.01945068	0.01272425	0.03133816	-0.00869174	-0.03255472
mc_fanorc	-0.0036028	-0.00128279	0.00038397	-0.00089462	0.00079919	0.0021585	0.00392655	-0.00132421	0.00041194	0.00093429	-0.00357716	-0.00162022	0.000319091	0.00021249	0.00052664	0.00225412	0.0057872	-0.00065642	-0.00107694	0.00247373	0.00063351	-0.00164482	-0.00217574	-0.00057705	0.00032061
pr_fanduct	-0.21471942	-0.00331793	0.02196997	-0.07090181	0.14912928	0.17648927	0.16688219	0.01950681	0.04652253	0.04605427	-0.21496248	-0.05403755	0.21605153	-0.00588732	0.00766	0.15124124	0.06457914	0.0548776	-0.05109777	0.14956584	0.07523205	-0.02026217	-0.11267589	0.0054942	0.07680893
eff_fanduct	-6.56222659	-6.94616862	-6.98599191	-6.82117153	-7.20871045	-7.25371262	-7.23385	-6.98644859	-7.0398454	-7.03297405	-5.8663877	-6.85763926	-7.31869752	-6.93298759	-6.96009561	-7.21566339	-7.06023829	-7.07396236	-6.85855986	-7.21920124	-7.07522205	-6.91046246	-6.74216318	-6.95170905	-7.08384339
mc_fanduct	0.03070303	0.00041695	-0.00328239	0.01038691	-0.02145613	-0.02553097	-0.02276413	-0.00303432	-0.00653752	-0.00667887	0.03061596	0.00760925	-0.03107053	0.00108508	-0.00112266	-0.02141896	-0.00929541	-0.00807121	0.00730765	-0.02142155	-0.01029503	0.00262037	0.01600393	-0.0006537	-0.01103742
pr_compresor1	0.03116116	0.01389365	-0.01278919	0.00663244	0.0137406	0.00014248	-0.05107067	0.03031923	0.026328	0.01893271	-0.02218051	0.00075394	-0.0142835	-0.02300016	0.01089243	0.02992824	0.00836973	-0.02188147	0.00594315	0.03177352	0.02041289	0.03177352	0.02041289	0.01174277	0.00810383
eff_compresor1	-0.6164081	-0.1076915	0.08829486	-0.01348707	0.14476579	0.20282548	0.68956057	-0.24204079	0.24040709	0.22212878	-0.5685168	-0.1468706	0.51256275	0.04332441	0.12975838	0.4926422	0.06439506	-0.2295567	-0.07479286	0.33332125	0.03944834	-0.3564945	-0.41504919	-0.05231691	0.18111188
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	-2.40217052	-0.52707721	0.50466713	0.17603648	-0.0166362	0.3114566	3.14467794	-1.44864513	1.16809289	1.09835561	-2.08355414	-0.6472464	1.73526302	0.28206215	0.62706586	2.04388605	-0.02988773	-1.50010751	-0.2752167	2.15912635	-0.0947986	1.88829272	-1.76897547	-0.39866327	0.15358443
eff_compresor2	1.64237613	0.362974	-0.3403996	-0.11780253	0.01143901	-0.2131089	-2.14860324	0.98460513	-0.7921584	-0.74614243	1.472540068	-1.183698648	-0.19192145	-0.43372354	-1.39593307	0.01792965	1.02271226	0.18881995	-1.47418526	0.06518223	1.29162859	1.20787504	-1.20787504	0.27252273	-0.34846748
mc_compresor2	-0.64365004	-0.12528861	0.13203245	0.03894898	0.02036073	0.10051367	0.825259158	-0.36115641	0.31751905	0.2915377	-0.55961145	-0.16480357	0.47129638	0.07055043	0.16202092	0.55062886	0.00271923	-0.37452013	-0.07479576	0.57902247	-0.01323923	-0.48531195	-0.47027052	-0.08667389	0.1494375
pr_turbina1	0.0062897	0.0019486	-7.2803545	-0.00249142	-0.00029797	0.00031861	-0.00722063	0.00194592	-0.0051527	-0.00313252	0.00640819	-9.4745455	-0.00302393	-0.00218553	-0.00096712	-0.00882164	-0.0020468	0.00274857	0.00073181	-0.00747893	-0.00219394	0.00730775	0.00531183	-0.00045608	-0.00369902
eff_turbina1	-0.00264392	-0.00226338	-0.00424301	0.00260393	-0.00223786	-0.00590809	0.00059228	-0.00128087	-0.0005779	-0.00190832	-0.00103416	6.9145546	-0.00019453	0.00110813	0.00620269	0.00558244	0.00120949	-0.00307775	0.00250116	0.00333115	-0.00061276	-0.00788747	-0.0028178	0.00141168	0.00211602
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	0.00934808	-0.00130908	-7.73845	0.00155986	-0.00580243	-0.00669562	-0.00919402	-0.00332956	-0.00517249	-0.00211073	0.00913856	0.00237989	-0.00899451	-7.7295455	0.00141388	-0.00610955	-0.00388475	-0.00481802	0.00152373	-0.00760211	-0.00202899	0.00006235	0.00463863	-4.4194E-06	-0.00550207
eff_turbina2	-0.02725458	0.00555667	0.00304062	-0.01024457	0.02003784	0.02140441	0.01721157	0.01037201	0.01192355	0.00726423	-0.02431578	-0.00191812	0.0213662	-0.00302574	-0.00042222	0.0184399	0.0092137	0.00762286	-0.00619197	0.02236442	0.0096942	0.00033782	-0.01464662	-0.00086652	0.00946034
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Acuerdo	-6.56222659	-6.94616862	-6.98599191	-6.82117153	-7.20871045	-7.25371262	-7.23385	-6.98644859	-7.0398454	-7.03297405	-5.8663877	-6.85763926	-7.31869752	-6.93298759	-6.96009561	-7.21566339	-7.06023829	-7.07396236	-6.85855986	-7.21920124	-7.07522205	-6.91046246	-6.74216318	-6.95170905	-7.08384339
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Tabla O.2.1: Degradación eficiencia fanduct -7% (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50	
0.0135422	0.02711309	0.05023148	0.03843308	-0.00496615	0.01477026	-0.01498073	0.01853274	0.02046352	-0.09305288	-0.05638733	-0.03075849	-0.03949621	0.00794955	0.00652954	0.01689749	-0.00555542	-0.0129362	0.09453003	-0.02684745	-0.00179558	0.04253004	-0.00275446	-0.02680831	0.02680831	0.0086572
0.03084794	0.00486929	-0.02932383	0.02444211	-0.01472132	0.01291694	0.02852935	0.02317642	0.04450123	0.03944821	-0.01691936	-0.00778861	0.01336906	0.02631084	0.00632186	-0.03251566	-0.03982839	-0.01046776	-0.00023194	0.00319655	-0.03173281	0.00065969	0.00129799	0.00345656	-0.00276419	-0.00298426
-0.0024389	-0.00120281	0.00091999	-0.00330423	0.00072351	-0.00100553	-0.00068234	-0.00277791	-0.00344177	-0.00051507	0.00255932	0.00140772	0.00070859	-0.00199341	-0.00066179	0.00100955	0.00243369	0.00111533	-0.00045566	0.00290821	0.00065969	0.04080784	0.12911124	0.18439415	-0.1042517	-0.1640449
-0.11248537	-0.02510091	0.12549367	-0.12107547	0.03703654	-0.03777992	-0.11578023	-0.12633813	-0.15962578	-0.15466127	0.09532773	0.08823988	-0.01729835	-0.10208527	0.01918469	0.08954357	0.12074786	0.04466138	0.02525264	0.02525264	-0.02160056	-0.02160056	-0.02160056	-0.02160056	-0.02160056	-0.02160056
-6.74066018	-6.90381256	-7.16561734	-6.72948972	-7.0068059	-6.88584034	-6.73900002	-6.72340314	-6.65623442	-6.68197052	-7.11828694	-7.02064178	-6.91746174	-6.76817208	-6.90722227	-7.08582245	-7.16690738	-7.03159499	-6.9933842	-7.17174377	-7.02166056	-7.17233653	-7.2906071	-6.7628344	-6.66593923	
0.01586609	0.00339508	-0.0180159	0.0168822	-0.0053703	0.00545192	0.01660475	0.01794579	0.0226207	0.02213487	-0.0136546	-0.00549296	0.00252594	0.01457616	0.00245613	-0.01151512	-0.01693813	-0.00633203	-0.0037736	-0.01747804	0.00600445	-0.01836166	-0.02612638	0.01440645	0.02303242	
0.0356657	0.02154381	0.0126058	0.05283559	-0.00407055	0.00708668	0.01352606	0.0345492	0.04308804	-0.02183307	-0.02183307	-0.03124974	-0.0272244	0.01547138	0.01850846	-0.00838936	-0.03100319	0.0119274	-0.019674	-0.03098379	0.00307563	-0.00853059	-0.04168309	0.03652921	0.02050647	
-0.54490046	-0.21880517	0.04250565	-0.74653309	0.06524974	-0.04825569	-0.29890712	-0.47577299	-0.67197752	-0.0031281	0.33904615	0.37113172	0.18113697	-0.2807973	0.29129546	0.20482374	0.57583247	0.22207503	-0.07822508	0.49967033	-0.03389362	0.31350204	0.68414318	-0.55413645	-0.32726987	
-2.56007272	-1.15514879	-0.34131049	-3.67056637	0.09527346	-0.00835092	-1.11965247	-2.15533085	-2.91659747	0.82651736	1.43729013	1.85391334	1.15045182	-1.02915563	-1.59038397	0.63170261	2.60310093	1.15353512	-0.59697559	2.23872549	-0.29153989	1.1404763	3.07705312	-2.59887049	-1.0399808	
1.70923371	0.79086753	0.22981923	2.50490469	-0.6806423	0.00871776	0.7695374	1.47028995	1.99175172	-0.55897128	-0.98299497	-1.26351701	-0.78475086	0.70586524	1.07978353	-0.43251656	-1.77526731	-0.78431595	0.34909352	-1.53108552	0.19659686	-0.77859681	-2.10158512	1.77514673	0.75750285	
-0.66030722	-0.29619683	-0.07011683	-0.9625188	0.02484343	0.0111522	-0.30451989	-0.56704057	-0.76748353	0.18920328	0.37295564	0.48350071	0.29023537	-0.27230281	-0.41733125	0.17314622	0.68814455	0.30439658	-0.12173473	0.59016981	-0.0745012	0.31685068	0.81823532	-0.67788273	-0.2938382	
0.00770267	0.00276339	0.00858835	0.0123517	0.00221494	-0.028981	0.00605625	0.00618857	0.00669398	-0.00334363	-0.00285137	0.00259708	0.00718119	-1.946406	-0.00770327	-0.00570702	-0.00257389	-0.00557954	0.00252724	-0.00146821	-0.01157657	0.00926442	0.000109256	0.0020779		
-0.0037314	-0.00386187	-0.00862715	-0.00657523	-0.00012983	0.00949053	-0.00392249	0.00033675	-0.00103011	0.00324447	-0.00211644	-1.2172405	0.00238569	-0.00061736	-0.00195347	0.00074292	0.00291081	-5.6071E-05	-0.00192178	0.00224586	-0.00141119	0.00111734	0.00646622	-0.00666218	0.00201779	
0.00436389	0.00074872	-0.0050288	0.00759359	0.00156502	-0.00078926	0.00474081	0.00696163	0.00784053	0.00572429	-0.00486284	-0.00303685	0.0037418	0.00384343	-0.0022139	-0.00671641	-0.00346234	-0.00308497	-0.00709916	-0.00112739	-0.00587198	-0.00921282	0.00366143	0.00705486		
-0.0149489	-9.5183E-05	0.01760863	-0.00931116	0.00184344	-0.00122112	-0.01429214	-0.01247152	-0.01967636	-0.01888829	0.01020231	0.00333694	-0.00420282	-0.01044331	-0.0027909	0.00897667	0.01706701	0.00750956	0.00665771	0.01670882	0.00669378	0.01725903	0.02448864	-0.01013688	-0.01723281	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Tabla 0.22: Degradación eficiencia fanduct -7% (II)

-6.74066018	-6.90381256	-7.16561734	-6.72948972	-7.0068059	-6.88584034	-6.73900002	-6.72340314	-6.65623442	-6.68197052	-7.11828694	-7.02064178	-6.91746174	-6.76817208	-6.90722227	-7.08582245	-7.16690738	-7.03159499	-6.9933842	-7.17174377	-7.02166056	-7.17233653	-7.2906071	-6.7628344	-6.66593923
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Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
pr_fanorc	-0.31413678	1.62167834	0.7807896	-0.39477612	0.81980695	-0.5865233	-0.47175468	0.20914095	0.21872013	0.20058804	-0.27995284	-1.2519787	0.7267387	-1.54211024	0.60202669	-0.76195095	0.95942392	-0.705632	0.01106748	0.18843456	-0.46102627	-0.62058966	-0.24237323	0.7816411	-0.82397613	
eff_fanorc	0.02596668	-0.17191171	-0.08712716	-0.04566234	-0.09041205	0.07666267	0.04848694	-0.01394199	-0.02198582	-0.01884313	0.02859449	0.12699156	-0.07736957	0.17607929	-0.07163873	0.07371908	-0.1045351	0.06619247	-0.00057054	-0.03114657	0.04840565	0.05535323	0.03319452	-0.0909885	0.08368717	
mc_fanorc	0.00334218	-0.0173492	-0.00840302	0.00415982	-0.0088287	0.0059924	0.0510117	-0.0022463	-0.00232424	-0.00218223	0.00299916	0.013183	-0.00781795	0.01652722	-0.00646803	0.00817829	-0.00216394	0.0075974	-0.00010007	-0.00097378	0.00489677	0.00664482	0.00258243	-0.00840663	0.00880025	
pr_fanduct	0.12594361	-0.56807708	-0.28616114	-0.01816935	-0.15137359	0.25364684	0.1970593	-0.06071406	-0.00035085	-0.07390833	0.12437916	0.53602817	-0.25248916	0.458886	-0.24957504	0.17079138	-0.23942463	0.28702501	0.06266629	-0.06548848	0.12566181	0.12759271	-0.01127616	0.21789409	0.33068259	
eff_fanduct	0.23845793	1.08847388	0.54741435	0.02974471	0.29525462	-0.47891403	-0.37890463	0.1239198	0.00407282	0.13855581	-0.24494068	-1.02255675	0.48337664	-0.8839385	0.46425471	-0.32805207	0.4663851	-0.55821142	0.11446048	0.12043136	-0.24354893	-0.24502074	0.02174113	0.41738616	-0.63359181	
mc_fanduct	-0.01596016	0.07189714	0.03629433	0.00231603	0.01879961	-0.03207406	-0.02479657	0.00765043	3.7082E-05	0.00917046	-0.01579955	-0.06770574	0.03181809	-0.05792335	0.030812	-0.02138905	0.03014442	-0.03619575	-0.00079225	0.0079132	-0.0159949	-0.01597555	0.00150719	0.02731403	-0.04194044	
pr_compresor1	-0.40235406	-0.13956268	-0.2485056	-0.38784109	-0.27107483	-0.44879328	-0.4240133	-0.331888716	-0.34113467	-0.33080054	-0.39765145	-0.54064316	-0.26456112	-0.5625051	-0.26860343	-0.447644	-0.45418371	-0.45333224	-0.37123704	-0.33058039	-0.1646817	-0.42559863	-0.37915683	-0.21616267	-0.47388026	
eff_compresor1	0.01727389	0.07323211	0.06304979	-0.15216575	0.21184839	0.04470542	-0.02944091	0.03275908	0.08764681	-0.0106302	-0.02724664	0.04875042	0.03900015	-0.18211308	-0.00088847	-0.09511606	0.20081889	-0.017119	0.08943664	0.0235674	-0.02377004	-0.10916816	-0.12373754	0.1285867	-0.01788309	
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	0.33013863	-5.82117286	-3.77035901	3.63916976	-6.12948748	0.09542502	2.05493441	-1.59292653	-2.600949	0.03232618	1.69041653	2.62946087	-2.71231474	6.95268761	-1.24632453	3.53584987	-6.69840777	2.87939475	-1.84351239	-0.73491792	1.8390206	3.75405681	2.77846046	-4.04559357	2.98073087	
eff_compresor2	-0.28432107	4.31111265	2.39855386	-2.56381537	4.36087655	-0.17990813	-1.59483752	1.13285912	1.82483953	0.0174896	-1.21518941	-2.04866767	2.00326352	-5.0812538	0.97474067	-2.57127977	4.63881935	-2.11618654	1.26395003	0.54058847	-1.33861332	-2.6903736	-1.94894514	2.92247352	-2.20509551	
mc_compresor2	0.09365286	-1.47825235	-0.82719453	0.87436087	-1.50071947	0.05011448	0.524224	-0.39491907	-0.62810431	0.00196158	0.42837755	0.09931317	-0.68469686	1.73430278	-0.33031156	0.87275229	-1.60206466	0.7388823	-0.44010527	-0.18470278	0.45175285	0.92065572	0.67005298	-1.00181918	0.76253852	
pr_turbina1	0.00012234	0.00844033	0.00590049	-0.00498717	0.00873379	0.00148734	-0.00162546	0.00374334	0.00692979	-0.00039956	-0.00262586	-0.00182309	0.00134287	-0.00787783	0.00112816	-0.00158306	0.00862768	-0.00286976	0.00312244	0.00130405	-0.00428046	-0.00279202	-0.00354248	0.00408755	-0.00454933	
eff_turbina1	-0.0042552	0.01031625	0.00933101	-0.00163639	0.00129238	-0.00439651	-0.00402933	0.00175068	-0.00068139	0.00125445	-0.00360772	-0.01294451	0.00537939	-0.00871254	0.00588958	-0.00420041	0.00613902	-0.00613324	-0.00197996	0.00198506	0.00080801	-0.00545398	0.00082931	0.00628609	-0.00093897	
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_turbina2	-0.00123774	0.01778847	0.00823995	-0.00125001	0.00395571	-0.00544247	-0.00530467	0.00334657	0.00037179	0.0018452	-0.00470872	-0.01520828	0.00673047	-0.01288508	0.00786349	-0.00251392	0.00762372	-0.00802213	-0.00104018	0.0024167	-0.00449808	-0.00377662	0.00084828	0.00411097	-0.0123631	
eff_turbina2	0.01235599	-0.04259106	-0.02337943	-0.00684065	-0.0081054	0.01821159	0.0164785	-0.00748956	0.00342007	-0.00597505	0.01395607	0.0488826	-0.01880964	0.03718782	-0.01929416	0.01039361	-0.01833385	0.02397998	0.00602356	-0.00546259	0.00808873	0.00731182	-0.00556445	-0.01642711	0.02576012	
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Acuerdo	-0.40235406	-0.13956268	-0.2485056	-0.38784109	-0.27107483	-0.44879328	-0.4240133	-0.331888716	-0.34113467	-0.33080054	-0.39765145	-0.54064316	-0.26456112	-0.5625051	-0.26860343	-0.447644	-0.45418371	-0.45333224	-0.37123704	-0.33058039	-0.1646817	-0.42559863	-0.37915683	-0.21616267	-0.47388026
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Tabla 0.23: Degradación relación de compresión compresor 1 -1% (I)

	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	1.3152985	-0.8632343	0.6429327	-0.11653545	0.63806161	0.02586767	-0.7490916	0.06921258	0.18363113	-0.20130721	-0.21699098	-1.2727918	-0.3971885	0.0742425	0.18615112	-0.03477125	0.06063238	0.30819483	-0.63448688	-0.18276605	-0.15935106	0.28641346	-1.5268663	0.46739602	0.92909841
	-0.1420023	0.09396961	-0.07476011	-0.00016179	-0.0797556	-0.00788983	0.07809178	-0.0054749	-0.02704747	0.02762538	0.01917889	0.12357864	0.04237256	-0.00456468	-0.03366961	-0.00436008	-0.00556972	-0.0269497	0.06706875	0.0233973	0.00495231	-0.03037411	0.17024848	-0.04199386	-0.0845829
	-0.01413977	0.00920979	-0.00686578	0.00122552	-0.00682977	-0.0024572	0.00800786	0.00071185	-0.00196888	0.00214099	0.00236191	0.01372285	0.00411901	-0.0008373	-0.0020458	0.00034587	-0.0007172	-0.00334751	0.00679701	0.00198553	0.00167829	-0.00304787	0.01632147	-0.00494909	-0.01001103
	-0.2586467	0.284634	-0.21964104	0.18795696	-0.30844447	0.00021641	0.18089164	-0.11665678	-0.11498493	0.1309489	0.1501757	0.32645151	0.1236536	0.02192625	0.00099588	-0.00471058	-0.07527172	-0.0906309	0.1631007	0.1215753	0.00254019	-0.03545881	0.45245147	-0.23098629	-0.1956674
	0.05366486	-0.05608112	0.02782609	-0.01644165	0.03913384	8.0894E-05	-0.0280722	0.01495943	0.01456065	-0.01667156	-0.0189434	-0.04087487	-0.0157355	-0.0029286	-0.00094096	0.00054152	0.00943239	0.01130004	-0.0205408	-0.01536744	-0.00031013	0.00441366	-0.05718805	0.0293775	0.02435558
	-0.19071644	-0.47963809	-0.27727192	-0.38522664	-0.25858549	-0.35709793	-0.44944396	-0.3309025	-0.32601907	-0.39711558	-0.4023422	-0.5080544	-0.41102883	-0.35528591	-0.333597447	-0.35647807	-0.34147658	-0.32167316	-0.43750682	-0.39525592	-0.36089568	-0.33444498	-0.55539953	-0.28592328	-0.26702418
	0.18080962	-0.04113463	0.04460592	0.09208568	-0.02150025	0.01187734	-0.09140634	-0.15729449	-0.01353494	0.07340923	0.06976899	-0.16181499	-0.03290186	0.01771556	0.09662673	-0.01494215	-0.03039689	0.05464484	-0.03388128	0.09772755	-0.02102741	0.12867117	-0.18034163	-0.11542155	0.1804869
	-7.10413226	3.12262979	-2.6812666	-1.06613528	-1.50424364	-0.44902761	3.76402721	3.02594825	-0.19727246	-0.86260245	-0.44349036	6.13194202	1.9709065	0.0001068	-1.72394456	0.7099503	0.03341687	-1.7578776	1.8847347	-1.87708029	0.71636169	-3.3843263	6.82714779	1.531174	6.34433942
	5.12775574	-2.30872358	1.96324165	0.72365239	1.16072775	0.31654234	-2.72659868	2.05755285	0.17319898	0.5475077	0.25748296	-4.45132048	-1.38175238	0.01329106	1.21710063	-0.4938175	-0.00694152	1.26440759	-1.41374304	1.24819457	-0.518794	2.37076654	-4.97336024	-0.69757723	4.53037372
	-1.7732384	0.7843501	-0.67318377	-0.24544258	-0.40241044	-0.10884345	0.92801467	0.0724126	-0.0643255	-0.1938768	-0.09043493	1.51854202	0.47709632	0.00722577	-0.41547702	0.17466042	-0.0033953	-0.43911371	0.46899836	-0.44363781	0.17077515	-0.82642131	1.70424534	0.25769059	-1.55947922
	0.01321438	-0.0039872	0.00820607	0.00219195	0.00103245	0.00264731	-0.00665745	0.00615507	0.00034927	-0.0002153	0.00325318	-0.00686186	-0.00259099	-0.00051122	0.00085323	-0.00075962	0.00073893	-0.00133063	0.00438815	0.004688	0.00445403	-0.00572996	-0.00257205	0.00849031	
	0.00758499	-0.00550654	0.00657045	-0.00143233	0.00753188	-0.00640004	0.00040008	0.0024285	0.0039523	0.00081547	-0.00351531	-0.0072879	-0.00403418	-0.00174445	0.00222612	0.00014536	0.00283059	0.00494642	-0.0037628	-0.00341783	0.0018362	0.00382547	-0.01510411	0.00536833	0.00397055
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.01363429	-0.00563933	0.00541901	-0.00322115	0.01007238	-0.00091035	-0.00414068	0.00240785	0.00459336	-0.00224785	-0.00130198	-0.00902426	-0.00298836	-0.00168102	-0.00152495	-0.00171385	0.00257265	0.00347305	-0.00378195	-0.00297767	-0.0003283	0.00195612	-0.01301259	0.00543208	0.00737598
	-0.03843211	0.02322865	-0.01971184	0.01475751	-0.02474974	-0.00250799	0.01374863	-0.0070458	-0.01000428	0.0103365	0.01444074	0.02157661	0.01108907	0.00323822	0.00218895	-0.00379756	-0.00642107	-0.00625961	0.01134232	0.00762107	-0.00166656	-0.0003611	0.03543232	-0.02051444	-0.01200288
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tabla 0.24: Degradación relación de compresión compresor 1 -1% (II)

-0.19071644	-0.47963809	-0.27727192	-0.38522664	-0.25858549	-0.35709793	-0.44944396	-0.3309025	-0.32601907	-0.39711558	-0.4023422	-0.5080544	-0.41102883	-0.35528591	-0.333597447	-0.35647807	-0.34147658	-0.32167316	-0.43750682	-0.39525592	-0.36089568	-0.33444498	-0.55539953	-0.28592328	-0.26702418
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	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	-0.3807325	1.69505797	-0.34095446	3.50494377	2.37043884	-0.58291856	1.71628177	-0.37928184	1.8110535	0.04894509	2.48512221	-0.04272815	1.84892461	-0.00335309	-0.5583567	1.08507944	-6.3914051	-0.6991234	0.78286899	1.14380487	-4.65131448	1.58792978	-0.18945008	0.59475707	-0.87609791	
eff_fanorc	0.0457411	-0.18703758	0.036593	-0.39957726	-0.27839123	0.05861591	-0.20803172	0.0386146	-0.2189743	0.02464099	-0.28196143	0.00131013	-0.21296344	0.00489974	0.06487137	-0.121215614	0.79846003	0.08389793	-0.059972	-0.09840179	0.58351161	-0.18809666	0.03482086	0.07551577	0.14960335	
mc_fanorc	0.0010752	-0.03472701	0.00667749	-0.06983663	-0.04396486	0.00353858	-0.03999585	0.0033298	-0.04263044	0.0038831	-0.04604638	7.3169E-07	-0.0404913	-0.00059019	-0.0053241	-0.02200751	-0.06875912	0.00590706	0.0182189	0.01655426	-0.02458185	-0.03103938	0.0057826	0.01352334	-0.00054261	
pr_fanduct	-0.00344712	-0.52001629	-0.15303965	-1.08623287	-0.7205849	0.10754611	-0.39061533	0.18605804	-0.48236756	0.0853198	-0.88747408	0.16609346	-0.49726399	-0.01723192	-0.09444488	-0.32370149	2.0152172	0.27497688	0.2907593	0.3045297	1.90658843	-0.50876306	0.09025207	0.4489981	0.29530751	
eff_fanduct	-0.04746074	0.72086873	-0.1895332	1.53574493	0.98319062	-0.17319488	0.54889766	-0.26367414	0.68973389	-0.00017184	1.17622693	-0.24745241	0.70430687	0.00329861	0.02473387	0.43518406	-4.01265974	-0.37654421	0.02880179	-0.08080179	-3.59468827	0.70077973	-0.00468806	0.57752025	-0.11168084	
mc_fanduct	0.00205179	0.04726222	-0.0219993	0.08949406	0.07723048	-0.01311871	0.03135158	-0.02525152	0.04331838	-0.01483807	0.10428871	-0.01856727	0.04008437	0.0031924	0.01626895	0.03300736	-0.37424291	-0.03633808	-0.05122828	-0.05233522	-0.33791917	0.05128922	-0.01543737	-0.06113661	-0.04814765	
pr_compressor1	-2.38278604	2.36443742	-2.48433663	-2.28940299	-2.22971614	-2.44261514	-2.33825794	-2.52419458	-2.29917911	-1.55364444	-2.11149858	-2.36137988	-2.33388606	2.40613233	-1.64629397	-2.35421576	-6.20957564	-2.53873774	-0.35348672	-1.8782793	-3.48882586	-2.3519813	-1.18127525	2.32270784	2.87727978	
eff_compressor1	0.63872073	-1.4693181	0.01341886	-2.11995412	-0.87861516	0.71007821	-2.34534658	1.03295556	-2.04410649	0.4598598	-0.61169705	-0.30166536	-2.05142734	0.29651293	0.36441359	-0.34687936	0.62614626	1.09702865	1.04110383	0.454935835	0.4848338	-1.0675109	0.62508194	-0.04721287	-2.41343699	
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	6.15530323	8.93288056	0.29608368	-0.0980305	-7.41427119	6.67751035	-9.86760473	4.32562013	-9.81504408	7.83904509	-6.67516493	-5.42991225	-9.62837259	1.83833449	6.65185365	-7.60828259	9.356272	6.70828206	8.02174241	7.09575882	7.56891889	-7.56817239	7.79486463	-1.7354024	95.1202315	
eff_compressor2	-2.18313779	2.15109889	-0.22497126	2.58420252	1.57450572	-2.46292771	2.26916076	-1.61620243	1.67418233	-0.89017238	1.23428793	1.18689684	2.32657467	-0.61215494	-0.84211739	1.71756903	0.86524518	-2.57491839	-0.35726109	-0.73904062	1.96014774	1.81166306	-0.83192857	0.0663107	-43.8179999	
mc_compressor2	0.6519772	-0.66589309	0.06077604	-0.77788401	-0.56967444	0.72863645	-0.78900744	0.51971313	-0.81768019	0.15138672	-0.54032976	-0.39901288	-0.73745904	0.21092649	0.4333661	-0.56181321	0.01616656	0.78055416	0.68361046	0.54090582	1.06485513	-0.38903812	0.56167324	-0.12049173	7.10758359	
pr_turbina1	-0.00607485	0.01583662	0.00220867	0.01437972	0.00556324	-0.00262908	0.01482434	-0.00586395	0.01396874	6.50256842	0.0084026	0.0288131	0.01127057	-0.00734846	5.5788485	0.00860304	11.9941218	-0.0065811	10.1913379	7.82015878	11.5733993	0.00738957	7.48668592	0.00492066	-19.7425675	
eff_turbina1	-0.00121452	0.01090918	-0.00095506	0.01345831	0.00999979	0.00132899	0.01792455	-0.00131062	-0.00289002	-4.7762037	0.01062429	0.00569381	0.0131564	0.00514611	-3.40306727	0.01133331	-14.151126	-0.0047457	-7.60365501	-5.09636695	-13.2353619	0.01201171	-5.20862697	0.0014082	23.7128211	
mc_turbina1	0	0	0	0	0	0	0	0	0	4.9052572	0	0	0	0	4.23648553	0	8.05622588	0	7.55468078	5.89779625	7.9492282	0	5.60825746	0	-12.7753145	
pr_turbina2	-0.00202387	0.73041019	0.00256026	0.70267663	0.62519767	0.00800154	0.8652338	-0.00359835	0.8700616	-2.49714767	0.61625933	0.7635462	0.79951357	-0.00314152	-1.60430906	0.65038041	-0.00931777	-0.00349706	-4.36286657	-3.22473995	-0.01329014	0.67290543	-2.83646225	0.29630566	-0.0798136	
eff_turbina2	-0.0099012	0.4057744	0.00417505	0.41159672	0.35189199	-0.00296806	0.52149683	0.00347985	0.51414965	-1.82035711	0.34952622	0.37938794	0.46132391	-0.00421393	-1.19156353	0.38182326	-0.00943419	-0.00083372	-3.12108658	-2.32251493	0.00344007	0.36548559	-2.06470882	0.25686306	-0.0010647	
mc_turbina2	0	0.67959794	0	0.65826847	0.58532132	0	0.82130974	0	0.8056128	-2.45095631	0.57245344	0.07301417	0.7548864	0	-1.58012301	0.61499914	0	0	-4.25741439	-3.15945251	0	0.62663834	-2.78194783	0.2920751	0	

Tabla 0.25: Degradación relación de compresión compresor 1 -4% (I)

Acuerdo	-2.38278604	2.36443742	-2.48433663	-2.28940299	-2.22971614	-2.44261514	-2.33825794	-2.52419458	-2.29917911	-1.55364444	-2.11149858	-2.36137988	-2.33388606	2.40613233	-1.64629397	-2.35421576	-6.20957564	-2.53873774	-0.35348672	-1.8782793	-3.48882586	-2.3519813	-1.18127525	2.32270784	2.87727978
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	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	0.284703	-0.6256392	-0.4955783	0.2672086	0.61843829	-0.5673234	0.08295235	-0.95675489	0.38997394	0.2289017	5.01373172	-0.74514725	0.8937703	-0.37809554	0.43980484	0.73381135	1.11165821	-4.4319742	-0.2771176	-0.755518	0.23044286	-3.37531537	1.5041208	0.20949729	0.01448252
	-0.07508672	0.08824798	0.05399869	-0.03335518	-0.07426237	0.07475228	-0.01454591	0.13746361	-0.049382	-0.03883432	-0.54661765	0.10341203	-0.12046116	0.04577336	0.04241402	-0.09774014	-0.1436	0.53958551	0.01308581	0.10044374	-0.02964935	0.39982623	-0.18761526	-0.03784045	0.00567827
	0.01665787	-0.00053587	-0.00337984	-0.00714477	-0.01393083	0.00377924	-0.00207162	-0.00032041	-0.00820414	-0.00552412	-0.11029669	0.0044993	-0.0188344	0.00461505	0.00943713	-0.01560678	-0.02319541	-0.02012175	0.00458878	0.00856555	-0.00991329	-0.0277598	-0.0297818	-0.00050217	-0.00082945
	0.28253873	0.00105605	-0.04780514	-0.17897612	-0.14721444	0.21725296	-0.11192382	0.1271853	-0.08715328	-0.06851471	-1.54288112	0.44645922	-0.20006594	0.1141153	0.30285808	-0.25140373	-0.32086163	1.5518093	0.224946318	0.53047342	-0.20082767	1.17625942	-0.51526809	0.08905874	0.04969765
	0.0078595	0.00064611	0.00947617	0.16259676	0.16068465	-0.30531301	0.11782659	-0.04640365	0.11087887	0.04483862	2.3020095	-0.58987673	0.26116796	-0.16969725	0.42135968	0.26928383	0.42076387	-2.97075096	-0.33216681	-0.6880926	0.23673403	-1.9572404	0.69272311	-0.11754408	-0.08848864
	-0.04963559	2.7399E-05	0.008862	0.02663413	0.01956113	-0.02872597	0.01688596	-0.02080212	0.00953712	0.01096089	0.11302578	-0.05918572	0.02357245	-0.01560155	-0.04290039	0.03855953	0.0385241	-0.25513643	-0.02634012	-0.07233739	0.02977766	-0.14166782	0.058739	-0.00902111	-0.00450841
	-1.09894288	-0.81796318	-1.37220982	-2.04506876	-2.14277753	-2.49923971	-2.38064423	-4.14509544	-2.37305255	-2.28420951	-2.05463318	-2.34988314	-2.25343348	-2.51993025	2.26493045	-2.16440965	-2.23317074	0.04620553	-2.34855867	-2.67634305	-2.2951486	-1.40906792	-2.2444709	-2.35184987	-2.37302283
	0.74758192	0.78253331	0.5080051	-0.11634128	-0.28010209	0.95350097	0.3450303	-0.18800536	-0.81217677	-0.08067254	-2.36587927	-0.07691396	-0.49599893	0.58383532	-0.03927465	-0.1065146	-0.48164697	1.11520432	-0.36379443	1.52920874	-0.14860641	-0.20014332	-0.60444096	-0.76542141	-0.53117049
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8.06834571	7.63348618	7.28416922	-3.16321021	-4.79557799	6.46339094	1.92661281	38.6212607	-7.1053133	-1.91278819	-11.0822326	11.5944445	-5.8395218	3.05618635	-1.7709901	-2.2337984	-5.79418372	6.38489894	-4.7240421	6.30640868	0.06692238	5.9823867	-6.43437633	-6.91600016	-5.5671493
	-0.87547628	-0.44393554	-0.8577255	0.25520211	0.85163467	-2.41708593	-0.59258844	-17.9263961	1.59261533	0.21402953	2.99126608	-4.63011224	1.18904172	-1.16207336	-0.00784668	0.35545685	1.12444735	1.79237738	0.98167521	-2.55219984	0.0758355	-0.62423253	1.28197158	1.58360853	1.1788195
	0.61762638	0.59996435	0.50128945	-0.27146662	-0.37695112	0.7353537	0.2066384	4.84946534	-0.52499084	-0.13883337	-0.98983503	1.44835402	-0.44633578	0.37407234	-0.13199091	-0.17046234	-0.44946936	0.70453307	-0.34845665	0.81343577	-0.10265364	0.42540757	-0.50189743	-0.49750304	-0.4197425
	-6.29271405	-5.21270465	-3.99337686	0.0144194	0.01251037	-0.00060669	-0.00703943	12.4549829	0.0299596	-0.00202732	0.04627798	0.0053088	5.5459E-05	0.0015177	0.0004996	-0.0093875	0.0663905	9.66253355	0.0303795	-0.00261292	-0.00150989	11.8404935	0.00131904	0.00865501	0.00687054
	6.70819417	5.32849293	4.52066032	0	0	0	0	-9.56371066	0.00940262	0.00804441	-0.67546124	-0.00479583	0.0116787	0.00269391	0.00311888	0.00894997	0.00775408	-11.2728211	0.00945523	-0.00588803	-8.0612E-05	-6.73026942	0.01001726	0.00963706	0.00800654
	-3.6122346	-3.09836098	-2.150058	0.6726683	0.5783512	7.3332E-05	0.00232285	-0.00442354	0.88415197	-0.00898669	0.5488542	-0.00100473	0.40056504	0.50774937	-0.01922059	0.46803205	-0.00563522	0.00332767	-0.01085531	0.63542561	0.0032736	-0.00072038	0.53230284	0.50417778	
	-2.58977118	-2.26204441	-1.58243899	0.49191601	0.43047299	-0.00227171	-0.00431754	-0.00246558	0.40507937	0.33266485	0.56968445	0.00152874	0.39091771	0.00797876	0.32589973	0.37232574	0.39723696	0.00078673	0.37971974	0.00787914	-0.01022038	0.0007236	0.36299137	0.40065093	0.37872516
	-3.53266653	-3.03615382	-2.11493946	0.64745865	0.56551587	0	0	0.43032364	0.84859105	0.53310323	0	0.53310323	0	0.39814313	0.49465643	0.55419141	0	0.46556601	0	0	0	0	0.59854891	0.52471804	0.49301691

Tabla 0.26: Degradación relación de compresión compresor 1 -4% (II)

-1.09894288	-0.81796318	-1.37220982	-2.04506876	-2.14277753	-2.49923971	-2.38064423	-4.14509544	-2.37305255	-2.28420951	-2.05463318	-2.34988314	-2.25343348	-2.51993025	2.26493045	-2.16440965	-2.23317074	0.04620553	-2.34855867	-2.67634305	-2.2951486	-1.40906792	-2.2444709	-2.35184987	-2.37302283
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Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fanorc	-0.0750397	-0.47612468	0.7892789	0.2653125	-0.15294843	-0.25398056	-0.49689638	-2.21281086	-0.79931689	-0.33675031	0.68986072	0.72886004	-1.52080985	-0.97561339	-0.0991849	0.48739586	-2.36758643	0.76297578	-0.02892287	0.27433941	1.59008439	0.0343422	-1.37486665	0.68182407	0.19308447
eff_fanorc	-0.00328324	0.0681471	-0.0897372	-0.02108738	0.00955377	0.0254633	0.07356702	0.23394733	0.11205869	0.03318657	-0.08209156	-0.07421082	0.1557106	0.14021707	0.01706403	-0.04222681	0.23776937	-0.08215962	-0.09447374	-0.03103472	-0.18748659	-0.0019283	0.1237772	0.08250157	-0.03843547
mc_fanorc	-0.0066233	0.01226891	-0.00929614	-0.00951611	0.00519178	0.0073225	0.0403157	0.02106644	0.02046503	0.00235022	-0.00833989	-0.00989846	0.00403253	0.02561374	0.00425467	-0.00583875	-0.00399261	-0.0091215	0.00110266	-0.0027767	-0.02442203	0.00218439	0.00959514	0.00394259	-0.00695884
pr_fanduct	-0.00268055	0.16528205	-0.14296067	-0.13756398	0.2058882	0.29404745	0.2127039	0.81858593	0.53941761	0.1580045	-0.15115883	-0.20234109	0.3385255	0.55274216	0.08041761	-0.16109212	0.47751341	-0.21495018	-0.0092419	0.01950613	-0.51116574	0.1375332	0.43806982	0.12470015	-0.23870319
eff_fanduct	-0.03241647	0.16292587	-0.3457076	0.16432793	-0.2460009	-0.36105732	-0.25289739	-1.40248956	-0.72478702	-0.29760328	0.30700885	0.35131394	-0.82955564	0.73247715	-0.0050421	0.2700883	-1.28646205	0.41527964	0.00420993	0.02939411	0.85704805	-0.10948284	-0.90477995	0.33693501	0.182166278
mc_fanduct	0.0024125	-0.02939593	0.01666325	0.02392136	-0.03559641	-0.05068983	-0.08857035	-0.11068208	-0.08848924	-0.02140336	0.02017608	0.02859088	-0.03332425	-0.08974416	-0.00733944	0.02384697	-0.04027751	0.02944418	0.00076842	-0.00639144	0.07768985	-0.02598267	-0.05185205	-0.01088974	0.04691747
pr_compressor1	-4.09884213	-3.56828511	-3.79384999	-4.13113304	-3.84908489	-3.81605944	-3.45689256	-4.25414284	-3.38378712	-4.11602838	-3.85311477	-3.89371823	-4.0626876	-3.4069355	-3.91489657	-3.99252377	-4.0202778	-3.8542505	-4.01471513	-3.83669371	-3.81065908	-3.88212283	-4.1338382	-4.28639499	-4.30572846
eff_compressor1	-0.07122208	-0.77104973	-1.31170246	-0.1294499	-0.88077465	-0.82961232	-0.74157654	2.28594	-0.71076203	0.27487779	-1.18228079	-1.15207355	0.08795003	-0.77753104	-1.03354468	-0.85032068	-0.28674074	-1.32887684	-0.53974784	-1.06682052	-1.57442172	-0.94914265	1.28797264	1.19312879	0.39045838
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	0.38837629	0.2651638	-1.736186	0.09388364	0.09390707	0.05777505	0.28975529	4.90106841	0.13735429	1.09266213	-1.51081036	-1.46354183	3.9905786	0.16680376	0.20777601	-0.8867698	6.0785761	-1.88421631	-0.14462647	0.1971469	-2.53198807	-0.85556844	3.65592799	1.93857246	1.17045566
eff_compressor2	-0.2664736	-1.0338338	1.53206405	-0.0151528	-0.22760813	-0.22889396	-1.7759564	-3.7477653	-1.27772428	-0.8074045	1.11839596	-1.0699968	-2.89222142	-1.24902849	-0.34628004	0.69043817	-4.46176066	1.36208465	0.09106353	-0.30216158	1.96734422	0.54798697	-2.7373397	-1.48567143	-0.74958022
mc_compressor2	0.09259333	-0.02964007	-0.55703195	0.01082009	-0.0064514	-0.00378579	-0.03787332	1.2655667	-0.01247097	0.2847166	-0.38840982	-0.37979981	0.96540983	-0.02109205	-0.07766895	-0.23598886	1.44659459	-0.48875247	-0.03828201	-0.07739269	-0.6765345	-0.20451128	0.93728382	0.51106308	0.26884489
pr_turbina1	0.0061822	-0.0189008	0.00197352	0.00140398	-0.00488669	-0.0052524	-0.01940086	-0.00881734	0.00537379	0.0010544	-0.00353207	0.00108443	-0.0096944	-0.00849196	-0.00931588	0.00313118	-0.00861094	-0.00071567	-0.00443418	-0.00874138	-0.00390611	0.00110142	-0.00862483	0.00404341	-0.00463138
eff_turbina1	0.00421845	0.06832125	0.00502329	0.00376951	0.02498345	0.02361483	0.08335532	0.01916263	0.04687967	-0.00755772	0.00610729	0.00438835	0.02973171	0.03888967	0.03688741	0.00098227	0.05146077	0.00973564	0.009594812	0.04011184	0.00843911	0.0025683	0.04669162	0.02121352	0.01327679
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	-0.38957451	7.40648444	1.78886701	-0.16625233	2.77353551	2.73553977	9.36708713	-3.57176887	5.40558949	-0.96735377	1.26169364	1.23302836	-3.71875869	6.98973303	3.94501327	0.73840421	-5.17785336	1.56842758	0.10210867	4.59441737	2.33345887	0.74870227	-3.27014191	-1.84332954	-1.33228236
eff_turbina2	-0.14164379	3.81143866	0.63341259	-0.06949909	1.42935564	1.39774897	4.6884869	-1.29455378	7.7716623	-0.34074979	0.44855806	0.43574117	-1.35042088	3.51246461	2.02654512	0.25732261	-1.39532706	0.5507794	0.03693355	2.3445888	0.80390249	0.27951793	-1.18162696	-0.6668097	-0.49645494
mc_turbina2	-0.24496838	5.71121947	1.12337772	-0.10701302	2.12747202	2.08137929	7.1399776	-2.2367481	4.13447139	-0.60516165	0.79504908	0.77441778	-2.33350317	5.30890316	3.0375338	0.45993562	-3.19451217	0.98518087	0.06525842	3.52194615	1.46462612	0.07244942	-2.05218429	-1.1597877	-0.84438119

Tabla 0.2.7: Degradación relación de compresión fanduct -7% (l)

Acuerdo	-4.09884213	-3.56828511	-3.79384999	-4.13113304	-3.84908489	-3.81605944	-3.45689256	-4.25414284	-3.38378712	-4.11602838	-3.85311477	-3.89371823	-4.0626876	-3.4069355	-3.91489657	-3.99252377	-4.0202778	-3.8542505	-4.01471513	-3.83669371	-3.81065908	-3.88212283	-4.1338382	-4.28639499	-4.30572846
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	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	0.24226359	1.10345954	-0.08629473	-0.02158927	1.33737387	-0.59929451	0.08570454	-2.24541331	-0.72111009	0.29443557	-0.70058645	-0.63387468	-0.10437853	-1.24709886	0.31131597	-2.90071302	-0.16956222	-0.07915418	-1.29507441	-0.16418148	-0.21007295	0.17689582	-0.48587563	-0.46653365	1.29986013
	-0.02959639	-0.12299736	0.0194823	0.00089445	-0.13427823	0.05782908	-0.01496608	0.11459028	0.08719261	-0.04189977	0.07945378	0.0610266	-0.0006485	0.14137448	0.0430522	0.28864007	0.01821863	0.01663995	0.12779387	0.02197332	0.00913625	-0.02487243	0.0753076	0.0688857	-0.14510617
	-0.00190975	-0.01444445	0.00408105	0.00314905	-0.01778948	0.00483497	0.00084361	0.00294534	0.01369207	-0.00614634	0.00352097	0.00023231	0.00413828	0.01430487	0.00858868	0.01959996	0.00626365	0.00273071	0.00692201	0.00615294	-0.00032545	-0.00096503	0.01217955	0.00467847	-0.01643522
	0.02246201	-0.27959214	0.1601382	0.0945744	-0.43638901	0.20843707	0.04517655	0.27501337	0.457281	-0.23986166	0.18397847	0.01760712	-0.00233487	0.32527666	0.29970564	0.98222379	0.18913474	0.10947124	0.26478251	0.16694082	-0.03811068	-0.05789766	0.40161569	0.19825106	-0.55218454
	0.03458524	-0.55565514	-0.1780678	-0.07550714	0.73208874	-0.40186423	0.00595991	-0.70568671	0.62488149	0.25894394	-0.43735931	0.24365808	-0.01654658	-0.59698105	0.36702406	-1.78287055	-0.21793515	-0.12273717	-0.6321886	-0.17662602	-0.05307135	0.12384361	-0.50513617	-0.35555597	0.88604112
	-0.00675525	0.05766985	-0.02848716	-0.01887781	0.06557168	-0.0260374	-0.00980378	-0.02570926	-0.07200096	0.04235173	-0.01916661	0.00911235	0.00182398	-0.04329102	-0.05144505	-0.12854876	-0.03483898	-0.019102305	-0.02671977	-0.03088285	0.01165091	0.00729558	-0.066687	-0.02784673	0.08589129
	-3.90909377	-3.78386941	-3.86826706	-3.86321013	-3.85942475	-4.15709578	-3.92832324	-4.1053439	-3.9150685	-4.23694798	-4.23720373	-4.24105378	-4.08000763	-4.24020956	-3.84221874	-4.1952154	-3.66579296	-3.96663237	-4.21494735	-3.84612321	-4.21382325	-3.90011826	-3.83498475	-4.12479533	-3.98657094
	-0.94852504	-1.49753334	-0.95309531	-0.86637741	-1.47953768	0.66561819	-0.91486232	0.34251619	-0.55738276	0.39217851	1.29103285	0.50529747	-0.22484908	0.88732795	-0.83294639	2.90796575	-0.79739682	-0.7377768	1.06423153	-0.891063931	0.62638184	-1.13181942	-0.77001864	0.21526003	-1.32565626
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.81658395	-2.62483239	0.1279225	0.17193798	-2.30184991	1.63847433	-0.70486866	3.52794568	0.77109951	0.47227762	2.16671039	2.30786795	0.24118263	2.39673585	0.06587757	6.56013506	0.21465785	-0.23741313	3.23437177	0.14323479	1.09279931	0.2495438	0.00801979	1.16302442	-2.06431442
	0.5785192	1.88186241	-0.267702	-0.36459531	1.76948361	-1.23650154	0.47579881	-2.5785721	-0.62130394	-0.2667047	-1.61891599	-1.66201572	-0.18447652	-1.87484604	-0.24909372	-4.99731153	-0.99731511	0.14106167	-2.4136448	-0.37605626	-0.79883368	-0.32350678	-0.19366819	-0.877623	1.62788839
	-0.19782888	-0.68456827	-0.00985435	-0.01636718	-0.61484254	0.4288697	-0.1775685	0.86777633	0.21630665	0.10274796	0.56294959	0.56335043	0.05324399	0.61196445	-0.00460383	1.66701127	-0.02137748	-0.05210763	0.81316888	-0.01416023	0.26970964	-0.02097048	0.00072432	0.30533374	-0.57506995
	-0.00128705	0.00116485	-0.00183029	-0.00631907	-0.00196475	-0.0004885	0.00285944	-0.00562158	0.00025782	-0.00014673	-0.00177221	-0.00389863	0.00173655	0.00144516	-0.00241031	-0.00758424	-0.01155997	0.00040472	-0.00287986	-0.00394104	0.00289442	-0.00396682	-0.00168813	-0.00105355	0.00280793
	0.00316087	0.00751348	0.02691341	0.04078316	0.00698104	0.01671139	0.00150562	0.04259191	0.00147839	0.0061711	0.02532713	0.03512977	0.00480121	0.019151929	0.02220854	0.02996539	0.05459327	-0.0015782	0.03124429	0.03514429	0.00756083	0.03668717	0.01355426	-0.0055584	0.00408472
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.68766309	2.1995268	3.36231526	4.45452933	2.0664077	-1.42700565	0.60133824	-3.3355619	-0.26512684	-0.57984941	-1.99669982	-2.31138907	-0.2411028	-1.895604	2.7156101	-4.69863531	6.17947412	0.23641527	-2.94738079	4.27628768	-1.09561252	4.42347509	1.67330867	-0.98131112	1.93228785
	0.24492765	0.77321196	1.72544913	2.26765733	0.7175431	-0.50835389	0.21385324	-1.2094579	-0.07433812	-0.22625147	-0.71669853	-0.8470238	-0.0901326	-0.6827977	1.38657511	-1.46454363	3.15717903	0.09289111	-1.06928443	2.1741989	-0.40148976	2.2674123	0.84085762	-0.34356368	0.64512785
	0.43344163	1.38160761	2.57900612	3.40685438	1.29620942	-0.89497828	0.37751475	-2.09449029	-0.15950916	-0.36763505	-1.25354891	-1.19023066	2.06860063	-2.914466302	4.74008433	-0.15222458	4.74008433	0.15222458	-1.84951615	3.26885241	-0.69271478	3.40425463	1.2803639	-0.61393585	1.2068899

-3.90909377	-3.78386941	-3.86826706	-3.86321013	-3.85942475	-4.15709578	-3.92832324	-4.1053439	-3.9150685	-4.23694798	-4.23720373	-4.24105378	-4.08000763	-4.24020956	-3.84221874	-4.1952154	-3.66579296	-3.96663237	-4.21494735	-3.84612321	-4.21382325	-3.90011826	-3.83498475	-4.12479533	-3.98657094
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Tabla 0.28: Degradación relación de compresión compresor 1 - 7% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25		
Degradación																											
pr_fanorc	-0.41780014	-0.2007965	-0.0644556	-0.23397675	-0.30145852	-0.37324121	-0.1002534	-0.22462133	-0.5434582	-0.7756288	-0.28425138	0.08345157	0.38726049	-0.88830362	-0.20355361	-0.4290377	-0.2273894	-0.74687125	-0.75846402	-0.28613891	-0.32053933	-0.08556908	0.20245466	0.37281108	-1.77284866		
eff_fanorc	-0.04984503	0.02589762	0.00760596	0.03124509	0.00882684	-0.000882684	-0.000882684	0.002469019	0.03332903	0.07719264	0.01110563	-0.00701349	0.05551513	0.0904762	0.01329259	0.03499362	0.00889377	0.08775361	0.088883189	0.03388495	0.02358928	0.00146411	-0.02437437	-0.04565512	0.19381524		
mc_fanorc	-0.00655098	0.00214939	0.00077084	0.00285869	0.00269886	0.00462737	-0.00128633	0.00094028	0.00810276	0.00221034	0.00224587	-0.00101538	-0.00383089	-0.00046221	0.00078139	0.00497263	0.00347729	0.00491744	0.057922	0.0036638	0.00236716	6.1773E-05	-0.00164462	-0.00295684	-0.00109528		
pr_fanduct	-0.15069009	0.09673481	-0.11407546	0.07884123	0.13200458	-0.02888021	0.00490841	-0.05864513	0.22922812	0.25954718	-0.1084514	-0.00460756	-0.2765736	0.28608496	-0.1027134	0.09359534	0.02870641	0.32579049	0.43282785	-0.00689652	-0.00687382	0.00769663	-0.20475958	-0.31288161	0.59858989		
eff_fanduct	0.21789614	-0.13109848	0.14098002	-0.17700321	-0.18254865	-0.12666291	-0.16951519	0.06949893	-0.46754596	-0.36082841	-0.02193743	0.00864021	0.36790689	-0.39849034	-0.19698825	-0.30399933	-0.19698825	-0.44584465	-0.56182778	-0.14048857	-0.17088546	-0.00372807	0.27387933	0.424820233	-0.6571883		
mc_fanduct	0.02062452	-0.01344435	0.01619702	-0.0097288	-0.01832195	0.00770017	0.00394624	0.00855366	-0.0642053	-0.03418957	0.01883336	0.00063233	0.03817928	-0.0385822	0.01742723	-0.00405285	-0.00029438	-0.0445664	-0.05936478	0.00391448	0.00842373	0.00012437	0.0284792	0.04329451	-0.07959201		
pr_compressor1	0.03606842	-0.04341103	-0.04283991	-0.07895024	-0.07656653	-0.33065711	-0.28094656	-0.26466485	-0.26945997	-0.26257823	-0.34117246	0.00149149	0.06998938	-0.24431816	-0.33465333	-0.27086428	-0.29623543	-0.18388665	-0.1665271	-0.310659	-0.29711005	-0.10015396	0.01602048	0.04160775	-0.3695952		
eff_compressor1	-0.19726857	-0.9464986	-0.81857187	-0.97608328	-0.78488708	-1.33241043	-1.41412604	0.55180465	-1.32265959	0.38228849	-1.43019638	-1.00140629	-1.03195702	0.72000092	-1.41087066	-1.42877404	-1.35776963	-0.42068903	-0.58909514	-1.33987345	-1.46408707	-1.05127867	-0.96089206	-0.98659645	1.42358604		
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_compressor2	-0.20907278	1.45753887	0.19959946	0.53996616	1.76290313	-0.02017131	-1.7900861	10.6162658	-0.54622875	4.75988516	-1.22787701	0.65693356	1.28743174	4.7745199	-0.78155676	-1.89740136	-0.36289419	2.59557376	1.6768084	0.08656026	-2.46307286	0.43065159	4.29875829	4.43456498	1.55780931		
eff_compressor2	1.11643506	-0.71818928	-1.58978881	0.26663057	-0.40904146	-0.32880211	0.51996125	-4.36393715	0.19947768	-3.93884622	0.49399616	-0.41959075	-0.5666265	-5.46437253	0.18007676	1.05811462	-0.4072039	-2.37393657	-1.95211894	-0.38911756	1.38453826	0.2599495	-1.09622667	-1.13649808	-2.42039653		
mc_compressor2	-0.41547271	0.2854763	0.56132479	-0.21127524	0.51475985	-0.41110101	-0.5831995	1.59601395	-0.46956089	1.36727373	-0.61587395	0.17538454	0.22306167	1.90199726	-0.53897565	-0.69799734	-0.45796354	0.84529029	0.71426799	-0.38320814	-0.7952986	-0.23942365	0.40729076	0.42952549	1.87109374		
pr_turbina1	-0.00356027	-0.00712534	-0.00138555	0.00413256	-0.00406364	0.00567775	0.00628378	-0.00939406	0.00302867	-0.01008492	0.0052456	-0.00470682	-0.00458422	-0.01845895	4.7478E-05	0.00998684	0.00224738	-0.00793492	-0.0022979	0.00245332	0.01298003	0.00316093	-0.00193454	-0.00592228	-0.0111536		
eff_turbina1	0.00854391	0.00888852	0.002796	0.01314344	0.00204975	0.0311138	0.02714042	0.00657496	0.02574836	0.00235739	0.0304445	0.00399981	0.00909292	0.00929251	0.02866519	0.02765717	0.02935881	0.00123124	-0.0018891	0.03001911	0.02850967	0.01610236	0.00737848	0.01195519	0.00681341		
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_turbina2	0.00662693	0.00044771	0.00078065	0.00045825	0.0003016	0.0006507	0.00026242	0.0008968	0.00020616	0.00021974	0.00038698	0.00050191	0.00049394	0.00074246	0.00037492	0.00079665	0.00100968	0.00042337	0.00019725	0.00026189	0.0001301	0.00036941	0.00086198	0.00053833	0.00034025		
eff_turbina2	-0.0078147	-0.00258989	-0.00861819	-0.00383201	-0.00653219	-0.00906547	-0.00707316	-0.00546801	-0.0050232	-0.01020781	-0.00561495	-0.0069332	-0.0124982	-0.00615031	-0.00929377	-0.01255563	-0.00846356	-0.00955366	-0.00788312	-0.00841936	-0.0118996	-0.01092429	-0.00943163	-0.00774424	-0.00814416		
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Tabla 0.29: Degradación eficiencia compresor 1 -1% (I)

Acuerdo	-0.97268857	-0.9464986	-0.81857187	-0.97608328	-0.78488708	-1.33241043	-1.41412604	0.55180465	-1.32265959	0.38228849	-1.43019638	-1.00140629	-1.03195702	0.72000092	-1.41087066	-1.42877404	-1.35776963	-0.42068903	-0.58909514	-1.33987345	-1.46408707	-1.05127867	-0.96089206	-0.98659645	1.42358604
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	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	0.3007946	-0.6660925	0.19467037	0.33021593	-0.52394034	-0.64045587	-0.54859702	-0.5491014	0.39318677	0.2029483	-0.53226268	0.36478319	0.27086508	-0.92029262	-0.45882458	-0.32315805	-0.03946017	0.539396408	0.23249934	-0.68835233	0.01468689	-0.49397408	-0.33488978	-0.81623274	0.11013169
	0.05812736	0.08785097	-0.01228504	-0.03846439	0.04676222	0.10449052	0.06289481	0.04906803	-0.04334713	-0.02197198	0.05346014	-0.05019806	-0.0418692	0.09992793	0.04226729	-0.00399567	-0.05915407	-0.0331569	-0.0084223	-0.0331569	-0.00295512	0.03805635	0.0184447	0.0951921	-0.0239648
	0.0668032	0.00403586	-0.00301435	-0.00313931	0.00404489	0.00663308	0.00258958	0.00568312	-0.00631711	-0.00323845	0.00804295	-0.00569354	-0.00712274	0.00011056	0.00620172	0.00167834	0.000395572	-0.0084223	-0.0331569	-0.00295512	-0.0084223	0.00568733	0.00334912	0.00458705	-0.001882005
	0.21684206	0.27640246	-0.17213842	-0.16667611	0.19827906	0.47772298	0.16181009	0.14333042	-0.08964282	-0.10120695	0.08820478	-0.29852343	-0.43135791	0.32533176	-0.04989558	0.05781502	0.04419813	-0.31567213	-0.06992755	0.1868338	-0.20647515	0.11598177	-0.05499743	0.32003099	0.05877729
	0.0072086	-0.38001886	0.23197794	0.22699263	-0.27054517	-0.57639759	-0.24869735	0.40007444	0.13119164	0.13875764	-0.7728023	0.41010717	0.46236824	-0.45720814	-0.0992376	-0.092334	-0.0553217	0.4329922	0.10654867	-0.29191058	0.27835366	-0.31583709	-0.09708037	-0.44242796	-0.06649899
	-0.03568296	-0.05748334	0.02357016	0.02929115	-0.02706188	-0.06696292	-0.02102393	-0.00452603	0.01207431	0.01343831	-0.01005968	0.04159974	0.06240827	-0.0425121	0.01011619	-0.00775183	-0.00574461	0.04393974	0.0992971	-0.02457786	0.02900562	-0.01204249	0.01250881	-0.04319679	-0.0087555
	0.26696108	-0.20416993	0.01131399	0.02746861	-0.13136027	-0.04417917	-0.21161438	-0.25338444	0.04790601	0.01148839	-0.38296964	0.03253809	-0.22422257	-0.32883072	-0.34995296	-0.18323282	0.00178803	0.04516176	0.02238326	-0.2409825	0.00195332	-0.30459571	-0.32724177	-0.22451931	0.01424655
	-1.98743561	-0.33220148	-0.9887623	-0.98426198	-0.66388282	-0.89800412	-0.07705978	-1.44295585	-0.95833207	-0.96004676	-1.36632852	-0.97255404	-1.19553644	1.15740096	-1.37067204	-0.18994558	-0.98276046	-0.99463049	-0.98648606	0.10300416	-1.01841719	-1.3659986	-1.41714496	-0.20364435	-0.93077666
	7.39625199	1.07740539	-0.29566508	4.03988111	2.38830763	0.38453303	2.24576024	-3.52144825	-0.14385381	0.1894523	-0.83284859	0.22059807	5.11019952	-0.13647336	3.96255031	2.64335361	2.64335361	-0.64362838	0.72809311	4.88586848	0.98589982	-0.41356785	-1.3477336	3.43118518	-0.77827771
	-1.1989383	-0.5956738	1.14510144	2	-1.74437505	0.63925021	-1.16540424	1.97866892	1.02822463	-0.26736306	1.40972806	-0.02076413	-2.156881613	-0.25702673	-0.3979862	-0.33264572	0.34674422	0.64693455	-1.49237459	0.53525192	0.0337099	0.58624492	-1.78694141	1.08845119	
	0.8376547	0.91860308	-0.45347783	0.3787015	0.622202	-0.24431513	1.10026426	-0.93492617	-0.39222504	-0.39894917	-0.35523226	-0.56853506	-0.35547988	1.79457389	-0.43727655	1.0506845	0.13115215	-0.52783417	-0.24132983	1.20854657	-0.23981267	-0.46007627	-0.62898843	0.9788663	-0.40817966
	6.27185283	-0.00619767	0.00555044	-0.00494399	0.00837169	0.0030372	-0.00874471	0.00923594	-0.00402705	0.00074356	0.00508686	0.00820245	-0.00261683	-0.01171444	0.00176549	-0.01179396	-0.00301946	0.00429248	0.00121576	-0.0083528	0.00127032	0.00708225	0.01295661	-0.005675	-0.00372465
	-3.87714656	0.00243611	0.00507155	0.00705934	-0.00175512	0.00034988	0.00538769	0.03638229	0.00927466	0.00462886	0.02771909	0.00558796	0.03320343	0.00417323	0.00352565	0.00657384	0.00253852	0.006321	0.00719133	0.0043835	0.00924662	0.0257122	0.02818504	-0.000606937	0.00704065
	4.7507491	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.00045358	0.00057546	0.00073996	0.00056448	0.00097846	0.00067014	0.00062374	0.00082413	0.00068752	2.9835E-05	0.00032343	0.0003291	6.6263E-05	1.8944E-05	0.00046114	0.00068223	0.000398611	0.00014933	0.00025442	0.0002893	0.00065154	0.00015119	0.00043582	0.00044861	0.00052514
	-0.00537855	-0.00843338	-0.01111688	-0.0054811	-0.00564326	-0.00662705	-0.00960263	-0.00579262	-0.00845155	-0.00687947	-0.00457497	-0.00599688	-0.01040511	-0.00380043	-0.00985401	-0.00906627	-0.00417981	-0.01276285	-0.01276285	-0.00783936	-0.00833113	-0.00652394	-0.00436339	-0.00528916	-0.00674981
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tabla 0.30: Degradación eficiencia compresor 1 -1% (II)

-1.98743561	-0.33220148	-0.9887623	-0.98426198	-0.66388282	-0.89800412	-0.07705978	-1.44295585	-0.95833207	-0.96004676	-1.36632852	-0.97255404	-1.19553644	1.15740096	-1.37067204	-0.18994558	-0.98276046	-0.99463049	-0.98648606	0.10300416	-1.01841719	-1.3659986	-1.41714496	-0.20364435	-0.93077666
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	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25			
Degradación																												
pr_fanorc	0.04179968	0.00897059	0.01216128	0.04537797	-0.00441546	0.00233965	0.0058613	0.00522099	0.00877481	-0.00118659	0.00101564	-0.02917602	-0.01959786	-0.02627161	0.04917583	-0.032192	0.02277454	0.01906811	-0.001038625	-0.01205328	0.02020989	-0.00383334	-0.01943126	0.020203713	0.02757486			
eff_fanorc	0.02007919	0.00065655	0.00736395	0.02933191	-0.01063552	0.00740233	0.00469408	0.00179544	-0.00080561	-0.0009011	-0.00063638	-0.00812319	-0.01134511	-0.00544477	0.00246747	-0.01615738	0.01845715	0.00768692	0.00088661	0.00666129	0.01414452	-0.00896566	-0.01120483	0.01180757	0.01942552			
mc_fanorc	0.00859442	0.00310014	0.00228718	0.0047541	-0.00080772	0.00176799	-0.00026032	0.00156274	-0.00068579	-0.00041423	0.002028549	-0.00381363	-0.00196778	-0.00640198	0.00279229	-0.00389001	0.00347931	0.00414513	-0.00247205	-0.00098382	0.00148113	0.00038124	-0.0023682	0.00326511	0.00633532			
pr_fanduct	0.14395689	0.0562923	0.03866162	0.18858396	0.02022132	-0.0393205	0.00462111	-0.03834051	-0.02924241	-0.00265709	0.00123105	-0.05148909	-0.11630039	-0.17212163	0.02671252	-0.09180279	0.06270469	0.04914178	-0.0378871	-0.02838594	0.11592462	0.012945	-0.09620117	0.06956661	0.07517819			
eff_fanduct	-0.00930243	-0.00322392	-0.01916984	-0.04312823	-0.00838656	0.02642894	-0.00983888	0.02425714	0.00163538	0.00592842	-0.00421497	0.01317493	0.05137325	0.06897571	-0.00683834	0.04054533	-0.00883877	-0.00883877	-0.0111998	0.00928085	0.0156489	-0.03040069	-0.00639881	0.00758227	0.01282728	0.00090447		
mc_fanduct	-0.03018121	-0.01119265	-0.00757707	-0.03201239	-0.0016471	0.00313666	0.00394719	0.00089347	-0.0019522	0.01202541	0.0181745	0.03109007	-0.00612129	-0.01194203	-0.00187063	0.01735702	-0.01194203	-0.01292973	0.00812051	0.00519513	-0.01826413	-0.00187063	-0.0078789	-0.01381954	-0.01773571			
pr_compressor1	0.01835188	-0.04599491	-0.03893764	-0.18769152	-0.03251576	0.09707686	-0.00558811	0.10165462	0.01665513	-0.00061056	-0.0418985	-0.04241118	0.11470019	0.03071633	-0.03916685	-0.01556649	-0.0575938	0.05679359	-0.00693202	-0.01284469	-0.05993777	-0.00688487	-0.02646446	-0.02225203	0.06505651			
eff_compressor1	-4.10184106	-4.1052415	-4.121539	-4.0947938	-4.04716856	-3.94765402	-4.02708318	-3.95125458	-3.97568813	-3.98363839	-4.12048488	-3.9299946	-3.75443501	-3.78869739	-4.15080072	-3.84947452	-4.12938423	-4.13954522	-3.96842576	-3.94473809	-4.22727956	-3.97838704	-3.94906622	-4.10758881	-4.16332643			
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	6.64889813	1.49646137	1.60636165	4.4159754	-0.92624738	2.07358587	-0.06244515	2.19032782	0.62935242	-0.35728016	1.76400541	2.30019182	0.06133638	3.22342229	1.84749455	-1.83569413	1.72880546	4.71879391	-1.06222308	-1.07338287	0.26638037	-0.49012537	-1.50778646	3.0294377	5.0855291			
eff_compressor2	-1.82919641	-0.39384099	-0.41427618	-1.33422046	0.23942894	-0.48465329	0.02104396	-0.51806586	-0.1666882	0.08513442	-0.45356412	0.57736078	-0.01202566	0.90772189	-0.47581465	0.42148857	-0.46035963	-1.29461752	0.26511172	0.23904351	-0.06579605	0.14485503	0.36410591	-0.81688234	-1.37103401			
mc_compressor2	0.3002812	0.11147847	0.22908358	0.59989332	-0.15700854	0.30445274	-0.0826283	0.32065479	0.09749904	-0.09556879	0.24251896	-0.41135915	0.18791917	-0.56991618	0.25659839	-0.32130193	0.23770825	0.63777303	-0.17380102	-0.17292961	0.04072678	-0.08414318	-0.26017529	0.42756679	0.68604652			
pr_turbina1	0.5628294	0.01134384	0.00294022	-0.26230457	-0.55841229	0.7608063	-0.06939345	0.71307941	0.183962	-0.04485394	0.00448429	-0.88219029	0.6979795	0.0244897	0.00437379	-0.30767004	0.0514815	0.49614807	-0.31923422	-0.13032026	-0.6848515	-0.14436489	-0.48304611	0.22667752	0.62550369			
eff_turbina1	-0.51746854	-0.03989327	-0.04062483	-0.09991056	0.19628342	-0.42836521	0.0379866	-0.4112148	-0.08864291	0.027611896	-0.0411676	0.27432765	-0.26307427	0.07482658	-0.04729084	0.13380813	-0.04097773	-0.37844384	0.133808732	0.07683353	0.24611869	0.06149994	1.7824487	-0.7946757	-0.48516894			
mc_turbina1	0.39609517	0	0	-0.18235693	-0.4174123	0.54141611	-0.05226058	0.51689912	0.13973055	-0.03992553	-0.04371482	0.51007866	0	-0.23150709	0	-0.23150709	0	0.35638822	-0.23350604	-0.09619371	-0.50393946	-0.1048055	-0.35801941	0.16302796	0.44691613			
pr_turbina2	0.00610966	0.00689599	0.00598036	0.005091	0.00305195	0.00645551	0.00565201	0.00423018	0.00443546	0.00595829	0.00380333	0.00115912	0.0054642	0.00674218	0.00301911	0.00557229	0.00363583	0.00607731	0.0017157	0.0027096	0.00447169	0.0069554	0.00271657	0.003048341	0.0080718			
eff_turbina2	-0.0244277	-0.0553276	-0.00421746	-0.0091792	-0.00491501	-0.00674657	-0.00751401	-0.00664879	0.00456822	-0.00330994	-0.00789589	-0.00676823	-0.00730567	-0.00231748	-0.00566054	-0.00639069	-0.0232855	-0.00626057	-0.00162223	-0.00606247	-0.00484462	-0.00598814	-0.00319005	-0.00164534	-0.00577053			
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tabla 0.31: Degradación eficiencia compresor 1 -4% (I)

Aciento	-4.10184106	-4.1052415	-4.121539	-4.0947938	-4.04716856	-3.94765402	-4.02708318	-3.95125458	-3.97568813	-3.98363839	-4.12048488	-3.9299946	-3.75443501	-3.78869739	-4.15080072	-3.84947452	-4.12938423	-4.13954522	-3.96842576	-3.94473809	-4.22727956	-3.97838704	-3.94906622	-4.10758881	-4.16332643
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	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	-0.0020332	-0.0338882	-0.0298834	-0.0553879	-0.0398957	-0.00551097	-0.0010697	-0.00654749	-0.02059315	-0.04210412	0.02654125	-0.01736006	-0.01532339	-0.01356496	0.00646879	0.01770165	-0.0281604	0.00255627	0.01176381	-0.01860519	0.02845677	-0.01382194	-0.01387054	-0.01667682	-0.01099321
	0.00419731	-0.01987182	-0.0178803	-0.00859145	-0.01541062	-0.0032014	-0.00916198	0.01449126	-0.01416353	-0.01152909	0.02666491	-0.0010892	-0.00589498	-0.01237668	0.00914055	0.00668203	0.00049627	0.00384467	-0.00726712	-0.01016399	0.02054964	-0.00104908	0.00111786	0.01191178	-0.00600963
	-0.00065011	-0.00641882	-0.00656926	0.00022871	-0.00656392	-0.00194042	-0.00096135	-3.4803E-05	-0.00193339	-0.00528002	0.00478444	-0.00164931	-0.00027178	-0.00032022	0.00153821	0.00325387	-0.00257718	0.00051292	0.00089324	-0.00340511	0.00573873	-0.00249132	-0.00083015	-0.00038735	-0.00195558
	0.08277657	-0.11833573	-0.09093258	0.00506122	-0.1687145	-0.0459067	0.07372988	-0.04316939	-0.06139387	-0.12013429	0.12159886	-0.07659692	-0.02768039	-0.08492999	0.02498006	0.04976632	-0.0514035	0.09049195	0.0362612	-0.03786858	0.14507234	-0.11704563	-0.03967887	-0.05812263	0.00775099
	-0.0327746	0.02701768	0.03627227	0.00581844	0.06558044	0.01295344	-0.02266563	0.02234397	0.03144515	0.04203854	-0.02278194	0.02668171	0.04373655	-0.00734247	-0.01039762	-0.01596325	0.002398188	-0.02505039	-0.01596325	0.00943478	-0.02319052	0.05200923	0.02295325	0.02829113	-0.00560046
	-0.01085074	0.02449111	0.01985105	-0.00081888	0.03120034	0.00866372	-0.00865304	0.00588106	0.01107844	0.02349954	-0.02264362	0.01209416	0.00442028	0.01355518	-0.00534988	-0.01116497	0.01010205	-0.01355696	-0.00641806	0.00943478	-0.02716012	0.01940485	0.00640713	0.00822261	0.00151065
	-0.07831435	-0.01912202	0.05770298	-0.00303998	0.04983103	0.02112347	-0.05811398	0.02341316	0.00404724	-0.02456564	-0.0777927	0.05128254	0.00659316	0.0668952	-0.02979225	0.00804118	-0.02836664	-0.07848932	0.00778328	-0.02633952	-0.08942851	0.08521978	0.02033632	0.0447416	-0.04575069
	-4.1640469	-3.86330859	-3.73619802	-3.98354194	-3.75555612	-3.94477311	-4.10963661	-3.91002538	-3.86638614	-3.8380487	-4.13308772	-3.87771994	-3.90240469	-3.77955122	-4.0558325	-4.05352141	-3.99676238	-4.16894172	-4.03598113	-3.98433005	-4.10262185	-3.77789904	-3.90811372	-3.86821368	-4.06510658
	-1.49839661	-2.86232868	-4.16322281	-0.7370257	-3.0952317	-0.6248641	-1.79367062	0.55882202	-1.23857662	-2.86636151	3.47254415	-0.28809484	-0.66265991	-0.38659401	1.01296697	2.53504607	-1.58684248	-0.79651509	0.73784079	-1.79405829	4.72882018	-0.52518322	-0.48840461	-0.12943362	-1.54531449
	0.42236674	0.72614324	1.36478502	0.06452464	0.833506108	0.15457446	0.50287936	-0.16084828	0.27658655	0.73348518	-0.07240145	0.07059601	0.14598476	0.07944923	-0.25555537	-0.64269991	0.37600643	0.20168666	-0.15738781	0.45596089	-1.37745631	0.11914703	0.11047726	0.02609762	0.0596687
	-0.2645196	-0.50486687	-0.72452531	-0.04807999	-0.54294319	-0.09675667	-0.32670517	0.08166269	-0.2068054	-0.51140293	0.07982627	-0.08882276	-0.11222558	-0.06011961	0.14613982	0.3645314	-0.27427493	-0.13431487	0.12012071	-0.31073732	0.63401841	-0.07857353	-0.07850179	-0.01946851	-0.26629261
	-1.45602366	-1.01163291	-0.00235513	-0.06726729	-0.00149937	-0.02771855	-1.59118779	0.43298801	-0.01273316	-0.62182703	0.11078338	0.35350003	0.0898139	0.49426951	0.00529032	0.30445265	-0.39678876	0.97583429	-0.04705571	-0.80332044	0.10802282	0.5791996	0.11848895	0.41399932	-0.89880949
	0.40847035	0.25363394	0.00321185	0.03241774	0.08005158	0.02980374	0.41460081	-0.19458192	0.0491151	0.1861107	-0.12178023	-0.11434081	-0.0040876	-0.15274675	-0.02801978	0.15596009	-0.29606719	-0.20133272	0.00784191	0.24749907	-0.12901562	-0.18099881	-0.022889943	0.14687341	0.2750965
	-1.0874245	-0.77816442	0	-0.04701238	0	-0.01623177	-1.18881584	0.31216159	-0.0090283	-0.47817484	0.07730067	0.2574275	0.05762001	0.36235852	0	0.22099992	-0.29606719	-0.20133272	-0.03273487	-0.60199457	0.07940096	0.42641345	0.08811411	0.3042325	-0.67075977
	0.00516072	0.00144673	0.00824952	0.00131404	0.00707655	0.0013391	0.00131918	0.00342134	0.00352716	0.00287797	0.0059661	0.00429692	0.00618175	0.00382208	0.00451135	0.00776741	0.00212667	0.0057738	0.00109608	0.00298082	0.00315983	0.00708865	0.00403788	0.00476029	0.00508166
	-0.00767007	-0.00343789	-0.00158654	-0.00452041	-0.00339561	-0.00451454	-0.00626764	-0.00238116	-0.00450915	-0.00099064	-0.00797281	-0.00650329	-0.00544037	-0.00667527	-0.00799421	-0.00255837	-0.00800656	-0.00683582	-0.0041128	-0.00644956	-0.00432939	-0.00683004	-0.00551058	-0.00443255	-0.00560634
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tabla 0.32: Degradación eficiencia compresor 1 -4% (II)



	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	-0.0014066	2.9643E-05	0.0003028	-0.0028407	0.0002323	0.0024917	-4.9015E-05	0.002811	4.2105E-05	0.00413026	-8.7853E-05	-0.0001364	7.823E-06	-0.0007361	0.00040364	7.69E-05	-1.0249E-05	0.002422	-6.4421E-05	-0.00015466	-0.0026905	0.00033312	0.00032231	-5.2461E-05	-0.00014612	
eff_fanorc	-0.00039752	-1.1192E-05	3.203E-05	-0.00012161	0.00023993	8.3998E-05	1.3484E-05	-3.4045E-05	-9.2465E-05	5.1629E-05	-0.00013534	-0.00013079	-0.00012225	0.00017382	3.4804E-05	7.9194E-05	3.4804E-05	6.465E-07	-0.00011502	-0.00019074	-0.000285	-4.6568E-06	0.00010631	-0.00012648	-0.00013826	
mc_fanorc	-3.4054E-05	-4.0867E-06	3.9541E-05	-4.3306E-05	5.037E-05	3.965E-05	-9.755E-06	3.2155E-05	8.5731E-06	0.00047828	-9.055E-06	-2.0564E-05	-1.4390E-05	-4.605E-05	4.274E-05	2.0802E-05	-1.6187E-05	3.0251E-05	-1.8433E-05	-3.324E-05	-5.8212E-05	5.3718E-05	4.004E-05	-8.6268E-06	-1.5588E-05	
pr_fanduct	-0.00098381	-8.948E-05	0.00016951	-0.00016645	0.00065314	0.0004909	0.00011794	0.00112364	0.00018441	-0.00088173	0.00027425	-0.00094728	8.0737E-05	-0.00110647	0.00166085	9.873E-05	0.00013743	0.00074214	-0.00021961	-0.00016267	-0.000104318	-5.8097E-05	0.00115144	-0.0008471	-0.00084397	
eff_fanduct	-0.00014682	-6.7608E-05	9.6774E-05	4.4191E-05	-0.00034895	-0.00013646	-0.00010324	-0.00044699	6.5235E-05	0.00080015	-3.7171E-05	6.4578E-05	3.9216E-06	0.00015764	-0.00088906	9.6998E-05	-0.00016862	-0.00028379	3.9799E-05	0.00023395	1.5806E-06	-0.00010087	-0.00051714	0.00017271	0.00016063	
mc_fanduct	0.00019498	1.473E-05	-5.7866E-05	0.00019909	-0.00012192	-0.00011923	-2.538E-06	-0.0001919084	3.5548E-05	0.00056491	-3.5727E-05	0.00016469	1.9495E-06	0.0002107	-0.00028103	-3.7555E-05	2.9965E-06	-0.00014068	5.1748E-05	0.0001892	0.00021508	-3.0705E-05	-0.00020992	0.00012997	0.00014579	
pr_compressor1	0.00085424	0.00011029	7.888E-05	0.00062598	-0.0032793	0.00033165	-0.00025708	-0.00032944	1.1225E-05	0.0075107	0.00011833	0.00013978	0.00027372	0.00052114	-0.00063144	0.00025671	-0.00044143	5.6861E-05	0.00039554	0.00083481	0.00015908	-0.0007165	-0.00019312	0.00067955	0.00020211	
eff_compressor1	-6.9262418	-6.93017715	-6.93197965	-6.92874857	-6.93250069	-6.93056057	-6.93088142	-6.93177768	-6.9302463	-6.93092621	-6.92894541	-6.9287845	-6.92909148	-6.92907433	-6.93303533	-6.92982828	-6.93047605	-6.93107552	-6.928942	-6.92887083	-6.92911013	-6.93284503	-6.93218457	-6.92851297	-6.92864275	
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_compressor2	-0.02150863	0.002299	0.01833314	-0.03482179	0.03445534	0.02262463	-0.01289523	0.01192246	0.00445153	-0.07189024	-0.01070481	-0.00318874	-0.00773072	-0.04487478	0.01522761	0.01213896	-0.01603633	0.01616159	-0.01305233	-0.01968349	-0.05188637	0.04579822	0.01793689	0.0046571	-0.00485225	
eff_compressor2	0.00578347	-0.00049655	-0.00456748	0.00970211	-0.01001708	-0.00575595	0.0031049	-0.00266451	-0.00108635	0.0252362	0.00251843	-9.4253E-05	0.00180739	0.01277956	-0.00316158	0.0038667	-0.00371341	0.00329604	0.00536641	0.01446694	0.01446694	-0.015718	-0.00404985	-0.00117485	0.00043923	
mc_compressor2	-0.0031356	0.00046801	0.00303851	-0.00482796	0.00587137	0.00406624	-0.00194087	0.000193457	0.00070457	-0.00089796	-0.00152641	-0.00064382	-0.00106529	-0.00606643	0.00255224	0.002029384	-0.00236064	0.00277265	-0.001887	-0.00083959	-0.00696829	0.00788762	0.00312248	0.00069927	-0.00092423	
pr_turbina1	-2.3225E-05	0.0004365	3.8641E-05	-0.00175	8.8195E-05	0.0104124	-0.00389718	0.00233821	0.00068218	0.02164827	-2.2498E-06	0.00421825	-3.6408E-05	-0.00198467	-0.00513361	0.00587317	-0.00510875	0.00240933	-2.3596E-05	0.00058304	-0.00407023	6.7451E-05	3.520E-05	0.00669885	0.00039059	
eff_turbina1	0.00049553	-0.00025444	-0.00032685	0.00156705	-0.0007694	-0.00283049	0.00206103	0.00028277	-0.00037666	-0.01827437	0.00028476	-0.00170789	0.00022231	0.00185542	0.00085596	-0.0020219	0.00277625	-0.00118435	0.00034994	0.00016386	0.00340563	0.00059945	-0.00060773	-0.0023266	-0.00155701	
mc_turbina1	-5.3704E-05	0.00033353	0	-0.00126004	0	0.00786589	-0.00282333	-0.00172449	0.00047919	0.0157245	0	0.00394678	0	-0.0014515	-0.00382535	0.0043189	-0.00368622	0.00177548	0	0.00043605	-0.00289465	0	0	0.00491133	0.00277987	
pr_turbina2	0.0035815	0.01175531	0.01118314	0.01081353	0.01109726	0.01034119	0.01162814	0.01148212	0.007886	0.01176641	0.01091108	0.01064143	0.01183498	0.0073632	0.01157947	0.01088448	0.0120723	0.011304	0.01116676	0.01072129	0.0112491	0.0124679	0.01181331	-0.01123656	0.01174731	
eff_turbina2	-0.02146755	-0.02118892	-0.0210586	-0.02092034	-0.02288006	-0.02355484	-0.02442358	-0.02273328	-0.02116308	-0.02007856	-0.02223632	-0.02041042	-0.02117126	-0.02327974	-0.02139315	-0.02333019	-0.02151196	-0.02205206	-0.02260048	-0.02216995	-0.02179443	-0.02166752	-0.02182586	-0.02208633	-0.02174731	
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Tabla 0.33: Degradación eficiencia compresor 1 -7% (I)

Acierto	-6.9262418	-6.93017715	-6.93197965	-6.92874857	-6.93250069	-6.93056057	-6.93088142	-6.93177768	-6.9302463	-6.93092621	-6.92894541	-6.9287845	-6.92909148	-6.92907433	-6.93303533	-6.92982828	-6.93047605	-6.93107552	-6.928942	-6.92887083	-6.92911013	-6.93284503	-6.93218457	-6.92851297	-6.92864275
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caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-0.00016948	-0.00013293	0.00027348	0.00014775	-0.00017601	0.00016854	-0.00014909	0.00030134	0.00020595	0.0004077	0.00019104	-0.0002145	-1.604E-05	0.00021534	0.00016747	-8.1975E-05	0.00020438	-4.783E-05	-0.00016673	0.00017801	0.00016673	-0.00026416	0.00012513	-5.0787E-05	-8.0386E-06
-0.00028313	-0.00014446	0.00012499	-9.481E-05	-0.00017726	4.5303E-05	-3.4855E-05	0.00010444	4.3047E-05	0.00017866	1.5125E-05	-0.00027483	6.901E-05	0.00015297	-1.5656E-05	-0.00016329	0.00016588	-2.323E-05	-0.00020646	5.8997E-05	8.6125E-06	-0.00018717	6.5615E-05	1.4443E-05	-0.00011714
-5.1403E-05	-4.0449E-05	4.6155E-05	1.4826E-05	3.1683E-05	3.0591E-05	-1.8234E-05	5.1473E-05	5.0072E-05	4.8776E-05	2.5397E-05	-3.9223E-05	-2.4599E-05	6.3846E-05	2.8377E-05	-3.7031E-06	4.4611E-05	-1.8499E-05	-5.2908E-05	3.6039E-05	1.4336E-05	-4.0314E-05	1.8163E-05	-1.3297E-05	-6.26E-06
-0.00074663	-0.0007872	0.00013566	-0.00010755	-0.00082142	0.00019329	-0.00059784	0.000104026	0.00051078	0.00019865	0.00051794	-0.00101093	-9.9204E-05	0.00073032	0.00131221	-0.00052138	0.0002047	0.00045003	-0.00087776	3.3709E-05	0.00097331	-0.00105332	0.00047424	-0.00066938	9.1781E-05
-7.5981E-05	-5.9393E-05	-0.00047859	7.4184E-05	0.00011952	-0.00047875	0.00012689	-0.00036165	-7.6813E-05	-0.00044919	-0.0001731	4.7903E-05	-4.6082E-05	-0.00028024	-0.00055884	0.0001385	5.8913E-05	-0.00022926	-5.7118E-05	0.00014626	-0.00044931	0.00011256	-0.00019873	6.7872E-05	-0.00011779
0.00016438	0.00015848	-0.00024393	-3.0801E-06	0.00014949	-0.00020146	0.00010606	-0.00021149	-0.00013705	-0.00022851	-0.00010597	0.00018885	3.4016E-05	-0.00015962	-0.00021234	7.7095E-05	-8.8489E-05	-0.00029926	0.00019023	-4.7854E-05	0.00015267	0.00019662	-8.8323E-05	0.0001148	-9.0177E-06
-6.2608E-05	0.00094538	-0.00044384	0.00041229	0.00051962	-0.00066493	-9.7584E-05	0.00023801	0.0002491	0.00026211	0.00013601	0.00065413	0.00026279	-0.00259949	-0.0102027	0.00047323	0.0002547	-0.0013039	0.00013677	0.00037279	-0.00043786	0.00062847	-0.00012311	-2.5096E-05	-0.00013895
-6.92821733	-6.92917097	-6.93217557	-6.92917973	-6.92912859	-6.93208273	-6.92947364	-6.93120829	-6.93032147	-6.93188079	-6.93081138	-6.92893938	-6.92934031	-6.93123672	-6.93217787	-6.92882289	-6.92849681	-6.92849681	-6.92874423	-6.92966672	-6.93186883	-6.92868801	-6.93064708	-6.9295198	-6.93053619
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0.03625063	-0.02483285	0.01625874	0.01539044	-0.01353112	0.00766826	-0.00559917	0.02522887	0.02533926	0.02582286	0.01589147	-0.02300762	-0.00867883	0.03735804	0.00329799	0.00244645	0.02517928	-0.03067614	-0.04304258	0.02159014	-0.00175511	-0.03780346	0.00890616	0.00060402	-0.00161339
0.00971085	0.00639121	-0.00364409	-0.00395517	0.00365149	-0.00177354	0.0008769	-0.0063546	-0.00646456	-0.00643163	-0.00373104	0.00633608	0.00213653	-0.01086651	-0.00081386	-0.00068903	0.00751966	0.01193609	-0.0058329	0.00116576	0.01060182	-0.00219041	-0.00080895	0.00050322	
-0.004968	-0.0034486	0.00275317	0.00269567	0.00196889	0.0021657	-0.00095246	0.00447178	0.00467679	0.00467679	0.00447178	-0.00329189	-0.00115697	0.006301	0.0004876	0.00038305	0.00449399	-0.00434923	0.00383374	-0.00018264	-0.0052821	0.00145418	-1.4688E-05	-0.00019532	
-0.00328782	-0.00258023	-0.00010735	0.00823289	8.1619E-05	-0.00434025	0.00107405	0.00663172	0.01409985	0.00418968	0.00359805	-0.00079304	-8.1785E-05	1.6267E-05	0.00407432	0.01728924	-0.00793849	-0.00382687	0.01487121	-0.00637688	-0.00146354	0.00056012	0.00368177	-0.00214223	
-0.00324993	-0.00184462	-0.00026697	-0.00255524	0.00034721	0.0011796	-0.0003736	-0.00203559	-0.00338501	-0.00156657	-0.00146962	0.00066577	0.00025216	-0.0001222	0.00207571	-0.00045693	-0.00296151	-0.00372689	0.00296151	-0.00372689	0.00296151	-0.00372689	-0.00148488	0.00085704	
0.01098555	0.0110159	0.01149118	0.01037799	0.01028773	0.00866098	0.0113591	0.01031062	0.01089869	0.01096182	0.01173443	0.01108719	0.01100592	0.01098601	0.01069917	0.0051996	0.01063528	0.01073446	0.01058079	0.01148444	0.01098247	0.01114467	0.01132935	0.01109413	
-0.02231412	-0.02354354	-0.02076988	-0.02094855	-0.02200078	-0.02037218	-0.02091668	-0.02287042	-0.02110292	-0.02083887	-0.02032463	-0.02063462	-0.02011654	-0.0213863	-0.02087397	-0.02211092	-0.02155704	-0.02194457	-0.02186737	-0.02125466	-0.02135328	-0.02280815	-0.022325524	-0.02191514	-0.02085106

-6.92821733	-6.92917097	-6.93217557	-6.92917973	-6.92912859	-6.93208273	-6.92947364	-6.93120829	-6.93032147	-6.93188079	-6.93081138	-6.92893938	-6.92934031	-6.93123672	-6.93217787	-6.92882289	-6.92849681	-6.92874423	-6.92966672	-6.93186883	-6.92868801	-6.93064708	-6.9295198	-6.93053619
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Tabla 0.34: Degradación eficiencia compresor 1 - 7% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	-1.70947998	0.21852594	0.60770948	1.00772246	2.66020626	0.2180794	2.12964384	-3.04412652	-0.56900201	-1.49754941	1.40142833	0.2047113	-4.70400394	1.6017402	-0.3708974	-3.14587007	0.15564505	-4.6825156	-0.58765511	0.09101021	-1.9059733	-1.11591272	1.50191546	-0.01687121	0.59670482	
eff_fanorc	0.233484	-0.07174847	-0.07258823	-0.12397998	-0.29702499	-0.03464244	-0.22100422	0.3816618	0.05780526	0.17975733	-0.17076101	-0.03153643	0.60656281	-0.18194164	0.06353984	0.39494957	-0.0206581	0.85353363	-0.05416875	-0.01235445	0.22970037	0.13379981	-0.161211905	-0.01283002	-0.07483865	
mc_fanorc	-0.0023877	-0.00355505	-0.00707305	-0.01393677	-0.05172809	-0.00376757	-0.04255269	-0.02794096	0.01130143	-0.00021631	-0.05212261	-0.00330767	-0.08464013	-0.03039909	0.00620689	-0.02958524	-0.0013926	-0.08483383	-0.01290764	0.00163027	-0.00447184	0.00417838	-0.03171121	-0.00037396	-0.0078444	
pr_fanduct	1.18602345	-0.10683213	-0.40757616	-0.43875978	-0.85234504	-0.21031692	-0.71242325	1.55281335	0.31688038	0.78800453	-0.63557574	-0.12838665	2.14953336	-0.70370127	0.30220842	1.35617698	-0.20506679	1.9579984	-0.14357057	-0.13023339	0.98089811	0.66557003	-0.48659978	0.00880359	-0.33840315	
eff_fanduct	-1.6882974	0.12692895	0.47326737	0.55025536	1.17919887	0.24668239	-2.6296751	-2.6296751	-0.2629651	-1.10017333	0.77207001	0.15274077	-3.85688893	0.87168175	-0.31605647	-2.43504022	0.23694004	-3.5982482	0.2090756	0.18562589	-0.15594294	0.87412971	0.65587479	0.00397928	0.40242647	
pr_compressor1	-0.20698991	0.01452805	0.05531034	0.06604902	0.07605645	0.02846301	0.07145191	-0.30671327	-0.04132212	-0.10481962	0.08761084	0.01754807	-0.47621462	0.09727558	-0.04043123	-0.26503832	0.02761668	-0.3909129	0.01338128	0.01675368	-0.15594294	0.08654768	0.0521672	-0.00123151	0.04638026	
eff_compressor1	2.27394529	0.04214352	0.12233286	0.16129306	-0.50795481	0.05192507	-0.41790548	2.50397881	-0.2251147	0.63868956	0.22944994	0.04532448	-4.01837583	0.23198605	-0.19943367	2.72768453	0.00675444	-3.89587747	-0.43555526	-0.02733317	1.75876394	0.22310232	-0.31591105	-0.02049623	0.11767409	
mc_compressor1	0.01850767	-0.00451086	-0.10108875	-0.01390171	-1.14706205	-0.00979737	-0.80416592	0.32840184	-0.17195194	-0.9768957	-0.07964823	0.00710399	-0.12775212	-0.05031363	0.79934034	0.32681712	0.16088603	-0.1699391	-0.76598835	0.1832543	-0.2699507	-1.31830482	-0.56813868	0.03047078	-0.07817067	
pr_compressor2	4.01618361	-1.49147838	0.03256571	-3.3164732	-7.70542226	-1.91213274	-6.49143186	5.14510391	-2.65670416	4.48975669	-3.1404602	-1.52832478	6.78468956	-3.7728513	5.16820371	4.90599811	1.80916817	6.52561162	-6.3851626	5.54606716	3.86873074	3.76086574	-5.63416521	-2.72365189	-0.61088746	
eff_compressor2	-0.12445105	-0.44746683	-0.92784573	0.09036468	1.56180231	-0.30883618	0.96673527	0.98557767	-0.73386356	-1.91753658	0.09596766	-0.43843725	-0.72572207	0.27639203	-3.41236562	0.87406792	-1.7768383	-0.78888046	1.05091313	-3.42711632	-0.70240924	-1.86984284	0.59261628	-0.31241953	-0.68979404	
mc_compressor2	1.03713334	-0.20274436	0.00560923	-0.42266615	-1.24093415	-0.2786819	-1.09482107	1.3108934	-0.4543191	0.68361523	-0.39424536	-0.21495471	1.70608463	-0.53844645	0.93379984	1.25398401	0.30185745	1.61579643	-1.0473456	0.91898492	0.89033873	0.56334198	-0.95719589	-0.37695142	-0.08741579	
pr_turbina1	7.19197268	-0.00578019	-0.00745387	0.00210362	0.00533066	0.00358976	0.00693054	9.70719395	0.00070845	-0.00153112	13.6083896	0.00216814	-0.00573262	8.73757366	-0.00464745	12.4878213	0.0181148	-0.00306932	9.15916239	6.82854481	0.0062721	0.00598267	-0.00348244			
eff_turbina1	-8.68161444	0.00717986	0.00660716	0.0036644	0.00784853	0.00321984	0.00489325	-1.11949794	0.00711304	-4.83155925	0.00072855	0.00680116	-16.8437625	0.00376686	0.00077399	-0.3367574	0.0063582	0.00335994	-7.0623989	-3.93910286	0.00742591	0.00338355	0.00702543			
mc_turbina1	4.86689367	0	0	0	0	0	0	6.51529697	0	5.7387459	0	8.94696309	0	6.04202965	0	8.23695297	0	6.800275	0	6.800275	0	5.18437157	0	0	0	0
pr_turbina2	-0.01091232	0.00399599	0.00326798	0.01392602	0.02735924	0.00642604	0.0456022	-0.00584289	0.40879174	-0.00789357	0.001954605	0.0049246	-0.01072191	-0.05116914	-0.00334794	-0.00934922	0.00841324	-0.01011934	0.12234704	-0.00313099	-0.00778604	-0.00704638	0.08871573	0.16394164	0.00888247	
eff_turbina2	0.0021919	-0.00237202	-0.0338759	-0.03485402	-0.12267521	-0.0102229	-0.07826057	-0.00161098	0.34031701	-0.0016465	-0.04399157	-0.0053463	-0.00101091	-0.10780734	0.00224418	-0.00185788	-0.0050318	-0.00291914	0.07525379	-0.0050854	0.0048581	9.8317E-06	0.02828066	0.12644365	-0.0332284	
mc_turbina2	0	0	0	0	0	0	0.0126471	0	0.40739561	0	0	0	0	0	0	0	0	0	0	0.11468346	0	0	0	0.07395779	0.15986836	0

Acierito	-0.12445105	-0.44746683	-0.92784573	0.09036468	1.56180231	-0.30883618	0.96673527	0.98557767	-0.73386356	-1.91753658	0.09596766	-0.43843725	-0.72572207	0.27639203	-3.41236562	0.87406792	-1.7768383	-0.78888046	1.05091313	-3.42711632	-0.70240924	-1.86984284	0.59261626	-0.31241953	-0.68979404
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Tabla 0.35: Degradación eficiencia compresor 2 -1% (I)



caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
8.11174589	-1.33941005	0.000253	-0.07024894	3.26441836	0.07598996	-1.57083215	0.24508627	-0.34916072	-2.01660742	1.08528844	3.52008428	2.84724192	1.2001728	0.39123914	-0.01791503	-1.97966678	-0.81824008	1.18653327	0.67001509	-0.66744094	-0.14211757	-0.27334117	0.43544798	1.06394091
-0.87435652	0.16123553	-0.0071392	-0.00125954	-0.34947364	-0.01087199	0.18525746	-0.03589415	0.05600873	0.2427247	-0.11086983	-0.34072463	-0.30247749	-0.1289518	0.04699375	0.00118438	0.22969525	0.06822541	-0.13986483	-0.08057654	0.06615107	0.01612489	0.03433075	-0.05336265	-0.11757922
-0.16171263	0.00270056	2.8211E-05	-5.2671E-05	-0.06195988	-0.00166902	-0.00099482	-0.00375455	0.00558887	-0.00767183	-0.02270178	-0.09417759	-0.05491865	-0.02668846	0.0067633	0.00026433	-0.00764697	0.012161216	-0.02656128	-0.01243923	0.01359576	0.00197977	0.00434721	-0.00059002	-0.02273762
-2.61766428	0.89046924	0.02492379	0.03822262	-0.96080269	-0.03236209	0.78946844	-0.30484845	0.19961031	0.92157909	-0.23863087	-0.55848207	-0.83610459	-0.61312803	0.2249135	0.00413	0.80424403	0.33479874	-0.52629147	-0.29667267	0.36499804	-0.05754402	0.04824945	-0.25116423	-0.4977208
4.16263332	-1.15694029	-0.00259074	-0.10198644	1.35949353	0.03883075	-1.11987198	0.33399043	-0.20959929	-1.51759395	0.46243681	0.50738006	1.18698406	0.7329471	0.26785355	-0.0463391	-1.31648431	-0.44746119	0.63328284	0.36441968	0.04833407	0.05674657	-0.0604502	0.29477768	0.62847181
0.15049849	-0.11843788	-0.00829117	-0.00494127	0.08440738	0.0038882	-0.10474688	0.04170752	-0.02641229	-0.15473383	0.0308368	0.055993	0.07416097	0.08012732	-0.02991795	-0.00613815	-0.12194645	-0.04130891	0.06931463	0.04039654	-0.04542485	0.00755578	-0.00655349	0.03387101	0.05738198
-0.53107095	0.15793915	0.00073399	-0.18729956	-0.52353489	0.0104446	0.67848066	0.06700778	-0.18850655	1.91181157	-0.44687337	-0.25983502	-0.51433555	-0.09562485	-0.09483275	-0.0115037	1.50093149	-0.24144337	-0.0828457	0.11644476	-0.24343701	-0.02716153	-0.05152449	0.08276141	-0.16190502
-1.41142268	-1.3064537	0.03608646	-0.2044656	-1.23745679	0.04696937	-0.93253936	-0.05719436	0.80537054	-0.14693482	-0.8181937	-1.18488761	-1.168074	-0.2747797	0.10715053	0.02182232	-0.37751613	-0.19252351	-0.2690273	-0.00966707	-0.16136346	0.046618	0.04622474	-0.03753304	-0.40316934
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-13.7025971	4.40134092	-2.0152273	-2.91468323	-7.94643886	-2.69906068	4.53049396	-1.50856621	5.21950849	4.0680746	-6.51140047	-10.6003863	-7.7504292	-4.02596932	-0.42086792	-1.78647888	4.00582726	-3.12970291	-3.93175601	-2.82309533	-3.07018369	0.11006222	-0.528338181	-0.39669464	-5.11259965
5.41961453	-1.89391015	-0.33146637	-0.65856979	1.67745393	-0.13853267	-1.91231277	-0.42616367	-3.42107383	-0.50220048	1.07299981	2.51634811	1.58971885	-0.20061967	-0.9581271	-0.40092969	-1.04045173	-0.2536446	-0.21792523	-0.01605509	-0.44541448	-1.08338276	-0.87239683	-0.79125228	0.30808003
-1.8646156	0.69134225	-0.27130757	-0.51189782	-1.27291283	-0.36588724	0.69412824	-0.23320527	0.92187327	0.93185936	-1.07212561	-2.57968982	-1.24466681	-0.79343297	-0.03249591	-0.23509305	0.81699117	-0.53333389	-0.70909225	-0.37359209	-0.52123	0.02920538	-0.06460863	-0.05070976	-0.89767913
0.07570684	8.04228081	-0.00014558	0.0007352	0.01294235	-0.00284458	7.63308429	0.00047597	-0.00262148	8.78917706	0.0084223	0.08322025	0.01289093	0.00897339	0.00292561	-0.00645985	8.11802275	0.01343039	0.00219415	0.00035568	0.0075737	-0.00014223	-0.00206117	-0.00524436	0.01135656
-1.14189465	-5.0560979	0.0018595	0.00663354	0.00235262	0.00709319	-4.88197466	0.00495275	0.00024282	-7.17369796	0.00598588	-1.14733515	0.00714932	0.00720998	-0.0007451	0.00429738	-5.93041158	0.00411062	0.00844307	0.00393102	0.0061176	0.00200154	0.00178301	0.00383708	0.00764765
0	0.06293708	0	0	0	0	5.74840406	0	0	6.50310361	0	0	0	0	0	0	6.05847473	0	0	0	0	0	0	0	0
-0.51322524	-0.0107094	-0.00896922	0.41994735	-0.03167208	0.00194494	-0.00538288	0.00786465	-0.00291876	-0.00808823	0.08151502	-0.02796389	0.0283024	0.22776428	0.00089659	0.00148451	-0.00654261	0.36035469	0.24702624	0.00761697	0.35441567	0.00090109	2.2963E-05	0.00571861	0.15303784
-0.4879006	0.0056694	-0.00148871	0.3189345	-0.16260182	-0.00230628	0.00100708	0.001938459	-0.00261334	-0.00082019	0.03546159	-0.13308674	-0.13408888	0.13002981	0.00557603	0.00119034	-0.0006532	0.2970959	0.15028971	-0.017851	0.29708031	-0.00229006	-0.00565319	-0.00747028	0.07750618
0	0	0	0.40504976	-0.07385527	0	0	0	0	0.07087966	-0.07946401	-0.03019707	0.20449154	0	0	0	0.35452972	0.22861869	0	0.35441534	0	0	0	0	0.13324006

5.41961453	-1.89391015	-0.33146637	-0.65856979	1.67745393	-0.13853267	-1.91231277	-0.42616367	-3.42107383	-0.50220048	1.07299981	2.51634811	1.58971885	-0.20061967	-0.9581271	-0.40092969	-1.04045173	-0.2536446	-0.21792523	-0.01605509	-0.44541448	-1.08338276	-0.87239683	-0.79125228	0.30808003
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Tabla 0.36: Degradación eficiencia compresor 2 -1% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
Degradación																									
pr_fanorc	1.12494935	0.14365689	2.06287546	2.26448003	2.67641922	1.21713742	1.03721989	-0.35655665	0.0505785	1.14088714	-1.17684309	0.86984931	0.82931911	1.7512336	0.9376106	5.45714348	0.93028577	-0.28146041	-1.18924221	-0.10687596	-1.64905169	0.4236727	-0.58770013		
eff_fanorc	-0.12059268	-0.00272308	-0.22286704	0.04081126	-0.14410417	-0.22856143	0.30156686	-0.11439658	-0.11186844	0.02929667	-0.01871351	-0.11537245	-0.43001788	-0.10062052	-0.08995287	-0.18441394	-0.09379561	-0.65721165	-0.09594162	0.03703323	0.12561533	-0.00792693	0.17188306	-0.08881195	0.06241592
mc_fanorc	0.01365729	0.00844456	0.00090734	0.00558002	-0.00410441	-0.03825302	-0.04042249	-0.01685458	-0.01796529	-0.00405648	-0.00431738	-0.00417505	-0.07856839	0.00985074	0.02025211	0.00540948	0.12897122	-0.00759474	0.00123871	-0.01155138	-0.00573679	-0.01603921	-0.00725283	-0.0069859	
pr_fanduct	-0.39957174	-0.21286601	-0.72709948	-0.05573026	-0.38926227	-0.80721344	0.6772415	-0.42687583	-0.5562095	0.1200736	0.0458877	-0.31948206	-1.12176457	-0.30272824	-0.4623526	-0.44771879	-0.21587121	-1.9907988	-0.38635892	-0.01485515	0.43034839	0.14217664	0.53094368	-0.10475046	0.2178842
eff_fanduct	0.76795934	0.43723815	1.37331829	1.0825071	0.73472453	1.54393982	1.40323482	0.82543261	0.4946132	-0.23402772	-0.08788836	0.60439825	1.12850175	0.57355239	0.94765389	0.85020435	0.42338846	4.13684364	0.75816768	0.02126932	-0.8385358	0.26687776	-1.00883219	0.2159517	-0.4251786
pr_fanduct	0.05648001	0.04151073	0.10044134	0.00899013	0.05333409	0.10545949	-0.13905201	0.06323284	0.03728191	-0.00715007	-0.00623899	0.04319899	0.1216802	0.04278093	0.09485671	0.06019943	0.0306047	0.3886515	0.05620271	0.00239479	-0.07592079	-0.01871147	-0.07268529	0.01509174	-0.03649787
pr_compressor1	-0.64920149	-0.13988728	-0.53015962	-0.01789847	0.03070874	-0.37774942	-1.16682721	0.20692712	0.32602208	0.17387337	0.13951885	0.10211965	-1.03193758	-0.49056372	-0.70044598	-0.48974317	0.24832888	-0.94705235	0.20685571	0.38149415	1.17616951	0.2839795	0.64233954	0.45029792	0.56231398
eff_compressor1	0.01455587	-0.02460545	-0.95445661	0.01113382	-1.1999022	-1.4482101	0.08970134	-0.84390251	-0.9398922	-0.0882266	0.17315166	-1.04798698	-4.75430832	0.01869418	-0.09316651	-0.20369799	-0.6781025	0.08269873	0.19404217	-0.14691334	-0.31071225	-0.9487113	0.09019181		
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-0.24263464	2.00314187	-3.81957749	0.44845701	-1.40374078	-0.89538959	5.83836699	1.72016037	2.97355809	0.21219816	0.3927014	-1.0009584	0.81106927	-0.09337219	5.21596026	-0.39084341	0.42914638	5.81821936	0.40517317	2.56009553	3.43985901	1.19465243	0.48622632	3.1900384	1.72339355
eff_compressor2	-4.04602075	-5.66605475	-2.7438911	-4.25525208	-3.4663171	-5.47990712	-7.06738007	-5.44691848	-5.62071625	-3.7262542	-3.93998812	-3.61279548	-6.02408814	-3.3863658	-7.62695491	-3.85258209	-4.30237405	-8.81606632	-4.81442127	-5.67876248	-5.50607034	-4.29155898	-3.55636439	-5.6767249	-4.51396036
mc_compressor2	0	0.40253984	-0.39247601	0.08004913	-0.12184959	0	0.05715767	0.41269712	0.50692431	0	0.08570973	-0.0745262	0	0	0.40810415	0	0.13705894	0.44395546	0.20842499	0.51871725	0.71163728	0.17427453	0	0.5073698	0.29237005
pr_turbina1	0.40912176	5.7776454	-2.032027	3.6085102	-3.79584814	-11.9201475	7.66085068	8.74133976	9.2428887	1.15792976	-3.57754034	-1.2347459	-16.2540134	0.65474858	0.97336859	-2.69907416	-6.18278624	12.7782189	-7.64995307	5.07357681	3.30578313	-4.8008527	0.14528729	-9.4480876	3.14586439
eff_turbina1	0.66512055	0.60935139	0.38527634	-0.14564803	0.6102033	0.9862872	-0.16382238	0.9472394	-0.17690157	-0.08107173	0.61530506	0.65961983	5.03407932	0.5080128	-0.08622566	1.1676769	0.89658952	-0.1273536	0.95874328	0.70880341	0.73327701	0.79515163	-0.403053	1.12474912	0.09858307
mc_turbina1	-0.67186029	1.80844996	-0.62557283	1.07591623	-1.08778927	-3.49556155	2.40826112	-2.53004205	-2.68845881	0.25656643	-1.02765273	-1.18275964	-4.51113721	-0.4581501	3.15522949	-1.621225	-1.7826638	0.0303544	-2.20889729	1.57976959	0.99352903	-1.3312179	0.53984028	-2.73416129	0.92969861
pr_turbina2	1.50047455	0.73970475	5.83338662	0.28836071	2.45556238	2.63712967	-3.53781617	3.4774207	1.32289151	-0.65636158	-0.73614484	1.89864726	-2.86246962	1.06276869	0.82980043	1.61195263	1.11268885	5.13237282	3.40565663	-0.45816611	-2.9372177	-1.53593941	-2.3880958	0.22923779	-1.4415788
eff_turbina2	0.47101892	0.22659446	1.83833119	0.08679031	0.7805012	0.13716847	-1.1042317	1.05451189	0.4057144	-0.20579485	0.22754653	0.60228909	-2.40346744	0.33691637	0.25707916	0.51123942	0.34925458	1.5745396	1.05121585	-0.4428414	-0.92162191	-0.48585248	-0.75511552	0.06308976	-0.45361097
mc_turbina2	0.84274367	0.41378376	3.28457139	0.16252482	1.38020265	0.8422391	-1.99256118	1.92120275	0.73977732	-0.36877159	-0.41240155	1.06959658	-2.99805635	0.59852322	0.46854965	0.907775	0.62463122	2.89947786	1.91312228	-0.25882182	-1.64892568	-0.86529278	-1.34166227	0.12582215	-0.81039094

Tabla 0.37: Degradación eficiencia compresor 2 -4% (I)

Acerto	-4.04602075	-5.66605475	-2.7438911	-4.25525208	-3.4663171	-5.47990712	-7.06738007	-5.44691848	-5.62071625	-3.7262542	-3.93998812	-3.61279548	-6.02408814	-3.3863658	-7.62695491	-3.85258209	-4.30237405	-8.81606632	-4.81442127	-5.67876248	-5.50607034	-4.29155898	-3.55636439	-5.6767249	-4.51396036
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caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
0.02425279	-0.03648567	1.25833379	0.94696583	3.85891072	-0.50894039	-1.53085456	0.77602791	-0.46556278	-0.26286954	0.66323427	-1.64356705	-0.8443438	-1.09556027	0.34616331	1.1763713	0.16663225	0.21535311	-0.28033815	2.38828863	-2.74747824	-1.23245308	1.45908319	-3.08055772	0.48940177
0.00108846	0.01362538	-0.13308743	-0.10780319	-0.44244852	0.06308002	0.15023976	-0.07061484	0.05748219	0.02738602	-0.06296609	0.19872161	0.08959251	0.14565935	-0.02280792	-0.13342641	-0.01779447	-0.02307995	0.08224455	-0.21899628	0.3061446	0.12119117	-0.15949106	0.34798515	-0.06029184
0.00469372	-0.00279884	-0.01260451	0.00243125	0.04348726	0.00190495	-0.01680724	-0.01030728	-0.00485327	0.00302516	-0.01218886	-0.01703505	-0.00547063	0.00858836	-0.01539444	-0.00617477	0.00659178	-0.00040396	-0.04610221	-0.05057308	-0.01214941	0.0125532	-0.05891368	0.00858457	
-0.19703169	0.04975331	-0.35889461	-0.22799481	-1.33386656	0.08798153	0.56719282	-0.2628786	0.15488355	-0.03857664	-0.14196838	0.39467967	0.07341387	0.12465343	-0.36951333	0.03496912	-0.22124066	0.00229831	-0.70334935	0.57739709	0.45389621	-0.43892218	0.59200614	-0.28505091	
0.40189007	-0.10089051	0.68810688	0.43186153	2.57811035	-0.16491688	-1.08658627	0.51303892	-0.30397898	0.0735767	0.76885369	-0.80703787	-0.14893632	-0.2594484	0.56602677	0.07791331	-0.06715588	0.45871976	-0.00759302	0.09236413	-0.14664708	0.07913881	0.06186971	0.84412544	-1.21641374
0.04096607	-0.00703179	0.05144809	0.03084758	0.19242737	-0.01166124	-0.08707342	0.03790331	-0.02597484	0.00700905	0.0199763	-0.08031801	-0.01476094	-0.02545171	0.05396854	0.00523194	-0.00562354	0.04581376	-0.00012011	0.09236413	-0.14664708	0.07913881	0.06186971	0.84412544	-1.21641374
-0.72269718	0.07945913	0.20100679	-0.2181571	-2.28828899	0.13475979	0.96339928	0.29062855	0.45152384	0.32356557	0.38379437	-0.64557978	-0.75250686	-0.83449997	-0.5796819	0.24342805	0.44347499	-0.59507611	0.23629175	0.04933353	-1.28839247	1.19489977	-0.68402493	-0.99923954	-0.31682421
-0.05917256	-0.05993322	-0.71503882	0.09184594	-0.2040217	0.01040911	0.03492991	-0.87317311	0.07594911	0.08733768	-0.91352328	0.01407844	-0.0135419	-0.0121644	-0.10723593	-0.69028725	-0.79688685	-0.12429132	0.05673484	-1.73544106	0.15067145	0.19187089	0.05721981	0.14272693	-0.07397484
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.88111032	0.14457052	0.30838322	-0.17726803	-0.82875787	-0.0164022	0.26876793	2.11028235	1.61496608	2.41103667	3.03258178	4.11179252	4.3679137	5.05627041	3.32541423	1.41039207	3.10708738	2.19352206	2.63107312	-0.20553898	7.95941194	3.41379342	-0.22909243	10.4388176	1.62464436
-7.22366949	-3.76382645	-4.45917642	-3.83767382	-4.5062004	-3.88371316	-3.13378265	-5.40383663	-4.53711066	-5.61370809	-5.55643387	-5.90764777	-6.59682114	-7.13082299	-6.17458879	-5.06189823	-5.41739237	-5.84794534	-5.75232957	-4.39926619	-8.60618016	-5.43126375	-3.98774209	-10.3719508	-5.39079208
0.45890496	0	0.16293215	0	0	0	0	0.40326559	0.27462688	0.48667753	0.49430766	0.53931583	0.56941646	0.53661132	0.42313889	0.32571189	0.4665268	0.4304323	0.54039984	0	0.2227487	0.69610144	0	0.35442542	0.30726126
9.18615175	-1.02459899	-6.77770024	-2.73209317	0.15745859	-2.38212511	3.31428786	-8.8523805	3.3584975	5.01570873	-9.14785535	6.63191479	7.94656771	8.45012124	8.16512477	-8.10895894	-8.81461638	6.79026072	5.40877714	-12.5881257	9.42035145	3.18357983	-0.24639502	10.6875102	5.76030493
-0.08640467	0.34247578	0.91583332	0.86497949	1.62166862	0.61063204	-1.22166423	1.0537483	0.1107707	0.66180086	1.11484754	-0.18652755	-0.10889771	-0.12133922	-0.03394046	0.99176979	1.14187385	0.40412682	0.67827776	0.990955	-0.15885172	0.68652631	0.80158561	-0.22550286	0.90062358
2.9026989	-0.44728489	-1.93664549	-1.20479613	-1.83789708	-0.89893493	1.64727683	-2.55808958	0.99317345	1.56180642	-2.64421951	2.07225926	2.50143967	2.66250598	2.54953626	2.12795268	1.68281274	-3.70335414	2.97846043	0.95404668	-0.89470666	3.38592541	1.81175642		
-0.01759698	-0.55527078	2.50410974	0.6669679	5.13707313	-0.45372761	-2.37863998	1.78495666	-1.11714572	-0.28846589	0.36039073	-2.20994758	-0.88931125	-1.28807814	0.84626333	2.71278833	-1.13136045	0.77579609	-0.52448089	-1.36040701	-3.37078329	-3.023175	1.50656157	-3.67604636	1.15371483
-0.00557121	-0.17123402	0.78384394	0.21528487	1.60625854	-0.14726675	-0.74292994	0.54675722	-0.34798411	-0.0942845	0.10526536	-0.69688801	-0.28600122	-0.40496577	0.26089921	0.83832752	-0.35717651	0.24067881	-0.16497762	-1.42376816	-1.04687298	-0.95046367	0.47173104	-1.1388231	0.36222789
-0.00804513	-0.31015042	1.40940266	0.37428031	2.89128656	-0.25552474	-1.33334042	1.00179783	-0.6238668	-0.16149454	0.20033392	-1.24688977	-0.49919155	-0.72626313	0.47970164	1.5249362	-0.63864597	0.43822684	-0.29435812	-1.64473614	-1.89596352	-1.69787839	0.84846739	-2.0678117	0.65074542

Tabla 0.38: Degradación eficiencia compresor 2 -4% (II)

-7.22366949	-3.76382645	-4.45917642	-3.83767382	-4.5062004	-3.88371316	-3.13378265	-5.40383663	-4.53711066	-5.61370809	-5.55643387	-5.90764777	-6.59682114	-7.13082299	-6.17458879	-5.06189823	-5.41739237	-5.84794534	-5.75232957	-4.39926619	-8.60618016	-5.43126375	-3.98774209	-10.3719508	-5.39079208
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	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	-1.4545663	-1.22787465	-1.5711974	3.83867975	1.58995707	4.91296671	1.75704576	3.93810512	-1.01588396	0.6190245	2.4545421	1.38062004	3.56687799	0.55663511	0.58604575	0.17520913	0.3492272	-0.18280446	-0.1569881	1.84714783	4.21781047	0.89637256	-0.28495997	1.2592964	0.49802738	
eff_fanorc	0.1723073	0.18284941	0.07046597	-0.39846035	-0.17857455	-0.49833132	-0.20536779	-0.46036175	0.08938271	-0.21147807	-0.33765458	-0.15392495	-0.41597033	-0.08449322	-0.06190992	-0.01160695	-0.02333609	-0.02107239	0.02484032	-0.21918316	-0.79627312	-0.11882093	-0.02321817	-0.15749581	-0.05852351	
mc_fanorc	-0.00572458	0.00856552	-0.00652653	-0.00859151	0.02683001	-0.02064438	0.01212196	0.0169344	0.0051896	0.04538186	0.01203111	0.02847232	0.03878444	0.00035651	0.0125972	0.01800051	0.02582174	-0.02486634	-0.00694219	0.01207381	0.15144402	-0.0063145	0.00874875	0.0065177	-3.7948E-05	
pr_fanduct	1.55049376	1.01000931	0.21723713	-0.72806064	-0.59687915	-0.86705267	-0.57164875	-0.94910954	1.62399142	2.12809355	0.68730117	-0.52400376	-0.8599753	-0.11798818	-0.24894506	-0.00145823	0.00119916	0.58989832	0.12959344	-0.48776718	1.82797605	-0.11975643	1.67411039	-0.33579307	-0.10161006	
eff_fanduct	-3.36988109	-2.31108689	-0.45211158	1.30791538	1.17955217	1.56198118	1.08823161	1.69506569	-3.67605367	5.15919662	1.28865605	1.06550419	1.53668209	0.24251494	0.51140787	0.00021265	0.00384437	-1.22271733	-0.26555564	0.98697111	-4.51781815	0.2569008	-3.94484625	0.69118949	0.21646964	
mc_fanduct	-0.3122285	-0.21102092	-0.05006784	0.15001046	0.13199831	0.17715873	0.1185425	0.20293126	-0.32987359	-0.4020756	0.14656161	0.11938861	0.18079528	0.02745151	0.0585573	0	0	-0.12794345	-0.03011195	0.1126864	-0.36663472	0.02733213	-0.35692411	0.07860864	0.02322359	
pr_compressor1	-1.94336393	-0.96289963	-1.05629718	5.12488158	1.45683305	6.1864745	1.36029574	2.47732925	-2.33861803	-4.47788667	1.72595442	1.45080595	2.91398797	0.164916	0.87549768	-2.51248321	-3.25811271	-2.55179881	-0.86923177	1.23984333	-4.0174131	0.08147974	-3.73953009	1.05696651	0.12635608	
eff_compressor1	-0.15344685	-0.06532384	0.05815917	-0.50564983	-0.0842413	-2.87424232	-0.2946986	0.04992896	0.33557102	2.57908173	-0.25108417	-0.0016361	0.10363206	-0.03414586	-0.03147305	0.4718619	0.6618895	0.16815431	0.01066584	-0.0564719	2.99474137	-0.05805119	1.6007691	-0.08237536	-0.09526367	
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-0.48645577	2.22493417	0	-4.44343135	0	-4.09336185	0	0	-0.03470089	0.84461685	0	0	0	0	0	5.04956156	7.30108579	0	0	0	0	2.89517358	0	0.43423272	0	0
eff_compressor2	-6.3249552	-8.55232356	-7.0234336	-4.11150648	-7.04019721	-4.04680492	-7.1724184	-7.1224486	6.52413939	-6.85856359	-7.10828458	-6.91838319	-7.17554043	-7.09618428	-7.02351554	-10.4459388	-11.5370234	-6.65919533	-7.0584429	-7.01589498	-8.48391205	-7.0536567	-6.93681837	-7.01003866	-7.07640719	
mc_compressor2	2.24998329	2.8419055	0.55369213	-2.98001318	-1.26244966	-3.27265323	-1.45805548	-1.90823808	2.54821081	3.51029711	-1.48175126	-0.97259365	-1.87031193	-0.2644794	-0.50024765	1.2985146	1.52494828	1.26643351	0.26395241	-0.91297721	4.39397677	-0.4086759	3.1014506	-0.60861242	-0.37151081	
pr_turbina1	2.50243214	4.95894394	0.09748903	0.10821832	-0.11782795	-0.83250669	-2.38261015	-1.02923875	2.75295727	3.16269863	-1.56835503	0.8095678	-2.00384388	-1.43866636	-0.3945897	-3.42951807	-5.87793301	-1.54910888	-1.1849556	-0.91013367	4.47756505	-2.5996921	3.30675085	-0.89773057	-1.95912328	
eff_turbina1	-0.27419305	-0.0178752	0.6465771	-3.63384986	0.12266775	-3.71038556	0.67062966	0.03451075	-0.2164726	-0.27161112	0.37153429	-0.14036316	0.28760132	0.89230135	0.44598054	4.60671333	6.59122361	1.31745009	-1.01334579	0.36612965	-0.22171161	1.11908851	-0.19720275	0.49807026	1.01273381	
mc_turbina1	0.42452677	0.89497863	-0.37430133	1.56685147	-0.00265283	1.19892757	-0.56345875	0.03949767	0.47558973	0.55231486	-0.26503408	0.22622841	-0.23936386	-0.64950346	-0.23818237	-2.97455633	-4.41861936	-1.0143446	-0.72866706	-0.23024904	0.80233495	-0.90386455	0.58252172	-0.32444432	-0.78092176	
pr_turbina2	-6.55646856	-5.00716119	-1.52974615	6.34195988	3.40979817	6.93710556	3.17912526	5.2397371	-7.36951171	-10.1908158	3.66467993	3.05263651	4.9539435	0.0902768	1.26399172	-2.93853363	-3.80798758	-4.41663373	-1.35529667	2.35219078	-11.312244	-0.13384317	-8.33343455	1.45498046	0.01810793	
eff_turbina2	-0.9845268	-1.0421871	-0.37637808	1.55988842	0.8337149	1.71446897	0.7799084	1.29070953	-1.01882621	-1.15101104	0.90477171	0.74611168	1.21827891	0.02511629	0.30827044	-0.72521645	-0.94195603	-1.02244555	-0.33182558	0.58047965	-1.1780441	-0.03222586	-1.05779309	0.35751038	0.00101536	
mc_turbina2	-2.9176862	-2.2902386	-0.70595816	2.9155278	1.57204009	3.18556804	1.46132169	2.41419661	-3.33812973	-4.35419762	1.68563422	1.410115704	2.27974378	0.04322296	0.57995186	-1.35483936	-1.75841279	-2.030086	-0.62451167	1.0842618	-4.78891115	-0.06517683	-3.61688855	0.67343209	0.00730415	

Tabla 0.39: Degradación eficiencia compresor 2 -7% (I)

Acierto	-6.3249552	-8.55232356	-7.0234336	-4.11150648	-7.04019721	-4.04680492	-7.1724184	-7.1224486	6.52413939	-6.85856359	-7.10828458	-6.91838319	-7.17554043	-7.09618428	-7.02351554	-10.4459388	-11.5370234	-6.65919533	-7.0584429	-7.01589498	-8.48391205	-7.0536567	-6.93681837	-7.01003866	-7.07640719
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caso 25	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-0.2490878	3.10101352	-0.55613444	-0.33188632	-1.42773934	-0.67623334	1.4491042	2.94259736	2.19891129	-0.47973625	-1.47577535	1.90368385	1.88824993	4.70145265	3.47144415	-1.5625931	3.99280502	0.71774096	2.63262119	4.68469625	0.37595049	3.75694566	1.19270771	-1.34688338	-0.33391668
0.04148788	-0.3504636	0.05564251	0.02737164	0.24757864	0.12909503	-0.16748331	-0.37768232	-0.27361716	0.06219366	0.16781395	-0.23880513	-0.22995022	-0.49297898	-0.42106383	0.19115998	-0.49805867	-0.09776947	-0.32910369	-0.48924273	-0.04258883	-0.44618745	-0.14023784	0.1548036	0.06213948
-0.00346443	-0.01018085	-0.01068455	-0.00854136	0.00655001	0.02407995	0.01146446	0.00561322	0.01768764	-0.00430529	0.00607512	0.0064098	-0.00072314	0.00511346	-0.01577336	-0.02952767	-0.00294826	-0.00249826	0.00071215	-0.00023556	-0.00205075	0.01539303	0.01458658	-0.003568813	0.0132625
0.09113805	-0.57664385	0.31830551	0.1961194	0.12793689	-0.00120833	-0.36656563	-0.72713556	-0.65482932	0.18185445	1.4739698	-0.38023472	-0.49528777	-1.00324226	0.80600972	1.38054764	-1.11256929	-0.10644791	-0.5675791	-0.98345466	-0.05244855	-0.95371493	-0.39019616	1.46767749	-0.08501938
-0.18739211	1.09270503	-0.65473475	-0.4011086	-0.28836554	-0.0141569	0.74515024	1.32155094	1.2687273	-0.38266517	-3.20019666	0.7658165	0.97789255	1.78849047	1.44590014	-3.00068272	1.96368105	0.21582064	1.10144878	1.75684295	0.10629346	1.68800362	0.79145786	-3.32070939	0.17328505
-0.02159009	0.12622595	-0.07226583	-0.04467128	-0.02845266	0	0.08663969	0.1529159	0.14070738	-0.04195126	-0.30503582	0.09000017	0.1086903	0.20996148	0.1723037	-0.29162309	0.23072835	0.02458943	0.12723087	0.20787496	0.01209333	0.20101232	0.09014704	-0.31506603	0.01956461
-0.54464491	0.9994086	-1.51324938	-1.08854044	-0.24802031	-1.44718155	1.11117885	2.00732756	1.4802628	-0.9118898	-1.75290388	1.07876447	1.0232791	3.76397949	2.30192415	-1.64209387	4.07257803	0.0943874	1.18802621	3.44961123	-0.1211317	3.52107509	1.16997966	-2.04296009	0.3749162
0.0229316	-0.15437734	0.10402548	0.05252589	0.06210424	0.32073235	-0.0480816	-0.14144702	-0.08712388	0.05946547	-0.24240512	-0.05312389	-0.15010998	0.1803338	-0.08678116	-0.27800726	-0.04675513	-0.02499496	-0.11421796	0.38833163	-0.09616562	0.25753835	-0.0459791	0.07286334	-0.00349956
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	-0.26247638	0	0	0	0	-0.08904116	0	0	0	0	0	0	0	0	0
-7.02434146	-7.13863245	-7.0130553	-7.04240504	-7.16054655	-9.04670932	-6.97269383	-7.17641769	-7.05412359	-7.02525447	-6.6997751	-6.9473533	-7.13605675	-7.18821585	-7.13079011	-7.01827393	-7.11488094	-7.09296663	-7.10704211	-7.16256265	-7.07863798	-7.17519168	-7.02064278	-7.29347292	-7.05970002
0.46520928	-1.16057351	0.83428194	0.36097231	0.63345653	1.1174543	-0.49175577	-1.61279768	-1.23532736	0.59618408	2.20662846	-0.36198208	-1.15376736	-2.16906597	-1.64952984	2.15182863	-2.47217539	-0.12693557	-1.14477227	-1.9880241	-0.16899805	-2.06598566	-0.77585885	2.44911569	-0.35132178
0.60570906	-3.11517677	0.28742669	-1.13064854	4.02680853	-1.26886123	-0.23971818	-3.35168108	-0.76222497	0.62004233	2.86515914	-0.4540219	-0.08150122	-2.21162268	-1.91612912	3.16149344	-0.4690081	-1.32111078	-2.11238246	-2.03498971	-1.60696778	-1.45767658	-0.67003953	3.55104102	-0.33131966
0.4326435	0.71969845	0.63911845	1.03818944	-0.62473914	2.41641772	0.31119228	0.48800662	0.24218954	0.46910305	-0.18201773	0.35708691	0.66974426	0.14502551	0.32071223	-0.12322736	-0.17239197	0.87823272	0.57424667	0.1132184	0.98179563	0.1416098	0.39806154	-0.11848077	0.56409084
-0.1817164	-0.68291686	-0.36222341	-0.45888246	1.21818018	-2.81908766	-0.15120919	-0.41836627	-0.12235521	-0.20650776	0.4946569	-0.19973821	-0.52317481	-0.16262394	-0.23870178	0.55331057	0.237452	-0.62788159	-0.45719205	-0.11970265	-0.73334281	-0.0694939	-0.23732975	0.62820639	-0.34019523
-0.84663061	2.32415878	-2.24273114	-1.6850948	-0.12314573	-1.45526885	1.53776063	3.93317117	3.30071069	-1.32415457	-6.0908184	1.23830265	2.39248328	5.82253597	4.27962907	-5.62557464	6.93333928	-0.17095658	2.55200306	5.58307816	-0.31761589	5.7041398	1.99057095	-6.36430302	0.64321863
-0.21172982	0.58096318	-0.55046988	-0.41490617	-0.03208811	-0.35885011	0.38292959	0.97084802	0.81559035	-0.3219864	0.94921411	0.31338465	0.5881575	1.44111616	1.05605085	-0.93551308	1.70559185	-0.03795834	0.63520992	1.37998725	-0.073766	1.40270254	0.49211989	-0.95492596	0.15395604
-0.39222203	1.07159024	-1.03434733	-0.77804539	-0.05455401	-0.67364542	0.71079287	-1.81116624	1.52039131	-0.61009954	-2.73298342	0.57640312	1.10137405	2.68192987	1.9725258	-2.55940754	3.19712399	-0.07749606	1.17769142	2.57250471	-0.14732144	2.66672969	0.92039268	-2.88627222	0.29311252

Tabla 0.40: Degradación eficiencia compresor 2 -7% (II)

-7.02434146	-7.13863245	-7.0130553	-7.04240504	-7.16054655	-9.04670932	-6.97269383	-7.17641769	-7.05412359	-7.02525447	-6.6997751	-6.9473533	-7.13605675	-7.18821585	-7.13079011	-7.01827393	-7.11488094	-7.09296663	-7.10704211	-7.16256265	-7.07863798	-7.17519168	-7.02064278	-7.29347292	-7.05970002
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	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 24
Degradación																									
pr_fanorc	-0.03192142	-0.02026487	-0.08352979	-0.05964549	-0.04366093	0.0146478	-0.0070792	-0.01108979	0.03031706	-0.02175502	0.00932126	-0.03076804	-0.02689052	-0.05493949	0.01186475	-0.03304168	-0.00319463	-0.00265005	-0.06076575	-0.04478118	0.01357755	-0.00839946	-0.01221004	0.02919868	-0.02287528
eff_fanorc	-0.00200594	-0.00732594	-0.02651456	-0.01886407	0.01945481	-0.02926205	-0.0312958	-0.04641239	-0.03163574	-0.02872113	-0.02513654	-0.01521381	-0.03958331	-0.03493693	-0.00353864	-0.00885773	-0.02804725	-0.02039676	0.01792211	-0.03079474	-0.03282849	-0.04794508	-0.03316844	-0.03025382	-0.03025382
mc_fanorc	0.00090564	0.00013481	0.00348474	0.00064912	-0.00130054	0.0029218	0.0044176	0.00173435	0.00160742	0.00364506	0.004479	-0.00045277	0.00198689	0.00186548	0.00174439	-0.00019223	-0.00096306	0.00238687	-0.00044874	0.00182393	0.00334389	0.00063648	0.00050955	0.0025472	0.0025472
pr_fanduct	-0.01834354	-0.01690907	0.02993485	-0.09354083	-0.17767682	0.19471142	0.23212429	0.11378006	0.16406852	0.14513735	0.28726176	-0.10615947	0.07992162	-0.00248292	0.13939378	-0.01975931	-0.01832485	0.02451507	-0.0949566	-0.1790926	0.19292954	0.23070852	0.11236428	0.16265274	0.14372158
eff_fanduct	0.02229704	0.03113219	-0.1506021	-0.02396079	0.1897608	-0.19148642	-0.22973443	-0.25731943	-0.16550687	-0.14968922	0.27114352	0.01691109	-0.24027331	-0.16591011	-0.23696742	0.02235661	0.03119176	-0.15042153	-0.02354222	0.08982037	-0.19143686	0.22967486	-0.25725986	-0.1654473	-0.14869365
mc_fanduct	0.00263225	0.00317477	-0.00250246	0.02630538	0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538	-0.02630538
pr_compressor1	-0.03687348	0.00105196	-0.1039799	-0.07428629	0.00709563	-0.03020789	-0.04123925	-0.10047238	0.00077732	-0.04084538	-0.02634554	-0.04453559	-0.16640124	-0.24981477	-0.05337244	-0.03724449	0.00068395	-0.100766	-0.0746543	0.00673162	-0.0805759	-0.04160726	-0.10084039	0.00040931	-0.04121339
eff_compressor1	0.13567167	-0.03314872	0.06380933	0.03401659	-0.12355205	0.34062122	0.6452263	0.07048457	0.14294129	0.60707489	0.23872236	0.0342195	-0.05344028	-0.19142662	0.11797314	0.13431071	-0.03450968	0.06244837	0.03265563	-0.12491301	0.33924026	0.64386534	0.06912361	0.14138033	0.60571393
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	1.93727604	-0.13074764	-0.59437837	-0.61662436	-0.56287232	2.92464638	4.87729105	-0.83126388	0.97696602	4.85828936	1.69496335	0.2105326	-1.41356016	-2.08887058	0.38604002	1.93771546	-0.13830823	-0.53939396	-0.60580419	0.56243291	2.92506579	4.87773046	-0.83082447	0.97740543	4.85827877
eff_compressor2	-0.79203845	0.08353384	-0.54473564	-0.51278544	0.30013979	-1.26336323	-2.11391761	-0.55200197	-0.41570955	-2.08683734	-0.75488807	-0.59516262	-0.54637379	-0.21413439	-0.63047095	-0.79212808	0.08346402	-0.54482527	-0.51287506	0.30005017	-1.26342286	-2.11400723	-0.55210932	-0.41579917	-2.08692697
mc_compressor2	-0.97082143	-0.83221585	-0.76931541	-0.77076773	-0.93531616	-0.87398848	0.35781961	-0.78242886	-0.61044408	0.83878209	-0.47951104	-0.65482263	-0.88976161	-1.01979188	-0.60560536	-0.96060963	-0.82209405	-0.7591036	-0.76055593	-0.92510435	-0.86375668	0.56803141	-0.7721706	-0.60032328	0.84893939
pr_turbina1	-0.00176648	0.00604163	0.01014397	0.0048977	0.00193489	-0.0083744	-0.0051966	0.0080782	-0.003128	-0.01414161	-0.00367696	0.00219579	0.00333837	-0.00178181	-0.00264046	0.00516756	0.00262939	0.00402372	0.00106091	-0.00924838	-0.00607058	4.22255606	-0.00118678	-0.00336606	0.06448676
eff_turbina1	0.00098983	-0.0015418	0.02488456	0.02550389	-0.00105951	0.00427022	0.0615663	0.0266693	0.00378076	0.06407206	-0.00369577	0.02816331	0.03194475	0.03484401	0.01903049	0.00140453	-0.0011271	0.02529216	0.02591859	-0.00064481	0.00468492	0.061981	0.027084	-0.00336606	0.06448676
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	0.00083274	0.00494649	0.85900674	0.88848019	0.0671839	-0.00935089	-0.00583317	0.91212895	-0.00701885	-0.00377978	-0.01188812	0.71058381	1.10574045	1.19499409	0.58976057	0.001182	0.00529575	0.85882945	0.88882945	0.00706764	-0.00900163	-0.00548991	0.9124782	-0.0066696	-0.00343053
eff_turbina2	-0.00323738	-0.00647092	0.64345971	0.65885752	-0.012297	0.00861933	0.00995625	0.69829629	0.01232225	0.00517754	0.01487047	0.52614755	0.83349166	0.86883078	0.46014992	-0.00405663	-0.00720016	0.64273047	0.65812828	-0.0137624	0.00789009	0.00922701	0.69756704	0.01159301	0.00444829
mc_turbina2	0	0	0.82554817	0.85409674	0	0	0	0.88151288	0	0	0	0.68498702	1.0602876	1.13900255	0.57648828	0.00032684	0.00032684	0.82587391	0.85442358	-0.00032684	0.00032684	0.88033972	0.00032684	0.00032684	0.00032684
Acierto	-0.97082143	-0.83221585	-0.76931541	-0.77076773	-0.93531616	-0.87398848	0.35781961	-0.78242886	-0.61044408	0.83878209	-0.47951104	-0.65482263	-0.88976161	-1.01979188	-0.60560536	-0.96060963	-0.82209405	-0.7591036	-0.76055593	-0.92510435	-0.86375668	0.56803141	-0.7721706	-0.60032328	0.84893939

Tabla 0.41: Degradación flujo corregido compresor 2 -1% (I)

	caso 24	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	0.00820101	-0.03188109	-0.02801077	-0.05515074	0.0107445	-0.04566093	0.3346478	0.3129208	0.30891021	0.03031706	-0.02175502	0.00932126	-0.03076094	-0.02680052	-0.01239049	0.05396475	-0.03188109	-0.02801077	0.0146478	0.1494208	0.10098926	0.0107445	-0.04566093	-0.02175502	0.00932126
	-0.02666923	-0.0167465	-0.04111601	-0.03787843	-0.03646962	0.01945481	0.29073795	0.2887042	0.27358761	-0.03163574	-0.02872113	-0.02743654	-0.01751381	-0.03958331	0.00575426	0.00716307	0.0792035	0.05483399	-0.02926205	0.1252042	-0.03787843	-0.02926205	-0.16246519	-0.21064113	0.1567846
	0.00338113	-0.00155063	0.00087082	0.00076761	0.00061652	-0.00130054	0.3229218	0.32444176	0.32173435	3.6971E-06	8.3836E-06	0.0021179	-0.00275277	0.00196869	0.04396548	0.04381439	0.09439937	0.09682082	0.0029218	0.16094176	0.00076761	-0.15588348	-0.18322054	-0.17827494	0.186399
	0.28584599	-0.10757524	0.07790585	-0.00389869	0.13797801	-0.1767662	0.51471142	0.55212429	0.43378006	0.00033382	0.28496176	0.28496176	0.28496176	0.07932162	0.03961708	0.18449378	-0.01162524	0.17385585	0.19471142	0.38862429	-0.00389869	-0.01852199	-0.39595962	-0.03678265	0.46918176
	-0.27108395	0.01697066	-0.24021374	-0.16580054	-0.23690785	0.1897608	0.12850358	0.09026557	0.06268057	-0.00038067	-0.00034431	-0.27344352	0.01461109	-0.24027331	0.12383011	-0.19486742	0.11292066	-0.14426374	-0.19149642	-0.07323443	-0.16580054	0.39340785	0.0078408	-0.33161922	-0.08922552
	-0.0441144	0.0173032	-0.01115515	-0.00225209	-0.02041246	0.02630538	0.29063954	0.28485246	0.30380077	-5.7008E-05	-4.9883E-05	-0.04600315	0.01541445	-0.0107439	0.04476334	0.022028979	0.1132532	0.08479485	-0.02936046	0.12135246	0.0025209	-0.17691246	-0.156161462	-0.20360806	0.13821685
	-0.02671342	-0.0449036	-0.16676925	-0.25018278	-0.05374043	0.00709963	0.28979211	0.27876075	0.21952762	1.7878E-06	-9.3944E-05	-0.0286454	-0.04683559	-0.16640124	-0.20271477	-0.01127242	0.0510464	-0.07081925	-0.03020789	0.11526075	-0.25018278	-0.21024043	0.00709963	-0.04084538	0.1555746
	0.23736161	0.0285853	-0.05480124	-0.19778758	0.11661218	-0.12355205	0.34062122	0.6452263	0.07048457	0.00032876	0.00139627	0.23872258	0.0342195	-0.05344028	-0.19142662	0.11797314	0.12880853	0.04114876	0.34062122	0.6452263	-0.19778758	0.11661218	-0.12355205	0.60707489	0.24064258
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1.69540276	0.21097202	-1.41312075	-2.08943117	0.38647944	-0.56287232	2.92464638	4.55729105	-1.15126388	0.97696602	4.85828936	1.69496335	0.2105326	-1.41312075	2.92464638	4.87729105	-1.93293117	0.54297944	-0.56287232	4.85828936	1.69496335	0.21097202	-1.41312075	-2.08943117	0.38647944
	-0.75497033	-0.59525224	-0.54646341	-0.21422401	-0.63056057	0.30013979	-1.26106323	-2.43161761	-0.8720197	-0.41570955	-2.08683734	-0.7548807	-0.59516262	-0.54407379	-0.21183439	-0.63047095	-0.59525224	-0.54646341	-1.35931323	-2.11391761	-0.05772401	-0.47406057	0.55258979	-1.83438734	-0.659307
	-0.4690924	-0.64461083	-0.87954981	-1.00958007	-0.59593956	-0.93531616	-0.87166848	0.24011961	-1.10242886	-0.61044008	0.83878209	-0.47931104	-0.65482263	-0.88746161	-1.01749188	-0.66560536	-0.64461083	-0.87954981	-0.96991848	0.55781961	-0.85308007	-0.43889356	-0.68286616	1.09123209	-0.38336104
	-0.0045094	-0.0024904	0.00132181	0.00246439	-0.00265579	0.00193489	-0.0060744	-0.3228966	-0.3191218	-0.0032128	-0.01414161	-0.00367696	-0.00157506	0.00449579	0.00553837	-0.00178181	-0.00244904	0.00132181	-0.1032344	-0.0051966	0.15896439	0.15384421	0.25438489	0.23830839	0.0927504
	-0.00328107	0.02857801	0.03235945	0.05252871	0.01944519	-0.00105951	0.00657022	-0.2561337	-0.2933307	-0.00378076	0.06407206	0.00369577	0.02816331	0.03424475	0.03714401	0.01903049	0.02857801	0.03235945	0.00427022	0.0615663	0.19175871	0.17594519	0.15544049	0.22057206	-0.00369577
	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844	0.00034844
	-0.01153887	0.71220756	1.10608971	1.19533974	0.59010983	0.00671839	-0.00955089	-0.00583917	0.91212895	-0.00701885	-0.00377978	-0.01188812	0.71183831	1.10574045	1.19499049	0.58976057	0.71220756	1.10608971	-0.00955089	-0.00583917	1.35183974	0.74660983	0.00671839	-0.00377978	-0.01188812
	0.01424123	-0.52541831	0.83276242	0.86612154	0.45942067	-0.012997	0.00861933	0.00995625	0.68029629	0.01232225	0.00517754	0.01497047	0.52614755	0.83276242	0.86612154	0.48014992	0.52541831	0.83276242	0.00861933	0.00995625	1.04262154	0.61592067	-0.012997	0.00517754	0.01497047
	0.00032684	0.68531386	1.06061444	1.19332939	0.57681512	0	0	0	0.88151288	0	0	0	0.68498702	1.06061444	1.13900255	0.57648828	0.68531386	1.06061444	0	0	1.29582939	0.73331512	0	0	0

Tabla 0.42: Degradación flujo corregido compresor 2 -1% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
Degradación																									
pr_fanorc	-0.02093192	-0.010131741	0.02832464	0.01387725	0.05712122	0.03620901	-0.05233718	0.02092076	-0.01192285	0.01448456	-0.05488278	-0.02704659	0.03391005	-0.01979522	0.04805936	-0.00548404	<b>0.07476905</b>	-0.01836193	-0.03900341	0.01091444	-0.03724193	<b>0.08371569</b>	<b>0.07731786</b>	<b>0.08194523</b>	-0.01894562
eff_fanorc	0.03981049	-0.01689486	-0.00522751	0.01035466	0.05232241	0.00216323	0.01930389	0.02024901	-0.02397926	-0.03834104	-0.01287819	-0.02518867	0.03179868	0.00497238	0.01356241	0.00896387	-0.05920929	-0.02223079	-0.00213363	0.05200004	-0.01241074	-0.0342717	-0.01785041	-0.05190292	-0.01232355
mc_fanorc	-0.00291323	0.00101574	8.234E-06	-0.00031605	-0.00346675	-0.00106034	0.00021484	-0.00142959	0.00144816	0.00192825	0.00192938	0.00139547	-0.00288863	0.00019221	-0.00200413	-0.00097929	0.00185519	0.00251046	0.00159074	-0.0003852	0.00138055	0.00102168	-0.00099723	0.00235614	0.00106966
pr_fanduct	-0.19845751	0.05440713	0.0044604	0.00546124	-0.18266401	-0.00527556	-0.05599297	-0.05131505	0.06232502	<b>0.13718534</b>	0.036453	0.086484	-0.11290665	-0.0272991	-0.03948063	-0.06507939	<b>0.21344814</b>	<b>0.1126777</b>	0.0387607	-0.19589042	0.0276022	<b>0.17000362</b>	<b>0.0953263</b>	<b>0.25161643</b>	0.03546798
eff_fanduct	<b>0.35505022</b>	-0.1016499	-0.0758868	-0.00807607	<b>0.33117017</b>	0.01160933	<b>0.0934943</b>	<b>0.100056</b>	-0.0942316	-0.25351627	-0.07603176	-0.05670777	<b>0.21026569</b>	0.03506088	<b>0.07253624</b>	-0.03948063	-0.38155145	-0.2039173	-0.06465898	<b>0.34701471</b>	-0.0571552	-0.30528841	-0.17027605	-0.46314094	-0.06896379
mc_fanduct	0.0282175	-0.00771701	-0.00583726	-0.00092766	0.02592488	0.00061101	0.00752394	0.00730318	-0.00882392	-0.0198249	-0.00583387	-0.00476394	0.01596341	0.00321662	0.00544461	0.00942192	-0.03070309	-0.01590497	-0.00477325	0.02779194	-0.00813075	-0.02430272	-0.01395669	-0.03616344	-0.00508328
pr_compressor1	0.02767469	-0.00805815	0.00433072	-0.00016819	0.02580874	0.02668441	-0.01347574	0.01706784	-0.01146268	-0.011381	-0.03089121	-0.0137252	0.02516911	-0.00899128	0.02549034	0.00965158	0.00978596	-0.0263532	-0.02362386	0.03445223	-0.01463951	0.00241824	0.02074171	-0.00852465	-0.0090313
eff_compressor1	-0.51074908	<b>0.210694721</b>	0.03285207	-0.15629095	-0.59586973	-0.35805108	0.0402245	-0.35555122	<b>0.24483535</b>	<b>0.43594101</b>	<b>0.24876039</b>	<b>0.46876839</b>	<b>0.12269865</b>	-0.28739574	-0.07562409	<b>0.17865153</b>	<b>0.41955599</b>	<b>0.41955599</b>	<b>0.23914301</b>	-0.6077603	<b>0.33098083</b>	<b>0.20024277</b>	-0.11570786	<b>0.51149401</b>	<b>0.11804648</b>
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-2.26597816	0.97982355	-0.0559851	-0.9514604	-2.68959778	-2.29567885	0.57770718	-1.84502596	1.16804079	1.48818123	2.54448359	1.40199512	-2.35988406	-0.56785864	-1.46874761	-0.27513669	-0.1869664	2.16941242	1.47371076	-2.80332446	2.00976176	0.44926137	-1.22308747	1.89563032	0.50070695
eff_compressor2	<b>1.5748323</b>	-0.68006285	0.03424854	0.64681702	1.86893802	1.57017142	-0.38787321	1.26963357	-0.80772156	-1.03332545	-1.74830214	-0.96459986	1.63028823	-0.65746095	1.03365961	0.19522704	0.10384176	-1.49998622	-1.01273256	1.94454015	-1.37813304	-0.32471552	0.827057	-1.32731446	-0.34652989
mc_compressor2	-4.16527886	-3.27804954	-3.54992824	-3.79479075	-4.26643825	-4.14896901	-3.40246378	-4.03438378	-3.29713304	-3.13215779	-2.87006537	-3.17312607	-4.17050028	-3.29071761	-3.92264011	-3.62318708	-3.58664988	-2.96366228	-3.15754387	-4.2960616	-3.09850081	-3.39462402	-3.84607196	-3.00102316	-3.41283883
pr_turbina1	0.00726123	-0.00581545	-0.00716211	0.00517319	0.00745465	0.00765556	-0.00091772	0.0056718	-0.00539981	-0.00518694	-0.00919567	-0.00013525	0.00760343	-0.00399586	0.00400642	0.00145429	0.0018023	-0.00583364	-0.00020093	0.00682783	-0.01005715	-0.00136048	0.000181327	-0.00725497	0.0016451
eff_turbina1	0.00066773	0.00491004	0.00011648	0.00022238	-0.00411197	-0.000395073	-0.00289776	-0.00109578	0.00169767	-0.00204059	0.00428875	0.00016724	0.00010923	0.00084653	-0.00338272	0.00250183	0.00191982	-0.00047636	0.00065413	0.00324579	-0.00457048	-0.00069799	0.00106714	-0.00265513	0
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	0.00949832	-0.0026872	-0.00310159	0.00229339	0.00930943	0.00304959	0.00027667	0.00489202	-0.00308142	-0.00757062	-0.00370065	0.00152868	0.00629422	-0.00152796	-0.00158659	0.00107938	-0.00747457	-0.00472997	-0.001218181	0.00824604	-0.00471242	-0.000989656	-0.00892192	-0.01300385	3.4613E-05
eff_turbina2	-0.03030861	0.00702971	0.00454196	0.00369071	-0.01962891	0.00132486	-0.00734154	-0.00615982	0.00244343	0.02110092	0.00526344	-0.00087755	-0.01338412	-0.00357475	-0.00092842	-0.00728279	0.02850225	0.01296551	0.00375062	-0.01865385	0.00449812	0.02513569	0.01733706	0.0376804	0.00586914
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tabla 0.43: Degradación flujo corregido compresor 2 -4% (I)

Acierto	-4.16527886	-3.27804954	-3.54992824	-3.79479075	-4.26643825	-4.14896901	-3.40246378	-4.03438378	-3.29713304	-3.13215779	-2.87006537	-3.17312607	-4.17050028	-3.29071761	-3.92264011	-3.62318708	-3.58664988	-2.96366228	-3.15754387	-4.2960616	-3.09850081	-3.39462402	-3.84607196	-3.00102316	-3.41283883
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	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	-0.9589596	0.03681423	-0.04707682	-0.0366243	0.0420496	-0.03765106	-0.04783342	0.0075152	-0.0008939	-0.02590844	-0.01107789	0.00190727	0.00805561	-0.0303246	-0.02212367	0.0215664	0.04383832	0.04631473	-0.04224149	-0.00828097	-0.04444741	0.06680907	0.01674642	0.00577721	0.03030187
	0.01934227	-0.00750678	0.05336714	-0.02690845	-0.00374486	0.01233427	0.00556138	-0.03308555	-0.00682049	0.01250078	-0.00012387	-0.03356737	-0.03364218	-0.00356701	0.0404741	0.03917168	-0.00333327	0.01819571	-0.04027302	0.01041366	0.04804992	-0.05248844	-0.05753723	-0.01476395	0.03658464
	0.00053892	-0.00010651	-0.00025829	0.00202654	-0.00023904	0.00064368	0.00028808	0.00292946	0.00145129	-0.0001007	0.00046996	0.00233952	0.00265721	0.00158602	-0.00204781	-0.00336262	-0.00072875	-0.00359819	0.00407576	-1.2234E-05	-0.00242494	0.002028519	0.00309563	7.8297E-05	-0.00336922
	-0.0457717	0.05205161	-0.21074703	0.03444158	-0.00698538	-0.0195885	-0.05621235	0.13344781	0.07853478	-0.04333433	0.01808886	0.135216	0.15356132	0.04317821	-0.14919768	-0.1531286	0.02108319	-0.12695589	0.15886931	0.00613321	-0.18512518	0.21426541	0.18847719	0.01031199	-0.13794577
	0.08158076	-0.10042998	0.38031049	-0.19428217	0.01337232	0.02700116	0.1088555	0.24070259	-0.14941023	0.07669595	-0.03768012	0.23480188	-0.27175132	-0.07887341	0.2704164	0.28438028	0.03198637	0.23738781	-0.29387115	-0.00884094	0.33341662	-0.38428676	-0.34255575	-0.01455149	0.24670994
	0.00653279	-0.00767856	0.03013299	-0.01457426	0.00100256	0.00292558	0.00823638	-0.01899112	-0.01113932	0.00626559	-0.00286538	-0.01934522	-0.02172383	-0.00604656	0.02143189	0.0211723	-0.00304408	0.01778673	-0.02222999	-0.00144291	0.02641055	-0.03074721	-0.02662523	-0.00137006	0.01935261
	-0.01991813	-0.00443449	0.01272354	-0.03045595	0.00843185	-0.01988541	-0.00921782	-0.01917286	-0.01724677	-0.00660831	-0.00329282	-0.01046142	-0.023836	-0.02563049	0.0089927	0.03648559	0.0209502	0.04764961	-0.04191662	0.00239229	0.01244161	0.00956215	-0.01580231	0.00498797	0.03567127
	0.12236394	0.19799219	-0.43228031	0.51677425	-0.0534832	0.18327409	0.01373795	0.32594767	0.26607558	-0.01802454	-0.07476749	0.24488741	0.40869191	0.26557308	-0.31537911	-0.63199486	-0.16482666	-0.64011451	0.70895682	-0.1400925	-0.37456646	0.19445889	0.50140806	0.02775864	-0.52635021
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1.11394677	1.0592721	-1.54537388	2.71516667	-0.33271869	1.36186292	0.30224196	1.36468006	1.43138134	0.17817998	-0.55235461	0.81874	1.80117583	1.54496632	-1.04218681	-3.2353441	-1.27821679	-3.54013641	3.67111462	-0.91097895	-1.35068246	-0.03297428	2.07678011	-0.02410581	-2.64486544
	-0.79096996	-0.7265787	1.08454219	-1.87033797	0.22984862	-0.93049934	-0.20369505	-0.95151362	-0.98819919	-0.11757846	0.37424246	-0.58134163	-1.25224469	-1.07269025	0.73548285	2.2356979	0.86777882	2.44468133	-2.5376837	0.62488207	0.9478042	-0.00650231	-1.44838461	0.01342586	1.83057788
	-3.2604107	-3.2428831	-3.97682507	-2.81511076	-3.63172735	-3.1882402	-3.47978966	-3.172295	-3.15719468	-3.5030941	-3.69230652	-3.31802176	-3.05394063	-3.13327443	-3.83241821	-4.40963738	-3.87371398	-4.48241523	-2.56693144	-3.78883678	-3.92311113	-3.52881178	-2.97688139	-3.54877131	-4.24663877
	-0.00179494	-0.00580426	0.00606205	-0.00732777	0.00688051	-0.00640362	-0.0074902	-0.00846331	-0.0036927	0.00097729	0.00244012	-0.00167977	-0.00092084	-0.0036305	0.000951023	0.00310429	0.00245825	0.01062418	0.00102418	0.00310429	0.00245825	5.9602E-06	-0.00454378	0.00027236	0.00391097
	0.00351892	0.00168785	-0.00050567	-0.00192962	-0.0010629	0.00256665	0.00265163	-0.00225896	-0.00084251	0.00092187	-0.00332124	-0.00048938	-0.00384232	0.00352328	-0.00183795	-0.0049846	0.00108474	-0.00664638	0.00464883	-0.00318818	0.00160843	-0.0014271	0.00032315	0.00098025	0.00129137
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.00225136	-0.00544153	0.0093242	-0.00368708	0.00124104	-0.00087394	0.00772621	-0.00754194	-0.00372925	0.00366409	0.00029911	-0.00779111	-0.00359566	0.00011313	0.00577945	0.00763858	-0.00019366	0.00624063	-0.00734424	-0.00026398	0.0073283	-0.00905163	-0.00716704	-0.00136416	0.00485531
	-0.00881818	0.01151914	-0.02769834	0.01556233	-0.00841494	-0.00143117	-0.01106623	0.01475487	0.0132264	-0.00958831	0.006104	0.01090419	0.01451687	0.00313272	-0.01824669	-0.01893119	0.00417695	-0.01339784	0.0163982	0.0010636	-0.02461488	0.02774923	0.02253303	-0.00057754	-0.01304201
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

-3.2604107	-3.2428831	-3.97682507	-2.81511076	-3.63172735	-3.1882402	-3.47978966	-3.172295	-3.15719468	-3.5030941	-3.69230652	-3.31802176	-3.05394063	-3.13327443	-3.83241821	-4.40963738	-3.87371398	-4.48241523	-2.56693144	-3.78883678	-3.92311113	-3.52881178	-2.97688139	-3.54877131	-4.24663877
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Tabla 0.44: Degradación flujo corregido compresor 2 -4% (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
pr_fanorc	1.1569353	-1.13014471	0.5498563	2.6593861	-0.3434982	-0.03772408	1.61824941	-0.6426945	-0.02187686	1.76165497	-0.58388043	-0.71114929	-1.31731344	1.02108957	-0.59178087	0.4046077	0.39187436	0.28427401	0.21450131	0.71929094	0.53125074	0.94338786	-0.31979953	-0.47490452	0.5084664	
eff_fanorc	0.25513903	-0.22049631	0.10232344	0.47748079	-0.0611099	-0.10568087	0.24229556	-0.14559886	-0.02207523	0.32330976	-0.0871754	-0.09073121	-0.21973651	0.13618086	-0.0893168	0.07643948	0.07027757	0.01672334	0.08508038	0.10799212	0.12320183	0.15584188	-0.06828692	-0.07891663	0.06873224	
mc_fanorc	-0.0295108	0.02705585	-0.01381486	-0.06404531	0.00790931	0.00573768	-0.03765845	0.01617163	0.0005985	-0.04236158	0.01282581	0.01579535	0.03111017	-0.02303088	0.01324213	-0.00992425	-0.00958468	-0.00565484	-0.0071634	-0.01659468	-0.0145175	-0.02288545	0.00818644	0.01077007	-0.01159575	
pr_fanduct	-0.90105486	0.76855666	-0.47720283	-1.774109591	0.17948242	0.21480826	-0.96098409	0.39130942	0.10036267	1.1914592	0.23091291	0.42445773	0.7796669	-0.5248025	0.32827001	-0.22683136	-0.2584004	0.02025395	-0.33857433	-0.27870339	-0.53100229	-0.51372362	0.31203349	0.24878555	-0.29795751	
eff_fanduct	1.70548826	-1.45122001	0.89841297	3.36425471	-0.31584886	-0.41200242	1.8186731	-0.75165107	0.18657153	2.6780526	-0.43698168	-0.79850809	-1.48950002	0.99569771	-0.62328142	0.43380925	0.48798329	0.04106282	0.62919853	0.52047893	1.00812477	0.9758753	-0.59125473	0.49458391	0.55752563	
mc_fanduct	0.11608991	-0.10017179	0.06293067	0.23056129	-0.02298135	-0.02545598	0.12544849	-0.04878727	-0.01433915	0.15515674	-0.02946016	-0.05688201	-0.10097314	0.068857381	-0.04347578	0.0294686	0.03327416	-0.00391572	0.04253483	0.03425145	0.06888929	0.06491269	-0.04139212	-0.03235066	0.03914721	
pr_compresor1	0.48851939	-0.46949571	0.20948765	1.06515676	-0.13115165	-0.03523511	0.690343	-0.28569823	0.06998992	0.73177241	-0.22108761	-0.28451278	-0.52522304	0.46165325	-0.18482211	0.20094353	0.08881255	0.11135662	0.0930192	0.28078736	0.38878707	-0.15539334	-0.15868467	0.1498222		
eff_compresor1	-1.86333948	1.76034028	-0.71158157	-0.79725954	0.48536355	0.40143329	-2.35548068	1.76222983	-0.23179279	-2.66501331	0.76509072	0.89491622	1.83369938	-1.52508841	0.59749801	-0.87129651	-0.17669368	-0.29198012	-0.29766954	0.95278243	-1.0345444	-1.32330643	0.57884653	0.49755351	-0.41277811	
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	0.41608991	0.19882821	0.36293067	0.53056129	0.27701865	0.27445402	0.42544849	0.25121273	0.28566085	0.45515674	0.27053984	0.24311799	0.19902686	0.36857381	-0.04347578	0.0284686	0.03327416	-0.00391572	0.04253483	0.03425145	-0.23111071	-0.23508731	-0.34139212	-0.32325066	-0.26085279	
eff_compresor2	0.78851939	-0.16949571	0.50948765	1.36515676	-0.16884835	0.26476489	0.990343	0.01430177	0.36998992	1.03177241	0.07891239	0.01548722	-0.2522304	0.76165325	-0.18482211	0.20094353	0.08881255	0.11135662	0.0930192	0.28078736	-0.01961531	0.08878707	-0.45539334	-0.45868467	-0.1501778	
mc_compresor2	0.54091689	0.25971667	0.47180987	0.68979968	0.27701865	0.23603045	0.3658857	0.21604295	0.24566833	0.3914348	0.23266427	0.20908147	0.1711631	0.3169752	-0.06186603	0.04051082	0.0477797	-0.00557206	0.06052706	0.04873982	-0.32887054	-0.39452925	-0.48580098	-0.47293499	-0.37119352	
pr_turbina1	0.02613093	-0.00402699	0.01649143	0.0482764	-0.00049347	-0.00304673	0.02525113	-0.02078127	0.00454012	0.02632668	-0.00187295	-0.03146973	-0.03515426	0.01983496	-0.00884145	-0.00706101	-0.00994102	0.00069216	0.00484422	0.01085693	0.01297278	0.02281152	0.00139043	-0.00075676	-0.00726778	
eff_turbina1	-1.0874579	-1.11097418	-1.0935082	-1.08299219	-1.09452514	-1.09386394	-1.08137957	-1.08720281	-1.09997709	-1.07411342	-1.10222868	-1.09245111	-1.0794989	-1.08876935	-1.09001143	-1.09250291	-1.08227714	-1.09160829	-1.08547125	-1.09183661	-1.08734229	-1.09668044	-1.09941108	-1.0891585	-1.0764426	
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	0.03354899	-0.03255312	0.01558738	0.06908925	-0.01230089	-0.01688794	0.04121632	-0.02163553	-0.00262106	0.05803238	-0.07760439	-0.02323048	-0.02869692	0.01869827	-0.01616212	0.01379538	-0.002070396	-0.00892176	0.00611413	0.00478463	0.01725305	0.01616276	-0.01780992	0.000930575	0.01010784	
eff_turbina2	-0.09580206	0.08351185	-0.04845694	-0.18706533	0.00760411	0.02747333	-0.10092878	0.03196051	0.0102767	-0.12954424	0.01887491	0.04302387	0.07803618	-0.05353974	0.03308017	-0.01206018	-0.02993247	0.01295602	-0.03874768	-0.01440382	-0.06179399	-0.04668808	0.03875213	0.02277352	-0.02343904	
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Acierto	-1.0874579	-1.11097418	-1.0935082	-1.08299219	-1.09452514	-1.09386394	-1.08137957	-1.08720281	-1.09997709	-1.07411342	-1.10222868	-1.09245111	-1.0794989	-1.08876935	-1.09001143	-1.09250291	-1.08227714	-1.09160829	-1.08547125	-1.09183661	-1.08734229	-1.09668044	-1.09941108	-1.0891585	-1.0764426
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Tabla 0.45: Degradación eficiencia turbina 1 -1% (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
1.12294147	-0.54966466	-1.96334019	0.9763085	0.7249374	-0.81521853	-0.90001268	0.18397132	0.29047386	0.4969287	-0.1861395	0.50497106	1.98265541	-0.85236576	1.11880763	-1.09761339	0.087925	-1.23313777	-1.13035323	1.26731671	-1.77263664	0.23494545	0.83394286	1.46185582	0.823276561
0.2179242	-0.06354887	-0.3626337	0.15747682	0.17907366	-0.18627712	-0.10252797	0.03261867	0.08181918	0.1369892	-0.02865588	0.07530889	0.42303254	-0.23348018	0.1647325	-0.23634501	-0.02629155	-0.22929816	-0.38683311	0.24708668	-0.29048423	0.02773086	0.19846359	0.29300512	0.09126193
-0.02768188	0.01311521	0.04778189	-0.02301158	-0.02065593	0.02084882	0.02051122	-0.00318547	-0.00934977	-0.01360333	0.00793851	-0.01132191	-0.05068097	0.0235697	0.02356055	0.02773443	0.00013949	0.02925053	0.05113121	-0.03121741	0.04198781	-0.00588914	-0.0211804	-0.03673168	-0.01839953
-0.74175632	0.35578384	1.298546	-0.36754188	-0.55283131	0.50429983	0.46805094	-0.0271712	-0.4261958	-0.38169829	0.03809775	-0.26058654	-1.57008089	0.85430017	0.666706512	0.80985367	0.15125501	0.74723673	1.34925073	-1.01792052	1.10532549	-0.20384753	-0.60200677	-1.14959008	-0.45579518
1.41328166	-0.6757193	-2.45706751	1.06739629	1.0433329	-0.96874943	-0.88292683	0.06607556	0.80782834	0.73247231	0.08308963	0.48267417	-2.98031198	-1.61696637	1.2638003	-1.57788861	-0.28860144	1.41244876	-2.55611728	1.9286588	-2.09237504	0.39418424	1.14791052	2.18324756	0.85291765
0.09512486	-0.04645361	-0.16764243	0.07333394	-0.06255132	-0.06156666	0.00408101	0.05517201	0.04730294	-0.0047938	0.09406202	0.20303803	-0.10988462	0.08797385	-0.10403205	-0.01913615	-0.09622428	-0.09622428	-0.17410715	0.13380076	-0.14373583	0.02708086	0.07671682	0.14966287	0.06054723
0.49360054	-0.24241534	-0.79498881	0.37492957	0.33290395	-0.38933553	-0.32490576	0.032092	0.11475915	0.25030765	-0.1264473	0.23143254	0.87102017	-0.29426973	0.42041275	-0.45617165	-0.00274688	-0.49330651	-0.85936238	0.57576236	-0.74293611	0.14727823	0.31187225	0.64710974	0.32253974
-1.84503475	0.71865217	2.87464773	-1.21968644	-1.24602563	1.49110541	0.85393362	-0.18117815	-0.40183628	-1.12450813	0.37691095	-0.80239968	-3.26396587	1.16232278	-1.35594643	1.77667125	0.05237857	2.02878101	3.0454625	-2.11876793	2.54937101	-0.45572655	-1.26595818	-2.48124082	-0.89554896
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0.20487514	-0.34645361	-0.46764243	-0.22666654	-0.23076925	-0.36255132	-0.36156666	0.12708101	0.17817201	0.17030294	0.1182062	0.15706202	0.32603803	0.01311538	0.21097385	0.0896795	0.10386385	0.02677572	-0.05110715	0.25680076	-0.02073583	0.15008086	0.19971682	0.27265287	0.18354723
0.19360054	-0.54241534	-1.09498881	0.07492957	0.03290395	-0.68933553	-0.62490576	0.155092	0.23775915	0.37330765	-0.034473	0.35443254	0.99402017	-0.17126973	0.54341275	0.33317165	0.12023312	-0.42030651	-0.73636238	0.69876236	-0.61993611	0.27027823	0.43487225	0.77010974	0.4553974
-0.20487514	-0.34645361	-0.46764243	-0.22666654	-0.23076925	-0.36255132	-0.36156666	0.12708101	0.17817201	0.17030294	0.09859517	0.13088501	0.27169835	0.01092948	0.17581154	0.03419995	0.15901555	0.04099363	-0.07824505	0.39316349	-0.03174655	0.2927738	0.30576645	0.41743154	0.2810108
-0.029129	-0.0029129	-0.03067988	0.01168323	0.00728413	-0.01522225	0.00089314	-0.0049977	0.00422887	0.01994881	-0.00565522	0.00670044	0.04949423	0.00075988	0.00663394	-0.041675	-0.00121511	-0.02729296	-0.027291	0.03092968	-0.01589795	0.01743813	0.01282123	0.054022	-0.01354979
-1.08597284	-1.09738002	-1.09201946	-1.08958807	-1.084400754	-1.09337442	-1.09670833	-1.08592117	-1.08540579	-1.08801119	-1.09121171	-1.08860868	-1.08297251	-1.10414609	-1.08202325	-1.0852488	-1.09715443	-1.09004665	-1.09798054	-1.08002347	-1.10489394	-1.09471046	-1.08352245	-1.09777357	-1.06731793
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.02833923	-0.00973861	-0.04424907	0.01760302	0.01211461	-0.00021576	-0.01546432	0.00113602	0.01220894	0.02680408	-0.00473052	0.01148208	0.07397927	-0.02517414	0.00202138	-0.0660012	-0.00793191	-0.03065247	-0.0401513	0.05334652	-0.04242468	0.01240266	0.00935101	0.06226308	0.01640882
-0.07597533	0.03953769	0.12982159	-0.05344588	-0.05140488	0.05165556	0.04949612	-0.00547513	-0.04979945	-0.03117249	1.19435405	-0.02710198	0.1660192	0.0993487	-0.0720446	0.07515273	0.01975313	0.06796965	0.14039888	-0.11675412	0.11536121	-0.02634959	-0.06345223	-0.11915118	-0.0524153
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

-1.08597284	-1.09738002	-1.09201946	-1.08958807	-1.084400754	-1.09337442	-1.09670833	-1.08592117	-1.08540579	-1.08801119	-1.09121171	-1.08860868	-1.08297251	-1.10414609	-1.08202325	-1.0852488	-1.09715443	-1.09004665	-1.09798054	-1.08002347	-1.10489394	-1.09471046	-1.08352245	-1.09777357	-1.06731793
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Tabla 0.46: Degradación eficiencia turbina 1 -1% (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
pr_fanorc	0.3390617	0.3886267	-0.05934385	0.4659049	1.1830482	0.70468	0.1961014	-1.383358	0.60509612	-0.47201623	-1.2127997	-0.2486771	-0.05843876	-0.1147863	-0.1507264	0.53697426	0.0945706	1.30520504	-0.22032651	0.25296348	-0.53568866	-1.01836493	0.27591185	-0.71089246	-0.15990805	
eff_fanorc	0.03830989	0.11794027	0.01715879	0.11015761	0.17230291	0.13625107	0.06765958	-0.26202214	0.09557554	-0.09708369	-0.22880939	-0.0591329	0.0025718	-0.00724935	0.03511559	0.12640236	-0.06955641	0.19866683	-0.09740266	0.05917485	-0.08824508	-0.12705638	0.13321397	-0.13887485	-0.03815286	
mc_fanorc	-0.00791788	-0.0110014	-0.00013877	-0.01203055	-0.02583634	-0.01791288	-0.000635406	0.03445637	-0.01423349	0.01211052	0.02977763	0.06673325	0.00079807	0.00189426	0.00225053	-0.01397249	0.00139263	-0.02971101	0.00746903	-0.00712957	0.01226015	-0.01028619	0.01777152	0.00434618		
pr_fanduct	-0.21074495	-0.34117889	-0.09795714	-0.41888924	-0.49463282	-0.46113135	-0.30373512	0.94033582	-0.3676401	0.4451397	0.94767464	0.1259895	-0.07626663	0.06672701	0.05557194	-0.52787917	0.11086214	-0.73085523	0.35999391	-0.32338779	0.23289736	0.41131823	-0.53261054	0.42614907	-0.12880544	
eff_fanduct	0.40571156	0.65612929	0.19154283	0.79126036	0.94533608	0.87474722	0.588413	-1.79565336	0.70102647	-0.84950403	-1.7884921	-0.23151882	0.14808821	-0.01114773	-0.09482579	1.0873169	-0.20793939	1.38233231	-0.68392038	0.61107338	-0.43818559	-0.7715405	1.00861493	-0.81507499	-0.23752908	
pr_compresor1	0.02774455	0.04251295	0.01122583	0.05456581	0.06284147	0.05808573	0.03952544	-0.12194442	0.04776182	-0.12440554	-0.01433951	0.01078769	-0.00136371	-0.00931342	-0.00831342	0.06947874	-0.01214463	0.09590618	-0.04628979	0.04271878	-0.02922569	-0.05489628	0.06815612	-0.0533405	-0.01392569	
eff_compresor1	-0.80341315	-0.79133929	-0.28857991	-0.9315551	-1.67823316	-1.09485371	-0.59866012	2.09330226	-0.97867322	0.98413094	1.81495434	0.4878732	-0.07107533	0.11162499	0.32754525	-0.81957382	-0.10873632	-1.814146513	0.46495117	-0.68625309	0.94833375	1.15641189	-0.2775863	1.21624362	0.35051897	
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	-0.87581883	-0.72157018	-0.26553516	-0.87299008	-1.73092723	-1.06589131	-0.58535937	1.94080772	-0.94416211	0.94065194	1.56003171	4.2850458	-0.17473878	1.03431655	0.54512076	-0.81728165	-0.4035999	-2.26077807	0.36293745	-0.8379218	1.37681405	1.46152939	0.07150011	1.63005102	2.69665501	
eff_compresor2	0.61474043	0.5127581	0.18310593	0.61944529	1.22419832	0.75929402	0.41252267	-1.38345712	0.67113482	-0.6415072	-1.11882709	-3.02585697	0.11832601	-0.7304104	-0.3775687	0.59203326	0.27139208	1.60948536	-0.26605643	0.58885219	-0.94601685	-1.0439795	-0.0242245	-1.15245403	-1.90786101	
mc_compresor2	-1.84103304	-1.51541873	-0.55118244	-1.84972503	-3.56237835	-2.270143	-1.26006089	4.0749647	-1.98171908	1.92152732	3.30945691	1.0960014	-0.06476884	0.26684541	0.84097259	-1.33263668	-0.60790885	-3.51691732	0.60142125	-1.31257055	2.26714639	0.027119	2.51949328	0.6962431		
pr_turbina1	0.01863169	0.00387255	0.00687181	0.01716507	0.02440222	0.01577219	0.00625107	-0.0368073	0.0256643	-0.01930253	-0.0329062	0.00344667	0.00782284	0.00874481	0.009450678	0.00925714	0.01533839	0.02836979	-0.01228426	0.01079308	-0.02164092	-0.00523285	0.00086853	-0.01335579	0.00318782	
eff_turbina1	-4.31226745	-4.29955831	-4.30837086	-4.31098069	-4.30810692	-4.31054029	-4.30217964	-4.30529786	-4.32569828	-4.33080369	-4.31055718	-4.31207654	-4.31081047	-4.30229253	-4.32056224	-4.30428218	-4.31538375	-4.31056582	-4.30742898	-4.30766338	-4.30728988	-4.30360222	-4.31122621	-4.30669413	-4.32088778	-4.3105555
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	0.0232768	0.01880813	0.00820176	0.01922937	0.02394154	0.01766318	0.01777388	-0.03799841	0.01538347	-0.02307013	-0.03075432	-0.00222124	0.00948357	-0.00310377	-0.00733004	0.01989521	0.00783504	0.03036977	-0.01899933	0.01154955	-0.00881463	-0.00814953	0.00936508	-0.02018109	0.00614096	
eff_turbina2	-0.0186021	-0.03949529	-0.01328308	-0.0527903	-0.03850333	-0.04215975	-0.03970768	0.08848709	-0.03235658	0.05303191	0.10423367	-0.00011028	-0.01031188	-0.0056192	0.00788995	-0.06413927	0.01355402	-0.0728268	0.03759457	-0.04307517	0.01279971	0.03594789	-0.07097672	0.04069467	0.01725016	
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tabla 0.47: Degradación eficiencia turbina 1 -4% (I)

Acuerdo	-4.31226745	-4.29955831	-4.30837086	-4.31098069	-4.30810692	-4.31054029	-4.30217964	-4.30529786	-4.32569828	-4.33080369	-4.31055718	-4.31207654	-4.31081047	-4.30229253	-4.32056224	-4.30428218	-4.31538375	-4.31056582	-4.30742898	-4.30766338	-4.30728988	-4.30360222	-4.31122621	-4.30669413	-4.32088778	-4.3105555
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caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
0.53150245	-0.00868212	-0.06713521	-0.20114818	-0.83306741	1.53585731	1.88838218	0.69939765	0.90095346	0.54724835	-0.44868709	-0.15041327	0.32439598	0.27285668	-0.76580689	-1.09008375	-0.52117149	-1.54559996	-0.09311059	-1.70714817	-1.47610027	-0.34194112	-0.37574029	0.65201283	-0.03888046
0.04133129	-0.01848636	-0.05948381	-0.03719832	-0.15609764	0.26405599	0.20045345	-0.10311527	0.14728743	0.06858403	-0.06591531	0.00320998	0.03591221	0.05771262	-0.08718392	-0.191713	-0.06857534	-0.28563567	-0.0890067	-0.29802355	-0.21575642	-0.03862773	-0.121389	0.13757016	-0.12298966
-0.01063783	0.00026016	0.00313778	0.00461849	0.01910801	-0.03668646	-0.0276593	0.01552648	-0.02099072	-0.01221381	0.01017271	0.00291561	-0.00707716	-0.00717431	0.01676071	0.02590598	0.01135695	0.0367993	0.00459649	0.03969332	0.03366373	0.0077675	0.01128157	-0.01663143	0.01702264
-0.25532463	0.09628382	0.16319396	0.14595118	0.4887635	-1.06291738	-0.78137685	0.329639	-0.5067222	-0.30029807	0.2077042	-0.02988743	-0.23649835	-0.253293	0.34480729	0.63997205	0.23865782	0.94279983	0.26197047	0.96195554	0.83771498	0.14173866	0.53486944	-0.48944059	0.49323083
0.47771763	-0.06454811	-0.30715772	-0.27739953	-0.91455934	2.00807254	1.47854777	0.62125828	0.95552238	0.56728849	-0.39207131	0.05920115	0.45770477	0.4698082	0.35525311	-1.19536133	-0.45191313	-1.78014272	-0.49655383	-1.80920194	-1.5930927	0.27157161	-1.03342966	0.91409651	-0.92895998
0.03565913	-0.00480822	-0.02023536	-0.01955117	-0.06387601	0.13929392	0.10310222	-0.04303374	0.0654607	0.03994723	-0.0268488	0.00463374	0.03254147	0.03298428	-0.04528616	-0.08229855	-0.03138212	-0.1216849	-0.03286777	-0.12462075	-0.10997538	-0.01795594	-0.07017348	0.06219232	-0.06413441
0.20704685	0.02765539	-0.01897654	-0.01748298	-0.26401037	0.60318411	0.436391	-0.2526586	0.37018989	0.24456685	-0.16239963	0.12944224	0.09888139	-0.28384304	-0.4238337	-0.24413751	-0.57344831	-0.03737868	-0.62773559	-0.623212758	-0.21941411	-0.20927505	0.27204853	-0.28386621	
-0.66913483	-0.07056686	0.17459482	0.07652944	0.94592023	-2.05224021	-1.41653536	0.90629603	-1.19757951	-0.81417967	0.54124181	0.19232583	-0.40991627	-0.29520012	0.85823474	1.42847607	0.96439576	2.06923307	0.31110789	2.17347494	2.19384206	0.7659586	0.97362978	-0.89644108	0.86806545
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-5.05753312	-1.38864587	0.50601114	-0.52927472	0.65123277	-1.57665621	-1.01921829	0.74418412	-1.02329781	-0.69274415	0.41804217	0.25266744	-0.2982265	-0.19596113	0.74609594	1.15670944	0.90592499	1.63110151	0.1348801	1.72029853	1.89380263	0.71719594	0.63690654	-0.63715139	0.61440653
3.5959474	0.9365775	-0.3897491	0.3057659	-0.47317016	1.13279027	0.73854267	-0.53061955	0.729874	0.49180081	-0.30056882	-0.17592104	0.21623736	0.14493307	-0.53835804	-0.82921595	-0.63744645	-1.16944301	-0.09982532	-1.23501418	-1.34501168	-0.50054607	-0.4507623	0.45844315	-0.443376
-1.3286456	-0.34966285	-0.14109664	-0.11879257	1.5371143	-3.7438599	-2.43419282	1.72777744	-2.39432215	-1.62179556	0.93969361	0.56236836	-0.74685048	-0.48507262	1.74235399	2.71995533	2.11914502	3.38842379	0.34245512	0.05177184	4.44671879	1.83840209	1.73331503	-1.68666796	1.63444498
0.00534368	0.0079139	0.0018151	0.01584866	-0.00904086	0.01954592	-0.00077629	-0.00432855	0.002409374	0.01331059	-0.01073277	-0.00264874	-0.00324434	0.00516666	-0.00321111	-0.00870934	-0.02127856	-0.029293478	0.00366988	-0.01624032	-0.03708888	-0.02124659	-0.02415734	0.00730151	-0.00539736
-4.30253949	-4.3102428	-4.31511189	-4.32588863	-4.31371502	-4.30035158	-4.29712374	-4.30463956	-4.30601092	-4.30949794	-4.30199564	-4.30924808	-4.302683	-4.30709414	-4.31207273	-4.32099097	-4.30089422	-4.31083509	-4.32193509	-4.31324252	-4.31085093	-4.30771928	-4.3120113	-4.30710641	-4.31679604
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.01974052	0.00229414	-0.00908438	-0.00566638	-0.00881534	0.0397421	0.01760308	-0.00618349	0.00893884	0.01404855	-0.00613617	0.00251286	0.00929027	0.01300346	-0.00492684	-0.02972428	-0.01523134	-0.03713179	-0.01518887	-0.02866619	-0.04628132	-0.01420179	-0.03464513	0.00962187	-0.01461404
-0.02113578	0.00894158	0.01960648	0.01462158	0.05045299	-0.11558742	-0.09534385	0.02315396	-0.0537607	-0.02999073	0.01783467	-0.01391022	-0.03322028	-0.02304092	0.03333121	0.0584886	0.01913912	0.08768435	0.0304597	0.09109583	0.00840344	0.01275616	0.08812808	-0.05240299	0.05612209
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tabla 0.48: Degradación eficiencia turbina 1 -4% (II)



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fanorc	0.57062125	-0.12059426	0.05814648	0.01937896	0.61608254	0.30232785	0.20097962	0.20640029	0.07174885	0.07608681	0.12014507	0.08315918	0.62452205	0.11206217	0.90642196	0.07598243	0.02907532	0.09327134	0.10217938	0.10939144	0.11789941	0.08980832	-0.11856925	0.29608051	0.06866314
eff_fanorc	0.06683938	-0.03441352	-0.04071887	-0.0390971	0.18570712	0.10963385	0.17081764	0.03174607	0.13007204	-0.09847157	-0.03652938	-0.04452815	0.252028495	-0.04812739	0.31827128	-0.07245971	0.03593438	-0.01032928	-0.0401793	-0.010983554	-0.0378775	0.10120494	0.14466375	0.16556989	0.09243559
mc_fanorc	-0.01241043	-0.00621427	-0.02952508	-0.03471073	0.0741491	0.04087542	0.04593128	0.01537571	0.03682817	-0.07321684	-0.020346594	-0.01981896	0.07993743	-0.02462132	0.10929671	-0.0333387	0.01168506	-0.00345102	-0.0082096	-0.00461604	-0.01879694	0.02716724	0.04673979	0.03157192	
pr_fanduct	-0.23146863	-0.22706833	-0.3807588	-0.83518303	1.1739508	0.75183063	0.81210236	0.3890955	0.68840838	-1.13392529	-0.46284359	-0.3677282	0.93904173	-0.06105663	1.25703059	-0.4271265	0.18932412	-0.23954264	-0.25735708	-0.1715302	-0.4086065	-0.06104308	0.35425695	0.73178489	0.63940197
eff_fanduct	0.44739165	0.07014606	0.21862146	0.38042878	0.47535219	-0.44542053	-0.55256779	-0.34962764	-0.48939224	0.46104963	0.20259716	0.18492733	-0.62463591	0.28386753	-0.47738738	0.25401561	-0.11284927	0.07512643	0.09042324	0.05323142	0.17871478	0.30654395	-0.29383549	-0.49493385	-0.45809061
mc_fanduct	0.03012795	0.033469	0.05177803	0.12141752	-0.17969762	-0.1038485	-0.10761798	-0.04610171	-0.08932695	0.22758936	0.06711851	0.05157837	-0.14043354	0.0973467	-0.2088662	0.06112776	-0.02265367	0.03482717	0.03765498	0.0260008	0.05874006	0.40627004	-0.04099351	-0.11097178	-0.07396301
pr_compresor1	0.0051383	-0.0355743	0.18779804	0.0109731	-0.81415718	-0.70558201	-0.59851836	-0.53504044	-0.59569408	0.02026885	0.09960376	0.08969048	-0.39207435	-0.15629426	-0.63162016	-0.6252148	-0.18735468	-0.09543455	-0.02061297	-0.08144502	0.10091337	-0.47538495	-0.52464934	-0.79793767	-0.53911597
eff_compresor1	-0.70424501	-0.51402586	-0.57573801	-0.72964853	-0.23239605	-0.090746	-0.38002235	-0.12629941	-0.28770267	-0.80406333	-0.39609897	-0.38871176	-0.61624692	-0.08129977	-0.64776428	-0.57875248	-0.36392611	-0.52784172	-0.50447745	0.28973747	-0.39889548	-0.60776945	-0.52191231	-0.16831682	-0.25454231
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	0.45262602	0.27175284	1.46473419	1.37339521	-2.13550655	-0.98366048	-1.70143325	-0.7037317	-0.0791662	2.32031096	2.4059754	1.8257925	-3.04914785	1.22222764	-3.08748482	2.23928298	-0.05705983	0.29705202	0.48355412	1.37864585	1.99011886	3.75215473	-0.63875544	-1.27363588	-0.79790303
eff_compresor2	-0.1086473	0.32367418	0.03985618	1.00617713	0.53956289	0.09340624	0.01704509	-0.00363955	-0.30264352	1.4198279	-0.34807713	-0.20684173	1.11418179	0.95596111	1.36725642	-0.09443178	-0.0297222	0.3281329	0.44682694	-0.27884288	-0.28995783	2.2077624	0.14068876	0.15327319	-0.34423457
mc_compresor2	0	0.00067698	-0.01144489	0.0060051	0.00941893	0.00258194	0.00031564	1.1606606	0.0091076	0.0129604	-0.0166605	-0.0412959	-0.0982547	-0.00819426	-0.00818661	-0.00874926	-0.00201381	0.001539356	0.0015717	-0.01114713	-0.01663942	-0.10977009	-0.00111181	0.00425727	0.00702351
pr_turbina1	-2.21208609	0.64763179	-2.42726483	-3.8161524	7.84889807	3.00280157	7.63619602	0.83888228	4.86252824	-8.62641208	-3.52818165	-2.5460798	16.8034779	-3.1134701	16.3769291	-3.95710672	8.82881593	-0.10827487	-1.3338852	-2.3338852	-2.6289579	-4.6573857	2.39745561	-3.9403033	3.93888977
eff_turbina1	-7.7951652	-8.9516452	-8.06399767	-9.13268652	-10.3878185	-9.21214487	-10.1233834	-8.65566579	-9.39828635	-8.5339814	-7.2558937	-7.6557772	-12.3162495	-9.28088501	-8.96041713	-9.05748396	-9.04719484	-7.73004058	-7.49991189	-6.48099124	-10.0438104	-9.45841091	-9.32299997		
mc_turbina1	-1.7665986	0.8332426	-0.04684379	-0.24597346	5.54887953	3.20566855	5.46708454	2.17230322	4.11791729	-2.03089634	-0.53338586	-0.2072693	7.9347188	-0.00113906	6.76758509	-0.49972776	1.3359823	0.88220163	0.70073758	0.09187441	-0.27783236	-5.00802338	3.6675193	3.66829147	3.94976968
pr_turbina2	0.00640435	0.02713913	-0.01107467	0.05066453	0.01717781	0.03377966	0.00557857	0.00078241	0.03403588	0.07451175	0.0349151	-0.00811482	0.17785661	0.04244786	0.02806713	-0.02347412	0.00290968	0.1112936	-0.0220444	0.0319946	0.02021086	0.24088547	0.04722344	0.02700304	0.01433934
eff_turbina2	-0.02080453	0.00292648	0.04186412	-0.01224002	-0.03348068	-0.03984333	-0.02353697	-0.04443351	-0.0106717	-0.00075648	0.00151213	0.01148045	0.03153255	-0.09040938	-0.05088704	0.04806678	0.01651527	0.03388182	-0.02110669	-0.01046663	0.00191781	0.02206939	-0.02804949	-0.03830039	-0.01925193
mc_turbina2	0	0.01765368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07824334	-0.02343698	0	0	0	0	0	0

Acuerdo	-7.7951652	-8.9516452	-8.06399767	-9.13268652	-10.3878185	-9.21214487	-10.1233834	-8.65566579	-9.39828635	-8.5339814	-7.2558937	-7.6557772	-12.3162495	-9.28088501	-12.3331199	-7.80427031	8.82881593	-0.10827487	-1.3338852	-2.3338852	-2.6289579	-4.6573857	2.39745561	-3.9403033	3.93888977
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Tabla 0.49: Degradación eficiencia turbina 1 -7% (!)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
0.56751209	0.05144924	0.2391554	0.06053229	0.06944254	0.55503472	-0.07986287	0.10814635	0.05117536	0.16062792	0.21501787	0.03681987	-0.09317374	0.1045045	0.229232	-0.00471222	0.13139306	0.05300318	0.18265114	0.0378665	0.12774903	0.05318031	1.17779316	0.6076443	0.06946688
0.24183573	-0.00564959	-0.05339711	-0.04346647	-0.04113009	0.26718369	0.00382772	-0.01371924	0.09059762	0.13891294	0.06697128	0.01567326	-0.02060884	-0.07309672	0.08963393	-0.04731817	0.1597026	0.11274082	0.18952771	-0.03367383	0.10825115	0.08057418	0.35435877	0.16240851	-0.07147709
0.07985972	-0.01566828	-0.08640739	-0.01322788	-0.01505124	0.07914849	-0.09655663	-0.01232694	0.0079605	0.04039699	0.02233977	-0.00363035	-0.10610324	-0.06941577	0.02247889	-0.08695848	0.03812387	-0.13565595	0.04952246	-0.00427018	0.03746002	0.0138241	0.12296039	0.07118676	-0.08981515
1.15064964	-0.5781141	-2.0767968	-0.06034272	-0.19785561	0.99336431	-1.51084789	0.31948939	0.08895444	0.7775367	0.43265586	0.05328398	-1.61838796	-1.42303578	0.4757964	-1.4573782	0.73528941	-2.14096014	0.85101174	0.05133876	0.73312154	0.13131513	1.23770843	1.15910662	1.32383058
-0.45531067	0.27622276	0.9193885	0.04433222	0.10199903	-0.5179516	0.43756781	0.12540775	-0.0030892	-0.4984697	-0.31513217	-0.02966167	0.4224392	0.53278208	-0.33685941	0.4739014	-0.45611595	0.35370086	-0.43708909	-0.02526333	-0.50685153	0.10415005	-0.53859632	-0.45736213	0.36545162
-0.17878619	0.07616866	0.29593163	0.00845702	0.02753574	-0.14773371	0.27337979	0.04596682	-0.01393856	-0.10423944	-0.06010184	0.00962701	0.30274669	0.23146591	-0.0662252	0.25593731	-0.10085456	0.41794876	-0.12262636	-0.00721001	-0.09517668	-0.01940003	-0.20720067	-0.17874531	0.24786033
-0.78059395	0.0312194	1.95463824	0.0456311	0.07442227	-0.46308794	-0.1903409	-0.4824998	-0.13944182	-0.61023862	-0.62022998	-0.01925928	-0.11706352	0.14333588	-0.61851187	-0.08696314	-0.65601511	-0.49927937	-0.7188837	-0.02282644	-0.59097731	-0.20500577	-0.217584	-0.79766657	-0.13924214
-0.46980661	-0.69766363	-1.32556996	-0.4067983	-0.38518518	-0.62227692	-0.77801522	-0.5362208	-0.41426284	-0.28162827	0.12304597	0.44421378	-0.75843391	-0.99238316	0.03974115	-0.81821802	-0.27100354	-0.63583239	-0.30779513	-0.31510519	-0.29116139	-0.4379987	-0.82985543	-0.12750281	-0.7544519
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-2.22950426	0.76714892	3.3947094	0.87463455	1.19865839	-2.82384007	2.55473113	0.64589966	-0.09098315	-1.12426384	-0.24081714	0.03692372	2.87043957	2.20050566	-0.60133298	2.57658835	-0.93073475	3.84201604	-1.22950611	0.60017695	-0.95402511	-0.17088611	-4.01848498	-1.94693131	2.41466979
0.56387841	0.59060562	2.06910124	0.02370758	-0.10100945	0.91734422	1.52926456	0.57024217	-0.0187674	-0.22552108	-0.11431655	0.09956746	1.72065979	1.34848782	-0.00406665	1.53087581	-0.22125198	2.22277248	-0.15322003	-0.02243194	-0.26133799	0.16813509	2.08339453	0.49816231	1.47198796
0.00566333	0.00101456	-0.00019385	-0.00625919	-0.0089726	-0.06511831	-0.00111422	0.00116836	-0.00197746	0.00970933	-0.0003627	-0.00279822	0.0177472	0.01788181	5.3027E-05	0.00928119	0.009917	-0.09564237	0.01430985	-0.00534694	0.06802679	5.2038E-05	-0.17502831	0.00938105	-0.00157966
7.04833114	-0.77861602	-3.06226981	-0.05083807	-1.30497669	6.09496897	-3.8732284	-0.8569661	2.886605703	9.67089414	2.64665719	1.37495802	-3.41952321	-2.51510307	3.74933614	-5.03825497	3.32486774	-4.1893333	5.06354204	0.16615014	8.84127299	2.89706842	7.95122626	5.15184587	-1.41740503
-10.8351395	-9.22329268	-9.08409623	-8.3370188	-8.04708764	-11.9980792	-7.64966512	-9.08318827	-8.95258132	-9.53094043	-8.07264037	-8.82702046	-7.5771384	-8.74994754	-8.41512561	-8.22338474	-9.30579262	-6.61156514	-9.62816849	-8.49259955	-9.39530057	-9.23142609	-13.8631261	-10.1652926	-7.78043219
6.11498147	0.5923417	-3.2595159	0.37973267	0.19451769	1.57987168	-2.86748034	0.52950602	1.42151809	4.52302979	1.11966947	0.9832907	-3.3535996	-1.60210493	1.63634142	-2.53902689	3.86118823	-4.92982307	4.70677579	0.62719067	6.14493978	1.49426998	9.39531795	5.21563688	-2.71255116
0.00018328	0.03801615	-0.99414957	-0.03134633	-0.00809769	0.0742539	0.10611659	-0.05379105	-0.0075068	0.01350606	0.02607234	-0.03191464	0.12701781	0.05865766	0.01234139	0.09838483	0.0211863	0.23419965	0.01299426	-0.01754612	0.01148957	-0.11990562	0.0650998	0.02086381	0.0957274
-0.03109576	-0.00996004	-0.69630691	0.03069899	0.02186381	-0.04901012	0.00882449	-0.03884375	0.01029719	-0.01038229	-0.04916994	0.03133705	0.00497254	-0.01204076	-0.03768633	0.00059595	-0.01286323	0.02017887	-0.01126749	0.03138141	-0.01153581	-0.07197719	-0.20227371	-0.03644413	0.00940581
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	-1.032529793	0	0	0	0	0.06315404	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-10.8351395	-9.22329268	-9.08409623	-8.3370188	-8.04708764	-11.9980792	-7.64966512	-9.08318827	-8.95258132	-9.53094043	-8.07264037	-8.82702046	-7.5771384	-8.74994754	-8.41512561	-8.22338474	-9.30579262	-6.61156514	-9.62816849	-8.49259955	-9.39530057	-9.23142609	-13.8631261	-10.1652926	-7.78043219

Tabla 0.50: Degradación eficiencia turbina 1 - 7% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	-0.0504317	0.6036864	-0.2902419	0.3722929	-0.21619125	-0.27389419	-0.516161474	<b>0.98060736</b>	0.36547968	-0.2212877	0.12174938	-0.2959643	0.25465017	<b>-0.07266332</b>	0.36158815	<b>0.8020268</b>	0.5809009	-0.60223075	0.10691293	0.48345951	-0.10125648	-0.12222611	<b>1.04200762</b>	0.37140211	<b>-0.06346195</b>	
eff_fanorc	0.00356312	-0.02444466	0.04412302	-0.00270632	0.02670172	0.03467582	0.030938	-0.04397945	-0.0457556	0.04111579	-0.00164868	0.02217612	-0.03137243	0.0724039	-0.01263364	-0.07955763	-0.05249946	0.04835493	-0.0178786	-0.02014772	-0.01213051	-0.02400268	-0.10009392	-0.04342747	0.03664492	
mc_fanorc	0.00041956	-0.00465713	0.00220673	-0.00290734	0.00159186	0.00214004	0.00395405	-0.00756458	-0.00278241	0.00168433	-0.00091206	0.00230677	-0.00192494	0.00747666	-0.00280022	-0.00617137	-0.00444744	0.00457003	-0.00079847	-0.00377045	0.00078596	0.001011173	-0.00798367	-0.0028221	0.00670237	
pr_fanoduct	0.08411637	-0.17806081	0.1084799	-0.11681842	0.04853574	0.09680379	0.21185606	-0.33863998	-0.17576622	0.07257312	0.05280399	-0.14196439	-0.22281242	0.43107885	-0.07481721	-0.34054298	-0.25562952	0.23664297	-0.01601664	-0.15594322	-0.03007068	0.01190938	-0.3775271	-0.10801671	0.31476367	
eff_fanoduct	-0.15709805	0.39020193	-0.20479115	0.2676327	-0.09793343	-0.20599912	-0.44448423	0.73779448	0.34715354	-0.14270541	-0.10314211	-0.28766923	0.422219967	<b>-0.88319433</b>	0.18086203	0.67847895	0.51399642	0.48486985	0.03534682	0.33651976	0.03183507	-0.06113372	0.76499733	0.19359446	-0.68257128	
pr_fanoduct	-0.00860138	0.01814573	-0.01121052	0.01179185	-0.00516596	-0.00987116	-0.00448067	0.03465193	0.01816737	-0.00748161	-0.00545538	0.02311475	-0.04428082	0.00757842	0.03494415	0.02631666	-0.02443852	0.00168512	0.01582578	0.003191894	-0.00097743	0.038975303	0.011112697	-0.03200781		
pr_compresor1	0.1477824	0.57188905	0.12446338	0.50191933	0.12922335	-0.06764372	-0.19080131	<b>0.91102201</b>	0.11905704	0.12443732	0.21204951	0.00984817	-0.12394751	-0.34207486	0.56194207	0.25101012	0.23484164	-0.10833095	0.19952905	0.46351389	-0.2314374	-0.3560059	0.41709519	0.06549768	-0.6596157	
eff_compresor1	0.10674857	0.020673	0.09394109	0.02899135	0.08281207	0.05850989	0.12197264	-0.00668077	0.0283626	0.05558167	0.07292036	-0.0537248	-0.05982659	0.19225863	0.0775734	-0.465285869	-0.02122612	0.13291111	0.09011396	0.02902607	0.04093423	0.02695506	-0.04162055	0.02201897	0.10959161	
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eff_compresor2	0.06024164	0.29651089	0.0286708	0.24747501	0.04238944	-0.03781085	-0.11573998	0.46320913	0.09592351	0.04140794	0.1008842	-0.02004946	0.00035754	-0.22837597	0.26159335	0.19857453	0.16779992	-0.09010152	0.09655558	0.24103733	-0.07988362	-0.13092134	0.287599	0.07420949	-0.33085174	
mc_compresor2	0.00932716	0.02825274	0.00879247	0.02674922	0.00534421	-0.00601062	-0.00949118	0.04484784	-0.0082529	0.00720521	0.01370907	0.00126932	-0.02765001	-0.00959152	0.03125251	-0.0053167	-0.00257503	-0.00196251	0.00666003	0.02091764	-0.0258055	-0.03207187	0.00625657	-0.0667473	-0.03940832	
pr_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eff_turbina1	-0.00509237	-0.04528273	-0.00167102	-0.04139329	-0.0061045	0.01463136	0.0267626	-0.07673566	0.0076375	-0.00541271	-0.00904963	0.01111433	0.03400948	-0.04627272	-0.00516899	-0.00493664	0.01714098	-0.03391699	0.08640334	-0.0075517	-0.03391699	0.04988331	-0.02417301	0.010178	0.07765216	
mc_turbina1	-1.4043851	-1.4062302	-1.4043888	-1.40794036	-1.40343652	-1.40200977	-1.40204428	-1.41121195	-1.4037045	-1.40359768	-1.40165438	-1.40317235	-1.40210964	-1.40148757	-1.41030462	-1.40035972	-1.4024321	-1.4025501	-1.4046417	-1.40474502	-1.40097083	-1.40186832	-1.40605967	-1.40158643	-1.39693717	
pr_turbina2	-0.18162443	-2.2893876	-0.21217212	-1.99877089	-0.18020288	0.76740626	1.44610612	-3.94384206	0.05333197	-0.0521953	-0.44279979	0.46255497	1.18716411	2.12299155	-2.2294171	-0.3541289	-0.52671241	0.9352702	-0.4197958	-1.71897767	1.69282866	2.36638326	-1.35984239	0.33844212	3.78360044	
eff_turbina2	-0.13454418	-1.83945789	-0.16021823	-1.60423451	-0.13561719	0.62459829	1.1779397	-3.17761351	0.01905571	-0.1520222	-0.33847677	0.38555077	0.90968825	1.74317709	-1.77686743	-0.46526596	-0.45291546	0.74771022	-0.33488887	-1.38498146	1.33854041	1.88218827	-1.12351609	0.29905939	3.04594926	
mc_turbina2	-0.18556443	-2.37659161	-0.21835514	-2.07324854	-0.18520944	0.80032289	1.50542735	-4.09780196	0.05144838	-0.21254762	-0.45663976	0.48164634	1.21931892	2.129765	-2.31368966	-0.5633536	-0.55447824	0.97370414	-0.4362499	-1.7855162	1.7595731	2.4519523	-1.41992954	0.35944358	3.92927227	

-1.4043851	-1.4062302	-1.4043888	-1.40794036	-1.40343652	-1.40200977	-1.40204428	-1.41121195	-1.4037045	-1.40359768	-1.40165438	-1.40317235	-1.40210964	-1.40148757	-1.41030462	-1.40035972	-1.4024321	-1.4025501	-1.4046417	-1.40474502	-1.40097083	-1.40186832	-1.40605967	-1.40158643	-1.39693717
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Tabla 0.51: Degradación flujo corregido turbina 1 -2% (!)



caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50					
-0.0938475	-0.5472664	-0.86493688	0.24815958	-1.10457463	0.18880591	0.88714369	-0.53411776	-0.30038812	-0.34045204	0.46638155	-0.83131511	-0.07695051	-0.29352604	0.23846306	-0.05179157	0.55721308	0.04378247	0.22858028	-0.2644531	0.34264829	-0.35087569	0.12459233	0.06373111						
0.01755382	0.04650241	0.06968717	-0.03540885	0.07113745	0.02286064	0.03487461	-0.05479081	0.04745165	0.03382449	0.02890768	0.01052635	0.002390788	-0.0019138	0.000396945	-0.00420944	-0.00037984	-0.0020876	0.00264027	0.00277427	0.00560533	-0.01127156	-0.01296652	-0.00068069	-0.02457733					
0.00073582	0.00418405	0.00656649	-0.00185453	0.00849177	-0.00216154	-0.00042953	0.00665778	0.00417613	0.00227308	0.00260886	-0.00350679	0.00646636	0.00056833	0.0023403	-0.0019138	0.000396945	-0.00420944	-0.00037984	-0.0020876	0.00264027	0.00277427	0.00560533	-0.01127156	-0.00068069	-0.02457733				
0.08708893	0.25087445	0.2843939	-0.14491506	0.44855352	-0.14950426	-0.12670589	0.40978489	0.17525975	0.13059378	0.13829319	-0.1798479	0.31622936	-0.0121496	0.16390924	-0.09052175	0.04746431	-0.10227793	-0.02194216	-0.12517556	0.11340096	-0.11381173	0.07790894	-0.0448374	0.10067717					
-0.16867696	-0.48833804	-0.59670831	0.28231157	-0.93342985	0.23502271	0.83547125	-0.388487396	-0.26963849	-0.28688272	0.34604807	-0.68519262	0.02282282	0.35564006	0.15768137	-0.15768137	0.06224873	0.06224873	0.28263071	-0.2547228	0.26069267	-0.07629287	0.09631051	-0.235353599						
-0.00916583	-0.02583721	-0.02922699	0.01512129	-0.04609075	0.01546492	0.01312445	-0.0174777	-0.01350786	-0.01420673	0.0184613	-0.03223907	0.00126679	-0.01656581	0.00489549	-0.09455011	0.01056604	0.00241497	0.01269303	-0.01146899	0.0116631	-0.00148052	0.0046995	-0.01032048						
0.18210295	0.05625857	-0.37931921	0.01386395	-0.58615322	0.20166891	-0.08457526	0.4588026	-0.41393492	-0.0689991	-0.04205614	0.05453336	-0.55873505	0.05900933	-0.29027491	0.68466546	0.1588337	0.28955627	0.2872339	0.48085109	-0.2501947	0.46739906	-0.43621205	0.14591845	-0.21793955					
0.10883354	0.16914993	0.1109232	0.00392151	0.17528797	0.02826066	0.00361985	-0.04047322	0.09724567	0.10161221	0.07124359	0.00601845	0.10811807	0.06947388	0.0668724	0.07977227	0.08366325	0.049553545	0.06679553	0.06516218	0.08454402	0.04740296	0.02198466	0.03039817	0.06354178					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0.06475383	-0.01401724	-0.22133207	0.05011194	-0.32451937	0.12247596	0.00367298	0.28401765	-0.20195088	-0.04652933	-0.03966335	0.08227755	-0.28801741	0.02543366	-0.12902563	0.30184079	0.06807599	0.17681464	0.13226391	0.21896792	-0.10254879	0.22496941	-0.18339379	0.0874697	-0.06357797					
0.01232269	0.01347405	-0.01973805	-0.01341617	-0.02564258	0.00018959	-0.01934935	0.00605308	-0.02864085	-0.00494865	-0.00187379	-0.01152079	-0.03141172	-0.00399311	-0.01803929	0.04292415	0.00805494	0.01035715	0.01410021	0.0222898	-0.01794808	0.02293655	-0.03879218	0.00253664	-0.0151004					
-0.0675327	-0.0050304	0.04933209	0.01245277	0.06393838	-0.00898845	0.027774	-0.02337712	0.05269288	0.01868729	0.01225236	0.01636158	0.06414024	0.00774065	0.0402444	-0.06311375	-0.00951342	-0.01164765	-0.02290541	-0.03740252	0.03388651	-0.03282914	0.0551893	-0.00578464	0.03677094					
-1.40321501	-1.40664085	-1.40270952	-1.40519392	-1.40168206	-1.40609822	-1.40011843	-1.40203509	-1.4007932	-1.40059524	-1.40175437	-1.40009492	-1.39838447	-1.40215205	-1.39770031	-1.4107636	-1.40639971	-1.40102358	-1.40588364	-1.40967104	-1.40085946	-1.40618757	-1.40211369	-1.40457756	-1.39694905					
-0.34878394	-0.03124633	2.2709555	0.52120998	3.27944603	-0.47272168	1.02633102	-1.6286225	2.59391988	0.84877337	0.7095573	0.38967887	3.25267037	0.24974593	2.01814252	-3.01757754	-0.2645707	-0.74791514	-0.97520179	-1.88012506	1.69719216	-1.79860943	2.6901519	-0.22204762	1.74314933					
-0.26174506	0.00368942	1.83837691	0.39234927	2.65883145	-0.35942187	0.79813888	1.34784745	2.0811615	0.68924101	0.5831702	0.28506957	2.62819263	0.19301502	1.62771149	-2.40878158	-0.20115458	-0.60152722	-0.7779907	-1.51584807	1.36394446	-1.4472722	2.14191636	-0.18344292	1.40784687					
-0.35320206	-0.02595433	2.36260747	0.33318611	3.40880657	-0.44628839	1.05444663	-1.69976756	2.69238745	0.88407557	0.74045979	0.39813052	3.37989266	0.25902483	2.09798001	-3.1300293	-0.27295953	-0.75742092	-1.01139439	-1.95334018	1.76282154	-1.86832045	2.79450249	-0.23164598	1.81065546					

Tabla 0.52: Degradación flujo corregido turbina 1 -2% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	-0.3866083	-0.33722086	-0.32712594	-0.6506435	-0.29669001	-0.04018224	-0.08273906	0.42519775	0.29790167	0.57108914	-0.05092486	-0.66314326	0.21674677	0.22087337	0.6224091	0.6224091	-0.16651844	-0.28319493	0.22621842	-0.1139311	-0.3057495	0.13066153	-0.0525131	-0.47871621	-0.00297544	
eff_fanorc	0.00561224	-0.02324096	0.02470234	-0.05347986	0.06037905	0.00087347	-0.02289731	-0.00055449	-0.03467664	-0.02708943	-0.02889728	0.0018241	0.03419458	-0.03866814	-0.03560706	-0.07258875	0.00839475	0.01454621	-0.03799427	-0.00552684	0.00395448	-0.01946388	0.00485182	0.03551385	-0.00898979	
mc_fanorc	0.00028763	-0.00024958	0.00024066	-0.00047759	0.00046837	0.00021631	3.5969E-05	6.4269E-05	-0.00034626	-0.00021598	-0.00042397	3.5862E-05	0.00049646	-0.00015569	-0.00016884	-0.0004667	0.00012778	0.00020941	-0.00016449	8.5108E-05	0.00022725	-9.8756E-05	3.8124E-05	0.00034905	5.0895E-06	
pr_fanduct	0.0035996	-0.13802413	0.16077337	-0.19175599	0.2216526	0.04100852	-0.05865085	-0.01781536	-0.04464542	-0.0945674	-0.13824921	0.10253414	0.22760939	-0.13981619	-0.17928987	-0.33199274	0.12667171	0.16980771	-0.15940131	0.0213614	-0.12412784	-0.04579797	0.01546499	0.24263042	-0.00684701	
eff_fanduct	-0.2502288	-0.30498511	-0.35342467	0.43692729	-0.48626643	-0.12116847	0.10327099	0.0388668	0.0926621	0.20623945	0.32864792	-0.21902873	-0.52869001	0.29386532	0.36958912	0.7132214	-0.27424611	-0.37295509	0.40054689	-0.5065432	-0.29384165	0.0878112	-0.0398867	-0.51205853	0.00294684	
mc_fanduct	-0.00495516	0.00637484	-0.00744382	0.00888449	-0.0102412	-0.01019702	0.00282888	0.00088416	0.00198107	0.00436142	0.00633643	-0.00478411	-0.01040541	0.00652702	0.00823804	0.01538704	-0.00581564	-0.00788853	0.00928377	-0.00965699	-0.00570814	0.00028308	-0.00062664	-0.01131016	0.00094766	
pr_compresor1	-1.94031594	0.60904124	-0.2395251	1.35647367	-1.02436279	-1.43748932	-1.36022279	-0.17439651	0.21334312	0.27817016	1.51118177	-1.94696102	-0.6172653	-0.71132411	-0.25399023	0.07563408	-0.55948065	-1.27479711	-0.44194218	-1.08534992	-0.4105394	-0.5210407	-0.47559831	-0.63196134		
eff_compresor1	-0.5794388	0.1727243	-0.0328326	0.37732397	-0.27964104	-0.38613368	-0.38613368	-0.04678453	0.02963498	0.06349265	0.41024731	-0.0498105	-0.56993999	-0.18691783	-0.20066494	-0.09964356	0.03869299	-0.162899	-0.40085121	-0.12343726	-0.31081915	-0.19061068	-0.16064137	0.16349283	-0.1786949	
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eff_compresor2	-0.70254874	0.24261982	-0.12320116	0.50679447	-0.39518028	-0.52014326	-0.47160432	-0.0566001	0.06367228	0.10114485	0.55181268	0.03337843	-0.73558279	-0.20186558	-0.22115722	-0.0312192	2.8514E-05	-0.23266718	-0.41566657	-0.15810014	-0.44228704	-0.14240681	-0.1858004	0.13482029	-0.22793544	
mc_compresor2	0.05554155	-0.0124808	0.00021794	-0.03493087	0.02206514	0.04506854	0.04807371	0.00730942	-0.00833616	-0.0054555	-0.04280613	-0.01130245	0.05101944	0.02719135	0.03194643	0.02350888	-0.00869799	0.0075436	0.05100811	0.0129652	0.02800477	0.01405345	0.01601204	-0.03737456	0.0202719	
pr_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eff_turbina1	0.04886194	-0.01948001	0.01212122	-0.08492798	0.03769963	0.03034846	0.00239644	-0.00670359	-0.00690112	-0.03972679	-0.0040224	0.05097348	0.01106349	-0.00260626	-0.00086875	0.01647036	0.0236883	0.00738506	0.03014476	0.00902622	0.01292808	-0.00651657	0.01850397			
mc_turbina1	-4.7629552	-4.76585547	-4.76641642	-4.77022182	-4.76330121	-4.766545	-4.76707672	-4.76837683	-4.7623764	-4.76666351	-4.77168716	-4.76681716	-4.76854764	-4.76157842	-4.76761376	-4.76559988	-4.77266681	-4.7676346	-4.76707346	-4.77343618	-4.76108479	-4.7659453	-4.76647493	-4.76832363	-4.76449414	
pr_turbina2	2.24643834	-0.88282071	0.54725741	-1.75105093	1.44014956	1.62540651	1.36760075	0.15916272	-0.2414421	-0.1437073	-1.82548369	0.02095288	2.48378544	0.46060388	0.4801688	-0.26764544	0.14206769	0.89976639	1.04760644	0.51145249	1.41827062	0.38420124	0.58044256	-0.13391776	0.67803307	
eff_turbina2	1.91943136	-0.77224959	0.49280718	-1.51536363	1.25689799	1.38238044	1.14308134	0.12505809	-0.20181121	-0.36578454	-1.56858503	0.04226401	2.14652551	0.36080071	0.37198991	-0.29193801	0.14764535	0.79400674	0.85070464	0.63506131	1.22751679	0.31955042	0.49533658	-0.0676636	0.57094801	
mc_turbina2	2.49849384	-0.98730785	0.61688037	-1.95607955	1.61052214	1.80657523	1.51526066	0.17437358	-0.26593532	-0.46145829	-2.03276118	0.02906671	2.76883099	0.5058976	0.52458475	-0.31545378	0.16414908	1.00950164	1.15505212	0.56909076	1.58253115	0.42525048	0.64619643	-0.13866305	0.75184795	

Tabla 0.53: Degradación flujo corregido turbina 1 -5% (I)

Acuerdo	-4.7629552	-4.76585547	-4.76641642	-4.77022182	-4.76330121	-4.766545	-4.76707672	-4.76837683	-4.7623764	-4.76666351	-4.77168716	-4.76681716	-4.76854764	-4.76157842	-4.76761376	-4.76559988	-4.77266681	-4.7676346	-4.76707346	-4.77343618	-4.76108479	-4.7659453	-4.76647493	-4.76832363	-4.76449414
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caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-0.05964435	-0.2795813	-0.4737669	0.1602926	-0.22572711	0.04609539	0.24042175	<b>0.28293632</b>	-0.11249402	-0.08217725	-0.48136976	-0.55884519	<b>1.07575564</b>	-0.39769088	0.28304261	-0.34911668	0.45574001	-0.25579497	0.61965948	0.08423609	-0.06777964	-0.29684246	-0.34196136	0.000433	0.22399776
-0.00613979	0.00562836	0.0375701	-0.00171371	0.00296395	-0.00034208	-0.03620423	-0.08982747	0.00179189	-0.00483117	0.05504581	0.04308351	-0.08299327	0.05684122	-0.02971559	0.04239043	-0.06427156	0.03513136	-0.03850343	-0.00602623	0.01262162	0.0538187	0.00237211	0.0138307	-0.01615119
4.4818E-05	-0.00017127	0.00035997	-0.00011939	0.00016593	-3.6525E-05	-0.00018125	-0.00063799	8.6704E-05	6.3458E-05	0.00035825	0.00040949	-0.00079295	0.00044244	-0.00020971	0.00025834	-0.00033102	0.00018753	-0.00046524	-6.2733E-05	4.8649E-05	0.00021134	0.00025167	-3.2688E-06	-0.00016262
0.04129131	0.00679905	0.17833998	0.01856093	-0.00067358	0.03753971	-0.07664125	-0.37099076	0.05614199	-0.02817928	0.2387402	0.14940741	-0.35668351	0.21733112	-0.1807953	0.11552461	-0.23901471	0.12185477	-0.2129187	-0.05275014	-0.01400088	0.06965623	0.01905434	0.00195995	-0.02833337
-0.10492183	0.01881279	-0.39811995	-0.02524283	-0.01302563	-0.07260074	0.16525606	<b>0.80924259</b>	-0.12987342	0.05121595	-0.51374002	-0.32320566	<b>0.81216781</b>	-0.47492485	0.38356462	-0.25296517	0.50983804	-0.25247524	0.48744809	0.10253584	0.02907689	-0.15808911	-0.07990074	0.01643442	0.08235577
-0.00190444	-0.00038805	-0.00823188	-0.00091515	5.8122E-05	-0.00179148	0.00349282	0.01713071	-0.00255277	0.00137013	-0.01107219	-0.06693042	0.01650089	-0.01009045	0.00837471	-0.00653301	0.01115473	-0.00566823	0.00987651	0.00243602	0.00064557	-0.00331635	-0.00086763	-0.0001328	0.000132092
-0.63340483	<b>1.76943845</b>	<b>-0.82181393</b>	<b>0.92700192</b>	<b>-1.13475282</b>	0.46507145	0.13816132	0.54847356	-0.52471058	-0.64234098	-0.040108	-0.56114793	<b>2.12998807</b>	-0.52070458	-0.22784941	-0.56547004	-0.48691163	0.43978349	<b>1.21857285</b>	-0.34648938	-0.13464677	-0.29947387	<b>-1.73137242</b>	<b>0.89955343</b>	<b>0.81247556</b>
-0.17216839	0.5307633	-0.22656728	0.26928893	-0.31209327	0.13645646	0.06655724	0.12028179	-0.16825879	-0.19163366	-0.0043525	-0.14978244	0.59610406	-0.13307575	0.06243758	-0.18290756	-0.15711918	0.14184949	0.34095129	-0.11479548	-0.0419993	-0.08546774	-0.4791512	0.27928458	0.242441177
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0.24262703	0.61948852	-0.3189453	0.31961908	-0.39197461	0.15433359	0.05006492	0.25013674	-0.20133037	-0.22436567	-0.05215047	-0.20835085	<b>0.8043367</b>	-0.200818	-0.0446254	-0.20574563	-0.13674677	0.14378108	0.4689771	-0.11102565	-0.0389918	-0.09899943	-0.61068088	0.33084522	0.29019052
0.0189373	-0.05738983	0.01694886	-0.0319708	0.0380965	-0.01775145	-0.00021138	-0.00059711	0.01313753	0.0221249	-0.0113188	0.01003304	-0.05109883	0.00669968	0.01681902	0.01146727	0.02784839	-0.02020326	-0.02791716	0.01340596	0.00456783	0.00567663	0.05535217	-0.02836908	-0.02483779
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.01821901	-0.03836437	0.02426213	-0.0211945	0.02684532	-0.01160653	-0.00269792	-0.02238641	0.01607832	0.01333942	0.00482379	0.016106	-0.05844956	0.01480364	0.00365973	0.0132914	0.00653497	-0.00898708	-0.03232925	0.00821771	0.00316432	0.00949614	0.04236347	-0.0242507	-0.01925745
-4.76395887	-4.76659776	-4.7681747	-4.76753465	-4.76567986	-4.76938219	-4.76590048	-4.76711692	-4.76448647	-4.76298051	-4.77459611	-4.77098462	-4.76872075	-4.77696077	-4.76770813	-4.77679648	-4.76517954	-4.77639243	-4.77529123	-4.76573287	-4.77044031	-4.7678192	-4.7622585	-4.77793701	-4.77092852
0.7932222	-1.88469314	1.16508812	-0.94936263	1.19698849	-0.42059754	-0.23432393	<b>-1.16449292</b>	0.67211637	0.65056111	0.42344201	<b>0.80518559</b>	<b>-2.84160063</b>	<b>0.85630714</b>	-0.06657605	0.73870643	0.14789364	-0.30231423	-1.66355213	0.27871994	0.09609713	0.38576662	<b>1.87799327</b>	<b>-0.99552459</b>	<b>-0.91443571</b>
0.66929431	-1.59228688	1.01852946	-0.79811021	1.00526753	-0.34714955	-0.21424629	<b>-1.05249401</b>	0.578622891	0.54288472	0.40247561	0.70552949	<b>-2.46956184</b>	0.7623659	-0.0910037	0.6582908	0.0787589	-0.23235628	-1.4509225	0.2271836	0.07910549	0.33951191	<b>1.59241088</b>	<b>-0.84581532</b>	<b>-0.7797412</b>
<b>0.86822478</b>	<b>-2.0903957</b>	<b>1.30200632</b>	<b>-1.05323756</b>	<b>1.32746596</b>	-0.46502392	-0.26374513	<b>-1.31182061</b>	0.74785584	0.72203012	0.48159209	<b>0.88838359</b>	<b>-3.1714722</b>	<b>0.95833329</b>	<b>-0.08383355</b>	<b>0.84714464</b>	0.15262703	-0.23861824	<b>-1.85939411</b>	0.30584864	0.1091262	0.42946287	<b>2.08677253</b>	<b>-1.10692634</b>	<b>-1.0175561</b>

Tabla 0.54: Degradación flujo corregido turbina 1 -5% (II)

-4.76395887	-4.76659776	-4.7681747	-4.76753465	-4.76567986	-4.76938219	-4.76590048	-4.76711692	-4.76448647	-4.76298051	-4.77459611	-4.77098462	-4.76872075	-4.77696077	-4.76770813	-4.77679648	-4.76517954	-4.77639243	-4.77529123	-4.76573287	-4.77044031	-4.7678192	-4.7622585	-4.77793701	-4.77092852
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	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	-2.08704347	1.56729265	-1.3684872	0.19374638	0.08832889	1.97071266	0.95059677	-0.38694077	-1.6178105	-1.16020218	-1.53372069	-0.7631722	0.79528014	0.32093515	-3.39593485	0.6669638	-0.17076967	-3.37078405	-0.73793167	0.20381555	0.21664741	2.44739554	-1.14423872	1.64913171	0.53040411	
eff_fanorc	1.28774431	-0.97014095	-0.82310308	-0.10477688	-0.04480531	-1.20826185	-0.59420727	-0.72609781	1.00666043	0.71820081	0.96601787	0.46859946	-0.46985918	-0.1857617	2.09328362	-0.40219087	0.09492271	2.1098804	0.48799667	-0.1361995	-0.11469462	-1.56293433	0.689598	-1.00512002	-0.30737577	
mc_fanorc	-0.6884751	0.05089555	0.04455089	0.00631959	0.00283292	0.06385015	0.03098228	0.01237573	-0.05269945	-0.0376473	-0.05017787	0.02449831	0.02553362	0.00988212	-0.11040878	0.02142268	-0.00498316	-0.1095552	-0.02412511	0.00646179	0.00693017	0.07973346	-0.03647994	0.03564228	0.01749295	
pr_fanoduct	0.04180746	-0.0550996	-0.05283166	-0.01624093	-0.00045909	-0.06894384	-0.03013289	-0.03173991	0.04561312	0.03019334	0.02471601	0.02419547	-0.05285732	-0.05591734	0.09615515	-0.0257948	0.04289478	0.0865264	0.00390055	-0.00264801	-0.01811812	-0.03066631	0.07218156	-0.004989368	-0.02819965	
eff_fanoduct	-0.1026923	0.09703294	0.11661713	0.04697509	0.00390384	0.13367394	0.07245106	0.04866026	-0.07980691	-0.05427164	-0.00459347	-0.05651624	0.1063919	0.05836149	-0.18169755	0.04435494	-0.0658838	-0.14769289	0.01627281	0.00901132	0.04454996	0.036425	-0.12058093	0.0997124	-0.0746929	
mc_fanoduct	0.00600622	-0.00787597	-0.00740243	-0.00220194	-9.7924E-05	-0.00995601	-0.00425096	-0.00446692	0.00647468	0.00439373	0.00350742	0.00331214	-0.00751398	0.00532254	0.01382285	-0.00381832	0.00617236	0.012254964	0.00064703	-0.00053129	-0.00257443	-0.00446842	0.0105318	-0.000710239	-0.00384415	
pr_compresor1	-0.6414224	0.2266614	0.5702359	0.29387154	-0.00705663	0.49118768	0.34522783	0.16961706	-0.1750812	-0.0390001	-0.20992763	-0.29885281	0.32923351	0.05954806	-0.65646833	0.03882725	-0.03202694	-0.37062694	0.24955686	0.03216479	0.25174019	-0.09831081	-0.24451374	0.40555927	0.41615455	
eff_compresor1	0.04949659	-0.06646698	-0.01899295	0.01420166	-0.08683923	-0.06442427	-0.01878837	0.01024078	0.08899184	0.08368281	0.05833808	-0.01058442	-0.02740571	-0.01458978	0.14485329	-0.05412343	-0.00467545	0.16680217	0.05624325	-0.01253684	0.02290593	-0.16881147	0.00299191	-0.07883864	0.00146884	
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eff_compresor2	-0.03957804	0.04166681	0.02898532	-0.00386144	-0.00686805	0.05321683	0.01634164	0.01702145	-0.05334707	-0.04447182	-0.03171702	-0.0248807	0.055658	0.02627303	-0.09922182	0.01571839	-0.04693897	-0.10042915	-0.02623346	-0.00433673	-0.00066228	0.03693643	-0.07590524	0.03310813	0.00577283	
mc_compresor2	-0.01637139	0.00465474	0.01600524	0.00952855	7.345E-05	0.01189078	0.00930731	0.00463801	-0.00293464	0.00071148	-0.00354425	-0.00794902	0.00991893	0.00194829	-0.01458745	0.00053232	-0.00207723	-0.00539007	0.01021559	0.00093088	0.00771477	-0.00880313	-0.00579389	0.01039086	0.01747424	
pr_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eff_turbina1	0.03830847	-0.065166	-0.02931489	-0.01581475	-0.00111387	-0.02441573	-0.02162742	-0.01023383	0.00860044	0.00323387	0.00972537	0.01551804	-0.01723423	-0.00078834	0.03479004	0.00322015	-0.0014823	0.01919017	-0.01203097	-0.00288217	-0.01482826	0.01296315	0.00782848	-0.002097134	-0.0228246	
mc_turbina1	1.44294108	1.43074034	1.42636382	1.42900815	1.43148568	1.42974769	1.42757195	1.42926592	1.43413006	1.43129866	1.43212727	1.43874081	1.43434968	1.43212727	1.43874081	1.43434968	1.43212727	1.4320752	1.429595104	1.429595104	1.42966828	1.43283728	1.43301057	1.42702422	1.42713715	
pr_turbina2	-2.49137043	0.61541395	2.11949042	1.17109772	0.02576285	1.63406966	1.29185494	0.53690491	-0.49441188	0.00728913	-0.76277773	-1.14384903	0.08410862	-0.00918778	-2.21788047	0.01656974	0.15198308	-1.04456525	1.1087457	0.11751685	1.00623774	-0.57790928	-0.49597991	1.47771564	1.66038607	
eff_turbina2	-1.99133457	0.49076647	1.6976695	0.93979455	0.01923898	1.30892815	1.03098015	0.43911634	-0.39245654	0.00643025	-0.60706527	-0.91328578	0.87222975	-0.02929669	-1.77949667	0.0185181	0.11413449	-0.83446383	0.89128776	0.09279874	0.80937106	-0.47424999	-0.40307386	1.1823187	1.3331771	
mc_turbina2	-2.66494163	0.65834155	2.26706475	1.25415715	0.07649187	1.75938865	1.38201904	0.57574435	-0.3289152	0.00570506	-0.81507556	-1.22162442	1.16177214	-0.00859054	-2.37384043	0.01772599	0.16177981	-1.11869242	1.18470582	0.12400179	1.07554712	-0.62098889	-0.53177426	1.58043118	1.7879019	

Acierto	1.44294108	1.43074034	1.42636382	1.42900815	1.43148568	1.42974769	1.42757195	1.42926592	1.43413006	1.43129866	1.43212727	1.43874081	1.43434968	1.43212727	1.43874081	1.43434968	1.43212727	1.4320752	1.429595104	1.429595104	1.42966828	1.43283728	1.43301057	1.42702422	1.42713715
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Tabla 0.55: Degradación flujo corregido turbina 1 2% (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
1.30691782	-3.34068641	2.81816897	-0.29192938	2.82018153	-1.78287552	0.0447027	-1.1441061	-2.39896228	-0.26392184	0.14319453	1.84907513	1.34128702	-1.0731017	0.85490289	-0.70939058	-0.08671622	-2.83862917	0.43340144	-0.10074711	-1.46609409	-0.54589779	-0.18240796	-1.68776757	-0.42752109
-0.83407428	2.04849104	-1.77725015	0.18649048	-1.74168532	1.07961031	-0.01271273	0.72522067	1.47763576	0.16008405	-0.1018344	-1.12379068	-0.85291779	0.6775985	-0.49748257	0.42868268	0.03386814	1.75946326	-0.27864962	0.05630417	0.68935432	0.35473678	0.10094284	1.04961245	0.25445594
0.04263867	-0.10836346	0.09178249	-0.00960005	0.09134011	-0.05753684	0.00163988	-0.03727022	-0.07801561	-0.00857929	0.00491211	0.06030745	0.0435639	-0.03467633	0.02751169	-0.02293569	-0.00268437	-0.0928472	0.01414966	-0.00323621	-0.04736318	-0.01817097	-0.00566888	-0.05491551	-0.0140706
-0.01230709	0.11719408	-0.08259238	0.00684041	-0.10094578	0.09668528	0.00384216	0.01725862	0.0739959	0.00233837	0.01720115	-0.05377611	-0.02392026	0.02547629	-0.03639824	0.02878276	0.01891542	0.09089476	-0.00103293	0.01850295	0.08299433	-0.0123317	0.03323918	0.02519956	0.0026527
-0.00774242	-0.25122403	0.17373734	0.00312892	0.1788879	-0.18013803	0.00509284	-0.00905485	-0.13660186	-0.00953948	-0.04671116	0.13394444	0.03702863	-0.02619379	0.09486645	-0.06193028	-0.05045112	-0.18135673	-0.01276076	-0.04216386	-0.17195615	0.08099281	-0.05962762	-0.05316436	-0.03543073
-0.00186588	0.01685297	-0.01174116	0.00086097	-0.01457392	0.01373567	0.0006177	0.00255889	0.01053951	0.00040113	0.00240632	-0.00758021	-0.00358774	0.00386163	-0.00532392	0.00415661	0.00267763	-0.00019736	0.00019736	0.00255289	0.01172875	-0.0018057	0.00471891	0.00382882	0.00093559
-0.22283016	-1.08144406	0.82725102	0.17987112	0.59023312	-0.55475187	0.20473201	0.11504829	-0.47749903	-0.11262009	-0.23335387	0.81284347	-0.04347632	0.0374643	0.52697505	-0.34950065	-0.29537164	-0.79434782	-0.05627424	-0.21867844	-0.66430343	0.07953179	-0.22312601	-0.25815925	-0.36144733
-0.12510397	0.05436991	-0.07767392	0.04536659	-0.08678897	0.02821466	0.01941578	0.07872806	0.0949011	-0.0115384	-0.04444593	-0.017203	-0.09375026	0.06668896	0.00828036	-0.0085857	-0.03659975	0.06006872	-0.04252263	-0.02835901	0.00789211	0.04678151	-0.04682729	0.07536194	-0.02976239
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0136333	-0.10318057	0.05502239	-0.02298258	0.08140321	-0.09144173	-0.01977527	0.03315158	-0.07723334	-0.00943894	-0.01875068	0.02523975	0.02165716	-0.04215304	0.011170819	-0.03190314	-0.01810235	-0.06678238	-0.00485168	-0.02114438	-0.07360861	-0.00411523	-0.03589887	-0.03515327	-0.00265275
-0.00977422	-0.02847576	0.020946	0.00592066	0.01360387	-0.01528805	0.00611809	0.00620438	-0.01113268	-0.00267359	-0.00826255	0.0225493	-0.0040589	0.00347331	0.01540957	-0.00973134	-0.00966223	-0.01939897	-0.0032105	-0.00696467	-0.01942121	0.00435189	-0.00660657	-0.00449413	-0.01042602
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.02034603	0.0558823	-0.0413275	-0.00730255	-0.02486947	0.02592828	-0.0129017	0.01040873	0.02698433	0.00518132	0.01660551	-0.04678444	0.00937636	-0.00411126	-0.02759453	0.02189781	0.01732914	0.04451282	0.00959447	0.01491979	0.03488356	-0.00279935	0.01426862	0.01517685	0.02406348
1.43811503	1.44282388	1.42188854	1.43134728	1.42654928	1.43495293	1.42734917	1.43027971	1.43853893	1.43086723	1.43458411	1.42056663	1.43648087	1.431131	1.42570269	1.43678588	1.43440991	1.44064817	1.43996638	1.43563446	1.43693536	1.43102187	1.43441331	1.43429822	1.43823905
-0.99701906	-3.82980397	3.04995729	0.76766166	1.85211328	-1.71937902	0.92039051	0.57748819	-1.59710251	-0.42736244	-0.87570448	3.16034081	-0.33984299	0.36197414	2.02720786	-1.24838935	-1.11407187	-2.83237986	-0.24227574	-0.777219106	-2.29431481	0.24976685	-0.68254279	-0.9389733	-1.56917823
-0.80131129	-3.06706785	2.4406328	0.61758709	1.48770245	-1.38461078	0.79814673	0.46353754	-1.28046681	-0.34065187	-0.70588531	2.53015799	-0.27931474	0.28766655	1.62390846	-1.00308968	-0.89391914	-2.76916088	-0.19359827	-0.62278053	-1.84223275	0.2045709	-0.55474197	-0.74687983	-1.25124803
-1.06624007	-4.09954017	3.26197733	0.81995061	1.98171256	-1.84312507	0.98445301	0.61773475	-1.71067818	-0.45809505	-0.93980709	3.38042542	-0.3615288	0.3859808	2.16884024	-1.33502945	-1.19128995	-3.02926065	-0.26051423	-0.82779369	-2.45760203	0.26763968	-0.73171589	-1.00631588	-1.67752182

Tabla 0.56: Degradación eficiencia turbina 1 2% (II)

1.43811503	1.44282388	1.42188854	1.43134728	1.42654928	1.43495293	1.42734917	1.43027971	1.43853893	1.43086723	1.43458411	1.42056663	1.43648087	1.431131	1.42570269	1.43678588	1.43440991	1.44064817	1.43996638	1.43563446	1.43693536	1.43102187	1.43441331	1.43429822	1.43823905
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	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	0.94728707	1.97180496	-0.26440392	0.82631864	-0.48785416	0.30082364	2.10568739	0.55680869	-0.98670003	0.43383309	0.35042182	-1.56042104	-0.71665636	-0.64740331	-0.40958828	2.22786821	0.99252269	-0.29816556	-1.64624921	-0.92143359	-0.5471601	1.87869391	-0.41240304	-1.512195947	-1.70489708	
eff_fanorc	-0.64136073	-1.23047501	0.18959206	-0.54470323	0.33027072	-0.22513759	-3.20262623	-0.34817595	0.65457843	-0.6576156	-0.21480672	0.9844984	0.42874438	0.37206641	0.28116228	-1.40703393	-0.62000461	0.16191908	0.99945415	0.54837102	0.33032682	-1.15256428	0.23404453	0.95688955	1.03880005	
mc_fanorc	0.04572484	0.09370939	-0.01297021	0.03981586	-0.02386923	0.01480544	0.10011181	0.02621287	-0.04759423	0.02022465	0.01668656	-0.07443086	-0.03378991	-0.03057972	-0.01956146	0.10621312	0.04699751	-0.01374479	-0.07796996	-0.04303583	-0.02652017	0.08830031	-0.01920802	-0.0724524	-0.0802036	
pr_fanduct	0.00845274	-0.06952007	-0.01096191	0.00587877	-0.01051009	0.02237969	-0.09496996	-0.02684234	0.00245078	-0.02835873	-0.00852484	0.05207976	0.06853571	0.04719707	0.01062617	-0.06129418	-0.04625775	0.02313321	0.08455562	0.06456847	0.01073086	-0.10395057	0.04344485	0.0468865	0.07758471	
eff_fanduct	-0.00146096	-0.01403176	-0.0024816	0.00092325	-0.00208581	0.00429359	-0.01874648	-0.00543724	0.00056439	-0.00584331	-0.00174981	0.01042987	-0.13637056	-0.1086591	0.01507359	0.11120265	-0.10086752	0.05596776	-0.19309695	-0.14429025	-0.03331639	0.22192011	-0.09957797	0.10336109	-0.1789542	
mc_fanduct	0.04232001	-0.02930924	-0.01775954	-0.00526159	0.04399271	0.06097821	-0.07052637	0.04653006	0.03306084	0.02830798	-0.04536318	0.08589335	-0.03095046	0.1069913	-0.11047807	-0.03956223	-0.02910184	0.04407855	0.11791907	0.04427073	0.13660565	-0.0776674	0.05320451	0.00593495	0.11380234	
pr_compressor1	-0.18666714	-0.01697298	0.11120864	-0.13105403	0.03854586	-0.16652318	0.09786143	-0.02875407	0.1004446	0.01064658	0.04338283	-0.10580854	-0.10406575	-0.18118334	0.14380192	0.65839886	0.10341895	-0.05899658	-0.23801906	-0.17656673	-0.10612412	0.18980919	-0.1761995	-0.02528611	-0.1703111	
eff_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	0.00557335	0.02568194	-0.00120111	0.00338359	-0.00113912	-0.00244089	0.03017019	0.00878673	-0.00579544	0.01108766	0.00163742	-0.01717221	-0.02237641	-0.00782569	-0.00878451	0.02444823	0.0139241	-0.00746429	-0.0223657	-0.01712822	-0.00061958	0.03006836	-0.00982347	-0.0168428	-0.02229579	
eff_compressor2	0.04858093	-0.03049411	-0.02515194	0.03243615	-0.00832931	0.05484669	-0.06279601	0.00509099	-0.01895559	-0.01567357	-0.01442679	0.0483831	0.04993804	0.06712986	-0.03966689	-0.01467385	-0.03684399	0.03285922	0.0946788	0.06447014	0.04027904	-0.08225392	0.06384027	0.03029416	0.08228137	
pr_turbina1	-0.07866658	0.05770968	0.04039008	-0.04650863	-0.00047452	-0.09034656	0.11605796	-0.00674107	0.02088676	0.01644012	0.03188695	-0.10140533	-0.07418591	-0.12966942	0.07268616	0.03901764	0.07035469	-0.05812287	-0.17864689	-0.11497542	-0.09123321	0.14851998	-0.10741536	-0.06572969	-0.15623012	
eff_turbina1	4.19945445	4.6844664	4.62116513	4.31001426	4.48101934	4.15081463	4.89579298	4.44479661	4.5336575	4.54851219	4.59272048	4.11804466	4.2064726	4.02669194	4.74033869	4.63917195	4.72766657	4.26213154	3.84656998	4.07192282	4.15218322	5.00262641	4.08750189	4.24749791	3.92085185	
mc_turbina1	-1.12502538	0.8499008	0.57907392	-0.64028996	-0.01892855	-1.3290556	1.69499185	-0.16395242	0.31608137	0.28845921	0.45902129	-1.48310114	-1.09446516	-1.84013578	1.0119705	0.38193884	1.02743387	-0.86376036	-2.560808156	-1.63124275	-1.32027792	2.13512133	-1.5880751	-0.95512533	-2.27829713	
pr_turbina2	-0.98959664	0.74787577	0.50873676	-0.56719523	-0.01515072	-1.1680166	1.48734016	-0.14461543	0.2841916	0.25614522	0.39999002	-1.29373082	-0.96945686	-1.02980246	0.95971083	0.50835054	0.90044578	-0.76155208	-2.24042024	-1.63088587	-1.15683679	1.8713899	-1.37965082	0.83213327	-1.99478238	
eff_turbina2	-1.33799216	1.01663706	0.6870968	-0.7608795	-0.02230594	-1.58021456	2.0145389	-0.19376547	0.37608907	0.34269822	0.54432035	-1.7615001	-1.30334279	-2.18330802	1.30828927	0.69151042	1.22029281	-1.02614877	-3.04014697	-1.93850588	-1.56782989	2.53518958	-1.86407819	-1.13562661	-2.70715211	
mc_turbina2	4.19945445	4.6844664	4.62116513	4.31001426	4.48101934	4.15081463	4.89579298	4.44479661	4.5336575	4.54851219	4.59272048	4.11804466	4.2064726	4.02669194	4.74033869	4.63917195	4.72766657	4.26213154	3.84656998	4.07192282	4.15218322	5.00262641	4.08750189	4.24749791	3.92085185	

Tabla 0.57: Degradación eficiencia turbina 1 5% (I)

	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	-0.40678939	1.18202974	1.11897558	0.87406818	0.17260428	2.29489064	0.88467943	1.19144861	0.58295725	0.42410443	-1.23433908	0.22341444	0.62415127	2.48723188	1.56312377	2.0802091	1.31065791	3.47515737	2.31940568	0.27319832	0.75581001	0.74322216	-1.14448061	-0.16673568	-0.24795679
	0.24449841	-0.75054083	-0.68949771	-0.52362358	-0.09574902	-1.42548462	-0.55076659	-0.75263891	-0.34388108	-0.23347872	0.81395956	-0.10375269	-0.35336418	-1.60281723	-0.96688008	-1.32087456	-0.82181851	-2.16507155	-1.43142462	-0.16881666	-0.4758138	-0.47113103	0.70930441	0.08453906	0.13756693
	-0.01959399	0.05610968	0.05329361	0.0410818	0.0081301	0.10871376	0.04188253	0.0571337	0.02667504	0.01945187	-0.05979902	0.01072472	0.02938197	0.11867635	0.07451456	0.09920276	0.06214813	0.16557249	0.11047387	0.01272649	0.03582426	0.03583731	-0.05471675	-0.00774099	-0.01181346
	0.02473106	-0.03097009	-0.04965992	-0.05797838	-0.02317193	-0.09946477	-0.04270901	-0.02824152	-0.03368156	-0.04221208	-0.00476698	-0.0292803	-0.04517379	-0.06705919	-0.05554019	-0.08326636	-0.03618574	-0.11982659	-0.08841152	-0.00911519	-0.02737999	-0.00659357	0.035535466	0.01716996	0.01040913
	-0.04924988	0.0525876	0.11107169	0.12956098	0.05153699	0.08324581	0.02938219	0.07215934	0.06747897	0.11120662	0.02415437	0.08677311	0.11061935	0.10254249	0.11421653	0.16526345	0.0689452	0.23475508	0.19879888	0.00799403	0.04688985	0.02633512	-0.07922943	-0.0463086	-0.0365414
	0.00460785	-0.00640867	-0.00877133	-0.01151166	-0.0044476	-0.02000999	-0.00851661	-0.00559408	-0.00659698	-0.00850846	-0.00089079	-0.00552304	-0.00892052	-0.0135438	-0.01100978	-0.0167261	-0.00756076	-0.02394041	-0.01759046	-0.00201618	-0.00560655	-0.00126045	0.0069959	0.003494995	0.00204016
	0.01689741	0.00467825	-0.09118386	-0.05500166	-0.01487129	-0.03802962	-0.00517018	-0.12522788	-0.02362348	-0.10134876	0.03398688	-0.13115479	-0.08910239	0.05158998	-0.105206	-0.00977646	-0.03656073	-0.11550365	-0.16094194	0.05956694	0.01512559	-0.10866379	0.09229549	0.01447429	0.10138082
	-0.05149685	-0.03177747	0.12911876	0.15582923	0.07786637	0.07247215	0.05465052	0.12546677	0.08641525	0.22451778	0.14738919	0.23779716	0.15216235	-0.14912886	0.10485527	0.03711063	-0.02448407	0.04085122	0.18188871	-0.10130909	-0.00295669	0.03514806	-0.01740439	-0.0842289	-0.13237207
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.00542413	0.01393675	0.01588879	0.01349473	0.0046693	0.03343348	0.01065138	0.00537535	0.00761014	0.00634213	-0.00430513	-5.1979E-05	0.01105117	0.03115723	0.0168551	0.0993495	0.01532636	0.04123472	0.02391749	0.00454128	0.00931004	0.00119507	-0.0139522	-0.00263265	0.00066653
	0.02181067	-0.00540488	-0.05594882	-0.05866123	-0.0260073	-0.05874441	-0.02202424	-0.03915473	-0.02671025	-0.07078897	-0.03106699	-0.07285027	-0.06402276	0.02090908	-0.04469722	-0.03802932	-0.01027472	-0.07096343	-0.08120468	0.02011698	-0.00507561	-0.01656293	0.03839839	0.03412299	0.04711456
	-0.03847487	0.01302146	0.10478803	0.10221377	0.04295748	0.10487007	0.04219624	0.09557251	0.05180279	0.1256832	0.02929072	0.13897242	0.11151171	-0.02524224	0.1019707	0.06926536	0.02899899	0.14700895	0.1676394	-0.04277902	0.01290997	0.04817865	-0.07631037	-0.05969403	-0.09286671
	4.3431738	4.53169319	4.86331489	4.8399702	4.63262221	4.84940551	4.61535468	4.80707205	4.65678955	4.92290257	4.58982881	4.96607598	4.88210048	4.38848927	4.8380771	4.72971148	4.57897911	4.99799051	5.06166673	4.32302467	4.51727835	4.64574692	4.19972602	4.26454933	4.14693562
	-0.5564049	0.21650077	1.57448822	1.47644528	0.61993588	1.52211511	0.56097026	1.35044566	0.7222779	1.82440608	0.47844303	1.98856614	1.63463761	-0.3650726	1.48039598	1.01094424	0.42957067	2.09638531	2.40994342	-0.65004005	0.1597455	0.683846	-1.13332465	-0.86027885	-1.34785429
	-0.48809134	0.1887281	1.37858502	1.29501759	0.54667624	1.33268993	0.49234886	1.1768477	0.63630972	1.59928177	0.42763052	1.74256993	1.43252307	-0.3226931	1.29688823	0.88445488	0.37587038	1.83462476	2.10488812	-0.57070198	0.14007011	0.59122721	-0.99282571	-0.75478465	-1.18140639
	-0.66332142	0.25755699	1.86878381	1.75492833	0.73740204	1.80807533	0.66731247	1.60861711	0.85910055	2.16696654	0.56761488	2.36178424	1.94123299	-0.43275904	1.7577488	1.20245934	0.50928966	2.48992119	2.86079554	-0.77136507	0.18883602	0.81105847	-1.34630135	-1.02326117	-1.6010486

Tabla 0.58: Degradación flujo corregido turbina 1 5% (II)

4.3431738	4.53169319	4.86331489	4.8399702	4.63262221	4.84940551	4.61535468	4.80707205	4.65678955	4.92290257	4.58982881	4.96607598	4.88210048	4.38848927	4.8380771	4.72971148	4.57897911	4.99799051	5.06166673	4.32302467	4.51727835	4.64574692	4.19972602	4.26454933	4.14693562
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Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
pr_fanorc	0.1467071	-0.04473505	-0.0644766	0.09867566	0.0378869	0.0491377	0.01751057	-0.03087619	0.01875229	-0.08782262	-0.22523298	0.045561	0.04236743	-0.09935558	-0.03687213	0.022210693	0.1609851	-0.0765697	-0.06994242	-0.02132359	0.1174086	-0.09939577	0.1116754	0.05710449	0.01578553	
eff_fanorc	-0.06398526	0.01444214	0.05482673	0.11408359	-0.15030548	0.04914071	-0.14956576	-0.07841319	-0.17420468	-0.04306786	-0.0044291	-0.07791914	-0.14226782	-0.06865759	-0.10241283	-0.05346757	0.1878153	-0.14745356	0.09376333	0.20771447	0.23020779	-0.01222068	0.03203466	0.03828956	-0.06385243	
mc_fanorc	0.00021326	0.00025044	-0.0022711	-0.01173072	0.01189366	-0.00477938	0.00986131	0.00549958	0.01333008	0.00555	0.00576368	0.00261662	0.00975737	0.00677857	0.00816999	0.00344093	-0.01666579	0.01190155	-0.00312476	-0.01575681	-0.01921546	0.00429518	-0.0040592	-0.0040825	0.00640428	
pr_fanduct	0.19366807	-0.05512027	-0.2096471	-0.48870636	0.74367963	-0.1747239	0.51289896	0.24087886	0.73204199	0.19252781	0.08936676	0.16750182	0.57223274	0.23158916	0.41185689	0.15869075	-0.73892288	0.513880193	-0.1935287	-0.96682191	-0.88473446	0.09983158	-0.02086929	-0.12859247	0.34795158	
eff_fanduct	-0.36871627	0.10923078	0.37610008	0.88749375	-1.3534782	0.3160578	-0.93036691	-0.44891925	1.33254222	-0.34811184	0.15326609	-0.31766468	1.08838694	-0.41158172	-0.76569342	-0.28349406	1.33605498	-0.94590559	0.35138607	1.76365588	1.60260616	0.19536255	0.04091489	0.233534	-0.63250069	
mc_fanduct	-0.02717852	0.00819992	0.029667	0.06864216	-0.10716951	0.02336641	-0.07122657	-0.03345051	-0.10337926	-0.02762621	-0.01322858	-0.02232548	-0.08082131	-0.03264483	-0.0590799	-0.0213312	0.10591386	-0.07180876	0.02493906	0.13968828	0.12521269	-0.01417921	0.00115237	0.01748453	-0.04905648	
pr_compressor1	0.04593468	-0.028976	0.0188925	0.18002708	0.15147746	0.06484296	-0.09503336	-0.05361369	-0.1737031	-0.0955691	-0.13264646	-0.00830287	-0.0916117	-0.07093337	-0.11963486	-0.01859006	0.2056695	-0.16245357	-0.01479122	0.17733703	0.25256374	-0.08023705	0.08121877	0.0347362	-0.07980147	
eff_compressor1	0.3590054	0.37395195	-0.4002731	-2.15628293	2.33125604	-0.77654681	1.93362954	1.19354092	2.75266499	0.95075279	0.95503264	0.99453945	1.70654452	0.80072407	2.05347124	0.28283444	-2.95196053	2.57155599	-0.64977181	-3.02878578	-3.68831973	0.65733305	-0.91154488	-0.44157864	0.86789947	
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	0.95121916	2.29851709	-1.19928454	-10.0252885	9.62890726	-3.51099562	8.18447572	5.39578167	12.1217659	4.41178004	4.9716462	4.56070723	6.7951495	3.1915476	9.51123559	0.75813489	-12.6508253	11.8054299	-2.4997299	-12.3615242	-16.3195359	3.174487	-5.01291133	-1.88093904	3.41411604	
eff_compressor2	-0.6546523	-1.5474658	0.83400177	6.89113871	-6.61658117	2.42315157	-5.64127749	-3.70632594	-8.33246844	-3.03826693	-3.41510399	-3.11984894	-4.68529438	-2.2013761	-6.51552319	-0.54068319	8.7485827	-8.10803511	1.7207948	8.5164036	11.217738	-2.18510013	3.42600767	1.32067516	-2.3864755	
mc_compressor2	0.29393003	-0.57186292	-0.32495069	-2.6717138	2.57866028	-0.90698323	2.16166954	1.41623614	3.20897351	1.49181826	1.2541766	1.21923131	1.79415262	0.81687208	2.51589205	0.19486063	-3.31572602	3.10072147	-0.65381787	-3.31319732	-4.27767021	0.81339709	-1.28149279	-0.4897626	0.92554869	
pr_turbina1	-0.00098588	-0.02289865	-0.00016175	0.01125507	-0.03262446	0.01518791	-0.02586651	-0.02332245	-0.1045618	-0.00865457	-0.01055229	-0.0228146	-0.00831136	-0.04637836	0.01937071	0.02748074	-0.03319229	-0.00085995	0.03681622	0.04042232	0.00600143	0.00547878	0.00586693	-0.00783501		
eff_turbina1	-0.00738839	0.01348433	0.00253976	0.00116588	0.00874936	-0.01236001	0.00987702	0.0160665	0.00669344	0.00600565	0.01001419	0.00228802	0.00500054	0.00080656	0.0149247	-0.01449816	-0.0126076	0.001811398	0.00055969	-0.0027921	-0.00401401	-0.00402128	-0.00411043	0.00564728		
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_turbina2	-0.0176598	-0.0377197	0.00699474	0.01558751	-0.03738888	-0.00159613	-0.02367205	-0.01406618	-0.02668672	-0.00172994	-0.00021636	-0.01525846	-0.02292756	-0.00359129	-0.03847433	0.00292064	0.02552968	-0.01816717	-0.00249392	0.04793035	0.04857932	-0.01215798	-0.00141292	0.00472099	-0.00637856	
eff_turbina2	-0.97603789	-1.02418506	-1.03618917	-1.06370565	-0.90995596	-1.02487337	-0.95176164	-0.97963368	-0.91786354	-0.98480714	-1.0067695	-0.98702767	-0.93671619	-0.98407087	-0.96330072	-0.99076466	-1.08659081	-0.95300176	-1.02239443	-1.13115595	-1.09849157	-0.98720803	-0.99586697	-1.01559965	-0.9624241	
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Tabla 0.59: Degradación eficiencia turbina 2 -1% (I)

Acierto	-0.97603789	-1.02418506	-1.03618917	-1.06370565	-0.90995596	-1.02487337	-0.95176164	-0.97963368	-0.91786354	-0.98480714	-1.0067695	-0.98702767	-0.93671619	-0.98407087	-0.96330072	-0.99076466	-1.08659081	-0.95300176	-1.02239443	-1.13115595	-1.09849157	-0.98720803	-0.99586697	-1.01559965	-0.9624241
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caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
0.15207822	0.00018466	0.02261336	0.13982282	-0.01339177	0.00180096	0.00601231	-0.04007174	0.03018072	0.02698004	-0.0409105	0.06789027	-0.10929264	0.114528	0.028832	-0.09342335	-0.13273799	0.07323971	-0.07852524	0.00684083	-0.10717419	-0.05490631	0.0758152	-0.00977272	0.04329533
-0.14055341	-0.08970949	-0.04818718	0.08661027	0.25440027	0.22817473	-0.01051638	-0.0702769	0.00866383	-0.03381582	-0.1606797	-0.09259828	0.08612082	0.1770371	0.03502437	-0.20721441	-0.13860965	0.01472942	0.04959875	-0.02308149	0.13323477	-0.28952322	0.00694827	0.06108637	-0.04482113
0.00518763	0.00587291	0.00112891	-0.01066083	-0.01899629	-0.01642203	-0.00080922	0.00624259	0.00167846	0.00178595	0.01259921	0.00433316	-0.00271204	-0.015136	-0.00255768	0.01723806	0.01313931	-0.00198612	-0.00204978	0.00092005	-0.0067901	0.02258214	-0.00137508	-0.00345501	0.00319147
0.448978	0.33689455	0.10132354	-0.45588095	-1.01357689	-0.83350186	-0.0320106	0.3115634	-0.11189362	0.15853179	0.5835808	0.34463704	-0.27202694	-0.65367782	-0.15286151	0.80680066	0.51416489	-0.05764695	-0.21575026	0.02668808	-0.41586564	1.19624983	0.09477921	-0.16958643	0.20466866
-0.81701681	-0.61476551	-0.19537533	0.79790434	1.8423698	1.51585379	0.04675384	0.56113584	0.1893876	-0.29317364	-1.06914082	-0.64403657	0.49778706	1.17539393	0.28230496	-1.46569404	-0.93562218	0.10644328	0.3971164	-0.05338472	0.7580067	2.17584128	-0.17273922	0.32893012	0.37355059
-0.06245739	-0.04818957	-0.01452494	0.06318941	0.14274469	0.11636094	0.00460538	-0.04493004	0.01766367	-0.02344202	-0.08119591	-0.048655	0.03783909	0.09182564	0.0232072	-0.11414425	-0.07198438	0.00935802	0.03073142	-0.00297459	0.05642925	-0.17095338	-0.01606614	0.02303535	-0.02389175
-0.02300332	-0.05133322	-0.01797413	0.1945516	0.20709273	0.20598923	0.05002951	-0.10238332	0.02030513	-0.04041337	-0.14224368	-0.0455953	0.01492337	0.18809417	-1.28131-05	-0.21059616	-0.16565819	0.03750504	0.0078011	0.00155576	0.0579946	-0.28076271	0.01250353	0.05126333	-0.02010874
1.38189229	1.05609251	0.73854703	-2.39146262	-3.14547232	-3.33406466	-0.2179128	1.60182538	0.11079509	0.85204982	2.31603503	1.9899022	-0.87631842	-2.62623929	-0.25762017	3.25449078	2.26691559	-0.88831461	-0.52267726	0.01906788	-1.4686121	4.27653652	-0.22848215	-1.18742604	0.28694643
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.33788307	4.12077164	3.51413106	-11.4307768	-12.8273777	-14.5736817	-1.33247004	7.43444688	1.13855405	3.97806669	10.0624568	6.16481287	-3.53470855	-11.4578124	-0.44982507	14.2561183	10.072148	-3.54993657	-1.8124212	-0.09052112	-6.27335636	18.0746525	-1.44167024	-5.88293602	0.63369716
-3.67808462	-2.84736877	-2.39036377	7.83530877	8.87159034	10.0249782	0.90664548	-5.08733097	-0.75730856	-2.71871245	-6.92609306	-4.22801802	2.43367751	7.89817108	0.32580149	-9.799761	-6.92588828	2.41680467	1.24806938	0.0534348	4.3139352	-12.4382618	0.99200255	4.00802156	-0.46163605
1.44789	1.10483857	0.93882942	-3.00944902	-3.4065522	-3.83565034	-0.34741061	1.96074698	0.2890238	1.07932226	2.63129388	1.66807164	-0.97164457	-2.99359335	-0.12753874	3.72324218	2.60553671	-0.93830971	-0.49400361	-0.03475762	-1.65476962	4.77229306	-0.33248001	-1.54885133	0.17430169
-0.01797131	-0.00048819	-0.01390432	0.03759586	0.02097425	0.03802149	-0.00049035	-0.02896667	-0.02132621	-0.0246432	-0.02995454	-0.03056574	0.01189098	0.0315311	0.00421971	-0.05105755	-0.02093326	0.01789455	0.00644305	0.00047164	0.02889409	-0.04143317	0.00298865	0.02444558	0.01348822
0.00526042	-0.00967506	0.00465323	-0.0130419	-0.00531434	-0.00928809	0.00236034	0.00980211	0.01447134	0.00463407	0.00799387	0.00786634	-0.0366974	-0.02524271	-0.00316133	0.01909165	0.00636185	-0.01117256	0.00207012	-3.0529E-05	-0.01567693	0.00493992	-0.00697779	-0.00162448	-0.01416651
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0.01835151	-0.01917141	-0.01057956	0.03012603	0.0265305	0.038139	-0.00321589	-0.002297099	-0.00456829	-0.0276744	-0.02698962	-0.0283921	-0.00935002	0.00937503	0.00619728	-0.03631246	-0.01390954	0.0058503	0.01289581	-0.0037847	0.01409057	-0.05293353	-0.01194952	0.02115907	-0.00941696
-0.94961641	-0.96297541	-0.98910266	-1.05166217	-1.12936857	-1.09887166	-1.00741931	-0.97470292	-1.02770481	-0.98873093	-0.94102961	-0.95841159	-1.04078979	-1.07442641	-1.02734484	-0.91761966	-0.95376785	-1.00824778	-1.03522206	-1.00433276	-1.0466706	-0.86162384	-0.98328693	-1.02254765	-0.97980896

Tabla 0.60: Degradación eficiencia turbina 2 -1% (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
pr_fanorc	0.0260427	0.17299129	0.0662825	-0.0725742	-0.0599686	0.1625405	0.0608433	-0.02006474	0.1630943	-0.2060262	-0.05766387	-0.1143919	-0.14897364	0.25134042	-0.0422887	0.11852135	-0.12439163	0.13210051	-0.12048358	0.04063871	-0.0027015	-0.05120412	0.11640461	-0.09561179	0.00086267	
eff_fanorc	0.1275179	0.07724995	0.22075758	0.1061254	-0.10715829	-0.16594748	0.0231548	-0.15569925	-0.0028486	-0.06296464	0.17134113	-0.02961453	-0.21364473	0.25631251	0.10895952	-0.07946876	-0.20125762	0.01625665	-0.04476108	0.03607034	0.00350981	-0.1605992	-0.0193882	0.04867844	-0.02671235	
mc_fanorc	-0.00911275	-0.01087061	-0.01568111	-0.00503291	0.00908699	0.00714672	-0.00428734	0.01081103	-0.0034268	0.01024334	-0.010549195	0.00402616	0.0197586	-0.02760957	-0.01102582	0.00388059	0.01735114	-0.00534681	0.00582603	-0.00539304	-0.00052032	0.0131834	3.7461E-05	-0.0024739	0.00208155	
pr_fanduct	-0.40713975	-0.3843253	-0.74469561	-0.40203278	0.39069841	0.4908876	-0.12725008	0.52545085	-0.009483	0.28883045	-0.6073961	0.03084017	0.94047945	-1.16878044	-0.39252968	0.36535831	0.72026847	0.1293195	-0.21454251	-0.03785205	0.07262556	0.64874461	0.15522464	-0.22529089	0.10784829	
eff_fanduct	0.72269612	0.68177559	1.35377866	0.72856376	-0.70583147	-0.89116608	0.23295318	-0.9613956	0.01866466	-0.51651506	1.10422236	-0.04289255	-1.71719335	2.11538888	0.72151907	-0.66800085	-1.31901751	0.16014369	-0.25006348	0.39274895	0.07262556	-1.16382939	-0.27451876	0.40578883	-0.19766821	
mc_fanduct	0.0546772	0.0551679	0.10451509	0.05781732	-0.05468204	-0.06608992	0.01744775	-0.07309813	0.00229685	-0.0405505	0.08389908	-0.00285767	-0.13499147	0.16577922	0.05351864	-0.05204919	-0.10017003	0.01997034	-0.01736878	0.03001857	0.00547782	-0.09115111	-0.02228709	0.03126795	-0.01514057	
pr_compressor1	0.08010759	0.15579307	0.1724149	0.01267915	-0.11855798	-0.02484612	0.0745029	-0.11708469	0.09193898	-0.1627819	0.10865277	-0.0679525	-0.27523158	0.43123462	0.1587054	-0.02575542	-0.24099154	0.11118035	-0.09110123	0.11154597	-0.00088303	-0.16398344	0.02293889	0.02723876	-0.0436765	
eff_compressor1	-1.29911336	-1.4077276	-2.64938534	-0.94587141	1.53959218	1.19593447	-0.80517597	1.97599999	-0.94675621	1.72042588	-2.1052448	0.61384715	3.63705247	-4.98406791	-1.86689937	0.6569612	3.28473752	-1.1144972	1.18523691	-1.14484479	-0.00594141	2.21682101	-0.42939717	-0.60176683	0.70597906	
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-5.12632038	-6.03910026	-11.1005345	-3.26795716	6.75160724	4.30277372	-3.94520733	8.30470715	-5.21007199	8.21459924	-8.7679699	3.2680772	15.788624	-22.7669473	-8.63331077	2.11254972	14.9316152	-5.6597428	5.98193935	-5.7726255	0.09711677	9.310213353	-2.87501721	-2.43632789	3.48015402	
eff_compressor2	3.5726749	4.18476185	7.65978692	2.26787603	-4.6524047	-2.98846787	2.7111898	-5.73289979	3.5530455	-5.65224436	6.0563611	-2.28887239	-10.8771161	15.6742007	5.9505447	-1.48123069	-10.2667952	3.88286657	-4.09972942	3.93093697	-0.05418441	1.93035417	-6.42677504	1.6976574	-2.38563346	
mc_compressor2	-1.33377996	-1.54939667	-2.90410389	-0.8993438	1.76285069	1.13901423	-1.0289409	2.16854546	-1.34762664	2.11666093	-2.33688442	0.79406163	4.1500818	-5.96679874	-2.23014435	0.60228993	3.88680136	-1.4739135	1.54106617	-1.50321896	0.01023545	2.44432832	-0.70798913	-0.68456147	0.931131048	
pr_turbina1	0.00891341	-0.01649195	0.0134482	0.01794269	-0.01335253	-0.00578388	0.02126189	-0.02084486	0.0319579	-0.01411188	0.01823889	0.00210246	-0.03491553	0.05680291	0.01868905	-0.01245199	-0.03260622	0.02212973	-0.01751371	0.01954981	-0.00925713	-0.02116504	0.01502311	0.0209994	-0.0197173	
eff_turbina1	-0.00997819	-0.01084225	0.0081003	-0.00476351	-0.00040419	-0.00454893	-0.00413077	0.00554335	-0.01374691	0.00331429	-0.0025926	0.00278296	0.00079218	-0.00180201	-0.00703343	0.00269023	0.00373475	-0.01047213	-0.01101504	0.00884183	0.00272948	-0.01372536	-0.01115292	0.00024144		
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_turbina2	0.0016524	0.00565494	0.02561954	0.02004577	-0.0179569	-0.0104253	0.01258922	-0.02086669	0.00926577	-0.01263452	0.02509921	0.01301548	-0.0463773	0.04517013	0.01315061	-0.01297447	-0.03136717	0.0101192	-0.00953275	0.00835141	0.0022431	-0.02444864	-0.00377265	0.01857563	-0.013362	
eff_turbina2	-0.03849224	-0.03853664	-4.08231496	-4.04600134	-3.959103	-3.94112302	-4.002296	-3.93265019	-3.98965914	-3.97431245	-4.06450379	-4.00224097	-3.88336767	-4.1179607	-0.03354208	-3.94464818	-3.91824699	-4.00996974	-3.98825997	-4.01636198	-4.00847249	-3.92314533	-3.96881109	-4.0176001	-3.98659941	
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Tabla 0.61: Degradación eficiencia turbina 2 -4% (I)

Acerto	-4.03849224	-4.03853664	-4.08231496	-4.04600134	-3.959103	-3.94112302	-4.002296	-3.93265019	-3.98965914	-3.97431245	-4.06450379	-4.00224097	-3.88336767	-4.1179607	-0.03354208	-3.94464818	-3.91824699	-4.00996974	-3.98825997	-4.01636198	-4.00847249	-3.92314533	-3.96881109	-4.0176001	-3.98659941
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caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-0.10735109	0.07175423	0.13199935	-0.02160993	-0.09471627	-0.00958023	-0.0204467	-0.08767925	0.01498053	-0.08113624	-0.06262116	-0.02490347	-0.09115314	0.19327692	0.07341263	0.02690466	0.09161913	-0.14643295	0.03607051	0.0885755	0.06870456	0.06484653	-0.04944322	-0.09500255	-0.09323431
0.03731993	0.06621533	0.04503433	-0.02971368	-0.10464464	-0.1197958	-0.03793198	0.205675	-0.00120996	-0.06937636	0.01196906	0.04660437	0.06339864	0.07045696	0.00108588	0.0233928	0.13194983	-0.01827982	0.00015491	-0.01177098	-0.03878044	0.05733647	-0.22313941	-0.00929693	-0.08714977
-0.00066538	-0.00625726	-0.00727783	0.00281794	0.00974732	0.00853056	0.00385001	-0.01201809	0.00120501	0.00768435	-0.00010407	-0.00254688	-0.00208225	-0.0024273	-0.00152541	-0.0033995	-0.01118613	0.00532908	-0.00046567	-0.00055022	0.00108736	-0.00655997	0.01584801	0.00384696	0.00931137
-0.15215166	-0.28378505	-0.21829946	0.0391767	0.0779064	0.40928338	0.21743349	-0.74955581	0.08229969	0.3063703	-0.03655575	-0.15812368	-0.20094527	-0.20584534	-0.16476575	-0.58294221	0.1234515	0.02199001	0.0741007	0.15900188	-0.25783803	0.79932842	0.08331483	0.41375018	
0.28705543	0.51754887	0.40111818	-0.19357871	0.73247153	-0.75339838	0.39920376	<b>1.36817427</b>	-0.14820462	0.54389246	0.03972208	0.28770813	0.37693621	0.38514969	0.04234294	0.30264515	<b>1.05246247</b>	-0.21800726	-0.03786298	-0.13052841	-0.23917251	0.46762088	-1.45456964	-0.15852466	-0.14287158
0.02087983	0.04152044	0.03093172	-0.01338652	-0.0576554	-0.05642016	-0.03121517	0.10543175	-0.01200438	-0.04237045	0.00965359	0.02194367	0.02764079	0.02720368	0.00482501	0.02400668	0.08350769	-0.01830372	-0.00303928	-0.01014927	-0.02274821	0.03605779	-0.11320971	-0.01187083	-0.05961751
-0.00323859	0.12001755	0.1293613	-0.03814869	-0.1153661	-0.08742096	-0.05960833	0.11502477	-0.01662795	-0.12601122	-0.02662646	0.01654616	0.03302105	0.13276609	0.03275416	0.08730981	0.14754758	-0.07232683	0.01955023	0.03441547	0.01880312	0.09019469	-0.18071835	-0.09346675	-0.13151794
-0.46715185	-1.68845778	-1.41654793	0.40487805	1.53407059	1.60744553	0.7110062	-2.30955119	-0.15584084	<b>1.47181912</b>	0.35584093	-0.39516326	-1.00118798	-1.47401724	-0.32323237	-0.73843828	-1.56399629	0.58181928	-0.32306698	-0.25674403	0.22234894	-1.08396943	2.66958753	0.97382546	1.59905117
-2.02267156	-8.07655679	-6.87422296	1.91775546	6.61848152	6.90332838	3.0251671	-9.22435419	-1.14062618	6.9546481	2.13148923	-1.34868924	-4.57682308	-7.33524178	-1.5917764	-3.57288574	-5.99111562	2.60562689	-1.76096728	-1.58683439	0.41700445	-4.87997511	10.9733536	5.10015735	7.00824936
1.39626249	5.53305495	4.70940946	-1.32742351	-4.56984803	-4.76689131	-2.09271662	6.37677901	0.75613843	-4.77332031	-1.42959626	0.93776823	3.14065608	5.03386076	1.09200397	2.4530994	4.176065	-1.80349758	1.20223063	1.06902051	-0.3091584	3.36181959	-7.598717	-3.48327832	-4.83363311
-0.57782196	-2.13696128	-1.7661519	0.50114507	1.73050473	1.81678843	0.81257622	-2.46546808	-0.29801732	1.81151122	0.549143	-0.35259224	-1.23409893	-1.88073211	-0.42054216	-0.94769473	-1.59089379	0.65391763	-0.45762539	-0.38565676	0.15158931	-1.26800248	2.90683941	1.32136928	1.83995967
0.00932797	0.04431671	0.01235797	-0.01083848	-0.00675361	-0.02278578	0.00086279	0.10338499	0.00075548	-0.00565999	-0.02293464	-0.00155533	0.02604883	0.00923891	0.0075098	0.00796658	0.00149316	0.00201118	0.01098197	0.00444197	-0.00065689	0.05943184	-0.03040169	-0.00899796	-0.01800532
-0.00515832	-0.03030375	-0.00082402	0.008806012	-0.00044271	0.00980042	-0.00493387	0.01247333	0.00513328	0.00293817	0.01585476	-0.00111842	-0.01117633	0.00092517	-0.00121765	0.00689016	0.00544089	-0.00077196	-0.01312483	-0.00474093	-0.00415364	0.00091007	0.01471084	-0.00319245	0.00551626
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00965229	0.01040706	0.01538666	0.00082266	-0.0114065	-0.01735751	-0.01113568	0.03339846	0.00422156	-0.00131093	-0.0029901	-0.00458945	0.02182779	0.00448365	0.00641106	0.01731796	0.0145716	0.00036399	-0.00216093	-0.00456805	-0.01471422	0.01033125	-0.02453183	-0.01684771	-0.02154986
-4.01504405	-4.02339239	-4.01381442	-3.98425889	-3.95524277	-3.95370038	-3.96417851	-4.08888518	-3.98312453	-3.96766143	-3.99949076	-4.01653094	-4.02058752	-4.01469306	-3.99476769	-4.02232352	-4.0726641	-3.99126678	-3.98976139	-3.98531197	-3.97491218	-4.02508514	-3.89970392	-3.9895612	-3.95301914

-4.01504405	-4.02339239	-4.01381442	-3.98425889	-3.95524277	-3.95370038	-3.96417851	-4.08888518	-3.98312453	-3.96766143	-3.99949076	-4.01653094	-4.02058752	-4.01469306	-3.99476769	-4.02232352	-4.0726641	-3.99126678	-3.98976139	-3.98531197	-3.97491218	-4.02508514	-3.89970392	-3.9895612	-3.95301914
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Tabla 0.62: Degradación eficiencia turbina 2 -4% (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25			
Degradación																												
pr_fanorc	0.10639112	-0.05836864	0.09260956	0.10802328	0.05242208	-0.0623882	0.0454163	0.29149781	0.05424952	0.01826777	-0.1347175	-0.08232352	-0.01919491	-0.05959423	-0.0599121	-0.0599121	-0.0599121	-0.0599121	-0.0599121	-0.0599121	-0.0599121	-0.0599121	-0.0599121	-0.0599121	-0.0599121	-0.0599121	-0.0599121	
eff_fanorc	0.01651514	-0.02830116	-0.00253516	-0.01674531	-0.01801533	0.02836672	0.004107	-0.09842893	-0.01172958	-0.00658562	0.0450691	0.06990792	0.02442429	0.04301983	-0.00523596	0.00727823	0.01838343	-0.02485348	-0.01411253	0.00845234	-0.00749758	0.00045328	-0.03562598	-0.00465735	0.02926165			
mc_fanorc	0.00274536	-0.011639	0.00122619	0.00467183	-0.00160078	-0.00032894	0.01617714	0.01247375	0.00721129	0.00320015	-0.01456975	-0.01474868	-0.00858104	-0.00373447	-5.1446E-05	-0.004174	-0.004997	-0.0001272	0.0076809	-0.0040541	0.00198008	-0.00804751	0.00988011	-0.00310471	-0.00725975			
pr_fanduct	0.15947577	-0.14626616	-0.05463001	-0.015916188	-0.19618693	0.03126549	-0.07038695	-0.34745292	-0.07846958	-0.01282976	0.14753442	0.03209298	-0.06959672	0.2263829	-0.08340788	0.03255035	0.00251799	-0.01016232	-0.02373031	0.0653456	0.07214826	-0.01805748	-0.04018987	-0.1305395	-0.0169805			
eff_fanduct	0.15207757	-0.21826964	0.15008637	0.28663225	0.04299956	-0.02308571	0.16727613	0.56373022	0.1937533	0.16123285	-0.65618159	-0.52486046	-0.12346242	-0.28829738	0.07252701	-0.14955819	-0.15912449	-0.04056654	0.19764609	-0.1427532	0.1425929	0.26550162	0.22996339	-0.01604486	-0.22701754			
mc_fanduct	-0.02201085	0.03072717	0.01420619	0.007115165	0.03306142	-0.00583711	0.00309643	0.03643275	0.00814493	0.00420797	-0.01616444	-0.02916398	0.01501061	-0.00074706	0.00456361	0.00572335	-0.00466075	-0.00686625	-0.00731872	0.0156171	-0.00415042	0.0226906	0.01206115					
pr_compresor1	0.1483987	0.3076597	-0.18768926	-0.32506206	0.21903611	0.03945293	0.08361454	0.93294045	0.05692169	-0.13258559	0.33288413	0.25930293	0.28134343	0.318762	-0.11021717	0.06844734	0.06298622	0.03189779	0.0539944	0.08912041	0.07277335	0.12713196	0.04347576	0.16229493	0.00484195			
eff_compresor1	-0.10783814	0.08858069	1.99127963	2.86261536	-0.10186461	0.04178206	-0.2649437	-0.16617792	0.31876666	1.52940324	0.26642497	0.18261758	0.08983447	0.35382106	1.53596017	0.14059539	0.08822914	0.09369497	-0.28359551	0.17844001	0.20852462	0.1195864	-0.41057729	0.01093003	0.06549728			
mc_compresor1	0	-0.0432087	0	0	0	-0.0232387	0	0	0	0	-0.04834418	-0.02221473	-0.05902081	-0.08523599	0	-0.01955226	-0.0115716	0	0	0	-0.03962398	0	-0.00859582	0	-0.01120417			
pr_compresor2	-0.02542051	-1.06650974	0.58435104	0.9313975	-0.03613047	-0.05994646	0.40377368	0.97891846	0.46587032	0.50389039	-1.08110401	-0.93706249	-0.54053272	0.34039463	-0.3212988	-0.3212988	-0.34255567	-0.08430162	0.55989393	-0.26681134	0.11796711	-0.40404146	0.79840171	-0.29249607	-0.45989174			
eff_compresor2	-1.07688772	0.75795026	-0.79147702	-1.04784571	1.13740976	-0.00510907	0.94092116	-2.36128744	1.0378167	-0.85134049	1.06292427	0.91658051	0.53157929	0.39112002	-0.60571136	0.10378526	0.13348865	0.12121053	0.8173272	0.05445493	-0.95143358	0.21479061	0.94446784	0.60794411	0.19782218			
mc_compresor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina1	-1.3725058	-0.07193065	-1.9274802	-2.42323225	2.1157696	0.01028333	2.31247232	-2.7433752	2.61030547	-1.75009497	0.07157379	0.06206019	0.01398688	0.06122867	-1.57936662	-0.0323461	-0.01126878	0.1262733	2.26026381	0.031682	-1.42312793	0.0365495	2.76516605	0.86250621	0.06530119			
eff_turbina1	0.41982667	-0.07389651	0.8330764	1.111236	-0.85306527	-0.01158102	-0.99346702	-0.66073387	-1.12234233	0.7725888	-0.02420731	-0.04247829	-0.08283077	-0.05015048	0.66884331	0.01804053	0.03158008	-0.02138948	-0.98752634	-0.00512086	0.4745885	0.06662847	-1.23784702	-0.33103031	0.03370553			
mc_turbina1	-0.76754011	0	-1.11808598	-1.43406232	1.64755717	0	1.7873078	-2.08628101	1.98899081	-1.03577775	0	0	0	0	-0.92489429	0	0	0.08888773	1.73122396	0	-0.80479851	0	2.12695916	0.68213725	0			
pr_turbina2	1.99272046	-3.94272637	1.87029188	3.85073355	0.60137787	-0.25096603	2.66609888	3.9155378	3.08526108	1.90674894	-5.15481	-4.62953386	-2.77530081	-2.64456915	0.40522065	-1.65686493	-1.79726611	-0.39086238	3.16532265	-1.66235831	1.66313067	-2.77174788	-4.05989734	-0.35151592	-2.51068377			
eff_turbina2	-6.36688395	-7.97553229	-6.42339951	-5.8921538	-6.82710177	-7.06372141	-6.14197028	-5.71843554	-6.0182266	-6.41923752	8.18275906	-8.10534679	-7.7304713	-7.71076167	-6.88492601	-7.47177693	-7.51531499	-7.128168	-5.99374402	-7.4708579	-6.48306819	-7.7728043	-5.69630917	-7.10410669	-7.70645121			
mc_turbina2	1.16871649	-2.4073289	1.0984971	2.25142796	0.37561537	-0.48316673	1.67472133	2.4670238	1.92289526	1.10462795	-3.16496317	-2.83822797	-1.69108792	-1.64117173	0.23187751	-1.017766196	-1.10731883	-0.26033421	1.97398567	-1.02944331	0.9742104	-1.72168866	2.53304165	-0.2076045	-1.56747409			

Acierto	-6.36688395	-7.97553229	-6.42339951	-5.8921538	-6.82710177	-7.06372141	-6.14197028	-5.71843554	-6.0182266	-6.41923752	8.18275906	-8.10534679	-7.7304713	-7.71076167	-6.88492601	-7.47177693	-7.51531499	-7.128168	-5.99374402	-7.4708579	-6.48306819	-7.7728043	-5.69630917	-7.10410669	-7.70645121
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Tabla 0.63: Degradación eficiencia turbina 2 -7% (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
0.00498755	-0.12401486	-0.02232961	0.35828292	-0.03701066	-0.04957851	0.07389331	0.2472833	0.0333444	0.1156492	0.00449547	0.01520579	-0.08691444	-0.03926915	0.0003371	-0.00010272	-0.0773532	0.02012581	-0.0423579	-0.03719556	-0.06931142	-0.00187805	-0.0750757	0.02973646	-0.04507752
0.0165789	0.07785364	9.5864E-05	-0.08625401	-0.11801365	-0.01174914	-0.00664013	-0.08264182	0.0163535	-0.02842572	-0.00746655	0.00788377	0.07282825	0.01992569	-0.00371789	-0.01445245	0.08395261	-0.01631513	0.01738707	-0.01255752	0.05564019	0.01576018	0.000770014	-0.02920902	0.02159795
-0.00199571	-0.01086048	0.0024331	0.0204182	-0.01530177	-0.00666627	0.00045421	0.01898057	0.00061914	0.000532821	-0.00032019	0.00017211	-0.01020494	-0.00330919	-0.0056558	-0.00370481	-0.000893948	0.00319879	8.7908E-06	0.00120009	-0.00985241	0.00317119	0.00073307	-0.00173572	-0.00758694
0.13279357	0.08568173	-0.02308741	-0.08388123	0.4258676	-0.16262619	0.11993323	-0.09932424	-0.00744321	0.02426562	-0.07603977	0.00148599	0.04121851	0.14234067	0.0395591	-0.0740069	0.16612029	0.07623656	-0.10446782	-0.13328506	0.07599732	-0.03669866	0.02285111	-0.18868453	-0.01061059
-0.09382701	-0.44327857	0.05621552	0.56580025	-0.74376935	-0.15966275	-0.03605346	0.5394091	0.183301	0.2170537	0.10663435	0.02937942	-0.34668227	-0.16766473	-0.08615277	-0.39024248	0.08856918	0.03118268	0.09153536	-0.35309779	0.18969778	0.01613931	0.1550933	-0.242823	0.0112409
-0.01999839	-0.00712071	0.00500814	-0.01204363	-0.05922322	0.03650271	-0.01529393	-0.01120712	0.00149248	0.00246458	0.01237453	0.00022289	-0.0031145	-0.01485946	0.00345314	0.01015387	-0.0204566	-0.01030929	0.01617425	0.02208058	-0.01087529	0.00679444	-0.00612163	0.0327092	0.0112409
0.09716733	0.25495463	-0.09151622	1.3602354	1.05338204	0.19364067	0.09779808	0.55436797	0.05718104	-0.28015648	-0.09020886	0.02058377	0.23185487	0.33168484	0.3035334	0.06475443	0.32711543	0.00535536	-0.09669925	-0.1961646	0.28302113	-0.14465899	0.02066378	-0.24267243	0.14473278
0.15177541	0.20474348	1.3914994	3.60128874	0.53008753	0.16400832	0.0775188	-0.24036923	0.20294643	2.54621266	1.36705226	0.58908369	0.15126621	0.29465368	0.21684623	0.04212364	0.27856034	0.76819136	1.32094537	2.19592513	0.19655748	1.67088359	0.04885744	2.52915558	0.10076022
-0.06368165	-0.04771081	0	0	-0.33685415	0	-0.03602167	0	0	0	0	0	-0.04122243	-0.09314385	-0.00610934	-0.0008395	-0.08006155	0	0	0	-0.05892763	0	-0.01358546	0	-0.02405
-0.23718496	-0.9803238	0.32156302	-0.26769001	-1.26407004	-0.48077709	-0.03040225	1.6540203	0.14762933	0.84141137	0.31658986	0.03954619	-0.87444382	-0.458675	-0.69147067	-0.23930879	-0.92616839	0.17577202	0.25708483	0.55013048	-0.98048046	0.5081146	-0.01820377	0.65168646	-0.4740799
-0.04837485	0.7946329	-0.68476719	1.30569057	0.62732081	0.53427809	-0.06072409	-2.28183812	-0.87701168	-1.00877154	-0.70213023	-0.72809235	0.68839981	0.27699252	0.42738888	0.11529306	0.65427199	-0.87587064	-0.55568982	-0.61723122	0.63829108	-0.82618657	-0.01335116	-0.61139114	0.2029267
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00423931	0.07381504	-1.5343244	-0.22976465	0.09094555	0.45727301	-0.00382206	2.19866987	-1.42505741	-2.22137042	-1.58848568	-1.24291211	0.02116791	0.02802983	-0.00022955	0.00161769	0.05957887	-1.4088667	-1.4111099	-1.79671323	0.02478509	-1.87797678	0.01452188	-1.99198546	0.05401393
-0.04001255	-0.03552403	0.68815183	-0.1109963	-0.04135294	-0.08710626	-0.02043644	-0.45191756	0.47111144	1.03342234	0.63997751	0.4895464	-0.02829167	-0.0759221	-0.05476158	0.03132734	-0.05027115	0.59975081	0.65639631	0.85444674	-0.0466343	0.81419699	-0.01626734	0.85157377	0.03771341
0	0	-0.91443867	0	0	0	0.3504909	0	-1.63730991	-0.81285171	-1.33283952	-0.90565061	-0.72060884	0	0	0	0	-0.83400031	-0.83730314	-1.06397644	0	-1.09914013	0	-1.15923603	0
-0.92048345	-4.10953033	0.68227381	5.0289018	-4.92893158	-1.87590817	-0.1362537	5.61489898	1.59502763	3.26740476	0.81972666	0.24855811	-3.54622392	-2.37008251	-2.67326643	-1.17935163	-3.61123834	1.18863077	-0.0238421	0.91004847	-3.23046337	2.13253145	0.08757918	1.44839367	-2.41734786
-7.24670817	-8.01362864	-6.79748063	-5.78695972	-6.12597385	-7.55963717	-7.03589026	-5.1821051	-6.49780988	-6.00424992	-6.74675835	-6.92042904	-7.91420529	-7.63176923	-7.71441046	-7.35120994	-7.9180787	-6.63671109	-7.0969528	-6.72775682	-7.82794741	-6.34656668	-6.97195864	-6.6540888	-7.67891637
-0.56596562	-2.54182823	0.3991827	2.65562944	-3.01835624	-1.1730279	-0.08302287	3.52304301	0.94662242	1.9110279	0.48039646	0.13816786	-2.18862813	-1.46251597	-1.6432432	-0.73286211	-2.21974351	0.69882539	-0.02096314	0.53197812	-1.98320319	1.24009922	0.05405558	0.67727384	-1.50402766

Tabla 0.64: Degradación eficiencia turbina 2 -7% (II)

-7.24670817	-8.01362864	-6.79748063	-5.78695972	-6.12597385	-7.55963717	-7.03589026	-5.1821051	-6.49780988	-6.00424992	-6.74675835	-6.92042904	-7.91420529	-7.63176923	-7.71441046	-7.35120994	-7.9180787	-6.63671109	-7.0969528	-6.72775682	-7.82794741	-6.34656668	-6.97195864	-6.6540888	-7.67891637
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## 11.2 Anexo B

En este anexo se muestran los resultados obtenidos con el método de optimización al degradar la relación de compresión del fancore, la eficiencia del fanduct, la eficiencia del compresor 1 y el flujo corregido de la turbina 2. En las tablas se muestran 30 medidas con ruido para cada uno de los casos.



	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30				
pr_fanorc	-1.05662024	-0.91514128	-1.08963343	-1.0404948	-0.85232653	-0.86387977	-1.08656465	-0.76944719	-0.87198219	-1.0341934	-1.1449207	-0.84570707	-0.91822828	-0.93109487	-0.92917289	-0.75977661	-0.89928564	-0.89446464	-0.79567639	-0.97987214	-1.07167272	-0.97881386	-0.9642364	-0.89765693	-0.92473453	-0.9037482	-1.0997682	-1.1454548	-0.91043061					
eff_fanorc	-0.29582448	-0.3957892	-0.3578111	-0.32138654	-0.2741135	-0.36476631	-0.691482	-0.4831953	-0.30939844	-0.31906311	-0.3457777	-0.29066311	-0.3953878	-0.00756224	-0.3492404	-0.46982445	-0.48120293	-0.30079843	-0.35565313	-0.37861631	-0.33848795	-0.36053739	-0.34564435	-0.38411055	-0.3780049	-0.39586272	-0.1237554	-0.23336439						
mc_fanorc	-0.2796382	-0.21924533	-0.38543792	-0.0953703	-0.2217486	-0.49115334	-0.30275073	-0.4658007	-0.2255752	-0.17949549	-0.2406458	-0.2667689	-0.2245597	-0.25247516	-0.112912	-0.2708654	-0.2712356	-0.26377945	-0.19783396	-0.26575327	-0.4167775	-0.26197896	-0.16733136	-0.31682393	-0.43565181	-0.05347078	-0.37359159	-0.26545457	-0.1444071					
pr_fanduct	0.16865916	-0.2654454	0.12805062	-0.07878474	0.0207785	-0.02395393	0.12421548	0.12373621	0.15252539	0.05407015	-0.01159886	-0.03688483	0.05680056	-0.01108237	0.121891538	0.04929356	0.0571048	-0.04769218	-0.01641207	-0.18573792	-0.02329576	0.06247453	-0.03639099	0.03323248	0.14518849	0.05373294	-0.05157669	-0.06468335	0.01331807	0.01981455				
eff_fanduct	0.1502324	0.04578641	0.1409115	-0.0288157	0.00432203	0.03450153	-0.14630666	-0.0573758	0.01044397	0.0283382	0.29410925	-0.1549189	-0.1467419	0.00800886	-0.05879777	0.15746207	0.0780474	0.05198592	-0.02302549	-0.23552392	0.07415419	0.04048377	0.04844454	-0.08018529	0.05378102	-0.0182739	-0.13305296	-0.07480767	0.01844686	0.06424655				
mc_fanduct	0.0172003	0.18615609	-0.1654543	0.1174475	-0.07664662	0.07251537	-0.17343692	-0.09406658	-0.03006249	0.04031161	-0.06270462	-0.08983844	-0.0537087	-0.0781656	0.08833356	0.17372301	0.13452887	-0.09989829	-0.02111887	-0.17055953	-0.0627643	0.05555197	0.17632886	0.08677892	0.20179275	-0.07854575	-0.08515212	-0.11770019	-0.16767588	0.06377632				
pr_compresor1	-0.03187637	0.10028293	0.19076845	0.11768214	0.07508817	-0.13480316	0.01693047	0.3765612	0.04206396	-0.0965528	-0.00828794	-0.4408157	0.13869506	0.13594499	0.02675643	0.2089799	0.0533078	-0.09157661	-0.02111887	0.04582334	0.111835	0.0894906	0.0308692	0.13806707	0.0610459	-0.1449012	-0.210086	0.03771485	-0.0151338					
eff_compresor1	0.10941653	0.07282866	-0.12026385	0.067541	0.1249007	-0.1123869	0.10749304	0.13843829	0.03951008	-0.06156884	0.2563035	-0.08479982	-0.05671031	-0.01116883	0.02029832	0.04962585	0.06319542	0.16668747	-0.04388043	-0.07376258	0.0873404	-0.04802672	0.07072844	-0.17578874	-0.01665193	0.0055591	-0.06398859	0.04705596	0.03837452	0.12589492				
mc_compresor1	-0.11832075	-0.02767313	0.0088919	0.0890165	0.05710866	0.07356835	-0.0839231	0.0633776	0.04063436	-0.01465718	-0.11836907	0.0908485	0.0922747	0.06494808	0.15863825	0.07658302	0.01260359	0.0340745	-0.08314153	-0.07571604	0.04041401	0.00241413	-0.08518071	-0.24617499	-0.09760493	0.04455932	-0.11220881	-0.19631424	0.04606648	0.14453225				
pr_compresor2	0.07496897	0.02569381	0.11749292	0.0946736	0.20037584	-0.00405713	-0.11896364	0.05657523	-0.00380751	-0.06118291	0.06289887	-0.04584848	0.07934414	-0.07793936	0.11384333	-0.1249007	-0.0557067	0.00673934	-0.02889625	0.01166572	0.08528418	0.02977056	-0.04820442	-0.02078299	-0.16629084	-0.057318	-0.06311866	0.02293277	0.03379981	0.0217237				
eff_compresor2	-0.0624113	0.0282495	0.01881888	-0.0387579	-0.03032475	0.05940899	-0.0083314	-0.0541261	0.00262718	0.03728809	-0.0354584	-0.09016663	0.23288286	-0.1042353	0.0251052	-0.02328458	0.1652995	0.0547635	0.01382706	-0.06179814	-0.22188044	-0.1351224	0.02835517	0.1188063	0.051971	-0.0750239	-0.02606545	-0.04511776	-0.04689425	0.13307194				
mc_compresor2	-0.05883274	-0.00116071	0.21876658	0.0210893	-0.08517594	-0.10866448	-0.17444667	0.0658897	0.05327894	0.2257247	0.09226396	0.12338837	0.00597277	-0.01998973	0.0788032	0.01658669	-0.03814487	0.0952529	0.00663397	-0.0738515	-0.06723767	0.00780704	-0.02086479	0.00731693	0.00111591	0.002526489	-0.13844405	-0.01540029	0.00516607	0.06020363				
pr_turbina1	-0.08989204	-0.09648638	0.26145779	-0.04371305	-0.08358007	-0.1778024	-0.02016557	-0.0965155	0.12429155	-0.06202307	0.08395298	0.12384347	0.21294308	0.03907718	0.00564077	0.03535535	-0.06112371	0.03840177	0.0353554	0.04716251	0.07634914	0.0785842	-0.17630884	-0.08374988	0.09078206	0.17409397	-0.0573823	-0.0603747	-0.08079417	-0.0783841	0.09156343			
eff_turbina1	0.0593623	-0.0342322	0.01563177	-0.08818885	-0.07745869	0.07792003	0.08463873	0.0592507	0.04689746	0.06654482	0.0670248	0.10834547	0.1707595	0.12121838	-0.03988922	0.1455145	0.2202408	0.04159461	0.080035	0.0412655	-0.00917779	-0.14964232	0.0705537	-0.08328827	-0.02888228	0.03583706	0.00939474	-0.0783841	0.09156343					
mc_turbina1	-0.07878933	-0.0183775	-0.19180662	0.06257455	-0.06195947	0.11843072	0.0087383	0.02738414	0.16393837	-0.10434347	-0.0878611	-0.03833486	0.11733007	0.05970637	0.03494587	-0.00965614	0.08008811	-0.04918108	0.00346882	0.24273844	-0.00044656	0.51633979	0.10717894	-0.4024073	0.07857974	-0.102174	-0.0977231	-0.09277696	0.07163376	0.0287749				
pr_turbina2	-0.1475617	-0.05646534	-0.0448393	-0.0165464	0.00659055	0.15480572	-0.19522449	0.0533063	-0.1112367	0.12555546	0.06191916	-0.15357407	-0.0666631	0.04655344	-0.0047773	0.03893133	0.06323429	-0.03154972	0.0742822	0.02184074	0.08529186	0.04764916	-0.08421275	0.1341657	-0.00125702	0.03252455	-0.10299226	-0.20094685	0.1625445	-0.0284525				
eff_turbina2	0.0520783	0.08048367	-0.088011	-0.02191205	0.15550263	-0.15411886	-0.05682218	-0.04578678	-0.04812568	-0.0011404	0.14405135	-0.05858818	0.01986145	-0.14763994	-0.03966312	-0.33522804	-0.0375711	0.05813853	0.12496312	0.00631399	0.0980777	-0.04523446	0.20463448	-0.0918512	-0.08058869	-0.05160148	-0.16381054	-0.00684431	-0.0418994	0.01047422				
mc_turbina2	-0.0476428	0.2485493	-0.0817534	0.0238775	0.04744703	-0.1388834	-0.0551023	0.05831399	0.01557156	-0.2328015	0.0881501	0.07764515	-0.10206838	0.17380196	0.06881249	0.0880866	0.16298605	0.05670901	-0.0627134	0.01007707	-0.02109454	-0.22749866	-0.00132533	0.07211618	-0.03803445	-0.0447247	-0.12782157	-0.0580784	0.09363489					

Aerío	-1.05662024	-0.91514128	-1.08963343	-1.0404948	-0.85232653	-0.86387977	-1.08656465	-0.76944719	-0.87198219	-1.0341934	-1.1449207	-0.84570707	-0.91822828	-0.93109487	-0.92917289	-0.75977661	-0.89928564	-0.89446464	-0.79567639	-0.97987214	-1.07167272	-0.97881386	-0.9642364	-0.89765693	-0.92473453	-0.9037482	-1.0997682	-1.1454548	-0.91043061
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Tabla 0.1: Degradación relación de compresión fancorc -1%

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30
pr_fanorc	-3.89703824	-3.5880471	-3.61978703	-3.0093502	-3.77727914	-3.8656684	-3.78953006	-3.07747479	-3.94066373	-3.91792344	-3.55134971	-3.80214451	-3.8356978	-3.78403996	-3.7028922	-3.07835703	-3.8311009	-3.67660035	-3.76855366	-3.14784808	-3.7865673	-3.6007877	-3.8355704	-3.7177008	-3.86809534	-3.7957792	-3.85943296	-3.90115402	-3.7857878	-3.76215007
eff_fanorc	-1.5794848	-1.5863767	-1.53486674	-1.38888019	-1.34081773	-1.39888941	-1.42116886	-1.44336648	-1.44625207	-1.44809408	-1.20225795	-1.45586691	-1.6146784	-1.77119958	-1.30043399	-1.4317497	-1.3646689	-1.47659296	-1.49530275	-1.58447139	-1.48183486	-1.44951753	-1.6000706	-1.29748931	-1.4628078	-1.55557591	-1.30836003	-1.51077514	-1.38292066	-1.42000779
mc_fanorc	-0.9439382	-0.90611439	-0.94227175	-1.0430558	-0.93645313	-0.9806648	-0.977802	-0.837772	-1.0494491	-0.94764002	-1.0342077	-0.93030023	-0.8782625	-0.90923951	-0.94713875	-1.0381737	-0.7588663	-1.02749102	-1.0426704	-0.97557225	-0.89747938	-0.86931535	-1.0064958	-1.0521871	-1.12769226	-1.007332	-0.93999384	-1.08832488	-0.94089373	-0.90105654
pr_fanduct	-0.0844787	-0.13157931	-0.14469531	-0.0150455	-0.06322748	-0.2632918	-0.10741473	-0.2078355	-0.11579811	-0.07913063	-0.00989597	-0.0531154	-0.10810971	-0.07216996	-0.08854804	-0.07842117	-0.0402297	-0.05163735	-0.18409447	-0.01383977	-0.04256783	-0.01009242	-0.02324801	-0.02659093	-0.07713723	-0.07539162	-0.00747048	-0.00845154	-0.03885029	-0.11131658
eff_fanduct	-0.0044408	-0.19698727	-0.21945424	-0.0493361	-0.07762986	-0.1374153	-0.08530215	-0.0594888	-0.04497797	-0.01523964	-0.0800043	-0.00833388	-0.0087654	-0.0052095	-0.02844839	-0.0502736	-0.0765555	-0.1069857	-0.02302456	-0.02388858	-0.01145435	-0.04392883	-0.04942986	-0.04899704	-0.08004158	-0.03030941	-0.13915856	-0.01928832	-0.00276073	-0.05333663
mc_fanduct	-0.03561545	-0.12239453	-0.17689386	-0.02917651	-0.01644076	-0.02571055	-0.0585089	-0.0492694	-0.08317084	-0.1648031	-0.05942754	-0.07954602	-0.00869044	-0.03944529	-0.06662001	-0.15358848	-0.03863164	-0.0535774	-0.0165663	-0.13995904	-0.03497882	-0.02749632	-0.02402297	-0.07765933	-0.1696417	-0.07445222	-0.01435887	-0.07863497	-0.03466659	-0.14653522
pr_compresor1	-0.19773129	-0.2729143	-0.20445348	-0.21948809	-0.06943291	-0.05307314	-0.13116451	-0.15343957	-0.18327728	-0.16413309	-0.08240239	-0.0806783	-0.04997858	-0.01049433	-0.15597723	-0.0604538	-0.0244021	-0.07388651	-0.0339403	-0.02944021	-0.07388651	-0.367872	-0.01969664	-0.32252621	-0.01055609	-0.2076519	-0.23332869	-0.05789535	-0.01350226	-0.04061333
eff_compresor1	-0.0465002	-0.0134215	-0.03429585	-0.0085994	-0.0820694	-0.0376765	-0.1844956	-0.0378817	-0.04705881	-0.0646706	-0.0879502	-0.02749076	-0.03588554	-0.33341956	-0.0926529	-0.1098882	-0.09515057	-0.12582888	-0.0735162	-0.02154061	-0.01413117	-0.2263845	-0.0403764	-0.1757421	-0.10942992	-0.1377881	-0.0861002	-0.0208975	-0.04793707	-0.0529309
mc_compresor1	-0.2338304	-0.02347018	-0.26704788	-0.178202	-0.23833444	-0.05088114	-0.0016719	-0.12820431	-0.13332195	-0.3008793	-0.2373072	-0.08081649	-0.18353502	-0.18573978	-0.21867886	-0.18230881	-0.0971219	-0.33609711	-0.27365318	-0.13373262	-0.17424248	-0.6279971	-0.1867995	-0.02838515	-0.06519376	-0.19529501	-0.0422063	-0.1934917	-0.21945321	-0.5323705
pr_compresor2	-0.03330693	-0.0538993	-0.11382565	-0.1106552	-0.15740045	-0.17788074	-0.2091573	-0.1016994	-0.07813	-0.17628138	-0.1237042	-0.04557902	-0.07779616	-0.2472897	-0.0797887	-0.3842701	-0.3363558	-0.10614662	-0.15947411	-0.1638076	-0.07282912	-0.04711419	-0.1603861	-0.15345168	-0.17628957	-0.04848463	-0.22475091	-0.06574984	-0.0615304	-0.2851798
eff_compresor2	-0.4615742	-0.1657428	-0.44863291	-0.4567781	-0.3654808	-0.28336041	-0.3035451	-0.66956111	-0.3587803	-0.55825194	-0.45331164	-0.53268884	-0.3208998	-0.49157673	-0.20798145	-0.5700516	-0.3490388	-0.4447917	-0.40250751	-0.2770589	-0.45458494	-0.56628387	-0.4419703	-0.3000417	-0.68253355	-0.52328269	-0.41117887	-0.5272928	-0.33564674	-0.29933214
mc_compresor2	-0.17573901	-0.21537526	-0.24994509	-0.33857993	-0.28559701	-0.18370476	-0.22952943	-0.34804438	-0.26101637	-0.37424983	-0.1305123	-0.37007533	-0.29246415	-0.39487338	-0.27957406	-0.27886557	-0.37055881	-0.4953379	-0.37055881	-0.4953379	-0.16699901	-0.2149702	-0.5881222	-0.24835893	-0.43361583	-0.1796387	-0.42380481	-0.24899526	-0.2027572	-0.39498334
pr_turbina1	-0.0561463	-0.09440163	-0.07085148	-0.2283567	-0.0766338	-0.36101392	-0.08616988	-0.1356232	-0.02698774	-0.13629624	-0.02899314	-0.02899314	-0.0589031	-0.0907443	-0.00358138	-0.10434321	-0.2033113	-0.04764512	-0.0656671	-0.07692772	-0.06528384	-0.0467893	-0.13321891	-0.1294105	-0.08939466	-0.01689208	-0.03946312	-0.1494147	-0.03404883	-0.0854019
eff_turbina1	-0.07813974	-0.0958807	-0.04883396	-0.0073765	-0.02628537	-0.0879462	-0.0766338	-0.04479298	-0.16345786	-0.01935077	-0.25553863	-0.03765541	-0.11549811	-0.08449657	-0.02338138	-0.04543982	-0.03316147	-0.13461088	-0.0038479	-0.07692772	-0.09551735	-0.24254638	-0.0362153	-0.07833848	-0.07865216	-0.14657261	-0.0029705	-0.02251048	-0.0354463	-0.03461971
mc_turbina1	-0.02111003	-0.04080051	-0.02893973	-0.08951236	-0.0447294	-0.0185637	-0.15971531	-0.20429446	-0.0940406	-0.08851999	-0.00953407	-0.06682107	-0.02919413	-0.0813089	-0.0250156	-0.0970716	-0.03117508	-0.0545161	-0.0024639	-0.02045388	-0.08884021	-0.01049938	-0.10559708	-0.09318926	-0.17294573	-0.2451577	-0.0062866	-0.0700977	-0.0848885	-0.04153749
pr_turbina2	-0.0238239	-0.0736949	-0.16539742	-0.07272641	-0.12812046	-0.0786689	-0.0534426	-0.0663055	-0.0159827	-0.1062932	-0.1559108	-0.03231947	-0.10412625	-0.1686885	-0.1839162	-0.0389578	-0.07450976	-0.15170116	-0.0155667	-0.0289794	-0.2149432	-0.06753788	-0.11497592	-0.06318076	-0.00953131	-0.1377654	-0.0601652	-0.2124155	-0.0152995	
eff_turbina2	-0.0371365	-0.02770798	-0.02211489	-0.0533495	-0.09778274	-0.01545239	-0.04913151	-0.12334832	-0.08660415	-0.10899294	-0.15488108	-0.01188842	-0.03553551	-0.2886848	-0.04744183	-0.02689882	-0.0571469	-0.118846	-0.09578688	-0.02927416	-0.1599407	-0.05263239	-0.0080775	-0.09183578	-0.16360729	-0.01668385	-0.00951395	-0.2389732	-0.05430614	-0.0055246
mc_turbina2	-0.19897091	-0.16333871	-0.08384	-0.07785524	-0.21934072	-0.02166897	-0.1693496	-0.0444642	-0.11215709	-0.00186309	-0.28523878	-0.0939378	-0.08073656	-0.1598294	-0.0240209	-0.10042634	-0.19817329	-0.1042634	-0.02914229	-0.10233466	-0.0794639	-0.0942427	-0.00530095	-0.09497698	-0.02049753	-0.3877863	-0.02562674	-0.0183692	-0.195764	

Aberto	-3.89703824	-3.5880471	-3.61978703	-3.0093502	-3.77727914	-3.8656684	-3.78953006	-3.07747479	-3.94066373	-3.91792344	-3.55134971	-3.80214451	-3.8356978	-3.78403996	-3.7028922	-3.07835703	-3.8311009	-3.67660035	-3.76855366	-3.14784808	-3.7865673	-3.6007877	-3.8355704	-3.7177008	-3.86809534	-3.7957792	-3.85943296	-3.90115402	-3.7857878	-3.76215007
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Tabla 0.2: Degradación relación de compresión fancore -4%



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanorc	-0.0888239	-0.9027248	-5.95259647	-5.9762488	-6.1847356	-5.89519175	-6.1603794	-5.7963207	-6.0623235	-6.0596109	-5.8782854	-5.9450709	-5.8677670	-5.8894822	-5.90013424	-6.0276934	-5.9658646	-5.84511989	-5.8672742	-5.8271888	-5.86568087	-5.8408235	-0.03895873	-6.1193244	-5.9265801	-5.9443494	-6.0545354	-5.83150535	-5.9409175	-5.9391759	
eff_fanorc	-2.4911389	-2.40913997	-2.10987321	-2.3978656	-2.5703755	-2.34139218	-2.50785803	-2.4044916	-2.46516036	-2.24665201	-2.33513534	-2.34825735	-2.48493945	-2.36784837	-2.3504842	-2.31876983	-2.36217115	-2.48105841	-2.18213143	-2.07827544	-2.34226616	-2.43755175	-2.45786305	-2.38418946	-2.481353	-2.35154959	-2.4292947	-2.3678939	-2.4246654	-2.3766184	
mc_fanorc	-1.7027478	-1.62727219	-1.63997858	-1.38416281	-1.8216124	-1.72944654	-1.38133406	-1.51375364	-1.77882016	-1.71729972	-1.75604456	-1.78875073	-1.77157302	-1.6023344	-1.6183978	-1.8325628	-1.7333397	-1.7638004	-1.80104809	-1.81024089	-1.7490852	-1.68253887	-1.74638818	-1.6549482	-1.7426219	-1.66381394	-1.87702394	-1.64455642	-1.52023329	-1.63868275	
pr_faniduct	0.0865323	-0.16536795	-0.07744536	-0.0457591	-0.01095668	0.00553913	0.19431384	-0.01697258	-0.10517783	-0.15551629	-0.16636788	0.03666136	-0.09138924	0.09617425	-0.0122136	-0.01480777	0.14430877	0.05655714	0.04072369	0.0555714	-0.02788213	0.09491959	0.05915421	-0.173951	-0.26598891	-0.0947205	-0.03202076	-0.08077091	-0.02541064		
eff_faniduct	-0.05986913	-0.0781613	-0.0781613	-0.17516556	0.0196749	0.18860482	-0.0734732	0.0441388	-0.0426255	0.12321964	-0.12714671	-0.10685942	0.00710139	0.0157854	0.01993246	0.1364779	0.1364779	-0.0891431	0.02103443	-0.0137257	0.2331087	-0.0009376	0.04332205	-0.07379023	-0.0638108	-0.0011578	-0.18235842	-0.0929458	-0.1169384		
pr_compresor1	-0.06984654	-0.13657536	-0.13657536	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	-0.08778356	
eff_compresor1	0.3383892	0.2894351	0.13926538	0.16788395	0.49852495	0.26966521	0.21580919	0.2273667	0.45881313	0.25706577	0.31607954	0.33496621	0.38918225	0.34464095	0.2851913	0.33246605	0.3922324	0.3788807	0.32699386	0.34644095	0.3447998	0.27530831	0.3886826	0.5433085	0.3214716	0.09198169	0.2193516	0.27185109	0.27455902	0.45044351	
mc_compresor1	-0.3930814	-0.3301908	-0.4480125	-0.6945341	-0.4923889	-0.4475388	-0.4858682	-0.4937188	-0.5535214	-0.4513184	-0.5793846	-0.37947431	-0.3162704	-0.2757857	-0.4086739	-0.3348093	-0.3348093	-0.3348093	-0.3871455	-0.28641073	-0.3348093	-0.3348093	-0.3886826	-0.2038647	-0.31675207	-0.3175449	-0.4263626	-0.34392183	-0.5367372	-0.4621237	
pr_compresor2	0.2507691	0.1708203	0.1302779	0.33805238	0.6443554	0.2945355	0.3202562	0.22028946	0.4870611	0.4055346	0.4807882	0.48936605	0.40536081	0.9200314	0.2646946	0.2646946	0.2646946	0.3811178	0.3538779	0.2575513	0.40649716	0.199477	0.4283837	0.3584352	0.20487538	0.2540336	0.3647287	0.22838604	0.2480014	0.34056333	
eff_compresor2	-1.2694712	-1.4402845	-1.4238959	-1.4753854	-1.3700907	-1.2716716	-1.4478403	-1.2268045	-1.2025299	-1.44913182	-1.38269795	-1.2107083	-1.5397397	-1.3973672	-1.3138653	-1.1669326	-1.4480079	-1.3071062	-1.2508594	-1.3391889	-1.2518452	-1.4257249	-1.1105781	-1.1921185	-1.3043686	-1.2163434	-1.3122369	-1.8964861	-1.4963605	-1.4208769	
mc_compresor2	-0.5338953	-0.5501511	-0.770943	-0.7626552	-0.6179183	-0.70743013	-0.5964063	-0.7292089	-0.7068864	-0.6693289	-0.6281106	-0.9298178	-0.8194639	-0.8179387	-0.5536759	-0.6769899	-0.6821644	-1.0410548	-0.8009177	-0.8377578	-0.7054459	-0.8005563	-0.7679475	-0.7783046	-0.60760252	-0.8207512	-0.9598878	-0.6190659	-0.6480936	-0.8991665	
pr_turbina1	0.02702631	-0.078219	-0.177325	-0.0204387	-0.0058584	-0.0663653	-0.0939099	-0.0647637	0.1777166	0.09014795	-0.0825172	0.01174178	-0.0724877	0.10261351	0.02745972	0.0380789	0.0392232	-0.0404246	-0.1177429	-0.1034084	-0.0752414	-0.1537612	0.0714544	0.0247888	0.0838824	0.0830199	-0.0733517	-0.06649825	0.1840755	-0.0607775	
eff_turbina1	0.0600563	-0.0404735	-0.057564	-0.0313273	-0.1431208	0.1945605	0.0596266	0.0576591	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	0.0538457	
mc_turbina1	-0.0367568	-0.0969095	-0.1285142	-0.0282497	0.44477078	-0.13101963	0.0822208	0.06338416	-0.14452809	-0.09774	0.0402819	-0.0232988	0.0716306	0.0392314	0.0111529	-0.0623752	-0.0641009	0.0613038	-0.1190152	-0.13668756	-0.0216896	-0.13317696	-0.1889538	0.0311706	0.07998914	0.0127785	-0.0985463	-0.027788	-0.09861675	-0.11240613	0.103388
pr_turbina2	0.2323839	-0.0597536	-0.03982033	-0.0633688	-0.0844661	-0.01014912	-0.0889656	0.0070557	0.1355761	-0.1494528	0.2420315	-0.00030844	-0.0418783	-0.1415844	0.1426132	-0.12166694	-0.1237156	-0.0882737	-0.0815073	0.05865766	0.2579409	-0.0213181	-0.0484466	-0.0893931	0.01601784	-0.0889325	-0.1124016	-0.04513302	0.1388594	0.23604451	
eff_turbina2	-0.1767954	-0.1290813	-0.1828437	-0.1676142	-0.13633669	-0.1370006	-0.0852242	-0.1177858	-0.0793207	-0.07402194	-0.09380491	-0.2188875	-0.0409154	-0.3295607	-0.0856697	-0.1725885	-0.0830817	-0.09165824	-0.1081945	-0.1677491	-0.3041613	-0.3080633	-0.151083	-0.0812841	-0.0355609	-0.16154136	-0.1482742	-0.0749334	-0.1148077	-0.17623909	
mc_turbina2	-0.0997938	0.0630145	-0.0716302	-0.0950532	0.1433943	-0.2167968	-0.16141096	-0.28011855	-0.1240077	-0.167099	-0.05265915	-0.04159494	-0.074921	0.0745048	-0.0247795	0.0958983	-0.0959338	-0.2447518	-0.03171543	0.04432115	-0.0957191	-0.0634114	-0.02638425	-0.0274753	-0.0634114	-0.02638425	-0.0274753	-0.0634114	-0.02638425	-0.0274753	

Tabla 0.3: Degradación relación de compresión fancore -7%

Aleto	-0.0888239	-0.9027248	-5.95259647	-5.9762488	-6.1847356	-5.89519175	-6.1603794	-5.7963207	-6.0623235	-6.0596109	-5.8782854	-5.9450709	-5.8677670	-5.8894822	-5.90013424	-6.0276934	-5.9658646	-5.84511989	-5.8672742	-5.8271888	-5.86568087	-5.8408235	-0.03895873	-6.1193244	-5.9265801	-5.9443494	-6.0545354	-5.83150535	-5.9409175	-5.9391759
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Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanorc	0.0351749	-0.0459525	-0.0566639	-0.0215865	0.00761782	0.0240739	0.0554064	-0.0434507	0.0151574	0.05510461	-0.0549138	-0.0464206	-0.0603321	0.1234388	0.0154618	-0.0272549	0.02210746	0.0272677	0.04295251	-0.0501767	0.0401394	0.0165137	0.0480384	-0.0601992	0.0462804	-0.0454902	0.0094904	0.0170373	0.0786246	0.04164616	
eff_fanorc	0.0353212	-0.02049574	0.0180561	0.03850263	-0.02729708	-0.02043319	-0.06268028	0.02472847	-0.0444318	-0.0813466	0.04919406	0.0375704	0.01267826	-0.0901482	0.03525468	-0.0378276	0.02555842	0.02555842	0.0247496	0.03211609	0.03454545	-0.0860096	0.11213157	0.1502651	-0.03579298	-0.02355767	0.0167889	-0.05205815	-0.02380289	-0.01610742	
mc_fanorc	0.0019209	-0.0373703	-0.0181106	-0.0423661	0.0021421	-0.1084247	-0.0913345	0.0057781	-0.00132623	-0.0084222	-0.06019487	-0.0491312	0.0044264	-0.0490302	0.0500787	-0.0382059	-0.0393406	-0.00236539	-0.0565732	0.0506055	-0.061152	-0.0874914	-0.0402194	0.00411077	-0.0204015	0.03401065	-0.0603884	0.03366235	0.0236892	-0.028348436	
pr_fanduct	-0.0285884	0.0274216	-0.0432935	-0.0248262	-0.12055257	-0.06175887	-0.0018032	0.0511852	-0.0425848	0.07281	-0.02465131	-0.0102674	0.03879281	-0.03280719	-0.07429194	0.05385042	0.0644706	0.00759483	-0.04388388	-0.04388388	-0.04388388	0.0123357	-0.03359415	-0.03359415	-0.03359415	0.01263952	0.03483739	-0.04654782	0.02407944	-0.08236808	0.04890666
eff_fanduct	-1.026819	-0.9803901	-0.9415506	-0.9231043	-1.0359448	-1.0292167	-0.9132335	-0.92726843	-0.92628925	-1.013824	-1.03146319	-0.9779025	-0.95616057	-1.03802187	-0.99182838	-0.9326021	-0.9637949	-0.89990814	-1.04387823	-0.9647375	-0.96238853	-0.90317346	-1.042202	-1.0378204	-0.95081083	-0.96282015	-0.94292855	-0.94169688	-0.08030513	-1.1477579	
mc_fanduct	0.05448279	0.02749234	0.07187991	0.0088545	0.02589014	0.01404388	-0.0515788	0.02539154	0.03640464	0.03628925	-0.0216732	-0.03545996	-0.04001853	0.02088251	0.09563973	0.0557319	0.0315644	0.0021231	-0.0644155	-0.05538221	-0.0247077	0.09292668	0.1225224	-0.00790753	0.07340336	0.04005678	0.00780488	-0.01671542	0.03023965		
pr_compressor1	0.1209402	-0.1944956	0.2208075	0.17926249	0.2329046	0.1667949	0.1674883	0.1740106	0.22055162	0.2238846	0.26273292	0.24866512	0.1807438	0.23712083	0.16654356	0.1580911	0.2037528	0.194433	0.13145109	0.1117386	0.1827901	0.22501548	0.17235643	0.26965494	0.27284052	0.23849052	0.23849052	0.23849052	0.2427166	0.2146249	
eff_compressor1	0.05416159	-0.05646404	0.01497021	0.0624946	-0.0491259	-0.0214891	0.00130111	-0.0293288	-0.0470823	0.02293382	0.01615927	0.03382121	-0.0172538	0.01079893	-0.04123295	-0.05534466	-0.0280751	0.09276931	-0.0017249	0.0553781	0.0562286	-0.01682309	0.0630807	-0.01610586	0.00985492	0.04680159	-0.12128317	-0.0107781	-0.03989828	0.04467514	
mc_compressor1	-0.06214657	-0.09163895	-0.0675652	0.0230301	-0.0212941	-0.1031049	-0.0779386	-0.0461934	0.03731	-0.12263251	-0.02157485	-0.06262268	-0.0733309	0.0094453	-0.03389375	-0.03389375	0.07052716	0.0100598	-0.0253077	0.0097469	-0.08017395	-0.13461567	-0.02302809	-0.08619156	-0.13612049	0.00853418	-0.09753344	0.04123582	-0.01694072	0.07381044	
pr_compressor2	0.067369	-0.0674082	-0.05833384	-0.0861276	0.00813917	0.03293475	-0.0543715	0.0079404	-0.11479513	-0.1112393	0.02932447	0.00961117	-0.0847867	0.00634854	0.01089661	0.0527581	0.0087357	0.07850433	-0.1088927	0.0822931	0.01570774	-0.04211223	0.04375169	-0.06446248	0.03234989	-0.02814089	0.00868385	-0.00788953	-0.05301556		
eff_compressor2	0.077543	-0.0544729	-0.0800126	0.041131	0.05044833	0.0126763	-0.0998632	-0.054658	0.01381163	0.0284583	0.0546176	-0.01049649	0.04899742	0.01465912	0.14462841	-0.07316267	0.03892084	-0.04647095	0.0279582	-0.0245881	-0.08156642	0.02271135	-0.00566436	0.02174046	0.07126657	0.07109386	-0.1154343	0.03360281	0.06032326	0.06313647	
mc_compressor2	0.0664265	-0.04488475	-0.0764672	0.07843891	0.01118771	0.0082776	-0.0626879	-0.08140215	0.03467863	-0.09496488	0.03346221	-0.02784848	-0.0284831	-0.06039845	0.07180701	0.04477323	-0.05616024	0.02902991	0.02267073	0.05538168	-0.07591775	0.05858529	-0.00839521	-0.00835533	-0.0261032	-0.0920728	0.09012871	-0.00638706	-0.00602289	-0.03207261	
pr_turbina1	-0.0523893	-0.0217711	0.10063716	0.04146023	-0.03332868	0.05362106	-0.1542738	-0.01641155	0.01307495	0.03331843	-0.05423449	0.0986106	0.1397057	-0.01617084	-0.01749935	-0.01611335	0.0497709	0.08510949	-0.0391945	0.0379865	0.06616279	-0.0238006	0.2972738	0.0817406	-0.04292487	0.03351881	-0.0257602	0.05767922	0.04634752	0.05613842	
eff_turbina1	0.0065591	-0.0533062	-0.0681121	0.0673886	-0.0403891	0.03967207	-0.03936191	0.00306928	0.06292564	-0.09374656	0.0799564	-0.0077731	-0.00947271	0.00501023	0.0300765	-0.08013328	0.02393887	-0.0148878	-0.05850182	-0.0229778	-0.04517201	-0.0716058	-0.06861986	-0.00819491	-0.02127141	-0.01688548	-0.005703212	0.00861274	0.06857192		
mc_turbina1	-0.03337619	-0.0762689	0.0230111	0.0460057	-0.06416997	-0.0335519	0.0718702	-0.07913863	-0.04444762	0.02282829	-0.00929891	-0.00121154	-0.0150245	-0.04657931	0.06578689	0.06709883	-0.03451081	0.0522238	-0.0342443	0.0522238	-0.0347678	0.038197	0.00855715	0.0515614	0.06011764	0.00037188	-0.0624569	-0.06888429	-0.06800096	0.0656257	
pr_turbina2	-0.085357	-0.0786849	0.0138229	0.2378485	0.0032938	-0.0774456	-0.0763584	0.09416551	0.01148805	0.02715831	-0.0549076	-0.01180285	0.01288495	0.04819401	0.0039774	0.02893987	-0.0023154	-0.03188029	-0.02748358	0.0203353	-0.02532937	-0.01791248	-0.01247082	0.00824242	0.02894048	-0.01094555	-0.01627244	-0.04610434	-0.01663374	0.03948974	
eff_turbina2	0.02008931	-0.15174533	0.03917122	0.0534484	0.04688294	0.06819211	0.0571943	0.08532925	-0.07294729	0.01293931	-0.04478471	-0.06876219	0.0157637	-0.02708857	-0.11570783	-0.00339987	0.01702113	0.09141049	0.04794977	0.05278409	0.04953558	-0.01148547	-0.06979128	0.0942021	-0.0788023	0.03650494	0.05388865	-0.05356375	-0.0427439	0.05977958	
mc_turbina2	0.0040227	-0.0239844	-0.00989394	-0.0261889	-0.01916949	0.04714123	-0.0276169	-0.0214382	-0.04267703	-0.01696809	-0.07018561	0.06467948	0.02947955	-0.0323232	-0.01325292	0.01350961	0.03200411	0.11952621	-0.0507389	0.00569185	0.00082329	-0.0085721	-0.0049575	0.04354469	-0.02546052	-0.04495656	-0.0584974	0.1217641	-0.0763212	0.1183935	

Acero	-1.026819	-0.9803901	-0.9415506	-0.9231043	-1.0359448	-1.0292167	-0.9132335	-0.92726843	-0.92628925	-1.013824	-1.03146319	-0.9779025	-0.95616057	-1.03802187	-0.99182838	-0.9326021	-0.9637949	-0.89990814	-1.04387823	-0.9647375	-0.96238853	-0.90317346	-1.042202	-1.0378204	-0.95081083	-0.96282015	-0.94292855	-0.94169688	-0.08030513	-1.1477579
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Tabla 0.4: Degradación eficiencia fanduct -1%

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanorc	-0.1265873	-0.1156132	-0.0949989	0.0421982	0.0593947	0.06125103	-0.1245951	-0.1073528	-0.04252704	-0.0479304	0.0804949	-0.13984481	0.0124793	0.02309485	-0.1678063	-0.5271288	0.3336837	-0.6566541	-0.1279484	0.01679305	0.06536558	-0.02684555	-0.0493287	0.0358741	0.01899152	0.1065574	0.03816872	0.00739	0.07071272	0.00715861	
eff_fanorc	-0.0752295	-0.0492084	0.0790077	0.0016872	-0.0637977	-0.0085566	0.1541044	0.06321765	-0.0599953	0.0769302	0.0118882	-0.1157823	0.01370276	0.04125413	-0.0557303	0.1576016	0.0946266	0.11414631	-0.1357121	0.0230194	0.01959	0.1177836	0.02891816	-0.0818022	0.03072336	0.04499357	0.13571682	0.16689262	0.0742254	0.00809584	
mc_fanorc	-0.0303453	-0.0715269	-0.0716638	0.15333872	0.1941256	0.08413637	0.0855281	-0.4792068	0.0069482	-0.0682374	-0.08366035	0.01247845	0.21980011	-0.0707893	-0.1731836	0.0394455	-0.00334597	-0.01969399	0.0416348	0.0568616	0.13271972	0.05240373	0.1156497	0.01386882	0.13436368	0.02309889	-0.00740832	0.07578816	0.11881898	0.04626517	
pr_fanduct	0.07959741	0.1446522	-0.0929784	-0.0139532	0.00737418	-0.111297611	-0.0952495	0.0548523	-0.0896985	-0.0767689	0.0216653	-0.0045935	-0.1655386	0.0249001	-0.0236701	0.13592458	-0.08919575	0.02307177	-0.02399786	-0.0318322	0.09335974	0.08198246	-0.0828218	-0.2941492	-0.02828165	-0.00781864	-0.0454704	-0.00182152	-0.18850952	0.07998084	
eff_fanduct	-0.13707913	-0.0105713	-0.0428825	-4.11931154	-3.80768873	-3.98939003	-3.9498757	-3.8152246	-4.00735497	-0.0659894	-3.8861939	-3.9582833	-0.9357438	-3.9787969	-3.90259163	-0.1918855	-3.8803666	-3.9756874	-4.2062894	-0.0888279	-3.9798892	-4.05613651	-3.9494556	-4.0265932	-0.041026	-4.0091396	-3.9975943	-4.1258805	-0.7647484	3.99533851	
mc_fanduct	-0.07880673	-0.0588536	-0.0498186	0.0294981	0.11294616	0.12711324	0.0898078	0.01380764	-0.0105504	-0.0566889	-0.1082285	0.0951042	0.1804504	-0.0156606	0.0459896	-0.026163	-0.02214036	-0.06564076	-0.15646236	-0.094448	0.08148579	0.03728022	0.03656833	0.03156218	0.0752403	-0.01320127	0.0469712	0.06684828	0.03011324	-0.0055588	
pr_compressor1	0.7457348	0.9078287	0.7925538	0.8514812	0.9079079	0.83657031	0.8024958	0.7298867	0.8099638	0.74089791	0.8710594	0.8098523	0.8102076	0.7744389	0.7829499	0.8302182	0.9113194	0.8651911	0.78296302	0.9279421	1.0081605	0.9776617	0.9334978	0.8861296	0.8662196	0.7452088	0.9625281	1.01363285	0.9393521	0.9311752	0.9311752
eff_compressor1	0.0281896	0.0620436	0.0283169	-0.05016821	0.1177904	0.09627003	0.1582264	0.1547048	-0.068526	0.05513902	-0.058892	-0.02280818	-0.00715412	-0.0796702	-0.1147442	-0.2670406	-0.0761954	-0.2624913	-0.07703805	0.11811887	0.1444906	-0.0102474	-0.0624661	0.06291381	0.17169881	0.00736885	-0.0415887	0.07102683	-0.1984594	0.03294918	
mc_compressor1	-0.2802349	-0.1765692	-0.0851781	-0.12943047	0.2630227	-0.03281139	-0.13968746	-0.17490336	-0.170453	-0.2356229	-0.1102489	-0.00715442	0.2154639	-0.2599281	-0.2693537	-0.0584412	-0.2333587	-0.0367877	-0.1342382	-0.08459735	-0.37837639	-0.26104749	-0.1795484	-0.1104233	-0.12621334	0.1303311	-0.19521576	-0.0689627	-0.198061	0.04975072	
pr_compressor2	-0.0264908	-0.0072408	-0.0466656	-0.0544991	-0.1233885	0.04988357	0.0381445	-0.0649708	-0.0667975	-0.1348387	0.0024767	0.1181148	-0.1040596	0.08801151	0.1757948	-0.04949301	0.04949301	0.0835578	-0.0532372	-0.1152201	-0.0624145	0.0039338	-0.0047486	0.0434392	-0.08427865	0.07677154	-0.0191089	-0.028779	-0.04328956	-3.1748545	
eff_compressor2	-0.28462	-0.043138	-0.0101129	0.04813841	0.0471197	0.0456534	0.0001028	0.0501104	-0.1509402	-0.07302174	0.0747485	-0.04756786	-0.0112833	0.02758018	-0.0978918	-0.07982785	-0.0871108	0.00103557	-0.1296652	-0.0444004	-0.0397322	-0.06764668	-0.1002624	-0.0704524	-0.0238633	-0.2115963	-0.0892133	-0.0553045	0.07055846		
mc_compressor2	-0.0381265	-0.02854	-0.09594	0.0532321	-0.0154206	-0.0149751	-0.0733386	0.0373575	-0.0687576	0.0526984	0.079458	-0.1282762	-0.0278033	0.031797	-0.124815	0.05228991	-0.1097394	-0.0561088	0.0192624	0.1239817	0.01537467	0.0011742	-0.0519752	0.06538	-0.0235533	-0.1658435	-0.0457998	-0.0676889	-0.0086088		
pr_turbina1	0.056869	0.0577896	-0.0229565	-0.0552341	0.1323808	0.09631367	-0.0313873	-0.0227409	0.00739405	0.2017965	0.0827963	0.0289848	0.0639193	-0.2106463	-0.14735413	-0.1390279	0.0045403	0.1499694	0.279061	-0.1656927	-0.0616423	-0.0421538	-0.0819804	-0.1102002	-0.00194823	-0.0823982	-0.3851996	-0.0379236	0.06165117	0.03880288	
eff_turbina1	-0.0194509	0.0589029	-0.07527448	0.0088979	0.0744854	-0.0415305	-0.0261625	0.0283089	0.1466241	-0.0551751	-0.02918079	0.0676788	-0.0688933	-0.1468899	0.03761566	0.1662163	-0.0261454	-0.04318471	0.02397402	0.0567396	-0.0675999	0.06387884	-0.0742438	-0.06148643	0.1206819	0.0582827	0.0738865	-0.04075047	0.20200646	0.03876167	
mc_turbina1	-0.058765	-0.2457648	0.0514805	-0.0891926	0.137943	0.04166197	-0.00427825	0.0434427	0.10233146	0.0591648	0.0106539	-0.0578734	0.0999216	-0.0934738	-0.1054615	0.10088708	0.1334969	0.0495582	0.0394759	-0.1241282	0.02436558	0.00801957	0.07812805	0.15277605	0.05986732	0.019101807	0.0738865	0.04075047	0.20200646	0.03876167	
pr_turbina2	-0.0383829	-0.0040732	0.0177635	-0.0051402	0.01737708	-0.10046363	-0.11603828	-0.02539739	0.0422801	0.1693064	-0.00953729	0.16158911	-0.0393738	-0.00881938	-0.1254782	0.2456645	-0.0518199	-0.03199311	0.15231986	0.0719585	0.1853485	-0.08727497	0.01276386	-0.1953469	0.00070939	0.1244492	-0.0784405	0.05868584	-0.1497132	0.05866039	
eff_turbina2	0.1622635	-0.1150851	0.08202886	-0.0324956	0.0533233	-0.0577405	0.0004317	0.0238695	0.11937159	-0.00428943	0.18416515	-0.01385971	0.0484837	0.03653292	-0.0734388	0.0572789	0.0847029	-0.02407901	0.03591613	-0.1247523	-0.10040542	-0.1495514	-0.0868799	-0.12479546	0.13542352	0.01043715	0.06647042	-0.0846451	0.0881775	0.11713079	
mc_turbina2	0.0081092	0.0421569	0.02183755	0.03274855	0.00891529	-0.0770489	0.14652343	-0.04054985	0.00447033	-0.13309564	-0.13309564	-0.13088823	-0.12449717	-0.07002373	0.01686713	-0.04666703	0.06880829	-0.0252932	-0.0850724	-0.00275405	-0.03618851	-0.14207612	0.26151575	-0.07888279	0.14402261	0.08928849	-0.02662219	0.1124292	0.03176667		

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30
Acero	-4.13707913	-4.0105713	-4.11931154	-3.80768873	-3.98939003	-3.9498757	-3.8152246	-4.00735497	-0.0659894	-3.8861939	-3.8859139	-3.9582833	-0.9357438	-3.9787969	-3.90259163	-0.1918855	-3.8803666	-3.9756874	-4.2062894	-0.0888279	-3.9798892	-4.05613651	-3.9494556	-4.0265932	-0.041026	-4.0091396	-3.9975943	-4.1258805	-0.7647484	3.99533851

Tabla 0.5: Degradación eficiencia fanduct -4%

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanorc	0.0563703	-0.1300524	-0.0266033	0.0671399	0.0271932	0.0244715	-0.2292015	0.0976501	0.0815615	-0.0931698	0.007096	0.0697249	0.0469866	0.1718955	0.0563001	-0.0538134	0.0387707	-0.01739454	-0.2185966	0.0737647	0.06101618	-0.0293345	-0.0353797	-0.1189127	-0.0469784	-0.0947349	0.00413217	-0.0915315	-0.0261736	0.0705034	
eff_fanorc	0.0720203	-0.1607845	-0.0695821	0.0691781	0.0692933	0.0230702	0.0080613	0.0087731	0.17812939	0.0386148	-0.0436739	-0.0320124	-0.0823272	-0.0409196	0.0347656	-0.0497569	0.01316547	0.034318	-0.1616862	-0.2034343	0.07240739	-0.00514621	0.10051495	-0.0383899	0.0093559	0.0383899	0.00514621	-0.10051495	-0.0383899	0.0093559	
mc_fanorc	0.1291665	-0.0916631	0.0684618	-0.0483771	-0.1232552	0.0462015	0.0654689	0.1102273	0.0646369	-0.097878	0.2803776	0.0106756	-0.1142445	-0.1256093	0.05480157	-0.1006313	0.02301631	0.01911205	-0.0049378	0.0099555	-0.0051055	-0.0180049	-0.03946271	0.2324496	0.10223561	-0.0653879	0.03775612	0.1683059	0.1438171	-0.0107691	
pr_fanduct	<b>1.308257</b>	0.3096508	0.4497732	0.6323751	<b>0.5263161</b>	<b>1.1710938</b>	<b>1.4481656</b>	<b>1.7592913</b>	<b>1.55344</b>	<b>1.3216156</b>	<b>0.7510201</b>	<b>0.6178287</b>	<b>0.3840371</b>	<b>0.4621813</b>	<b>1.1674047</b>	<b>1.1701257</b>	<b>1.2883197</b>	<b>1.4096286</b>	<b>0.5700732</b>	<b>0.6859275</b>	<b>1.26184575</b>	<b>1.4481478</b>	<b>1.1159581</b>	0.3156412	0.5470762	0.4408678	0.3245487	0.5425955	0.5282056	<b>1.7511135</b>	
eff_fanduct	-7.2085816	-7.0565913	-6.9379438	-7.0343404	-7.1951815	-7.2621493	-6.9380834	-6.9395501	-7.1407973	-7.1670767	-7.1028273	-7.0296766	-7.0643165	-6.9855904	-7.0741308	-6.9374329	-7.0793541	-7.22140012	-7.283536	-7.03778515	-7.0670238	-6.7384676	-7.0722256	-7.0824563	-0.995648	-0.995648	-7.0824563	-0.995648	-0.995648	-7.0824563	
mc_fanduct	0.0945013	-0.1463066	-0.1057207	0.0044397	0.0381382	0.2941095	-0.1504989	-0.1467049	0.0000806	-0.0580797	0.15746307	0.0708474	0.0519839	-0.0230294	-0.235329	0.0745419	0.0043077	0.0450454	-0.0803529	0.0537802	-0.01182739	0.13305296	-0.0740767	0.1184486	-0.0642065	-0.029045	0.0576265	0.0576265	0.0576265	-0.0576265	
pr_compressor1	-0.2594334	-0.1171548	-0.15120907	0.0612448	0.0522031	-0.00836458	-0.0749769	0.0197403	-0.0207716	0.195308	-0.0911654	-0.0380537	-0.380775	-0.0302786	-0.0659684	-0.0831283	-0.1439159	-0.03283457	0.0872809	-0.04637283	0.0866321	-0.046636	-0.0866321	-0.046636	-0.0866321	-0.046636	-0.0866321	-0.046636	-0.0866321	-0.046636	-0.0866321
eff_compressor1	-0.070593	0.12111548	0.1266521	0.1494259	0.0397015	-0.0146986	-0.0394983	0.0523956	-0.01418237	0.1238158	0.0461296	-0.06108048	-0.0309218	-0.1883732	-0.0360576	0.0793749	-0.0394999	0.0803328	-0.0420849	0.06162394	-0.0546769	-0.0677885	0.0910807	0.0167145	0.09411704	0.0554479	0.1088641	-0.1062246	-0.0717835	-0.0717835	
mc_compressor1	-0.413289	-0.1934036	-0.1624671	-0.3402108	-0.3624884	-0.0449315	-0.3857392	-0.3571031	-0.3120663	-0.2800148	-0.3917295	-0.1942123	-0.3447803	-0.3746238	-0.1355596	-0.3483677	-0.2301736	-0.4766374	-0.3155193	-0.2953409	-0.3642959	-0.2591940	-0.2623548	-0.17300508	-0.1980821	-0.3552908	-0.2658882	-0.4100609	-0.2291043	-0.2291043	
pr_compressor2	0.0657833	-0.0733231	0.0793736	0.0510436	-0.00995718	-0.10796307	-0.079485	0.10162747	0.0735408	0.1693385	0.0870802	0.0330839	-0.0307545	-0.0774453	-0.0531604	0.11441401	0.01281413	-0.07478071	-0.2357469	-0.0870493	0.05205912	-0.1018081	0.2057404	0.01500643	-0.1342125	0.0854255	-0.1967073	0.0588945	-0.1509466	0.1161538	
eff_compressor2	-0.0078713	-0.1277654	0.0528753	-0.0067651	-0.0697651	-0.0883468	0.0754414	-0.0816938	0.1100433	-0.1281907	-0.05947067	0.0029304	0.0384818	0.02547056	-0.04962042	-0.0245829	-0.1709084	-0.0565518	-0.0669156	0.2833277	0.0197981	0.0179317	0.12401374	-0.1295526	0.0747868	-0.1295526	0.0747868	-0.1295526	0.0747868	-0.1295526	0.0747868
mc_compressor2	0.0579089	-0.0235514	-0.05661261	0.001678	0.0515809	-0.1054394	-0.0927663	0.2072826	-0.1052535	0.02341051	-0.0253458	0.1631915	0.052665	-0.0638814	-0.2328404	-0.1378124	0.0262537	0.1165863	0.0016971	-0.0770299	-0.0286545	-0.0472176	-0.05179425	0.131697194	0.131697194	0.0946591	-0.0299866	0.0694937	-0.0201455	0.0051128	
pr_turbina1	-0.1094448	-0.1770467	0.0610897	0.0397894	0.2231247	0.08966396	0.2078837	0.0327277	-0.02248673	0.0742802	-0.0378669	-0.02094487	0.169235	0.0040397	-0.0764515	-0.0688767	0.00448704	-0.02346179	0.00471693	0.00216489	0.1334405	-0.0180029	0.0389607	-0.0628958	0.07394057	0.06914935	0.0594399	-0.0669128	-0.0669128	-0.0669128	-0.0669128
eff_turbina1	0.753003	0.0823973	0.05715207	0.0486746	0.0644482	0.0649128	0.1849427	0.1686993	0.11919238	-0.0478892	0.4344415	0.21812408	0.0394061	-0.0155615	0.0779335	0.0391675	-0.0131779	0.0684737	-0.0539207	-0.0393218	0.0333706	0.00729474	-0.0793841	-0.09366343	0.0499871	-0.0529208	0.03762438	-0.10894149	-0.1218849	-0.1218849	
mc_turbina1	0.085307	0.0197383	0.0183844	0.1593387	-0.1132427	-0.0378661	-0.0472486	0.1842807	0.0580667	0.0280487	0.07118811	-0.03808108	-0.0084318	0.2338984	-0.0691456	0.1474397	0.02828894	-0.1494073	0.0696794	-0.1110724	-0.1061231	-0.1016706	0.06273376	-0.03767249	0.00104751	-0.0995795	-0.2350882	0.0451235	0.1497288	0.1497288	
pr_turbina2	0.1666574	-0.1875249	0.1173063	-0.1984682	0.1373546	0.02791916	-0.14177407	-0.0548631	0.05749144	0.0070227	0.0579313	0.07508428	-0.01974972	0.0492822	0.0336074	0.04709186	0.0594406	-0.07741275	0.1499657	0.0054298	-0.0049455	0.11479226	-0.1854665	0.1705845	-0.106525	0.03862847	-0.2123207	-0.1134507	-0.2146206	0.066475	
eff_turbina2	-0.1546284	-0.05308218	-0.0488678	-0.0462588	-0.09831404	0.1435135	-0.0637608	0.02086145	-0.1439834	-0.0376632	-0.03352804	-0.0195711	0.0099382	0.1267612	0.0443199	0.1116077	0.0434346	0.2064348	-0.09107312	-0.0087689	-0.16100154	-0.0591431	-0.04018942	0.0127412	-0.0998484	0.00779168	0.11879656	0.01305147	0.0250038	0.0250038	

Tabla 0.6: Degradación eficiencia fanduct -7%

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30		
pr_fanore	0.024537	-0.001514	-0.004394	-0.008502	0.011229	-0.011743	-0.004394	0.003843	0.003701	-0.009874	0.001386	-0.005152	0.005538	0.006149	0.008039	-0.002734	0.007528	0.009326	-0.011521	-0.009348	0.007379	-0.006905	-0.008922	-0.009712	0.007065	-0.011709	-0.009704	0.023746	-0.023621	-0.007865		
eff_fanore	0.005792	-0.054589	0.001134	0.007518	-0.006576	0.002483	0.004286	-0.012993	-0.011948	-0.003306	0.001272	0.009497	-0.007189	-0.006576	-0.003924	-0.008369	-0.005999	0.004959	-0.019324	0.011769	0.004904	0.007825	0.002333	0.040387	-0.015947	-0.001005	0.004656	-0.001594	0.005640	0.004584		
mc_fanore	-0.005479	0.010096	0.002197	-0.002829	-0.002517	0.004678	0.001544	0.000761	0.000216	0.000216	0.001035	-0.003307	-0.003307	-0.003307	-0.003307	-0.003307	-0.003307	-0.003307	-0.003307	0.003307	0.003307	0.003307	0.003307	0.003307	0.003307	0.003307	0.003307	0.003307	0.003307	0.003307		
pr_fanoduct	-0.076188	-0.048879	-0.004808	0.009074	0.008074	0.008061	0.007452	-0.002134	-0.005248	0.002917	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	-0.003941	
eff_fanoduct	-0.001675	0.003425	-0.008449	-0.002706	0.003211	0.006809	0.001674	0.007353	-0.002261	-0.007337	0.005189	0.004978	0.000129	-0.003493	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	-0.000432	
mc_fanoduct	0.006635	0.001748	0.004584	-0.002628	-0.002807	7.534E-05	-0.003568	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	0.003576	
pr_compressor1	0.205114	-0.202199	0.209473	0.218736	0.205478	0.207626	0.205791	0.205627	0.197482	0.208973	0.210679	0.215683	0.203329	0.202464	0.204645	0.206062	0.202140	0.207849	0.201184	0.205402	0.208815	0.213752	0.211235	0.208248	0.202476	0.208671	0.206528	0.203176	0.208107	0.209194		
eff_compressor1	-0.952659	-0.967998	-0.944634	-0.972937	-0.976494	-0.955205	-0.959307	-0.969415	-0.950253	-0.959807	-0.971836	-0.980478	-0.974457	-0.967847	-0.969390	-0.967826	-0.968594	-0.989363	-0.980963	-0.961046	-0.961846	-0.979404	-0.977864	-0.964978	-0.962382	-0.957313	-0.960517	-0.960966	-0.977967	-0.969203	-0.959804	
mc_compressor1	-0.043791	-0.045361	-0.045025	-0.049421	-0.047772	-0.048914	-0.049024	-0.049488	-0.049482	-0.049475	-0.041389	-0.044482	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	-0.041078	
pr_compressor2	0.009520	0.006378	0.000838	-0.009516	-1.4838E-06	-0.003793	-0.007703	0.009123	0.009697	0.009524	-0.003583	0.005956	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	0.008307	
eff_compressor2	0.004536	0.005363	-0.004738	-0.001649	0.005431	-0.001686	-0.004099	0.004806	0.005121	-0.004217	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	0.002043	
mc_compressor2	0.007953	-0.006478	-0.006364	0.003505	0.001125	-0.004512	0.000556	0.001679	-0.003624	0.001679	-0.001428	0.004981	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428	-0.001428
pr_turbina1	-0.029382	-0.054299	0.042304	0.037404	-0.038745	0.017482	0.007213	-0.014561	-0.014263	0.014038	0.004802	0.006179	-0.003495	-0.014975	-0.013895	-0.007293	-0.013798	-0.013922	0.014730	0.004585	0.004730	0.004730	0.004730	0.004730	0.004730	0.004730	0.004730	0.004730	0.004730	0.004730	0.004730	0.004730
eff_turbina1	0.004244	-0.003219	0.002709	-0.001134	-0.000471	0.000219	0.000437	0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263	-0.000263
mc_turbina1	0.005429	-0.003508	0.002708	-0.002449	5.941E-05	0.001182	0.002449	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634	-0.002634
pr_turbina2	-0.052295	-0.040651	0.007833	0.004216	-0.007578	0.009349	0.005174	-0.008801	-0.010435	0.006897	0.003697	0.002284	-0.009405	-0.009164	-0.009579	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287	-0.009287
eff_turbina2	-0.001588	-0.001124	0.002708	-0.001489	-0.003654	-0.004922	0.001626	0.004277	-0.002553	-0.003288	0.002253	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553	-0.002553
mc_turbina2	-0.035459	-0.012533	0.040254	-0.002508	-0.042191	0.008173	-0.003818	0.044694	-0.015741	0.002845	-0.001901	0.002342	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451	-0.002451

Tabla 0.7: Degradación eficiencia compresor 1 -1%

Aire	-0.952659	-0.967998	-0.944634	-0.972937	-0.976494	-0.955205	-0.959307	-0.969415	-0.950253	-0.959807	-0.971836	-0.980478	-0.974457	-0.967847	-0.969390	-0.967826	-0.968594	-0.989363	-0.980963	-0.961046	-0.961846	-0.979404	-0.977864	-0.964978	-0.962382	-0.957313	-0.960517	-0.960966	-0.977967	-0.969203	-0.959804
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	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
Degradación	-0.0086695	-0.0079792	-0.0118169	-0.0078709	-0.0102832	0.0446517	0.0085232	0.0093738	0.0091545	-0.0098018	0.0079747	0.0079615	0.0049654	0.0074758	-0.0096309	0.0082363	0.0075766	0.0080673	-0.0043658	-0.0053203	0.0091598	0.0086513	0.0089321	0.0129015	-0.0100104	0.0146325	0.0040801	-0.0068705	-0.0138385	-0.0095883	
eff_fanore	0.0125759	0.0395675	0.0398489	0.0188257	0.0074208	0.0398483	-0.0128645	-0.008827	-0.0069432	-0.0079540	-0.0040654	-0.00322169	0.0024206	-0.0096806	0.0048384	-0.0081764	-0.0091679	-0.0015906	-0.0037437	0.0588675	-0.0079407	-0.0023452	-0.00193745	0.00425144	0.001431	0.00120415	-0.0042606	0.0047366	0.0044764	0.000412	
mc_fanore	0.00373663	0.0087417	-0.0049257	-0.005392	0.0037399	-0.0053922	0.0094931	-0.0033519	-0.0027654	-0.0043291	-0.0011951	-0.0022733	-0.0023076	-0.0030376	-1.451615	-0.0044587	-0.0037388	-0.0030848	6.688746	0.0031014	-0.0047939	-0.0030273	-0.0037718	0.0032775	-0.00227461	0.0032702	0.0044914	0.00177652	0.00468659		
pr_fanoret	-0.0028284	0.0059278	-0.005234	-0.0020886	-0.0071739	0.0021965	-0.0043629	-0.0035266	-0.0049497	0.0021034	-0.0188632	-0.0046516	0.0014709	-0.0057765	-0.0113982	-0.0054601	-0.0087754	-0.0024001	-0.00870754	0.0024556	-0.0048394	-0.0061629	-0.0068452	0.00127019	-0.00210025	0.01019598	-0.0078739	0.00479495	-0.0053486	0.00468659	
eff_fanoduct	5.9494505	-0.0001974	-0.0033576	0.00402296	-0.0084423	-0.0077266	0.00662394	0.0066373	0.00309169	0.00210157	0.0090198	0.0033061	0.00102006	-0.0018234	-0.0098002	-0.0094936	0.0064884	0.00653519	0.0021781	0.0088638	-0.0034574	-0.0057406	-0.00637829	0.00167622	-0.00135177	0.004834	-0.00020354	-0.0036897	-0.0071139	0.0017392	
mc_fanoduct	0.00135495	-0.0027412	-0.0023907	-0.00276485	-0.0066068	-0.0021958	-0.00202056	0.001072694	0.00118109	-0.0014686	0.0019455	0.0014949	0.00184815	0.00107167	-0.0024342	-0.0007929	-0.00012351	0.0021544	0.00193789	-0.00088759	-0.00065015	0.00093127	0.00162068	-0.00019138	0.00013946	0.00066207	0.00187658	-0.0018584	0.0011825	-0.001927	
pr_compressor1	<b>0.8541876</b>	<b>0.8496634</b>	<b>0.84953425</b>	<b>0.8554101</b>	<b>0.8523342</b>	<b>0.8553348</b>	<b>0.8470027</b>	<b>0.8464006</b>	<b>0.8470595</b>	<b>0.8473478</b>	<b>0.8471089</b>	<b>0.8462725</b>	<b>0.844578</b>	<b>0.8520938</b>	<b>0.8453801</b>	<b>0.8571663</b>	<b>0.8406354</b>	<b>0.8443920</b>	<b>0.8468247</b>	<b>0.8523974</b>	<b>0.8506074</b>	<b>0.8509114</b>	<b>0.8442374</b>	<b>0.857654</b>	<b>0.8518659</b>	<b>0.857654</b>	<b>0.8518659</b>	<b>0.857654</b>	<b>0.8518659</b>	<b>0.857654</b>	
eff_compressor1	-0.0049556	-3.9947646	-0.0054977	-0.0046539	-3.99295157	-0.0037148	-3.9916862	-0.0031217	-0.0028246	-3.9930228	-0.0097216	-0.0097055	-0.0074097	-3.9953415	-3.9979493	-3.9982655	-3.9988787	-3.9962837	-3.9938495	-4.0100158	-0.0022106	-3.99870616	-3.9963811	-0.0213319	-3.9989762	-3.9982848	-3.9988047	-3.9964515	-3.9852704	-3.99628074	
mc_compressor1	-0.1740169	-0.177101	-0.1748799	-0.1805152	-0.17704169	-0.1764189	-0.1795304	-0.1770705	-0.177005	-0.17317219	-0.1736895	-0.1747823	-0.1750722	-0.1793059	-0.1746769	-0.1711562	-0.1750922	-0.1794823	-0.17516361	-0.1724823	-0.1748203	-0.1726251	-0.1720345	-0.1760491	-0.1753634	-0.1795203	-0.1735915	-0.1744999	-0.1745167	-0.17412425	
pr_compressor2	0.0002089	-0.007282	0.0013325	0.00099237	-0.0017494	-0.0021642	-0.0055837	0.0080076	0.0086166	0.0065772	0.00054047	0.0094974	0.0023446	0.00970738	-0.0095936	0.0025981	0.0096788	0.0091684	0.0084869	-0.0024757	0.0027194	0.0069412	0.00685342	0.00134698	0.00059936	0.00014119	0.008621	-0.0087092	-0.0034467	0.00065625	
eff_compressor2	0.0038252	-0.0098044	0.0056564	-0.00066807	-0.00255434	-0.0002399	0.00134621	0.0064938	0.0632973	0.00253762	0.0095954	0.00554027	0.00071279	0.0035248	-0.0033793	0.00212652	0.001012	0.0024922	0.0025748	0.0020175	0.0040626	0.0040497	0.0006972	0.0060323	-0.0025649	0.00049574	0.0012888	-0.0039499	0.0026798	-0.004056	
mc_compressor2	0.0060405	0.0031286	0.00207054	0.00312751	0.0014799	0.0042102	0.00105498	-0.004971	0.0016798	-0.00047542	0.00028039	-0.00094812	-0.00082891	0.00114866	-0.0016942	0.0018385	-0.0021194	-0.0034621	0.00353498	0.0536367	0.00170438	-0.0011929	-0.0025649	0.0031577	0.00126154	-0.00018002	2.1493505	0.0047085	0.0007092	0.00080228	
pr_turbina1	0.0424752	0.0144706	-0.037496	-0.0146496	0.0149843	0.0014799	0.0149843	-0.0146496	-0.0146402	0.0135885	-0.0140539	-0.0142885	-0.01471963	0.0094888	0.0019143	0.0023206	0.0094888	0.0094888	0.0094888	0.0016286	-0.0096686	0.0051432	0.0013106	0.0046403	-0.0147212	0.0138031	0.0044822	-0.00732976	0.0142078	0.00437418	0.00038216
eff_turbina1	0.009511	0.0032953	0.002252	0.003296	0.0028238	0.0044533	0.0019538	-0.00104915	-0.000533	0.0017538	0.00022706	0.0009488	0.0039143	0.0027005	0.0005209	0.0016286	0.0096686	0.0051432	-0.00153794	-0.00063767	0.00414304	0.0005388	-0.0003044	0.0031652	0.00144642	0.00050344	0.0034941	0.0037438	0.0003873	0.00093813	
mc_turbina1	0.0041253	-0.00017127	-0.00040547	0.00071663	-0.0009495	-0.0029165	-0.0004936	-0.00276301	-0.0026509	-0.0029494	-0.0028444	-0.0028752	-0.0002844	-0.00198643	0.0018367	0.0028202	-0.0021897	-0.00153478	-0.0010685	0.0002002	-0.0023694	0.0002107	0.00019305	-0.00149947	0.00140111	-0.00087502	0.00030145	0.0033267	0.00010542	0.0004307	
pr_turbina2	0.0044025	0.0101656	-0.0072375	-0.00868339	0.0093969	-0.0083384	-0.0091738	-0.0089382	-0.0092108	-0.0073962	-0.0083865	-0.0027282	-0.00912722	-0.0097957	0.0068686	-0.0097188	-0.00923407	-0.0057809	-0.0044466	0.0087004	-0.0167629	-0.0089773	-0.01032648	-0.0096673	0.0085522	0.00949802	-0.00555453	0.00909781	0.0091661	0.0092548	
eff_turbina2	0.00052845	6.429405	0.0006295	0.0002366	0.0051974	-0.00044837	0.00232786	-0.0019902	-0.00176597	-0.00335152	-0.00488574	0.0008751	-0.00044887	-0.00036663	0.00422087	0.00064734	-0.0049013	-0.0073827	0.0014102	0.00046363	0.00080238	0.0005228	0.00381175	-0.00161744	0.0022812	0.00021545	0.00134083	0.0027099	0.0043684	0.00097954	
mc_turbina2	0.0028497	0.0104172	-0.0213334	-0.0221142	-0.0008295	-0.00846394	-0.00088544	-0.00413437	-0.00422939	-0.00282719	-0.00478146	-0.0017083	-0.0024419	-0.00182324	0.00155591	-0.0017236	0.0045725	0.0004439	-0.00076574	0.0004439	-0.0006536	-0.0025514	0.00018194	-0.0023295	0.00047652	0.00023295	0.00052321	0.00082528	0.00052321	0.00082528	

Tabla 0.8: Degradación eficiencia compresor 1 -4%

Aerío	-4.0049556	-3.9947646	-0.0054977	-0.0046539	-3.99295157	-0.0037148	-3.9916862	-0.0031217	-0.0028246	-3.9930228	-0.0097216	-0.0097055	-0.0074097	-3.9953415	-3.9979493	-3.9982655	-3.9988787	-3.9962837	-3.9938495	-4.0100158	-0.0022106	-3.99870616	-3.9963811	-0.0213319	-3.9989762	-3.9982848	-3.9988047	-3.9964515	-3.9852704	-3.99628074
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Table with 33 columns (caso 1 to caso 30) and rows for components: Degradación, pr\_fanore, eff\_fanore, mc\_fanore, pr\_fanoduct, eff\_fanoduct, mc\_fanoduct, pr\_compressor1, eff\_compressor1, mc\_compressor1, pr\_compressor2, eff\_compressor2, mc\_compressor2, pr\_turbina1, eff\_turbina1, mc\_turbina1, pr\_turbina2, eff\_turbina2, mc\_turbina2.

Tabla 0.9: Degradación eficiencia compresor 1 -7%

Header row for 'Aeroto' component, corresponding to cases 1 through 30.



	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30
pr_fanorc	0.0146435	0.0054949	-0.01036438	-0.0015851	0.011194	-0.0118	-0.0041	0.009544	0.003648	-0.00989	-0.00133	-0.00586	0.010503	0.009612	0.009984	-0.00204	0.007758	0.019236	0.006874	-0.008	-0.01216	-0.00082	-0.00844	-0.00912	0.007049	0.00832	0.00966	0.012885	-0.01219	-0.0077
eff_fanorc	0.0090904	-0.00869873	0.01018088	-0.0004974	-0.00638	0.002626	0.002381	-0.00477	-0.01284	-0.00108	-0.00668	0.008178	-0.00556	-0.00809	-0.00089	-0.00049	-0.00624	0.010634	-0.0125	0.011194	0.005596	0.004639	0.002464	0.004172	-0.01493	-0.01116	-0.00334	-0.00135	0.00573	0.00469
mc_fanorc	-0.0062484	-0.00089753	0.0021908	0.00024627	-0.00288	0.004207	0.001325	-4.8E-05	-0.00021	0.002878	0.001338	0.000682	-0.00377	-0.00241	-0.00486	0.004249	-0.00327	-0.00494	-0.00384	0.002412	0.004236	-0.00012	0.00174	0.002241	-0.00218	-0.00423	-0.00197	-0.00295	0.003601	0.000516
pr_fanduct	-0.0070226	-0.00486727	-0.00477595	0.00515722	0.0001594	0.000806	0.006084	-0.00197	-0.00785	0.00096	0.004609	0.002177	-0.00594	-0.00081	-0.00379	0.006079	-0.0057	-0.00286	0.001175	-0.00055	-0.00251	0.002949	0.003815	0.001744	-0.00184	0.001671	-0.00392	0.000986	-0.0011	0.003644
eff_fanduct	-0.0056022	0.00333265	-0.00342694	-0.002712	0.000103	0.002343	-0.00092	0.002791	-0.00431	-0.01152	-0.00508	-0.00833	-0.00438	-0.0031	-0.001224	-0.00315	-0.00357	-0.00984	-0.00351	-0.00027	0.000964	-0.00725	-0.00503	-0.00424	-0.00752	0.001129	-0.00095	0.000792	0.004322	-0.00495
mc_fanduct	-0.0001414	0.00174902	0.00054835	-0.002246	-0.00019	0.000185	-0.00179	0.002925	0.003699	-0.00099	-0.00025	-0.00211	0.001443	0.000892	-0.00051	0.001764	0.000901	0.001179	-0.00134	-7.3E-05	0.000906	-0.00188	-0.00205	-0.00147	0.000795	-0.00158	0.002541	0.000521	0.00016	-0.00369
pr_compressor1	-0.014827	-0.01784241	-0.01555414	-0.0081659	-0.01301	-0.01148	-0.01101	-0.01628	-0.02131	-0.00938	-0.00783	-0.00437	-0.01516	-0.01604	-0.01622	-0.00851	-0.01635	-0.01186	-0.01066	-0.01603	-0.01186	-0.00692	-0.00652	-0.00999	-0.01625	-0.0158	-0.01744	-0.0154	-0.01036	-0.00926
eff_compressor1	0.037025	0.0611995	0.08496437	0.0575663	0.052606	0.073757	0.070072	0.061004	0.079117	0.075604	0.057269	0.048668	0.054717	0.062417	0.060125	0.064377	0.060509	0.039207	0.068546	0.069367	0.05704	0.05077	0.065186	0.067042	0.071436	0.067817	0.067449	0.056426	0.059959	0.069373
mc_compressor1	0.009381	0.0038216	0.00521816	0.00215733	0.004966	0.006103	0.00145	0.00651	0.009773	0.008872	0.005443	0.003168	0.00518	0.006902	0.008583	0.007329	0.005654	0.001948	0.00669	-0.00053	0.003033	0.004476	0.008614	0.008791	0.009545	0.007829	0.007851	0.00527	0.008476	0.001653
pr_compressor2	-0.0026509	-0.00145592	-0.00889784	-0.0176368	-0.0098	-0.01212	-0.01754	-0.00299	-7.1E-05	-0.018	-0.01929	-0.01985	-0.00804	-0.00245	-0.01835	-0.00312	-0.00935	-0.01128	-0.01231	-0.00979	-0.017	-0.01771	-0.01643	-0.0086	-0.00807	-0.00823	-0.00747	-0.00895	-0.01852	
eff_compressor2	0.0021177	0.00534404	-0.00659414	-0.0028371	0.003733	-0.00339	-0.00572	0.002412	-0.00115	-0.00589	0.000329	0.000464	0.003067	0.001758	-5.5E-05	-0.00192	0.00183	0.001712	0.002035	-0.00231	-0.00042	-0.00294	-0.00728	-0.00452	-0.00016	-0.00277	0.001704	-0.00121	-0.00352	-0.00657
mc_compressor2	-0.0621712	-0.06734857	-0.07321834	-0.0632723	-0.06554	-0.0682	-0.06652	-0.0638	-0.06997	-0.06125	-0.06781	-0.06085	-0.06814	-0.06603	-0.06515	-0.06482	-0.06577	-0.06657	-0.06687	-0.0673	-0.0669	-0.06758	-0.06209	-0.06655	-0.06535	-0.06704	-0.06675	-0.06813	-0.06751	-0.06601
pr_turbina1	-0.0134137	-0.01365794	0.01436429	0.00553882	-0.01371	0.014844	0.007347	-0.01317	-0.01407	0.014107	0.014086	0.014086	-0.01316	-0.01453	-0.01331	0.007333	-0.01312	-0.01376	-0.01409	0.015102	0.014402	0.007276	0.014273	0.013489	-0.01375	-0.01363	-0.01319	-0.01455	0.014473	0.01426
eff_turbina1	0.0247482	0.02028585	0.02456181	0.02239261	0.022459	0.022974	0.023355	0.022732	0.023636	0.023168	0.019666	0.019474	0.020091	0.020634	0.02478	0.021309	0.022134	0.021314	0.020262	0.020189	0.02254	0.02193	0.026837	0.024844	0.02314	0.023384	0.021649	0.023554	0.024436	0.020472
mc_turbina1	0.0071992	0.00252948	0.0072925	0.00685774	0.005497	0.00664	0.007375	0.003624	0.004194	0.008834	0.004189	0.008951	0.002724	0.003013	0.005946	0.006919	0.002886	0.005741	0.00322	0.002667	0.006206	0.007801	0.008969	0.00782	0.006113	0.004733	0.003545	0.004929	0.009552	0.008084
pr_turbina2	0.4795535	0.4793381	0.49649731	0.49288594	0.480919	0.497607	0.493667	0.480185	0.477813	0.498931	0.492397	0.497646	0.47936	0.479324	0.479362	0.493725	0.479311	0.479376	0.479921	0.498458	0.49738	0.493212	0.497527	0.49792	0.479366	0.47989	0.480037	0.479823	0.497151	0.497876
eff_turbina2	0.0726566	0.07066884	0.07550839	0.07350066	0.07079	0.072897	0.073181	0.06936	0.076289	0.078899	0.076066	0.076421	0.074965	0.072817	0.071188	0.074404	0.07448	0.076525	0.072129	0.07439	0.074193	0.074941	0.074629	0.076189	0.070919	0.071108	0.070994	0.073581	0.074354	
mc_turbina2	-1.9009089	-1.90162949	-1.89505866	-1.8977165	-1.90314	-1.89518	-1.89385	-1.90139	-1.89992	-1.89376	-1.89735	-1.89504	-1.90114	-1.90129	-1.89933	-1.89684	-1.90105	-1.90061	-1.90059	-1.89928	-1.89765	-1.89515	-1.89534	-1.89855	-1.90038	-1.89931	-1.90185	-1.90213	-1.89642	-1.89471

Tabla 0.10: Degradación flujo corregido turbina 2 -2%

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanorc	-0.001546	-0.0106261	0.01078782	0.00621116	-0.01118	0.009378	0.006939	0.008498	0.011928	0.008856	0.010676	0.00765	0.014697	0.007122	-0.00982	0.008644	0.010969	0.008489	0.005773	-0.00888	0.00887	0.008407	0.008267	0.015023	-0.00832	-0.01415	0.005344	0.011073	0.006663	0.006939	
eff_fanorc	0.0128217	-0.00504558	-0.00280779	0.01016882	0.008384	-0.00542	-0.01075	-0.0002	-0.00156	-0.00692	-0.00499	-0.00255	0.003085	-0.00296	0.005272	-0.00754	-0.004	-0.0004	-0.0064	0.005532	-0.00727	-0.00853	-0.00063	0.004921	0.006778	0.001456	-0.00629	-0.00393	-0.00817	-0.00828	
mc_fanorc	0.0019968	-0.00572438	-0.00703046	-0.0067634	-0.00036	-0.00075	-0.00637	-0.00506	-0.00646	-0.00649	-0.0039	-0.00396	-0.00423	-0.00495	-0.00176	-0.00617	-0.00643	-0.00478	-0.00366	0.000751	-0.0069	-0.00533	-0.00509	-0.00614	0.000516	0.001406	-0.00519	-0.00435	-0.00306	-0.00379	
pr_fanduct	-0.010793	-0.0088121	-0.01333082	-0.0140179	-0.01499	-0.01198	-0.01274	-0.01289	-0.00882	-0.01096	-0.0058	-0.01401	-0.00808	-0.01728	-0.01089	-0.01107	-0.00756	-0.01263	-0.01455	-0.00389	-0.01101	-0.01255	-0.01858	-0.00829	-0.00703	-0.01094	-0.01565	-0.01005	-0.01822	-0.00969	
eff_fanduct	-0.0188308	-0.01866689	-0.02795042	-0.0135131	-0.02762	-0.02488	-0.01311	-0.01901	-0.02301	-0.01338	-0.01587	-0.01904	-0.02283	-0.02989	-0.02349	-0.01555	-0.01291	-0.01731	-0.01591	-0.02345	-0.02692	-0.02579	-0.01819	-0.02279	-0.01502	-0.00862	-0.0224	-0.02533	-0.02085		
mc_fanduct	0.00182774	-0.00028599	-0.0001796	-0.0009913	0.000518	-0.00069	-0.00053	0.00148	0.00025	-0.00035	0.001076	0.000243	0.00269	0.002687	-0.00159	4.4E-05	-0.00103	0.002014	0.002771	-0.00111	0.000191	0.000704	0.003169	0.000652	-0.00084	-0.00022	0.001289	0.000654	0.000329		
pr_compressor1	0.3089567	0.30080848	0.30312608	0.30412866	0.305789	0.300755	0.300399	0.301106	0.301879	0.300683	0.3041	0.301882	0.303324	0.298245	0.306697	0.300014	0.29936	0.298888	0.298647	0.311848	0.302774	0.299501	0.299772	0.30703	0.306753	0.30504	0.297393	0.301682	0.297843	0.301881	
eff_compressor1	-1.746294	-1.26646471	-1.27566884	-1.2876073	-1.26274	-1.26462	-1.26165	-1.27823	-1.27227	-1.26302	-1.27925	-1.27948	-1.27694	-1.26542	-1.25729	-1.25993	-1.25914	-1.26434	-1.26404	-1.26404	-1.27213	-1.2567	-1.2567	-1.2662	-1.29593	-1.25822	-1.25781	-1.29916	-1.26036	-1.26799	
mc_compressor1	0.186116	0.11674687	0.1184371	0.11312954	0.115985	0.118483	0.119969	0.116036	0.115691	0.119878	0.118984	0.117697	0.115929	0.117887	0.120603	0.117597	0.120265	0.1194	0.117453	0.120228	0.120944	0.122577	0.116214	0.117159	0.117678	0.11855	0.11908	0.119462	0.12035		
pr_compressor2	-0.0654722	-0.06138943	-0.06181658	-0.0553988	-0.06477	-0.06174	-0.06209	-0.05621	-0.06235	-0.06247	-0.06247	-0.05516	-0.07112	-0.06163	-0.06132	-0.05491	-0.05429	-0.07102	-0.06249	-0.06549	-0.06162	-0.05487	-0.06289	-0.07023	-0.06557	-0.0544	-0.06139	-0.05595	-0.06161		
eff_compressor2	-0.008791	-0.01037821	-0.00830877	-0.0084659	-0.01239	-0.00953	-0.00806	-0.00381	-0.00592	-0.00739	-0.00625	-0.00462	-0.00951	-0.00724	-0.01309	-0.00899	-0.01126	-0.00795	-0.00714	-0.00945	-0.00615	-0.01014	-0.00854	-0.00418	-0.01421	-0.01017	-0.00856	-0.00976	-0.00441	-0.01007	
mc_compressor2	-0.0480271	-0.0466524	-0.04357056	-0.04357053	-0.04365	-0.043727	-0.043727	-0.04368	-0.044035	-0.043413	-0.04378	-0.04358	-0.04372	-0.04399	-0.04904	-0.04351	-0.043794	-0.04004	-0.04344	-0.043127	-0.04353	-0.04371	-0.04091	-0.04342	-0.043542	-0.043737	-0.043791	-0.04547	-0.04926	-0.04387	
pr_turbina1	0.0213714	-0.00673943	-0.00700386	0.00050443	0.021629	-0.00691	-0.00701	-0.00617	-0.00689	-0.00686	-0.00668	-0.00639	-0.00613	0.021018	-0.00692	-0.00699	-0.00639	-0.00642	-0.00684	-0.00687	-0.00684	-0.00687	-0.00692	-0.00699	-0.00659	0.021076	0.021604	-0.00633	-0.00699	-0.00655	-0.00686
eff_turbina1	0.0743501	0.07530613	0.07422196	0.07538446	0.074236	0.075022	0.073322	0.071539	0.071651	0.072739	0.073986	0.072559	0.075421	0.073201	0.074091	0.07317	0.07538	0.075258	0.073169	0.073048	0.070868	0.075703	0.074897	0.071239	0.074792	0.073091	0.076955	0.075622	0.07252	0.076176	
mc_turbina1	-0.0683084	-0.07863201	-0.07071008	-0.0719185	-0.07144	-0.07154	-0.07097	-0.07581	-0.0729	-0.07286	-0.07323	-0.07277	-0.07083	-0.07576	-0.06874	-0.07266	-0.07327	-0.07165	-0.07262	-0.06786	-0.07273	-0.07046	-0.06988	-0.07203	-0.06922	-0.07149	-0.07216	-0.07049	-0.07092	-0.07186	
pr_turbina2	1.2567186	1.23973785	1.23839731	1.24315201	1.25673	1.23889	1.23376	1.239046	1.23958	1.239168	1.240231	1.237918	1.238995	1.238643	1.256823	1.238585	1.239553	1.23863	1.238587	1.256584	1.237804	1.238126	1.237149	1.239218	1.257052	1.257194	1.238927	1.238648	1.238669		
eff_turbina2	0.189265	-0.18753591	0.19253762	0.18739545	0.195441	0.191527	0.192535	0.187345	0.187448	0.188645	0.184547	0.190029	0.189242	0.193226	0.193795	0.190303	0.184697	0.185372	0.189644	0.190171	0.191511	0.192231	0.193746	0.188086	0.191661	0.189488	0.188971	0.190443	0.1916	0.1908	
mc_turbina2	-4.8501421	-4.85702361	-4.85485333	-4.854621	-4.85377	-4.85377	-4.85377	-4.85611	-4.85475	-4.85637	-4.85549	-4.85715	-4.8539	-4.85519	-4.85558	-4.8513	-4.85414	-4.85466	-4.85391	-4.85622	-4.84828	-4.85362	-4.85314	-4.85536	-4.85092	-4.85208	-4.85457	-4.85777	-4.85486		

Tabla 0.1.1: Degradación flujo corregido turbina 2 -5%

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanorc	-0.021047	-0.0114734	-0.0120573	-0.0146222	0.006667	-0.01125	-0.01496	-0.01485	-0.01549	0.007594	0.004757	0.005269	0.001007	0.007722	-0.00959	0.008469	0.004255	0.002119	-0.00799	-0.01119	-0.0189	-0.00333	0.00675	0.007249	-0.00072	0.007782	-0.00056	-0.00808	-0.00825	-0.0102	
eff_fanorc	-0.133497	-0.00693681	-0.02099755	-0.0113011	-0.02403	-0.00446	-0.01399	-0.01374	-0.00662	-0.01648	-0.01988	-0.02149	-0.03187	-0.01401	-0.01658	-0.01556	-0.01617	-0.01849	-0.01112	-0.02557	-0.01958	-0.02935	-0.01834	-0.0147	-0.03476	-0.00712	-0.02315	-0.03305	-0.01262	-0.01138	
mc_fanorc	0.045236	0.0068145	0.0060316	0.00461904	0.002838	0.009536	0.007928	0.007894	0.010166	-0.00092	0.001118	0.00275	0.003073	0.001007	0.006672	0.000339	0.001495	0.003842	0.007008	0.0079	0.009769	0.004192	0.002344	0.006629	0.002311	0.00068	0.008234	0.005755	0.004536	0.002678	
pr_fanduct	-0.0112599	-0.00080701	-0.0008408	-0.0021007	-0.01229	-0.0002	-0.00231	-0.00121	-0.00607	-0.00435	-0.00829	-0.00424	-0.00428	-0.00637	-0.00098	-0.0047	-0.01145	-0.0118	-0.00975	0.001213	-0.0095	-0.01239	-0.00547	-0.00672	-0.00763	-0.00319	4.77E-05	-0.00062	-0.00184	-0.00203	
eff_fanduct	-0.0129671	-0.01869667	-0.01738946	-0.0190898	-0.02067	-0.0122	-0.021	-0.01858	-0.01372	-0.01682	-0.02077	-0.01553	-0.01873	-0.01742	-0.01872	-0.0189	-0.01858	-0.01483	-0.01489	-0.019	-0.01564	-0.01803	-0.01753	-0.02496	-0.01558	-0.00721	-0.02745	-0.0196	-0.01826		
mc_fanduct	0.0067694	0.00492115	0.0024526	0.00668736	0.00679	0.004891	0.003714	0.003421	0.006832	0.00208	0.004741	0.006666	0.005368	0.005644	0.003836	0.004265	0.006193	0.007974	0.004187	0.004519	0.004966	0.006793	0.006045	0.00471	0.004384	0.003878	0.004434	0.002969	0.002439	0.000229	
pr_compressor1	-0.025079	-0.01645961	-0.02515149	-0.0202213	-0.03073	-0.01984	-0.01788	-0.01935	-0.02266	-0.02	-0.02687	-0.02634	-0.02958	-0.02816	-0.02521	-0.02754	-0.02804	-0.03106	-0.02618	-0.02701	-0.02618	-0.03783	-0.02779	-0.02474	-0.02474	-0.03064	-0.02304	-0.02228	-0.02072	-0.02105	-0.01644
eff_compressor1	-0.0308695	-0.03565887	-0.00053447	-0.0229206	-0.01094	-0.03148	-0.02783	-0.02124	-0.02046	-0.05049	-0.03128	-0.02565	-0.0058	-0.02235	-0.0031	-0.02318	-0.02718	-0.01812	-0.01221	0.007839	0.002351	0.013887	-0.02197	-0.04214	-0.0028	-0.04386	-0.01585	-0.02537	-0.02071	-0.037	
mc_compressor1	-0.1473365	-0.1478527	-0.14470556	-0.1509142	-0.14257	-0.15172	-0.14631	-0.14637	-0.14627	-0.15188	-0.14806	-0.14533	-0.14049	-0.14472	-0.14778	-0.14935	-0.14704	-0.14541	-0.14853	-0.1422	-0.14806	-0.14228	-0.14848	-0.14241	-0.14979	-0.14478	-0.14998	-0.14649	-0.1492		
pr_compressor2	0.0701123	0.05232949	0.05594986	0.051993	0.068892	0.057024	0.052992	0.05326	0.06159	0.060773	0.0643	0.062739	0.063159	0.065227	0.053614	0.061334	0.069664	0.071272	0.058959	0.054555	0.056773	0.072458	0.063523	0.065049	0.06256	0.061553	0.054319	0.053763	0.054664	0.052901	
eff_compressor2	-0.256908	-0.26138031	-0.267992	-0.2623409	-0.25927	-0.26621	-0.26213	-0.26376	-0.2655	-0.25418	-0.25889	-0.25797	-0.26349	-0.26119	-0.2638	-0.26135	-0.25969	-0.25805	-0.26098	-0.26448	-0.26697	-0.26361	-0.26094	-0.26068	-0.26419	-0.25816	-0.2617	-0.26175	-0.26404	-0.26205	
mc_compressor2	-0.054896	-0.0560521	-0.0519129	-0.085254	-0.1096	-0.10226	-0.10277	-0.10423	-0.11058	-0.10145	-0.10717	-0.108	-0.10421	-0.10566	-0.11036	-0.11187	-0.10576	-0.11093	-0.11129	-0.10771	-0.10537	-0.11297	-0.10873	-0.10582	-0.10946	-0.10418	-0.1038	-0.10558	-0.10422	-0.10319	
pr_turbina1	-0.0072806	0.01434971	0.00754988	0.01397393	-0.01325	0.01372	0.014319	0.014199	0.013816	-0.01423	-0.01463	-0.01343	-0.01422	-0.01454	-0.01404	-0.01396	-0.01311	-0.01369	0.014927	0.005626	0.013807	-0.01408	-0.01351	-0.01446	-0.01441	-0.01415	0.005538	0.007564	0.007441	0.014291	
eff_turbina1	0.0215442	0.02414268	0.02586157	0.02210739	0.023141	0.027099	0.02062	0.02502	0.026398	0.018717	0.023076	0.020863	0.025806	0.021922	0.021716	0.023083	0.024606	0.025403	0.019258	0.023248	0.023916	0.027199	0.023434	0.02402	0.026696	0.021602	0.022954	0.022456	0.023521	0.021673	
mc_turbina1	0.0048929	0.00705945	0.00655237	0.00652758	0.004189	0.005756	0.007167	0.009982	0.008903	0.008324	0.004353	0.001004	0.003661	0.002921	0.002676	0.001881	0.002902	0.004788	0.003716	0.004967	0.003716	0.004786	0.002822	0.002707	0.004843	0.003664	0.003945	0.00531	0.007835		
pr_turbina2	-0.8094299	-0.464691936	-0.46935429	-0.464626	-0.48425	-0.46413	-0.46589	-0.4643	-0.46558	-0.48391	-0.48393	-0.48299	-0.48297	-0.48447	-0.4686	-0.4826	-0.48325	-0.48304	-0.46513	-0.47009	-0.46513	-0.48379	-0.48236	-0.48357	-0.48364	-0.48243	-0.47066	-0.46832	-0.46945	-0.46554	
eff_turbina2	-0.616458	-0.07659915	-0.07659915	-0.0745935	-0.07376	-0.07853	-0.07131	-0.07576	-0.07548	-0.07359	-0.07409	-0.07544	-0.07659	-0.07664	-0.07604	-0.07669	-0.07445	-0.07783	-0.07008	-0.07166	-0.07405	-0.0779	-0.07645	-0.07531	-0.07198	-0.07786	-0.07486	-0.07577	-0.07514	-0.07504	
mc_turbina2	1.847123	1.84949398	1.85024163	1.84789929	1.845966	1.845847	1.851804	1.848376	1.851513	1.845946	1.843754	1.843379	1.844107	1.847303	1.847087	1.842741	1.842538	1.841243	1.848684	1.848031	1.847028	1.843113	1.842167	1.843091	1.843988	1.842795	1.849154	1.845841	1.849772	1.852652	

Tabla 0.12: Degradación flujo corregido turbina 2 2%

Acierito	1.847123	1.84949398	1.85024163	1.84789929	1.845966	1.845847	1.851804	1.848376	1.851513	1.845946	1.843754	1.843379	1.844107	1.847303	1.847087	1.842741	1.842538	1.841243	1.848684	1.848031	1.847028	1.843113	1.842167	1.843091	1.843988	1.842795	1.849154	1.845841	1.849772	1.852652
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	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanorc	-0.058969	-0.072209	-0.028116	-0.053313	-0.02358	-0.0394	-0.0017	-0.0318	-0.0079	-0.0308	-0.00462	-0.0232	-0.0052	-0.0092	-0.0592	-0.0051	-0.0343	-0.0041	-0.0482	-0.0045	-0.00111	-0.0279	-0.00807	-0.0236	-0.00979	-0.05539	-0.00297	-0.0374	-0.00464	-0.00837	
eff_fanorc	-0.0487422	-0.05108143	-0.04231196	-0.0467744	-0.04205	-0.04461	-0.04097	-0.04369	-0.04919	-0.04321	-0.04841	-0.04091	-0.04297	-0.04095	-0.0484	-0.04749	-0.04392	-0.04509	-0.03143	-0.04578	-0.03956	-0.04177	-0.05039	-0.04012	-0.05588	-0.04679	-0.0447	-0.04536	-0.04687	-0.05331	
mc_fanorc	0.0114822	0.01107915	0.0076908	0.0109985	0.008173	0.010983	0.009189	0.011889	0.012526	0.008434	0.011964	0.00952	0.009671	0.011596	0.010852	0.010688	0.008511	0.008269	0.014943	0.011118	0.00879	0.010058	0.00731	0.008749	0.010718	0.009952	0.011174	0.009818	0.012419	0.011052	
pr_fanduct	-0.0132467	-0.01586052	-0.01582278	-0.0205143	-0.0166	-0.0109	-0.01632	-0.0128	-0.01295	-0.02081	-0.00964	-0.01856	-0.02015	-0.01382	-0.01945	-0.01581	-0.01536	-0.01159	-0.01527	-0.01848	-0.01699	-0.01957	-0.01953	-0.01881	-0.01881	-0.01827	-0.01427	-0.01459	-0.01532	-0.01751	
eff_fanduct	-0.038729	-0.04947516	-0.0453439	-0.0535232	-0.04835	-0.03279	-0.04772	-0.03816	-0.03849	-0.05702	-0.03442	-0.04935	-0.05293	-0.04418	-0.05161	-0.05095	-0.04646	-0.04486	-0.04602	-0.04282	-0.04798	-0.04617	-0.04916	-0.05095	-0.04949	-0.04866	-0.04439	-0.04413	-0.04365	-0.04735	
mc_fanduct	0.0141326	0.01319322	0.01080705	0.01407868	0.0112775	0.012259	0.012659	0.014666	0.014718	0.012907	0.013199	0.013775	0.014326	0.015158	0.014474	0.013853	0.012315	0.011234	0.012976	0.01407	0.012565	0.013829	0.010205	0.013176	0.013192	0.013636	0.014044	0.012602	0.01525	0.014006	
pr_compressor1	-0.1008203	-0.1022621	-0.09761241	-0.1016139	-0.09851	-0.09763	-0.09731	-0.09755	-0.09736	-0.09854	-0.0995	-0.09983	-0.09953	-0.09564	-0.10327	-0.10041	-0.0985	-0.10148	-0.0868	-0.09846	-0.09347	-0.09751	-0.10225	-0.09342	-0.1028	-0.10043	-0.10045	-0.10126	-0.09813	-0.10296	
eff_compressor1	0.0453808	0.05946292	0.02830521	0.04981923	0.035413	0.026441	0.026887	0.030761	0.030548	0.038262	0.039425	0.03509	0.040118	0.02227	0.059626	0.045198	0.036553	0.046477	0.011285	0.034423	0.007929	0.027231	0.051726	0.00999	0.057666	0.045011	0.043232	0.049077	0.033318	0.057815	
mc_compressor1	-0.034179	-0.0428003	-0.03708296	-0.0324908	-0.03374	-0.03834	-0.03756	-0.03227	-0.03255	-0.03079	-0.03425	-0.03353	-0.03283	-0.03393	-0.02994	-0.03163	-0.03244	-0.03629	-0.03465	-0.03375	-0.03309	-0.03609	-0.03351	-0.03561	-0.02976	-0.03189	-0.03477	-0.0324	-0.03333	-0.0304	
pr_compressor2	0.4198527	0.4208054	0.41880255	0.4217984	0.419268	0.41998	0.41843	0.420859	0.421508	0.419342	0.420088	0.422668	0.419562	0.420886	0.420426	0.4196	0.419527	0.41147	0.42104	0.418599	0.420206	0.42122	0.420496	0.419509	0.421034	0.419004	0.418652	0.421575	0.420739		
eff_compressor2	-1.6578178	-1.659096	-1.6576832	-1.6623429	-1.66057	-1.65569	-1.65787	-1.65777	-1.65842	-1.66025	-1.6569	-1.6602	-1.65804	-1.65978	-1.65613	-1.65931	-1.66239	-1.65945	-1.65951	-1.65861	-1.65675	-1.65907	-1.65532	-1.65968	-1.65835	-1.65962	-1.65941	-1.65824			
mc_compressor2	-0.3332654	-0.52959615	-0.52768413	-0.5294695	-0.53031	-0.52826	-0.53044	-0.52629	-0.52241	-0.52628	-0.5292	-0.52993	-0.52907	-0.525	-0.53037	-0.52623	-0.5257	-0.5322	-0.52183	-0.52887	-0.52493	-0.52885	-0.52682	-0.52533	-0.53057	-0.52924	-0.52806	-0.53245	-0.52517	-0.52833	
pr_turbina1	-0.0122441	-0.01236011	-0.0130701	-0.0125729	-0.01295	-0.01248	-0.01299	-0.01246	-0.01252	-0.01343	-0.01293	-0.01247	-0.01218	-0.01294	-0.01247	-0.01274	-0.01305	-0.01287	0.008762	-0.01244	-0.01312	-0.01248	-0.01252	-0.01265	-0.01251	-0.0124	-0.01299	-0.01295	-0.01232	-0.01247	
eff_turbina1	0.1220738	0.12281612	0.12281612	0.12356467	0.121275	0.122008	0.122622	0.122645	0.122411	0.122444	0.124948	0.119944	0.126744	0.121023	0.121066	0.123794	0.12381	0.124245	0.124384	0.119933	0.122371	0.12244	0.121888	0.119628	0.12454	0.120479	0.122129	0.123219	0.120866		
mc_turbina1	0.0177514	0.01938919	0.02158016	0.02216551	0.019657	0.020597	0.0205	0.020482	0.021146	0.020472	0.01987	0.018461	0.019408	0.020196	0.0202943	0.021596	0.019414	0.02492	0.020835	0.021211	0.020701	0.021174	0.022597	0.020184	0.020388	0.019173	0.019826	0.019004	0.020065		
pr_turbina2	-1.1636373	-1.16466447	-1.16526591	-1.1665483	-1.16573	-1.16394	-1.16534	-1.16503	-1.16518	-1.16743	-1.16378	-1.16565	-1.16553	-1.16584	-1.16565	-1.16617	-1.16542	-1.16542	-1.15143	-1.16492	-1.16349	-1.16505	-1.16545	-1.16588	-1.16557	-1.16461	-1.16508	-1.16521	-1.16502	-1.1651	
eff_turbina2	-0.212846	-0.21112998	-0.20973654	-0.2055455	-0.20799	-0.21461	-0.20776	-0.211	-0.21042	-0.209	-0.21599	-0.20657	-0.20831	-0.20895	-0.20755	-0.20875	-0.20954	-0.20755	-0.20954	-0.20755	-0.2091	-0.2069	-0.20721	-0.20807	-0.20561	-0.20743	-0.20866	-0.21001	-0.21197	-0.20854	-0.20879
mc_turbina2	4.597966	4.51270266	4.51369523	4.5160048	4.514445	4.515044	4.512817	4.513997	4.514255	4.518503	4.511685	4.513783	4.512938	4.515176	4.515176	4.51633	4.513717	4.513837	4.518536	4.512486	4.51287	4.511874	4.513882	4.514508	4.513975	4.511064	4.513144	4.514781	4.51252	4.513019	

Acierto	4.5097966	4.51270266	4.51369523	4.5160048	4.514445	4.515044	4.512817	4.513997	4.514255	4.518503	4.511685	4.513783	4.512938	4.515176	4.515176	4.51633	4.513717	4.513837	4.518536	4.512486	4.51287	4.511874	4.513882	4.514508	4.513975	4.511064	4.513144	4.514781	4.51252	4.513019
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Tabla 0.13: Degradación flujo corregido turbina 2 5%

## 11.3 Anexo C

Debido a la gran cantidad de tablas sólo se mostrarán algunos de los casos mostrados en el capítulo 8.

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	-0.01653893	-0.03170171	-0.02427245	-0.01622295	-0.00890609	0.01020777	-0.04413205	-0.01720796	0.01108943	-0.0687041	0.03810407	0.03630313	-0.02805182	0.01639624	-0.00589204	-0.08119095	0.04632705	-0.04677866	0.01465971	-0.0522482	0.02353057	-0.08651598	0.01754905	0.02172285		
eff_fanorc	-2.02937628	-1.9446072	-2.00026468	-2.07027415	-2.0112718	-2.03488927	-2.01200357	-2.06074477	-2.035566	-1.97519261	-1.98693964	-2.04559417	-2.0225217	-1.98222743	-2.01799946	-1.9930103	-2.03067567	-1.99679931	-1.9796203	-1.96055636	-1.97804745	-1.99013401	-2.02168806	-2.02427606	-2.04038551	
mc_fanorc	0.00262928	-0.04043461	0.00031063	0.00566892	0.00077821	0.00168377	0.00174695	0.00455283	0.02004206	-0.00033913	-0.0012418	0.00184095	0.00166663	-0.00200187	0.00078701	0.00169441	0.00027292	0.00050962	-0.00220704	-0.00119846	-0.00333561	-0.00157702	0.00313506	0.000110977	0.0012542	
pr_fanduct	-0.12469619	-0.26205099	-0.0153633	0.29239511	0.03171676	0.1178643	0.0314192	0.231502	0.13109875	-0.10959093	-0.033193	0.15242355	0.04782168	-0.08358978	0.03567711	-0.01794674	0.07915945	-0.02718393	-0.10392422	-0.1457352	-0.12656273	-0.05444766	0.04514471	0.09593635	0.10048132	
eff_fanduct	-0.22621495	0.4732544	0.0340006	-0.52357076	-0.05699251	-0.2063452	-0.05178894	-0.2034871	-0.23979354	0.19619147	0.02167003	-0.27441463	-0.09245475	0.15379986	-0.06645037	0.02365914	-0.14475332	0.05461917	0.7937712	0.26158005	0.22369735	-0.08077586	-0.17519402	-0.18670213		
mc_fanduct	-0.01781374	0.03772904	0.00220388	-0.04169792	-0.0045037	-0.01709766	-0.00422455	-0.0331451	-0.01879481	0.0155913	0.00173829	-0.02186687	-0.00667401	0.011718	-0.0051055	0.00265704	-0.01130717	0.00662029	0.01470113	0.02079444	0.01866025	0.000775509	-0.00607205	-0.01339622	-0.01441903	
pr_compressor1	-0.03859537	0.02841804	-0.0045057	-0.0638516	-0.02259394	-0.01027986	-0.04099914	-0.0512011	-0.03462384	-0.01527887	0.00726743	-0.01588117	-0.03538928	0.02789284	-0.01077292	-0.04685744	0.00592396	-0.01487002	0.01198742	-0.00956317	0.02383576	0.01703358	-0.06723752	-0.01040442	-0.01726067	
eff_compressor1	-4.47472213	-5.41611182	-4.99563597	-4.10442959	-4.66063367	-4.79231373	-4.54746411	-4.14849709	-4.46303616	-4.96965606	-5.03850517	-4.59859565	-4.53055132	-5.33602373	-4.73864654	-4.54178917	-4.76196432	-4.91477908	-5.18694678	-5.12650275	-5.22640117	-5.14624467	-4.72829689	-4.70958955	-4.62538906	
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_compressor2	1.9701533	-1.6340709	-0.30738875	3.23013785	1.28382941	0.11281923	2.01140542	3.17269129	1.93284075	0.14689391	-0.48959551	1.02443456	1.84576414	-2.02061172	0.81391936	2.26661815	0.43455656	-0.22168171	-1.03338772	-0.45380862	-1.17312374	-1.0870766	3.45260923	0.70046988	1.1002538	
eff_compressor2	-1.35706037	1.14757616	0.20888438	-2.24162125	-0.87579612	-0.10417913	-1.37678216	-2.19276859	-1.33231864	-0.03091274	0.33931395	-0.71689409	-1.26604945	1.38663565	-0.5578464	-1.56127801	-0.29965213	0.15738022	0.7007834	0.3254381	0.82148949	0.76238194	-2.36041674	-0.48995311	-0.76031685	
mc_compressor2	0.51975873	-0.44432732	-0.08770635	0.85320196	0.3359046	0.04189741	0.51943572	0.83843165	0.51757912	0.01663636	-0.118228	0.28403348	0.47915137	-0.53089106	0.21474747	0.58099294	0.12846917	-0.07344602	-0.26502499	-0.1951992	-0.29933637	-0.2894485	0.88601401	0.19547586	0.30097594	
pr_turbina1	-0.0020925	0.00318271	-0.00232587	-0.0056203	0.00328419	-0.00239125	-0.006666	-0.00505081	0.00208444	-0.00136971	-0.00034502	-0.00696301	0.00672776	-0.00388945	0.00535641	0.00254738	0.00287609	-0.00063949	0.00296817	-0.0036322	-0.00307705	-0.00336895	-0.00354248	-0.00277081	-0.00242974	
eff_turbina1	-0.00768791	-0.00046652	-0.00689616	-0.00658212	-0.00283999	-0.00283355	-0.00527536	-0.00400026	-0.00188874	-0.00018874	-0.0025174	-0.00676665	-0.00088277	-0.00585061	-0.00400058	-0.00344463	-0.00622569	-0.00092359	0.00621242	-0.0036322	-0.00307705	-0.00336895	-0.00354248	-0.00277081	-0.00242974	
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_turbina2	-0.00502807	0.01062786	0.00186438	-0.01175604	-0.00203045	-0.00104831	-0.00082209	-0.01003619	-0.00593289	0.00742255	-0.00064835	-0.00640285	-0.00257934	0.00535494	-0.00405951	0.00031383	-0.00589964	0.00444476	0.00224545	0.00079788	0.00458067	-0.00051037	-0.00278159	-0.00535892	-0.00652252	
eff_turbina2	0.0484255	-0.03109132	-0.00427002	0.0306638	0.00319067	0.01463096	-0.00124091	0.02618278	0.0184205	-0.01604324	0.00225377	-0.001950214	0.00405147	-0.0087556	0.00379697	-0.00270598	0.01353264	-0.00639298	-0.00764676	-0.02181432	-0.00896157	-0.00493977	-0.00100256	-0.01291339	0.01664422	
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Aciento eff fanorc	-2.02937628	-1.9446072	-2.00026468	-2.07027415	-2.0112718	-2.03488927	-2.01200357	-2.06074477	-2.035566	-1.97519261	-1.98693964	-2.04559417	-2.0225217	-1.98222743	-2.01799946	-1.9930103	-2.03067567	-1.99679931	-1.9796203	-1.96055636	-1.97804745	-1.99013401	-2.02168806	-2.02427606	-2.04038551
Aciento eff compresor 1	-4.47472213	-5.41611182	-4.99563597	-4.10442959	-4.66063367	-4.79231373	-4.54746411	-4.14849709	-4.46303616	-4.96965606	-5.03850517	-4.59859565	-4.53055132	-5.33602373	-4.73864654	-4.54178917	-4.76196432	-4.91477908	-5.18694678	-5.12650275	-5.22640117	-5.14624467	-4.72829689	-4.70958955	-4.62538906

Tabla 0.1: Caso 10: Degradación -2% eficiencia fancore y -5% eficiencia compresor 1 (I)



	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	-0.02115978	0.02562693	0.005104	-0.00205016	0.01300787	0.05700916	0.0546878	-0.02742246	-0.05641558	-0.02351805	-0.02180902	-0.01863383	-0.01943707	-0.0174098	-0.00374935	-0.12017962	-0.00551836	0.02094673	-0.00189996	-0.00055627	-0.00560019	-0.03199976	0.01045998	-0.01235099	-0.02879947
	-1.98583584	-2.05305595	-1.96558312	-2.00636546	-2.00552688	-2.01516117	-2.06394987	-2.01326527	-2.02684013	-1.99651203	-1.9959968	-1.98158721	-2.03897938	-1.99053819	-2.04409489	-1.99318009	-1.98691462	-2.01650284	-2.04273429	-2.06047728	-1.94918874	-2.04685996	-2.02907072	-1.98956296	-1.98355137
	-0.00096402	0.00147857	-0.00278099	-9.8728E-05	9.2297E-06	-0.0010265	0.00280317	0.00116564	0.00353233	-6.087E-05	-0.0005188	-0.00026669	0.00254125	-0.00061599	0.002497	0.00250795	-0.00086105	0.0008654	0.00276592	0.00436824	-0.00353533	0.00047823	0.00160728	-0.00136477	0.00013966
	-0.0846792	0.12706876	-0.14174083	-0.01107953	0.03425711	0.0224689	0.23966559	0.03057204	0.11852626	-0.0276484	-0.05916962	-0.03439095	0.12007596	-0.04983961	0.12361268	-0.02265732	-0.04623538	0.08294592	0.14367178	0.23407469	-0.19914173	0.14998852	0.10879178	-0.09493279	-0.02148406
	0.14916821	-0.22301134	0.25223406	0.01860754	-0.06434597	-0.03456723	-0.43187087	-0.04915203	-0.22368995	0.0497026	0.09869797	0.0738821	-0.21542448	0.08561768	0.23195889	0.03320843	0.08029128	-0.14829291	-0.25095279	-0.41617766	-0.3628531	-0.27257291	-0.20049156	0.15663757	0.03557628
	0.01213636	-0.01835528	0.01998844	0.00162983	-0.00509655	-0.00829451	-0.03439413	-0.00442859	-0.01685617	0.00372549	0.00852074	0.00470416	-0.01722833	0.00701066	-0.01730634	0.00317925	0.00641758	-0.0120318	-0.002027666	-0.03318964	0.0282309	-0.02132963	-0.01561213	0.01281475	0.00271615
	0.0055943	-0.00864738	0.01981357	-0.00793065	-0.00369899	0.02481049	-0.01428357	-0.0252465	-0.05785775	-0.00645799	-0.01095368	-0.0084199	-0.04232846	-0.00266712	-0.04308188	-0.05171136	-0.00183267	-0.01084262	-0.03623624	-0.04657766	0.03794619	-0.05304779	-0.02366909	0.00311607	-0.02205535
	-5.05625185	-4.65304772	-5.28128207	-4.8264235	-4.83997626	-5.12384015	-4.55160115	-4.69799653	-4.33157696	-4.9507499	-4.81054304	-5.03764791	-4.40968396	-4.97285473	-4.24275467	-4.59045844	-5.01333241	-4.80839873	-4.41472027	-4.31046729	-5.56674353	-4.27618962	-4.59850225	-5.0262746	-4.88945885
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.34497989	0.62383222	-1.40560616	0.56483175	0.2699583	-1.31219292	0.87741658	1.06001643	2.80644801	-0.00796309	0.87659166	-0.46945009	2.26108288	-0.01666331	3.14729591	1.96409115	-0.24669938	0.23383378	2.13101224	2.27717313	-2.67149103	2.80734584	1.5668423	-0.19337891	0.23249162
	0.47401537	-0.44336029	0.97810779	-0.38216392	-0.1842568	0.8934782	-0.62722855	-0.72822934	-1.92854887	0.01030748	-0.5865721	0.32003328	-1.55687327	0.01927617	-2.15794338	-1.34059174	0.17541565	-0.17057088	-1.47323443	-1.59054327	1.84625278	-1.9325779	-1.0496321	0.14702161	-0.21598072
	-0.0897429	0.17423673	-0.3705449	0.14934707	0.0798809	-0.32966669	0.25302694	0.27410295	0.72749384	-0.0069135	0.22747303	-0.12978548	0.59758415	-0.00600219	0.83017196	0.48611217	-0.06542016	0.06896242	0.56412528	0.60355379	-0.70937797	0.73495636	0.40492176	-0.05395957	0.07785479
	-0.00064547	0.00055764	0.00553748	-0.00064453	-0.00094156	0.00507761	-0.00216009	-0.0008204	-0.00336034	0.00223597	-0.00182054	0.00577258	-0.00222513	-0.00161979	-0.011083455	-0.0023127	0.001279	0.00104055	-0.00645138	-0.00336182	0.00719196	-0.00202668	-0.00641005	-0.00047943	0.00091762
	-0.0035571	-0.00350773	-0.00639582	-0.00418572	-0.0072423	-0.00836939	-0.00812011	-0.00436479	-0.0080311	-0.0077191	-0.00572684	-0.00386294	-0.00589944	-0.00398807	-0.00054048	-0.00490966	-0.0033754	-0.00579562	-0.00080065	-0.00209414	-0.0049259	-0.00843333	-0.00177999	-0.00623853	-0.00669663
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.00474225	-0.0033302	0.0050414	-0.00122847	-0.00247566	0.00032871	-0.00933662	-0.00158142	-0.00418376	0.00033388	0.00027491	0.00309077	-0.00525737	0.00120924	-0.00617209	0.00136008	0.00422984	-0.00322441	-0.00644252	-0.00916683	0.01002643	-0.00594815	-0.00452181	0.00210013	0.00150636
	-0.00940053	0.01545138	-0.01364458	-3.5349E-05	0.0067343	0.00426919	0.03334231	-0.00034302	0.015400835	-0.00171341	-0.00414091	-0.0103147	0.01385745	-0.0041402	0.01474648	-0.00658065	-0.00216775	0.01132231	0.00882896	0.02148083	-0.0233825	0.01677153	0.01647667	-0.00804867	-0.00080642
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Tabla 0.2: Caso 10: Degradación -2% eficiencia fancore y -5% eficiencia compresor 1 (II)

	-1.98583584	-2.05305595	-1.96558312	-2.00636546	-2.00552688	-2.01516117	-2.06394987	-2.01326527	-2.02684013	-1.99651203	-1.9959968	-1.98158721	-2.03897938	-1.99053819	-2.04409489	-1.99318009	-1.98691462	-2.01650284	-2.04273429	-2.06047728	-1.94918874	-2.04685996	-2.02907072	-1.98956296	-1.98355137
	-5.05625185	-4.65304772	-5.28128207	-4.8264235	-4.83997626	-5.12384015	-4.55160115	-4.69799653	-4.33157696	-4.9507499	-4.81054304	-5.03764791	-4.40968396	-4.97285473	-4.24275467	-4.59045844	-5.01333241	-4.80839873	-4.41472027	-4.31046729	-5.56674353	-4.27618962	-4.59850225	-5.0262746	-4.88945885



	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fancore	-0.02614551	-5.04346238	0.08152847	-0.05860301	0.0692651	0.0249448	-0.00073491	0.01214458	-0.04987124	0.00137129	0.00690174	-0.06621611	-0.02087256	0.00098999	0.0250085	-0.0178936	-0.01331942	-0.04096639	-0.02304772	-0.02204092	-0.02013252	-0.02684035	0.07680643	0.02214412	-0.01803002	
eff_fancore	-5.00550811	-5.04346238	-5.06618401	-4.98996648	-5.02787003	-4.98989003	-5.03973747	-5.02566952	-4.98924385	-5.03180388	-4.96638516	-5.0010777	-4.99868172	-5.0125263	-4.98423243	-5.06276854	-4.96127594	-5.03991618	-5.02949305	-5.0085045	-4.98476084	-5.0594979	-5.0955118	-5.03332203		
mc_fancore	-0.00036594	0.0018252	0.00126337	0.00041102	-0.00111717	-0.00362827	0.00161294	0.00054663	-0.00121362	0.00018094	0.00063027	-0.00153021	-0.00066445	-0.00151166	-0.0011072	-0.00237098	0.00312293	-0.0027322	0.00162537	0.00135996	-0.00088522	-0.00195802	0.00099555	0.00118705	0.00150503	
pr_fanduct	-0.0530855	0.02677794	0.18129484	-0.05564501	0.03806005	-0.15933042	0.09464123	0.05423769	-0.4718055	0.0438135	0.0429891	-0.179676	-0.06065747	-0.07544211	-0.01563403	-0.1529856	0.15179306	-0.2094962	0.06229267	0.05228912	-0.07267644	-0.13894731	0.16282026	0.11634988	0.05138378	
eff_fanduct	0.09917556	-0.05084237	-0.3258218	0.10020235	-0.06768297	0.27951115	-0.16706583	-0.09479314	0.25109397	-0.03346105	-0.07786607	0.31932511	0.0540085	0.13976968	0.02909409	0.28606823	-0.27251433	0.3679635	-0.11652161	-0.09197078	0.12862954	-0.24526117	-0.28964503	-0.21497062	-0.08913269	
mc_fanduct	0.00752536	-0.00333434	-0.0259278	0.00787645	-0.0056832	0.02148673	-0.01364166	-0.00795652	0.02138253	-0.00274651	-0.00604289	0.02550529	0.00845248	0.0104894	0.0018173	0.02175322	-0.02152852	0.02991186	-0.00901496	0.00765615	0.01027661	0.01963592	-0.02335243	-0.01678938	-0.00704666	
pr_compressor1	-0.0071142	-0.03137805	0.00374749	-0.02423945	0.02780115	0.04559631	-0.02970528	-0.00602192	-0.01386597	-0.01927401	-0.0129276	-0.01054275	0.00234989	0.00939608	0.001499063	0.02050057	-0.04215191	0.00799904	-0.02256528	-0.0182378	0.00389493	0.00746013	0.00105202	-0.01203753	-0.04503285	
eff_compressor1	-2.01329957	-1.52459156	-1.69427325	-1.94125088	-2.21702637	-2.61640506	-1.56254457	-1.91448627	-1.91865085	-1.72108907	-1.7570434	-2.19485025	-2.0820072	-2.22813178	-2.16660825	-2.46641169	-1.381789	-2.27858871	-1.64541515	-1.7835655	-2.01715819	-2.21251466	-1.74543449	-1.67823079	-1.40792942	
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_compressor2	-0.0421674	2.05997436	0.40317791	0.44869018	-1.69974917	-2.9752594	1.7016185	0.00783248	0.89590018	1.12154524	0.82076438	-0.02567023	-0.3754856	-1.14681558	-1.06620024	-2.07205346	2.33930517	-0.73055102	1.24979558	0.63794016	-0.07104085	-0.80070964	0.3494757	0.90788152	2.6964628	
eff_compressor2	0.03373537	-1.40662126	-0.29681033	-0.30013324	1.15278966	2.04801342	-1.16979856	-0.01020281	-0.59169366	-0.7638071	-0.5691484	0.03592891	0.6334976	0.78900223	0.74445754	1.4385271	-1.61566172	0.52547564	-0.6041809	-0.4462125	0.05767718	0.5636363	-0.25451785	-0.6312743	-1.8409992	
mc_compressor2	-0.0192945	0.52766253	0.13188702	0.10016789	-0.42735275	-0.77651704	0.4519482	0.00845259	0.2179297	0.29162572	0.22131845	-0.0412597	-0.30127268	-0.27578115	-0.55499723	0.6156769	-0.20825349	0.16388206	-0.02481827	-0.22065742	0.11991555	0.253022	0.70490422			
pr_turbina1	-0.0063736	-0.00459667	-0.0022386	3.3532E-05	0.00437522	0.00863544	-0.00767494	0.00076645	-0.00150295	-0.00489546	-0.00255399	-0.00055627	-0.00108787	0.00494651	0.00874088	-0.00453096	0.00101176	-0.00382489	1.9215E-05	-0.00294238	0.00340929	0.00012275	-0.00226507	-0.00586879		
eff_turbina1	0.00042845	-0.00390545	-0.00433442	-0.00467736	-0.0048797	-0.00813743	0.00047953	-0.0066628	-0.00145911	-0.00174878	-0.00387397	0.00022226	-0.00314181	-0.00533623	-0.00679124	-0.0055605	-0.00232579	-0.00242096	-0.00598135	-0.00138459	-0.00065164	-0.00090571	-0.0050892	-0.00384773		
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_turbina2	0.0044637	-0.00175029	-0.00730701	0.00341511	0.00017764	0.00603015	-0.00338617	-0.0007156	0.00500169	-0.00123486	0.00657617	0.00122224	0.0043669	0.00144147	0.01088466	-0.00515012	0.00701733	-0.00507812	0.0018842	0.00725321	-0.00745746	-0.00591201	-0.00378031			
eff_turbina2	-0.00665938	-0.0012147	0.02457833	-0.00876784	0.00875124	-0.01466571	0.01027654	0.00755227	-0.01369219	0.00454807	0.00648571	-0.02316305	-0.00588868	-0.0071965	0.00153721	-0.02033219	0.01675456	-0.0220089	0.00608064	0.00425818	-0.00838628	-0.0119928	0.02242355	0.01840325	0.00112928	
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Acierito eff fancore	-5.00550811	-5.04346238	-5.06618401	-4.98996648	-5.02787003	-4.98989003	-5.03973747	-5.02566952	-4.98924385	-5.03180388	-4.96638516	-5.0010777	-4.99868172	-5.0125263	-4.98423243	-5.06276854	-4.96127594	-5.03991618	-5.02949305	-5.0085045	-4.98476084	-5.0594979	-5.0955118	-5.03332203	
Acierito eff compressor1	-2.01329957	-1.52459156	-1.69427325	-1.94125088	-2.21702637	-2.61640506	-1.56254457	-1.91448627	-1.91865085	-1.72108907	-1.7570434	-2.19485025	-2.0820072	-2.22813178	-2.16660825	-2.46641169	-1.381789	-2.27858871	-1.64541515	-1.7835655	-2.01715819	-2.21251466	-1.74543449	-1.67823079	-1.40792942

Tabla 0.3: Caso10: Degradación -5% eficiencia fancore y -2% eficiencia compresor 1 (I)

	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50	
	0.00794111	-0.0009175	-0.0178785	0.013209634	-0.00381578	0.01137495	-0.01833577	-0.02275006	0.0033709	0.06093922	0.019193916	0.00415479	0.02566239	0.01828973	0.04791933	0.0206933	0.00982395	-0.04165212	0.03700883	-0.05691886	0.08533874	0.00977025	0.00338858			
	-5.03230471	-5.00173145	-4.98317803	-5.01426603	-5.06211905	-5.00906143	-5.06352098	-5.02562825	-5.04490403	-5.06614477	-5.00739781	-5.05876015	-5.03683109	-4.98115102	-5.033860421	-5.01336025	-5.05856009	-5.04127764	-5.01123013	-5.04652124	-5.0009668	-5.01571799	-5.05344416			
	0.00035419	-0.00150765	-0.012490712	-0.00979102	0.00359938	-0.004161663	0.00421363	0.00052461	0.00188674	0.00178497	-0.00095167	0.00356489	0.00021284	-0.00321047	0.00109512	-2.5938E-06	0.0022572	0.0015872	0.00040585	0.00242415	-0.00136351	0.00041087	-0.00277203	-4.1508E-05	0.00290951	
	0.0410794	-0.07940544	-0.12490712	0.19790934	-0.06426824	0.20996231	0.00569231	0.00569231	0.1040688	0.18354903	-0.02662164	0.2028202	0.05053767	-0.1554991	0.08415536	-0.00622934	0.1897422	0.1204435	0.03201849	0.08062358	-0.02377832	-0.05688536	-0.03002383	0.0070096	0.16543534	
	-0.07513385	0.14775711	0.22359512	0.01686291	-0.33577926	0.11015502	-0.38040809	0.00937504	-0.18403933	-0.33358873	0.05766516	-0.36018101	-0.08841316	0.27639529	-0.1573436	0.00531706	-0.33507097	-0.22099768	-0.06317665	-0.14516913	0.0409521	0.09997455	0.06080985	-0.00771422	-0.29561196	
	-0.00584664	0.01120564	0.01785625	0.00191998	-0.02829861	0.00886929	0.00220158	-0.00105931	-0.01471146	-0.02626344	0.00374576	-0.02871484	-0.00733623	0.0219489	-0.01208318	0.0009271	-0.02694922	-0.01733221	-0.00440077	-0.01153069	0.00353543	0.00818096	0.0038322	-0.00089538	-0.02352563	
	-0.00749561	0.00844493	0.00495708	0.00661097	-0.03673035	0.01979156	-0.06811621	-0.00139832	-0.02707955	-0.0211989	0.01570731	-0.04839426	0.00398277	0.03482495	-0.01216903	-0.02259021	-0.03114541	-0.020262629	-0.020538092	-0.02433237	0.0218654	-0.02376091	0.05169132	-0.01560457	-0.03219622	
	-1.80227208	-2.09605794	-2.15673406	-2.01085985	-1.39749129	-2.1953216	-0.99752455	-1.98413151	-1.59059447	-1.45931143	-2.23260788	-1.26268187	-1.94306723	-2.40965281	-1.73837882	-1.67743463	-1.49559101	-1.61216445	-1.63030737	-1.581330976	-2.23574219	-1.86392229	-2.59091688	-1.85610513	-1.44278283	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0.61728683	-0.45273114	-0.45281851	-0.3184882	2.05398137	-1.11968962	4.25949555	-0.33181373	1.45549532	1.73526662	-1.36578056	2.90137148	-0.2881775	-1.83766175	0.75669999	1.53152878	1.68100395	1.24830135	1.57156071	1.42256808	-1.47382295	0.8444738	-3.31663681	0.52411674	2.04929868	
	-0.42528718	0.31853275	0.32623319	0.2188551	-1.42710699	0.77137495	-2.92812381	0.22166192	-1.00724549	-1.20276584	0.93297414	-2.00050107	0.19205568	1.2758007	-0.52457343	-1.05334737	-1.16809502	-0.86528377	-1.06989317	-0.98244245	1.00946884	-0.56771778	2.26668669	-0.36000588	-1.41780526	
	0.1696339	-0.1186674	-0.12598969	-0.07763903	0.54636418	-0.29114969	1.1239434	0.09316728	0.38530394	0.47894407	-0.35584827	0.77107114	-0.06772172	-0.48432008	0.20679892	0.41064443	0.46086222	0.33840855	0.41679372	0.36490872	-0.37878926	0.20602084	-0.84916475	0.1388816	0.54624978	
	-0.00145686	0.00081602	0.00193817	0.00212849	-0.0036132	0.00216008	-0.0126042	5.3463E-05	-0.00387398	-0.00751916	0.00580111	-0.00657192	0.00219226	0.00153551	-0.00642358	-0.00226713	-0.00490327	-0.00512154	-0.00365758	0.00643132	0.0006534	0.00122033	0.00024531	-0.00706763		
	-0.00417305	-0.00182453	-0.00658251	-0.0050284	-0.00430807	-0.00805297	-0.00039252	-0.0076893	-0.00204155	-0.0012437	-0.00751828	-0.00511036	-0.00775561	-0.00462951	-0.00502646	-0.000644	-0.00399787	-0.00263799	-0.00338911	-0.00310129	-0.01061612	-0.00675984	-0.01129773	-0.0022002	-0.00199604	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	-0.00196027	0.00191608	0.00224028	0.00089852	-0.00791205	0.00452435	-0.0116481	0.00023279	-0.00547791	-0.00885584	0.00153799	-0.00947587	-1.7339E-05	0.00495614	-0.00431384	-0.00289956	-0.00641106	-0.0637925	-0.00137644	-0.00315697	0.00122497	0.00185405	0.00240279	-4.1812E-05	-0.00759882	
	0.00598377	-0.0241821	-0.01468844	-0.00021467	0.02021454	-0.00141715	0.02550284	-0.000705	0.01018351	0.02564119	-0.00598429	0.02161068	0.00621475	-0.01554806	0.01281464	-0.00225614	0.02417536	0.01597277	0.00751784	0.00525343	0.00153386	-0.00766631	0.00101467	0.0001917	0.01689885	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	-5.03230471	-5.00173145	-4.98317803	-5.01426603	-5.06211905	-5.00906143	-5.06352098	-5.02562825	-5.04490403	-5.06614477	-5.00739781	-5.05876015	-5.03683109	-4.98115102	-5.033860421	-5.01336025	-5.05856009	-5.04127764	-5.01123013	-5.04652124	-5.0009668	-5.01571799	-5.05344416		
	-1.80227208	-2.09605794	-2.15673406	-2.01085985	-1.39749129	-2.1953216	-0.99752455	-1.98413151	-1.59059447	-1.45931143	-2.23260788	-1.26268187	-1.94306723	-2.40965281	-1.73837882	-1.67743463	-1.49559101	-1.61216445	-1.63030737	-1.581330976	-2.23574219	-1.86392229	-2.59091688	-1.85610513	-1.44278283

Tabla 0.4: Caso 10: Degradación -5% eficiencia fancore y -2% eficiencia compresor 1 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fanore	0.069573	0.072484	0.010293	0.014417	0.029173	0.039467	0.054384	0.014874	0.006693	0.076611	0.055238	0.015067	0.032947	0.057413	0.000308	0.073774	0.017564	0.024602	0.299837	0.025184	0.013518	0.026307	0.016806	0.013579	0.007076
eff_fanore	-3.955627	-3.953557	-3.997145	-3.962217	-4.074472	-4.028028	-3.973402	-4.023682	-3.964147	-4.041285	-4.032719	-4.037063	-4.012429	-4.033806	-3.997132	-4.034027	-4.051574	-4.001547	-4.032662	-4.023880	-3.979420	-3.983684	-3.983759	-4.007164	-4.017277
mc_fanore	-0.004346	-0.004258	-0.004630	-0.002316	0.002755	0.002145	0.001329	0.001139	0.003507	0.004942	0.007916	0.002546	0.001053	0.001825	-0.000234	0.003760	0.004612	-0.000395	0.000472	0.001235	0.002145	-0.001178	-0.001627	6.4413E-05	-0.000174
pr_fanuct	-0.235885	-0.226495	-0.072267	0.149514	0.199678	0.039328	-0.147084	0.051106	0.263498	0.135308	0.082494	0.163833	0.006029	0.005659	0.005494	0.093708	0.195690	-0.057820	0.096030	0.036028	-0.142411	-0.101336	-0.103679	0.023090	0.006403
eff_fanuct	0.424189	0.406405	0.143319	0.258678	0.356719	0.071662	0.263498	0.364897	-0.240584	-0.149595	-0.290407	-0.014459	-0.053028	-0.004837	0.005403	-0.167493	-0.357492	0.099730	-0.175454	0.062706	0.257894	0.176171	0.192460	-0.045309	-0.009425
mc_fanuct	0.037592	0.032281	0.010186	0.024592	-0.028606	-0.005618	0.020852	-0.007417	0.028979	-0.033872	-0.017578	-0.023412	-0.000561	-0.004837	0.000543	-0.012845	-0.027463	0.008292	-0.013796	-0.005195	0.020346	0.014418	0.014451	-0.003482	-0.001023
pr_compressor	0.035628	0.034078	0.013694	0.006594	0.029634	-0.047812	-0.014660	-0.028374	0.031978	0.034435	-0.051165	-0.030971	-0.026327	-0.001241	-0.001241	-0.075430	-0.066938	-0.015403	-0.018640	-0.031684	0.010425	-0.005128	0.017109	-0.012031	0.005962
eff_compressor	-4.459786	-4.474605	-4.182157	-4.183551	-3.333041	-3.488436	-4.040067	-3.652009	-4.470587	-3.252065	-3.374234	-3.563348	-3.660467	-3.645209	-4.052737	-3.119529	-3.150136	-3.838649	-3.578201	-3.604788	-4.178165	-4.027043	-4.376464	-3.800454	-3.953425
mc_compressor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-1.943694	-2.071026	-1.461204	-0.696889	2.175284	2.067502	0.505229	1.057095	-2.185454	3.039061	2.508975	1.273619	1.498886	1.198418	0.663704	4.027053	3.360262	0.657993	1.324956	1.495913	0.786350	-0.197862	2.058847	0.954476	0.285198
eff_compressor2	1.358053	1.443191	0.789031	0.487746	-1.504376	-1.415236	-0.013651	-0.762768	1.517894	-2.093457	-1.728694	-0.887726	-1.022559	-0.824582	0.452132	-2.769701	-2.318578	-0.445949	-0.912131	-1.024283	0.557846	0.147062	1.414707	-0.061555	0.192198
mc_compressor2	-0.517753	-0.549840	-0.298816	-0.187564	0.589432	0.577888	0.003004	0.296307	-0.582491	0.781802	0.647461	0.342629	0.386873	0.301468	-0.172169	1.041678	0.884870	0.167382	0.361206	0.390180	-0.215893	-0.063801	-0.546422	0.163801	-0.073992
pr_turbina1	0.051884	0.037275	0.003602	0.007430	-0.005874	-0.006938	0.003354	-0.003404	0.002913	-0.003752	-0.005706	0.007286	-0.002907	-0.000981	0.003321	-0.012704	-0.006547	0.004507	-0.048172	-0.001638	0.011291	-0.000649	0.004283	-0.001965	0.001364
eff_turbina1	-0.004981	-0.005294	-0.005635	-0.007184	-0.005853	-0.005431	-0.006068	-0.001242	-0.010532	-0.003734	0.000695	-0.004551	-0.004644	-0.007452	0.003307	0.003307	-0.004012	-0.003038	-0.001952	-0.008248	-0.008626	-0.002438	-0.009140	-0.005231	-0.005642
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	0.009317	0.007464	0.005821	0.005905	0.007105	0.005420	-0.001025	0.009620	-0.002387	-0.002488	-0.004468	-0.001376	0.001262	0.002375	-0.005493	-0.008715	0.001895	-0.005821	-0.002139	0.008146	0.005149	0.009773	9.4033E-05	-0.000494	
eff_turbina2	-0.026932	-0.024453	-0.010782	-0.017096	0.024795	0.002918	-0.018875	0.008621	-0.022097	0.010444	0.004788	0.021148	0.009308	0.002160	-0.001482	0.003147	0.023590	-0.006217	0.013384	0.002322	-0.016229	-0.018263	-0.011191	0.005478	0.001018
mc_turbina2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Acierto eff fanore	-3.955627	-3.953557	-3.997145	-3.962217	-4.074472	-4.028028	-3.973402	-4.023682	-3.964147	-4.041285	-4.032719	-4.037063	-4.012429	-4.033806	-3.997132	-4.034027	-4.051574	-4.001547	-4.032662	-4.023880	-3.979420	-3.983684	-3.983759	-4.007164	-4.017277
Acierto eff compressor 1	-4.459786	-4.474605	-4.182157	-4.183551	-3.333041	-3.488436	-4.040067	-3.652009	-4.470587	-3.252065	-3.374234	-3.563348	-3.660467	-3.645209	-4.052737	-3.119529	-3.150136	-3.838649	-3.578201	-3.604788	-4.178165	-4.027043	-4.376464	-3.800454	-3.953425

Tabla 0.5: Caso 10: Degradación -4% eficiencia fanore y -4% eficiencia compresor 1 (I)

	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	-0.02557374	0.01626796	-0.01237683	-0.01930296	0.02363963	-0.0007825	0.0118698	0.05629491	0.05629491	0.0251934	-0.02417065	-0.01919112	-0.03016431	-0.01919112	-0.03016431	0.0295434	-0.02754665	-0.01490095	-0.04052975	0.01724668	-0.05537875	0.05547788	-0.10086395	0.01316849	0.00351246
	-3.98794489	-4.02587182	-3.98975114	-4.03683455	-3.98575353	-4.01366212	-4.02712114	-4.00633807	-4.01267804	-4.00001264	-3.98850148	-3.97906372	-4.00162259	-3.98629177	-4.01063247	-3.98640312	-3.98574629	-4.02892783	-4.00491376	-4.02647133	-4.00371786	-4.03853951	-3.96822196	-3.98156872	-3.96811072
	-0.00144838	0.00061998	-0.00111674	0.00197018	-0.00245655	0.000441	0.00046729	0.00109482	-0.000890865	-0.00128483	-0.00120904	-0.00108461	0.00047755	-0.00172481	-7.2629E-05	-0.00223072	-0.00038273	0.00071688	-3.793E-05	0.00148153	0.00067896	-0.00022838	-0.00044324	-0.00191333	-0.00276453
	-0.11023359	0.05924636	-0.08124601	0.07445716	-0.10729822	0.02669204	0.044938229	-0.00860162	0.02856811	-0.02593984	-0.10493129	-0.07049011	-0.01779048	-0.10853948	0.01066582	-0.08905256	-0.06141666	0.00939897	-0.06206686	0.11328701	-0.0417288	0.06570524	-0.16478455	-0.08527705	-0.15032603
	0.20199605	-0.10949481	0.14577676	-0.12887656	0.19682485	-0.05190607	-0.07727138	-0.00203173	-0.04436423	0.05080603	0.19017581	0.12469504	0.01697916	0.19287497	0.1933319	0.15330861	0.10653833	-0.02538362	0.10307895	-0.20261077	0.06898294	-0.11370095	0.29681351	0.14963918	0.27193037
	0.0154862	-0.00852238	0.01162974	-0.010393	0.01154286	-0.00939477	-0.0664075	0.00115445	-0.00398449	0.00323411	0.01512416	0.00995013	0.00256514	0.01531782	0.00148558	0.0117339	0.00885657	-0.00010177	0.00894834	-0.01635286	0.00600475	-0.009541	0.02367533	0.0129188	0.02140235
	0.00206104	-0.02044056	-0.00726879	-0.03062551	0.02375109	-0.01916421	-0.01000862	0.04103133	0.00731746	0.03176221	-0.00293911	0.00424694	-0.03234795	0.00418148	-0.0089636	0.02456228	-0.01795849	-0.019721	-0.03124483	-0.02199909	-0.03127246	0.00734561	-0.03388636	0.00984037	0.02001466
	-4.10394523	-3.59021788	-3.99213934	-3.59913866	-4.24416646	-3.75535574	-3.77061371	-3.51729108	-3.98870578	-4.27897701	-4.00055389	-4.07127133	-3.60840405	-4.0735159	-3.86666969	-4.34378242	-3.85495462	-3.57520971	-3.65242326	-3.61069986	-3.65019232	-3.91152274	-3.87821949	-4.11381058	-4.7458214
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.53897345	1.53608949	0.02042515	1.44376889	-1.34663287	0.90958804	0.51510015	2.15834961	-0.47700386	-1.94484473	-0.0578463	-0.53482858	1.80652944	-0.34592451	0.25256248	-2.07763527	0.70976919	1.70843252	1.68050944	1.12584739	1.59727107	-0.38848116	1.02653417	-0.64495814	-1.367768
	0.41482742	-1.04881427	-0.00133237	-0.9513668	0.93491284	-0.62006022	-0.35752739	-4.46935934	0.32451368	1.32969512	0.0505376	0.37120023	-1.2280603	0.253498	-0.17005902	1.3864958	-0.47653792	-1.16316864	-1.1370637	-0.78216449	-1.0645811	0.25837313	-0.67941097	0.45347659	0.95185285
	-0.1619804	0.41542978	0.00132904	0.37568487	-0.35317584	0.24211763	0.1408318	0.59413122	-0.11209432	-0.50860285	-0.02708934	-0.14686953	0.47013676	-0.09495154	0.06491732	-0.52826309	0.1774446	0.44476699	0.43070684	0.30605763	0.40435579	-0.08463063	0.23768723	-0.16839371	-0.36443092
	0.00380641	-0.00365721	0.0033862	-0.00282884	0.00493287	-0.00121566	6.8223E-05	-0.00610702	0.00140509	0.00408502	0.00035153	-0.00103152	-0.00698464	-4.4774E-05	-0.00047136	0.00447902	-0.00093109	-0.00545782	-0.00683292	-0.00427173	0.00191186	-0.00011363	0.00190178	0.00289677	
	-0.00485676	-0.00609986	-0.00780079	-0.00408334	-0.00761661	-0.00682265	-0.00415696	-0.00279788	-0.00502486	-0.000835704	-0.00186618	-0.00083257	-0.00114433	-0.00592587	-0.00402366	-0.00545612	-0.00214515	-0.00247312	0.00099642	-0.00644694	-0.00185782	-0.00625948	-0.006352	-0.00369544	
	0.00511836	-0.00347398	0.00809992	-0.00308705	0.00424756	-0.0013574	-0.00078192	-0.00143597	0.00119774	0.00359359	0.00168402	-0.00248509	0.00528074	0.00160834	0.00682713	0.00396408	-0.00059607	0.00042194	-0.005866501	0.00163532	-0.00121919	0.00918422	0.00121958	0.00598863	
	-0.10343881	0.00894919	-0.00735461	0.00462238	-0.0114803	0.00418274	0.00492247	0.0022245	-0.00561484	-0.00223915	-0.01437094	-0.00944188	0.00095311	-0.01049352	-0.00237288	-0.00900618	-0.00725581	0.00080453	-0.00655095	0.01307076	-0.0069793	0.01103908	-0.02427181	-0.00559572	-0.01929498
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

-3.98794489	-4.02587182	-3.98975114	-4.03683455	-3.98575353	-4.01366212	-4.02712114	-4.00633807	-4.01267804	-4.00001264	-3.98850148	-3.97906372	-4.00162259	-3.98629177	-4.01063247	-3.98640312	-3.98574629	-4.02892783	-4.00491376	-4.02647133	-4.00371786	-4.03853951	-3.96822196	-3.98156872	-3.96811072
-4.10394523	-3.59021788	-3.99213934	-3.59913866	-4.24416646	-3.75535574	-3.77061371	-3.51729108	-3.98870578	-4.27897701	-4.00055389	-4.07127133	-3.60840405	-4.0735159	-3.86666969	-4.34378242	-3.85495462	-3.57520971	-3.65242326	-3.61069986	-3.65019232	-3.91152274	-3.87821949	-4.11381058	-4.7458214

Tabla 0.6: Caso 10: Degradación -4% eficiencia fancore y -4% eficiencia compresor 1 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
pr_fanore	0.3567735	-0.35666456	1.1837436	0.22117629	0.95417313	-0.30205848	0.19371656	0.63931774	0.23974093	0.06816552	0.58490567	0.66310758	0.35249754	0.30746581	1.00826841	0.53902045	0.73792467	-0.31521706	0.67475574	0.10869032	0.41701386	0.57486399	0.8666384	0.88021259	0.86607459	
eff_fanore	-0.2516692	-0.25630973	-0.0842617	-0.14070921	-0.65192539	0.21651606	-0.11556407	-0.45126599	-0.16199099	-0.04021042	-0.39888682	-0.46586696	-0.26393805	-0.2005325	-0.69708607	-0.36617938	-0.51995224	-0.23250674	-0.88844282	-0.07094263	-0.29630411	-0.39937951	-0.16452112	-0.59794607	-0.05677675	
mc_fanore	-0.02499594	-0.02599476	-0.01329775	-0.01727763	-0.06889115	0.02002463	-0.01420278	-0.04528262	-0.0195689	-0.00570191	-0.04228384	-0.04744425	-0.02436264	-0.02332661	-0.07127427	-0.03895909	-0.05305524	0.02064915	-0.04756131	-0.00848808	-0.03042716	-0.04151642	-0.06204598	0.06326204	-0.00743378	
pr_fanduct	-1.03492573	-1.00779655	-0.935715261	-0.98506371	-2.19657043	0.05258511	-0.67081104	-1.3525243	-0.93565087	-0.52804979	-1.416164231	-1.41052851	-0.71590319	-1.07066439	-1.99125748	-1.44451923	-1.73072332	-0.02956187	-1.35788642	-0.58664054	-1.16680637	-1.40509535	-1.91110955	-1.98399326	-0.65369391	
eff_fanduct	1.3617622	1.31386794	1.22429566	1.2737577	3.19955715	-0.36580967	0.79955866	1.88397652	1.21051782	0.55889507	1.9627833	1.95156507	0.87087351	1.41319254	2.8805768	2.00275083	2.46921673	-0.23260769	1.8732312	0.6560332	1.57208142	1.94744351	2.75504714	2.86661893	0.74927937	
mc_fanduct	0.09016931	0.08711232	0.08195135	0.08520773	0.21324481	-0.02490108	0.05232057	0.12443787	0.07998543	0.03701042	0.13064923	0.13038087	0.05742577	0.09395988	0.1920795	0.13362164	0.16445966	-0.01593128	0.12504455	0.04317327	0.10462958	0.12960801	0.18340733	0.19089109	0.04981197	
pr_compressor1	0.1077625	0.11848641	0.10770704	0.11263875	0.08374674	0.14453378	0.13167402	0.10693811	0.1185112	0.1297262	0.10172524	0.10383918	0.13201977	0.11043267	0.09733292	0.09841938	0.10033294	0.14156696	0.1077825	0.13066592	0.10959276	0.10798273	0.09237264	0.08850396	0.12454527	
eff_compressor1	0.88548594	1.15437753	0.70116986	0.9073237	1.04388389	1.01376523	1.23173699	1.18083365	1.0521936	1.07241673	1.0173121	1.13993877	1.42764771	0.9055739	1.32607464	0.91666384	1.17685959	0.95673507	1.25711821	1.183736	1.0370756	1.16775661	1.14135193	1.0323801	0.96768175	
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	0.82857156	1.0939291	0.61905705	0.80514791	1.17807927	0.74088249	1.12118073	1.21570528	0.94654722	0.94000825	1.03438386	1.18094164	1.33398665	0.84942088	1.48320333	0.91220903	1.23510443	0.68395385	1.278332	0.98290066	0.8939949	1.15504628	1.2334256	1.1546495	0.81604637	
eff_compressor2	0.42277449	0.6405417	0.19401299	0.3632039	0.96555486	0.0855103	0.58431632	0.84384327	0.48416413	0.39594896	0.68712268	0.82877923	0.81003983	0.43101574	1.21039097	0.57421879	0.91146613	0.03692706	0.90560955	0.44516541	0.58632672	0.77593408	0.96532644	0.90925834	0.30561337	
mc_compressor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_turbina1	0.06188771	0.06728152	0.0609428	0.06441702	0.07018045	0.06011791	0.06849089	0.07020075	0.06643927	0.06363259	0.06594209	0.06792072	0.07151218	0.06029203	0.07590851	0.06416238	0.07410355	0.05881575	0.07094148	0.06503207	0.06547824	0.06612037	0.07323314	0.06961011	0.060171	
eff_turbina1	-0.22557732	-0.26920293	-0.19672927	-0.2279026	-0.29820445	-0.20440845	-0.26790384	-0.28657919	-0.24548497	-0.2387517	-0.26174541	-0.28265115	-0.30039068	-0.23085205	-0.33606701	-0.24466505	-0.29919436	-0.19519038	-0.29623958	-0.24722129	-0.23332272	-0.27917319	-0.30273032	-0.28748047	-0.2189083	
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_turbina2	-9.67467832	-11.6053755	-8.24682246	-9.67406388	-13.5096609	-8.03942147	-11.4978061	-12.6478813	-10.5757667	-10.0163126	-11.5209715	-12.4472784	-12.8882939	-9.95975778	-15.2855451	-10.7999232	-13.3845961	-7.8521281	-13.0832138	-10.4324798	-11.0598629	-12.500224	-13.542919	-13.0275156	-9.2757145	
eff_turbina2	-12.9909084	-14.5439668	-11.8345736	-12.9886203	-16.1773007	-11.6283235	-14.435464	-15.4115511	-13.7142541	-13.2241449	-14.5094183	-15.2499648	-15.5531222	-13.2229958	-17.5865725	-13.9316193	-16.0406691	-11.4448324	-15.7606079	-13.5666934	-14.1194833	-15.2987036	-16.1731293	-15.7730995	-12.6382574	
mc_turbina2	-10.1403909	-12.1588912	-8.64964451	-10.1393499	-14.1689241	-8.46616669	-12.0391284	-13.2531019	-11.0815477	-10.4874009	-12.0769504	-13.0433321	-13.4903255	-10.4389374	-16.0212738	-11.3256849	-14.0326383	-8.21710215	-13.7077701	-10.9236602	-11.9910455	-13.0988373	-14.1902351	-13.6631497	-9.71410346	

Acierto pr_fanduct	Acierto eff_turbina2
-1.03492573	-1.00779655
-0.935715261	-0.98506371
-2.19657043	-2.19657043
0.05258511	0.05258511
-0.67081104	-0.67081104
-1.3525243	-1.3525243
-0.93565087	-0.93565087
-0.52804979	-0.52804979
-1.416164231	-1.416164231
-1.41052851	-1.41052851
-0.71590319	-0.71590319
-1.07066439	-1.07066439
-1.99125748	-1.99125748
-1.44451923	-1.44451923
-1.73072332	-1.73072332
-0.02956187	-0.02956187
-1.35788642	-1.35788642
-0.58664054	-0.58664054
-1.16680637	-1.16680637
-1.40509535	-1.40509535
-1.91110955	-1.91110955
-1.98399326	-1.98399326
-0.65369391	-0.65369391

Tabla 0.7: Caso 16: Degradación -2% relación de compresión fanduct y -5% eficiencia turbina 2 (I)



	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	0.64769722	-0.25250584	0.61626286	0.2749709	0.19867852	0.47466946	0.39432223	0.79047643	1.09502887	0.50711695	0.19448604	0.26567003	0.98789453	0.6508721	0.52573083	0.23854695	0.60701113	0.48788333	0.27518997	0.47631072	-0.00304493	0.50912091	-0.06290345	1.00299671	0.94578632
	-0.46517648	0.19689026	-0.43003333	-0.08561265	-0.15476074	-0.32624388	-0.27495175	-0.51518512	-0.75389576	-0.35155288	-0.12688426	-0.18897674	-0.70473135	-0.44392948	-0.3293914	-0.18008736	-0.42406454	-0.3293914	-0.17609891	0.01153045	-0.36194206	0.05300155	-0.69874864	-0.63876834	
	-0.04569764	0.01547254	-0.04935245	-0.02085455	-0.01455718	-0.03544156	-0.02877161	-0.05663647	-0.07818789	-0.03719579	-0.0444611	-0.01902885	-0.07018792	-0.04578197	-0.03371536	-0.017201	-0.04336639	-0.05594434	-0.0207076	-0.03469618	-0.0007104	-0.03723677	0.0032663	-0.07101347	-0.06780618
	-1.30588466	-0.2900278	-1.38048018	-1.01505897	-0.64906824	-1.4784382	-1.1126876	-1.77024842	-2.29912087	-1.40664805	-0.69808045	-0.76280466	-2.07992016	-1.4484397	-1.2127643	-0.78436192	-1.44773716	-1.372585	-0.95127688	-1.2989986	-0.43566062	-1.3819581	-0.37796888	-1.99045954	-2.08396742
	1.79778866	0.18104984	1.91110021	1.33419306	0.75154513	2.05710735	1.4938522	2.52475664	3.35313323	1.94665193	0.83221552	0.93673794	3.02439937	2.01259096	1.64476255	0.93968965	2.01944524	1.89412965	1.22286908	1.77984894	0.41826784	0.91171252	0.31567118	2.88004137	3.01906105
	0.11927899	0.01127147	0.12715781	0.08834966	0.04968781	0.13731542	0.09892432	0.16845404	0.22425442	0.1297621	0.05493267	0.06200709	0.20176907	0.13418838	0.10913397	0.06379548	0.13407634	0.12599424	0.08141852	0.11869436	0.02738852	0.1727234	0.02104978	0.1918897	0.20145914
	0.11089539	0.13268139	0.1177783	0.11222286	0.12695434	0.09888033	0.11307072	0.09872842	0.07428902	0.10369365	0.12762301	0.12498212	0.09188477	0.1052896	0.10797743	0.12043895	0.1020955	0.10562545	0.11687758	0.11360494	0.13693618	0.10661609	0.13570332	0.09467331	0.07901028
	1.28364651	0.83873847	1.25839448	0.92580092	1.17367736	0.87311717	1.06132682	1.18928915	0.95149911	1.00597183	1.17164791	1.17862964	1.26584143	1.15189493	1.07917236	1.10467573	1.06882945	1.01764951	1.02985049	1.18965256	1.17119888	1.08238337	1.08245676	1.32729954	0.87496213
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1.29953788	0.59299124	1.2519319	0.86132956	1.06091615	0.86580127	1.02292938	1.24710369	1.53530087	0.9867533	1.05198683	1.06846073	1.4000958	1.17530817	1.07441185	0.96686176	1.09037547	1.01071992	0.93162087	1.15444487	0.99299631	1.06446309	0.87878583	1.48321151	1.04084637
	0.9139743	-0.00815392	0.86786755	0.42501103	0.5382014	0.52037753	0.60244727	0.93936854	0.99695072	0.62244617	0.53164156	0.57240939	1.14320892	0.81924326	0.68906243	0.50233077	0.73709739	0.63472935	0.47739989	0.73952768	0.40697628	0.68467423	0.29109182	1.21443204	0.84599656
	0.06927497	0.06273735	0.0700577	0.02669473	0.06607175	0.06312326	0.06830129	0.06882386	0.06711308	0.06606885	0.06381042	0.06903869	0.0749542	0.06851841	0.06582157	0.05974786	0.06734133	0.06532527	0.0623026	0.0698473	0.06659854	0.06884235	0.06239377	0.07940632	0.06631159
	-0.3016776	-0.18785663	-0.29686693	-0.20393078	-0.25405278	-0.23946156	-0.26447047	-0.29749442	-0.28841113	-0.25630142	-0.25391399	-0.26104053	-0.327654	-0.28505798	-0.26496208	-0.24653579	-0.26886403	-0.25948744	-0.24108191	-0.28370799	-0.24892525	-0.27096447	-0.22697445	-0.3424791	-0.26784159
	-13.2053209	-7.51991947	-13.1555241	-9.98597801	-10.8657207	-10.5987062	-11.2131141	-13.5204915	-13.1970966	-11.3564652	-10.9937711	-11.589106	-14.8775805	-12.5567773	-11.5205332	-10.8328643	-11.928363	-11.4778553	-10.5037171	-12.4802535	-10.4093262	-11.8656072	-9.5751075	-15.2708416	-12.1679901
	-15.8556849	-11.2038874	-15.8245744	-13.2431013	-13.9166584	-13.778555	-14.2395292	-16.1494949	-15.9262528	-14.3780648	-14.029097	-14.1658925	-17.2705248	-15.3454274	-14.44905995	-13.7006106	-14.8402269	-14.4720899	-13.6531306	-15.2754102	-13.5554365	-14.794641	-12.8603921	-17.5758341	-15.0846461
	-13.83102	-7.87634041	-13.7860985	-10.464766	-11.377129	-11.1166594	-11.7483824	-14.1740417	-13.8454351	-11.9063554	-11.5129591	-11.6882856	-15.5971508	-13.1602265	-12.0713556	-11.082623	-12.5014784	-12.0317176	-11.0059098	-13.0775711	-10.9169795	-12.4341339	-10.0265936	-16.0059593	-12.7657861

-1.30588466	-0.2900278	-1.38048018	-1.01505897	-0.64906824	-1.4784382	-1.1126876	-1.77024842	-2.29912087	-1.40664805	-0.69808045	-0.76280466	-2.07992016	-1.4484397	-1.2127643	-0.78436192	-1.44773716	-1.372585	-0.95127688	-1.2989986	-0.43566062	-1.3819581	-0.37796888	-1.99045954	-2.08396742
-15.8556849	-11.2038874	-15.8245744	-13.2431013	-13.9166584	-13.778555	-14.2395292	-16.1494949	-15.9262528	-14.3780648	-14.029097	-14.1658925	-17.2705248	-15.3454274	-14.44905995	-13.7006106	-14.8402269	-14.4720899	-13.6531306	-15.2754102	-13.5554365	-14.794641	-12.8603921	-17.5758341	-15.0846461

Ilustración 0.8: Caso 16: Degradación -2% relación de compresión fanduct y -5% eficiencia turbina 2 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
pr_fanore	-0.45379229	-1.20794716	0.223559	-5.5507392	-5.4774977	-5.6974427	-2.0130529	-0.32716972	-2.7247448	-0.1862183	2.75748396	-4.46469998	-0.5880145	0.01104302	-2.15088829	3.0665502	0.01151575	5.5389541	-2.96064687	-0.34817273	-0.86970488	1.50554919	-6.27449116	1.03169476	-0.56598337	
eff_fanore	-0.39150477	0.15713523	0.21980704	0.74063263	0.76685459	0.75928411	0.25131212	-0.29581187	0.28667411	-0.15580496	0.37220244	0.62704972	-0.5111117	0.00504457	0.2804292	-0.4245304	0.02039391	0.38388897	0.43217786	0.11175539	-0.20130738	0.85375655	-0.15074308	-0.50633745		
mc_fanore	-0.02867175	0.03936961	0.01378031	0.1187579	0.17760926	0.11966366	0.05229204	-0.0204172	0.01936005	-0.01165282	-0.04482045	0.11863914	-0.05528994	0.00048277	0.0323992	0.02354312	0.00040313	0.06356231	0.04777264	-0.00539965	-0.03638535	-0.03516652	0.16513889	0.00579399	-0.03468966	
pr_fanduct	-0.66041767	-1.30073822	-0.65145753	-0.31120724	-0.78300447	-0.31539951	-1.14447337	-0.65255803	-0.75406972	-0.65289642	-1.98282875	-0.84080872	-0.6509832	-0.65255801	-0.90918958	-2.25928671	-0.65530694	-2.87519959	-0.79302695	-1.2490374	-0.75375099	-1.48997786	-0.35984678	-1.97954947	-0.64417516	
eff_fanduct	0.02346808	-0.53742387	0.00143006	-2.44222699	-1.55089355	-2.47505253	-0.82381014	0.00314096	-1.6050791	0.00750204	0.79971035	-1.43386676	0.00420696	0.01178742	-1.2905281	-1.3857207	0.0054293	2.57581439	-1.5096743	-0.61485234	-1.59696964	-0.13979789	-2.36388942	0.68476916	0.00330806	
mc_fanduct	0	-0.02251113	0	-0.02064807	-0.02864169	-0.03419348	-0.025353	0	-0.03338394	0	0.03852	-0.02292506	0	0	-0.03464338	0.07243723	0	0.13592707	-0.02768823	-0.0141356	-0.02017622	-0.00764555	-0.03239878	0.03451265	0	
pr_compressor1	-0.44472258	0.1160373	-0.2352942	-0.54778649	-1.29613958	-0.84644373	-0.02485916	-0.34899767	-0.12396242	-0.37101517	0.92334877	-0.83501305	-0.01173413	-0.30017891	-0.1500704	0.57984612	-0.15065049	0.67226607	-0.14156187	0.2780947	0.12060872	3.062287	-1.6204259	0.14252274	0.2449945	
eff_compressor1	-1.15594642	-0.54647872	-0.70128217	-1.38481716	-1.55306243	-0.88095547	-0.85028234	-0.889737	-0.79581451	0.38208261	-0.95251057	-0.95251057	-0.30882676	-0.77175136	-0.73860979	0.11506008	-0.52333224	3.44574311	-1.03246117	-1.1912537	-1.01569017	2.23264815	-1.59769795	-0.88785764	0.10427369	
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-0.94752196	1.33067319	-0.67577993	6.27523544	0.24351394	4.62629285	1.62356728	-0.57151751	1.98196277	-0.69694338	1.965884	1.60152444	-0.43376478	-0.43376478	1.51370223	9.0661072	-0.30875733	17.9867602	2.3086281	3.12706272	3.41166973	14.8671324	1.2074576	1.68487013	0.8756321	
eff_compressor2	-0.12987277	-0.34022339	-0.1057315	-2.11827665	-1.58839051	-2.31836147	-0.53148251	-0.09242584	-0.53113841	-0.11092978	0.78076888	-1.62373139	0.0459699	-0.10117732	-0.5232827	-5.24827127	-0.05572538	-12.120678	-0.7213836	-0.47762808	-0.5341922	-6.1793119	-1.36423869	1.50373055	0.11918806	
mc_compressor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina1	-20.752362	-6.50868557	-16.062223	-18.0868873	-21.5224845	-14.5643366	-9.45665711	-17.918699	-9.5913517	-16.6422099	-1.90235726	-12.072424	-15.7950105	-16.7843301	-8.69206297	3.24482471	-5.0465019	3.56724657	-11.357972	-11.7025187	-11.1645968	-1.97870577	-21.582491	-4.9395572	-15.5656296	
eff_turbina1	5.06975579	0.46619349	3.91542041	5.25168722	5.63970229	1.59925243	0.58014977	4.37479768	0.6234835	0.6925256	0.16388735	0.34047016	3.83084577	4.09382935	0.56163366	0.03700554	3.66557404	0.11517747	0.65565883	0.73574715	0.79436231	0.24510102	5.8580253	0.39116255	3.75659862	
mc_turbina1	-10.0704882	-2.18134781	-7.79799139	-5.68532147	-6.70728533	-4.78895942	-3.17449539	-8.6967645	-3.19435985	-8.07614632	0.62851006	-0.0375717	-7.66516506	-8.14515767	-2.90953267	1.11362651	-7.30253037	1.24989705	-3.81328911	-3.93699941	-3.73970148	-0.64970881	-6.69722357	-1.64675469	-7.55801337	
pr_turbina2	0.54952517	-3.11507555	0.148866	-3.22773397	-0.15579418	1.62201371	-3.29549073	0.30454909	-2.55807125	0.5265768	5.83247534	1.54541128	-0.78702289	0.72698657	-1.92169883	-3.34092377	-0.13624532	-5.2244012	-3.43939128	-0.7651304	-6.00906284	-5.19838778	-0.76615609	-6.77802154	-1.6414627	
eff_turbina2	-1.5268474	-3.3452489	-1.89702489	-3.21037756	-2.27950519	-0.82631228	-3.35100479	-1.7500437	-2.87914653	-1.55524164	-4.9716209	-1.06502811	-2.7308947	-1.82859472	-2.64139028	-2.8820864	-2.1535428	-3.66532328	-3.29778177	-4.38727861	-4.13281446	-3.66309888	-2.34173535	-5.39746639	-3.49901277	
mc_turbina2	0.64178726	-2.23828229	0.17468406	-2.0510965	-0.50829917	1.47222169	-2.31487267	0.35748994	-1.67127469	0.61449283	-4.58916362	1.25531857	-0.90668063	0.26781397	-1.23761127	-1.59044285	-0.15309079	-3.49176148	-2.33806935	-8.0595132	-4.23216561	-3.46178378	-0.72952383	-5.77315769	-1.89710695	

Acierio pr_fanduct	-0.66041767	-1.30073822	-0.65145753	-0.31120724	-0.78300447	-0.31539951	-1.14447337	-0.65255803	-0.75406972	-0.65289642	-1.98282875	-0.84080872	-0.6509832	-0.65255801	-0.90918958	-2.25928671	-0.65530694	-2.87519959	-0.79302695	-1.2490374	-0.75375099	-1.48997786	-0.35984678	-1.97954947	-0.64417516
Acierio eff_turbina2	-1.5268474	-3.3452489	-1.89702489	-3.21037756	-2.27950519	-0.82631228	-3.35100479	-1.7500437	-2.87914653	-1.55524164	-4.9716209	-1.06502811	-2.7308947	-1.82859472	-2.64139028	-2.8820864	-2.1535428	-3.66532328	-3.29778177	-4.38727861	-4.13281446	-3.66309888	-2.34173535	-5.39746639	-3.49901277

Ilustración 0.9: Caso 16: Degradación -5% relación de compresión fanduct y -2% eficiencia turbina 2 (I)



	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	4.64842636	-1.17029874	1.28233154	3.65262927	-5.18302321	-0.89220708	-1.66214729	-1.75296668	0.99785044	-0.07448563	-6.05929295	0.67025277	-0.94618535	-6.99118223	-4.57393539	-6.77266194	-3.18861396	-5.95582549	2.01991269	-0.48802445	-6.41663903	-2.70488313	-1.00070595	-5.35588257	-0.57853467
	-0.61116991	-0.02742807	-0.16938033	-0.50599038	0.71733544	0.82390988	0.21471993	0.22110566	-0.1322346	-0.06198088	0.8175971	0.62846804	0.11993785	0.84703739	0.61081414	0.89560106	0.41606958	0.79496388	-0.27610472	-0.45483019	0.8577553	0.35908411	0.11458848	0.71886259	-0.53639145
	0.05162646	-0.05576997	0.02481561	0.01624641	0.12262945	0.12065081	0.02313846	0.03733173	0.05049575	-0.0045603	0.09994968	0.0411674	-0.00225625	0.13088805	0.08060263	0.14053381	0.04141197	0.12194273	0.00711229	-0.03009997	0.06821391	0.06382969	0.00061618	0.12989953	-0.03574697
	-2.86556225	-1.12998409	-1.91160157	-2.30088428	-0.52217718	-0.02766581	-0.99083581	-1.08898227	-1.8590996	-0.64924979	-0.09648326	-0.65905513	-1.02554264	0.09212447	-0.51250796	0.16232231	-0.63053102	-0.10003257	-1.92284986	-0.64846024	0.32602407	-0.10199513	-1.02734778	-0.41782566	-0.64921776
	-2.5576365	-0.85813035	0.69467589	1.48783786	-2.05844475	-3.0304642	-1.13012895	-0.9488712	0.59764907	0.00778994	-2.89607221	-0.00542607	-1.06657073	-3.2586455	-0.07265294	-3.38744248	-1.897046	-2.88305368	0.74899653	0.00901173	-3.75202059	-1.09094163	-1.052538	-2.26157181	0.0235416
	0.20473662	-0.01922033	0.03567738	0.07677095	-0.02552549	-0.03202213	-0.03088511	-0.03179746	0.03048441	0	-0.01984511	0	-0.02738269	-0.03714187	-0.02227772	-0.02657372	-0.04183783	-0.03411792	0.03746015	0	0.00056146	-0.02972314	-0.02609477	-0.03304408	0
	4.80181371	0.25637138	0.58201194	0.64904557	-0.66966114	-1.03909088	-0.01079347	0.08740691	0.66396067	-0.09784124	-0.48391613	-0.51445756	0.11438817	-1.0795354	-0.32278133	-0.79918719	-0.39479977	-1.08199636	0.17174891	0.03618129	-0.00417741	-0.25524893	0.11591113	-1.12822354	-0.10169964
	1.12625357	-0.99166948	-0.48234694	0.18276526	-1.10290514	-1.3824796	-0.80795706	-0.64012193	-0.1101066	-0.48554548	-1.04203966	-1.14800084	-0.85770916	-1.47726662	-2.20476023	-1.84768408	-0.65414265	-1.26212227	-0.58080558	-0.21385595	-0.91600709	-0.85668367	-0.88638883	-1.21209353	-0.47066999
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	33.3350496	3.1262826	9.34555449	10.4452109	4.74109118	2.13705134	1.88334623	1.2518092	14.3778892	-0.18745914	3.43515429	-1.46361618	2.436719	0.25167432	2.78456322	3.18603087	1.06663172	2.1386618	11.8759688	0.44058897	4.97854265	1.21767987	2.51633147	1.37075753	0.18813126
	-19.8139928	-0.41803643	-4.97377164	-6.04435551	-2.04505178	-1.23174234	-0.46552117	-0.47835844	-8.1209718	-0.03800182	-1.64328389	-2.22076192	-0.41468177	-0.60248908	-1.11507772	-1.55720767	-0.65548661	-1.33913741	-6.25953167	0.05430765	-1.59604271	-0.63750381	-0.4294567	-1.20291625	0.01981602
	7.4156572	0	1.6327492	3.3272747	0	0	0	0	2.49735919	0	0	0	0	0	0	0	0	0	2.00113206	0	0	0	0	0	0
	11.3160571	-10.0761288	1.02367392	3.2702754	-17.1944388	-17.7331261	-8.96039961	-7.53675215	0.69020103	-17.749195	-12.4509397	-15.0623264	-9.2831885	-8.8702781	-12.546241	-21.6238065	-8.28465299	-17.2406029	1.10728784	-16.0959882	-13.3707966	-9.47620099	-9.70730657	-17.6095741	-16.46185
	-0.56983397	0.73026526	-0.15861253	0.06285632	3.36533406	5.00611228	0.59744693	0.50239719	-0.03706023	4.20883363	0.54483904	3.69694208	0.65327954	5.3008964	0.60185347	6.19485896	0.52064382	4.81742888	-0.17158498	3.9041835	-0.1189275	0.53598467	0.67318279	4.86936222	4.00189113
	4.15459747	-3.37999598	0.33237247	1.1121025	-5.21572859	-5.56002402	-3.00348734	-2.5254925	0.24783692	-8.38667184	-4.17479936	-7.30687882	-3.1141392	-5.89938119	-4.21401483	-6.69372218	-2.77086603	-5.42741994	0.36417319	-7.81213983	-4.4701931	-3.17834782	-3.25557208	-5.59620486	-7.99003217
	-8.04020956	-7.41826963	-3.51104834	-2.7461849	-1.02334002	-0.74852495	-3.10806483	-1.80469949	-5.19653786	-0.45741162	-0.55616584	1.25004659	-4.42516263	-0.67033962	-2.56107131	-3.03075407	0.22208996	-0.16407514	-4.20374698	-0.98699501	-2.96049174	-1.65049857	-4.76324973	-0.35600607	-0.51791269
	-3.43304319	-4.47968859	-3.34624096	-3.04929053	-2.21168548	-2.04839402	-3.21069191	-2.64503748	-3.66768483	-2.43889591	-1.73078323	-0.91128442	-3.81598294	-2.04673675	-2.80079857	-3.08904408	-1.56516006	-1.7996617	-3.99888265	-2.91204122	-2.74087562	-2.55621568	-3.96622299	-2.05001218	-2.49251752
	-5.03052725	-5.40626085	-2.37974826	-1.86381636	-2.13160372	-1.19512499	-3.47103398	-0.52637199	-0.08037203	1.45248977	-3.09849167	-0.4680015	-1.64883319	-2.15162892	0.40597413	-0.05833107	-2.84096224	-1.13915682	-1.75896916	-1.07872624	-3.35270732	-0.32135827	-0.32135827	-0.59490894	

-2.86556225	-1.12998409	-1.91160157	-2.30088428	-0.52217718	-0.02766581	-0.99083581	-1.08898227	-1.8590996	-0.64924979	-0.09648326	-0.65905513	-1.02554264	0.09212447	-0.51250796	0.16232231	-0.63053102	-0.10003257	-1.92284986	-0.64846024	0.32602407	-0.10199513	-1.02734778	-0.41782566	-0.64921776
-3.43304319	-4.47968859	-3.34624096	-3.04929053	-2.21168548	-2.04839402	-3.21069191	-2.64503748	-3.66768483	-2.43889591	-1.73078323	-0.91128442	-3.81598294	-2.04673675	-2.80079857	-3.08904408	-1.56516006	-1.7996617	-3.99888265	-2.91204122	-2.74087562	-2.55621568	-3.96622299	-2.05001218	-2.49251752

**Ilustración iError! Utilice la pestaña Inicio para aplicar 0 al texto que desea que aparezca aquí...30:**  
**Caso 16: Degradación -5% relación de compresión fanduct y -2% eficiencia turbina 2 (II)**

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	-0.0542935	-0.0097598	0.00178791	-0.00337639	0.00213184	-0.00763787	-0.01079659	-0.0024501	-0.01386647	-0.01248331	-0.00735682	-0.00619833	0.00146466	0.00736483	-0.00507693	-0.00097802	-0.00584826	-0.00281704	0.00340279	-0.00434883	-0.00281819	0.00095047	-0.01295407	0.00683509	-0.00210619	
eff_fanorc	-0.12049632	-0.02985202	0.04944435	-0.0926762	0.07532611	-0.21240052	-0.29702149	-0.00649	-0.36981789	-0.31955936	-0.20167056	-0.17959831	0.05767893	0.18577593	-0.14480299	-0.07706627	-0.13903537	-0.07775787	0.11362323	-0.12105011	-0.08688708	0.01655062	-0.35153687	0.17664429	-0.03851194	
mc_fanorc	-0.03889199	-0.00654467	0.01193592	-0.02359218	0.01625783	-0.05445205	-0.07871159	-0.00303312	-0.0989701	-0.09011397	-0.05298694	-0.0428729	0.01119304	0.0535513	-0.03636872	-0.00822949	-0.04161989	-0.02098174	0.02337709	-0.03063819	-0.0197044	0.00781737	-0.09320243	0.04925468	-0.01354864	
pr_fanduct	-0.82066521	-0.81979519	-0.83210074	-0.81739195	-0.8163385	-0.8178951	-0.82769023	-0.83363892	-0.81212151	-0.82290151	-0.82044258	-0.80768061	-0.81794665	-0.81884022	-0.82106589	-0.82977828	-0.81999882	-0.82744845	-0.83086233	-0.81708229	-0.81681092	-0.81504425	-0.81984897	-0.8220126	-0.81020481	
eff_fanduct	0.0990471	-0.00423664	-0.00242074	-0.00088415	-0.00645311	-0.00806815	0.00600073	-0.00435723	0.01180892	0.01039231	0.0086645	-0.01221659	-0.00702651	-0.01640023	0.00419316	0.00201225	0.00235392	0.00807642	-0.01936498	-0.0098196	0.01565552	-0.01828292	0.00552021	-0.00651379	-0.02135952	
mc_fanduct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_compresor1	2.15713321	1.1483451	0.775657	1.11313067	0.56897397	1.91549703	2.3539767	0.73767121	3.50885726	2.7265401	2.14482191	1.82393248	1.2057191	-0.25297198	1.57703552	0.61597531	1.59014529	1.19859824	-0.0847331	1.75300081	1.6322769	1.18937505	3.32285	0.00695972	1.40196237	
eff_compresor1	1.04600773	0.51015113	0.61382482	0.59457854	0.24072	0.93986504	1.13855921	0.68084264	1.35656759	1.3916992	0.98485202	0.63499306	0.43325475	-0.14875566	0.73316977	0.40836399	0.83975793	0.69381151	0.08273856	0.71645366	0.7722058	0.39176369	1.44054687	-0.0083216	0.50112187	
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_compresor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
eff_compresor2	0.61762061	0.30191281	0.31495204	0.35760333	0.16136138	0.55681753	0.67836027	0.35749598	0.82708312	0.81198171	0.59098817	0.41021241	0.2784338	-0.08401723	0.44868705	0.24556834	0.48786648	0.40174864	0.05727188	0.4273792	0.44470173	0.22407457	0.85768863	0.00706077	0.32578312	
mc_compresor2	0.0017826	0.0077002	-0.01974075	-0.00213175	0.00314788	0.0034663	0.0073188	-0.00719985	0.0409694	-0.0006342	0.00906019	0.02845477	0.01573698	0.00335051	0.00755115	-0.00752418	-0.00026414	-0.00756583	-0.01168173	0.01826874	0.00560094	0.02282382	0.0236095	0.00235524	0.01861955	
pr_turbina1	-15.0829329	-5.3661893	-11.2989841	-8.53357002	-2.64580066	-12.83551205	-15.0925823	-13.6442256	-12.697942	-20.0311125	-12.6209399	-4.0589581	-3.46702607	3.66715258	-9.23405877	-6.67113584	-11.7419782	-11.0027152	-2.69512936	-6.7670612	-9.54571403	-0.66916039	-17.0249909	1.17219278	-3.95610084	
eff_turbina1	2.78814864	0.98706238	2.142931	1.88610766	0.49212386	2.37341022	2.78403951	2.56913881	3.70511202	2.33279589	0.71807608	0.62153753	0.668862616	1.70392203	1.25317145	2.17458711	2.05625249	0.52776221	1.22980945	1.75985615	0.0986995	3.11188197	-0.2085927	0.70861453		
mc_turbina1	-7.83391603	-2.78642646	-3.88254394	-4.4311181	-1.37294853	-6.66543303	-7.83815442	-7.08128699	-6.59625784	-10.4053859	-6.5548441	-2.10691523	-1.80802155	1.90886119	-4.79449955	-3.46260334	-6.09873087	-5.7210532	1.39513301	-3.51340342	-4.95806008	-0.34695397	-8.84470418	0.61129163	-2.05467678	
pr_turbina2	1.36331637	-0.18349461	5.58917155	2.14273141	0.75959151	1.1577858	0.582939	7.35736463	6.65061293	1.9545569	0.15522778	-4.20970839	-1.81638839	0.38064561	0.36192417	3.26775189	1.91152831	3.32128756	3.97737309	-2.11475511	0.30763919	-3.45835888	-2.8433877	0.99769764	-2.3073129	
eff_turbina2	-1.55484328	-2.68886513	1.55745069	-0.9803672	-1.99944612	-1.6958627	-2.13418374	2.86951672	-7.45077972	-1.11291905	-2.66456091	-5.64660711	-3.88383655	-2.12935838	-2.28757088	-0.1492236	-1.14543161	-0.10725786	0.38854241	-4.10281116	-2.34330942	-5.09616568	-4.632437	-1.82880247	-4.24295566	
mc_turbina2	0.5699029	-0.07454159	2.33974115	0.89745275	0.31941634	0.48639109	0.2331184	3.07776504	-2.77919234	0.81542	-0.06473668	-1.75792811	-0.75895718	0.248523	0.15269711	1.36723347	0.80236877	1.38990273	1.66599155	-0.88228387	0.12859344	-1.44259209	-1.18628068	0.42402148	-0.96276504	

Acierto pr_fanduct	-0.82066521	-0.81979519	-0.83210074	-0.81739195	-0.8163385	-0.8178951	-0.82769023	-0.83363892	-0.81212151	-0.82290151	-0.82044258	-0.80768061	-0.81794665	-0.81884022	-0.82106589	-0.82977828	-0.81999882	-0.82744845	-0.83086233	-0.81708229	-0.81681092	-0.81504425	-0.81984897	-0.8220126	-0.81020481
Acierto eff_turbina2	-1.55484328	-2.68886513	1.55745069	-0.9803672	-1.99944612	-1.6958627	-2.13418374	2.86951672	-7.45077972	-1.11291905	-2.66456091	-5.64660711	-3.88383655	-2.12935838	-2.28757088	-0.1492236	-1.14543161	-0.10725786	0.38854241	-4.10281116	-2.34330942	-5.09616568	-4.632437	-1.82880247	-4.24295566

Ilustración 0.11: Caso 16: Degradación -4% relación de compresión fanduct y -4% eficiencia turbina 2 (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
0.00647137	0.00131713	0.0008465	-0.00964454	-0.01320842	-0.00554501	-0.00477656	0.00329116	-0.00400376	0.00342794	0.00231571	-0.01173933	-0.00689083	0.01195171	-0.0006762	0.00454156	-0.01665572	-0.00239746	-0.00774469	-0.00109447	0.00555333	0.00574015	0.00451541	0.00032776	-0.00100211
0.17256038	0.01984974	0.01828689	-0.25151033	-0.33597821	-0.15004656	-0.12077757	0.07827702	-0.10792501	0.07774844	0.06041659	-0.29670954	-0.14273038	0.32339169	-0.01819911	0.12378735	-0.44458765	-0.05685032	-0.19755812	-0.01678327	0.14307976	0.14677939	0.1245494	0.02707304	-0.02519641
0.04680914	0.01054178	0.00616157	-0.070709156	-0.09264331	-0.04054196	-0.03388678	0.02435291	-0.02990219	0.02475753	0.01679639	-0.08431169	-0.04247876	0.08618527	-0.00403672	0.03264446	-0.11751017	-0.01697032	-0.05468172	-0.00818332	0.04096089	0.04067552	0.03160174	0.00181824	-0.0066598
-0.8195668	-0.81699085	-0.82087968	-0.82665815	-0.80198485	-0.82666436	-0.81656505	-0.81574615	-0.82981962	-0.82021178	-0.82251924	-0.81965158	-0.82119994	-0.82383889	-0.81598605	-0.82268807	-0.81710621	-0.81999986	-0.81500549	-0.82677882	-0.81525195	-0.82952132	-0.82966464	-0.82706557	-0.81514537
-0.00234736	-0.00044479	0.0017087	0.00931228	-0.00043538	0.00030721	-0.00213123	-0.00369819	0.00848933	-0.00614142	0.00001727	0.01145226	-0.01100454	-0.00172494	-0.0024911	-0.00215664	0.00737299	-0.00806791	0.00211333	-0.00191628	-0.01959475	-0.01093024	-0.00803104	0.00572594	0.0108979
0.50577582	1.24165777	2.30498322	2.35903379	3.39170086	1.24315798	1.8945503	1.39146705	1.57482002	0.77738154	0.47441855	2.95782563	1.9787891	-0.76430129	1.14790221	0.09776195	3.41377592	1.18419422	2.59405523	0.3457432	0.61011875	-0.49313285	0.95386553	0.6434775	1.21815162
0.12359366	0.57422177	0.9445262	1.13527803	1.26837712	0.75745084	0.8381142	0.47001813	0.85257301	0.31047753	0.38793288	1.36894968	0.79310846	-0.20801072	0.43352256	0.06410128	1.39440327	0.56251173	1.09889113	0.42658418	0.12547065	-0.05570452	0.46470086	0.38973677	0.52201997
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.06813607	0.30932403	0.51327073	0.67464627	0.7866392	0.44757661	0.50635794	0.26989693	0.48905586	0.17418689	0.20678274	0.80570599	0.48920137	-0.14545274	0.2729732	0.03890251	0.85497602	0.34776277	0.65347481	0.24621183	0.07845635	-0.03208304	0.24844495	0.24391519	0.31914185
0.01247973	0.00679241	0.02070679	0.0062967	0.04501171	-0.01120567	0.01078839	0.02157384	-0.00422233	0.00909443	-0.01290977	0.01218703	0.01776188	-0.01782836	0.01425993	-3.0963E-05	0.03428762	0.00298109	0.02006037	-0.02296201	0.01811313	-0.01714957	0.00323403	-0.00652903	0.00804807
1.24295556	-6.15696683	-9.15948924	-5.2292411	-10.3191619	-12.6880402	-10.2460046	-2.4424273	-12.7009928	-2.1950682	-6.00899099	-17.4773081	-8.44207541	1.08791725	-3.49958822	-0.03957837	-14.4287786	-7.3648727	-12.3103106	-9.61069825	2.03384771	-1.2775304	-5.39455969	-6.57936101	5.95074869
-0.23822127	1.13497861	1.66322873	2.80808151	1.84417738	2.36936383	1.87893	0.42208703	2.35670608	0.40142496	1.30153076	3.2123592	1.53922279	-0.16561224	0.63292912	0.01890234	2.62016556	1.36089874	2.24570615	1.81868489	-0.39655887	0.26999115	0.98521527	1.23216403	1.09630964
0.64753973	-3.197675	-4.75966292	-7.91044006	-5.36212963	-6.58693918	-5.32104293	-4.26887834	-6.59636961	-1.14066014	-3.58657861	-9.07867097	-4.38478874	0.56855573	-1.81530604	-0.01613273	-7.49646483	-3.82338507	-6.39540361	-4.98659634	1.05594173	-0.65647514	-2.78965009	-3.41292841	-3.0889985
-1.45862471	-0.07048919	-3.22686994	0.54740379	-7.64972603	4.30561481	-0.53126992	-3.24855699	2.66054558	-0.44645777	4.10187409	-0.86008925	-1.87460469	4.7208163	-1.36257166	1.35651873	-5.02700832	0.98726319	-2.51505757	6.48316809	-2.47166036	5.00900072	0.5015208	3.01739028	-0.07106933
-3.64354646	-2.61187603	-4.93691318	-2.14498504	8.1874278	0.62388841	-2.99304723	-4.94882031	-0.58974403	-2.88813814	0.45812348	-3.19433666	-3.91998281	0.8975022	-3.56341449	-1.57102356	-6.24576646	-1.82015936	-4.4043792	2.220382	-4.37579377	1.1337406	-2.18740221	-0.34026389	-2.62113737
-0.60997168	-0.02847971	-1.3495564	0.23083416	-3.1978767	1.80321836	-0.2195095	-1.35481976	1.11713842	-0.18706939	1.71772755	-2.10139397	1.97488386	-0.56607856	0.56042751	-2.10139397	0.414756	-1.0494359	2.71334826	-1.03191018	2.09595389	0.21096677	1.26334493	-0.0284836	

-0.8195668	-0.81699085	-0.82087968	-0.82665815	-0.80198485	-0.82666436	-0.81656505	-0.81574615	-0.82981962	-0.82021178	-0.82251924	-0.81965158	-0.82119994	-0.82383889	-0.81598605	-0.82268807	-0.81710621	-0.81999986	-0.81500549	-0.82677882	-0.81525195	-0.82952132	-0.82966464	-0.82706557	-0.81514537
-3.64354646	-2.61187603	-4.93691318	-2.14498504	8.1874278	0.62388841	-2.99304723	-4.94882031	-0.58974403	-2.88813814	0.45812348	-3.19433666	-3.91998281	0.8975022	-3.56341449	-1.57102356	-6.24576646	-1.82015936	-4.4043792	2.220382	-4.37579377	1.1337406	-2.18740221	-0.34026389	-2.62113737

Ilustración 0.12: Caso 16: Degradación -4% relación de compresión fanduct y -4% eficiencia turbina 2 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fanore	0.27715214	0.10259766	-0.11956237	0.13886742	0.65519946	0.72069708	-0.41602811	0.31169671	0.6777445	0.44195331	-0.10040604	0.23780856	-0.3193948	0.48537252	0.0940737	0.05510594	0.38161797	0.12686951	0.26032935	-0.58839241	0.359491	0.61096642	0.24938074	-0.10280298	-0.19192996
eff_fanore	0.01107074	-0.00103897	0.02840201	-0.01201695	-0.07167069	-0.07172477	0.01268435	-0.01440883	-0.06344718	-0.04070187	-0.01253139	-0.02620729	0.05795112	-0.04766807	0.00289667	-0.02791414	-0.04421596	0.01197489	-0.07914331	-0.05259591	-0.02513603	-0.03919871	-0.00782035	0.01937991	0.00929958
mc_fanore	-0.01668807	-0.00664705	0.00634253	-0.00827313	-0.0375212	-0.04095327	0.02439793	-0.03834988	-0.03931023	-0.02601499	0.00627079	-0.01316963	0.01815201	-0.02812985	-0.00327433	-0.00254845	-0.02222247	-0.00823541	-0.01436608	-0.03400004	-0.01993315	-0.05282452	-0.0144718	0.00599585	0.01131722
pr_fanduct	-0.0033924	-0.00344665	-0.00316437	-0.00192743	0.00049546	0.00291014	0.00319175	-0.00270937	-0.00226416	-0.0029282	0.00267047	0.00247202	-0.00089085	-0.00179897	0.00057431	0.00318997	-0.00146742	-0.00545746	0.00318931	-0.00136901	0.00117714	-0.00108958	-0.00380257	0.00070862	0.00208387
eff_fanduct	-1.42542729	-1.45165258	-1.44739864	-1.47104761	-1.48239536	-1.49706874	-1.52909363	-1.48596134	-1.46680192	-1.47032769	-1.52883205	-1.51161419	-1.45838697	-1.49335681	-1.47497195	-1.53337302	-1.49101157	-1.44700472	-1.55460979	-1.49466661	-1.48200189	-1.47023958	-1.45399681	-1.48198882	-1.51464233
mc_fanduct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor1	-4.85273727	-2.43005993	-2.68593837	-0.31902002	0.13665007	0.32020184	-0.41951138	-1.40435656	-0.41815202	-0.8693862	0.84956352	-0.27868944	-0.08363444	0.27966141	0.71662163	-1.2120666	-3.42493723	3.86056875	-0.13942724	-0.8826773	-1.00064427	-1.90644744	-3.56683387	-0.98345008	
eff_compressor1	0.19380132	0.11670631	0.10201308	0.03863634	0.05322457	0.05724471	0.04409596	0.09059233	0.09285006	0.0768	0.0123531	0.05711948	0.14562114	0.02380969	0.05192986	0.09916859	0.10539824	0.1525665	-0.08269335	0.05242986	0.07759039	0.0721736	0.09275437	0.1591534	0.05308677
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	6.14704296	3.58660646	3.59465442	1.60080597	1.75324508	1.46177921	0.29744826	2.60895806	2.30834602	2.4511669	-0.40959625	1.14511633	4.36302626	1.36646868	1.85247184	-0.27912643	2.38101059	4.4946215	-2.8654355	2.15498635	2.187077	2.87118181	3.25091888	3.8257676	1.26464669
eff_compressor2	0.30708247	0.1771657	0.17931962	0.08037133	0.08462695	0.06956847	0.03097917	0.13278724	0.10854835	0.12049735	-0.00883012	0.06535954	0.22572106	0.06844289	0.09401033	-0.00036535	0.1285432	0.22505681	-0.13058071	0.10013461	0.11003115	0.13888827	0.16246455	0.20316512	0.07679449
mc_compressor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina1	11.4649777	3.88659424	4.48631409	-3.47836939	-5.07480683	-4.9798919	1.97544162	2.31800459	-3.71447792	-1.30536285	-3.06771879	0.58644976	11.5016474	-4.75450744	-1.34878719	-1.0956631	1.93881857	7.29121104	-13.0105534	-5.35073323	-0.47181521	-1.40366811	2.34844706	12.1489111	3.155878731
eff_turbina1	-9.1384245	-6.87381442	-7.04726015	-4.72108332	-4.26834037	-4.6593161	-6.16466074	-6.37172516	-4.66923848	-5.35693618	-4.71677754	-5.78847579	-9.04398356	-4.34088413	-5.3241214	-5.2571199	-6.2461806	-7.87413865	-1.80771117	-4.21034797	-5.57927694	-5.34851721	-6.42664045	-9.18025697	-6.55038076
mc_turbina1	1.54321562	0.52222284	0.60605883	-0.4761528	-0.68686384	-0.67237678	0.2682208	0.31279563	-0.5035645	-0.1779585	-0.4138545	0.07471001	1.55300563	-0.64360198	-0.18449932	-0.144568	0.26913429	0.98373523	-1.75279045	-0.7260827	-0.06561111	-0.19093246	0.31405784	1.64296991	0.42632251
pr_turbina2	-4.49329934	-1.88892959	-2.27713089	-0.12395019	0.27215618	0.75051996	2.32757269	-0.22494624	-0.51740358	-0.5016912	3.01303575	1.77027406	-2.48225995	0.70449397	-0.30290561	3.48672882	0.19960384	-2.82670062	5.86692102	-0.61150154	-0.20044263	-0.99857578	-1.43770712	-0.94324457	1.38182367
eff_turbina2	-2.10114637	-0.88607797	-1.07154799	-0.06214084	0.13046385	0.35453532	1.08224735	-0.10205468	-0.24045442	-0.23148485	1.40678831	0.82740369	-1.6813594	0.33479301	-0.14746815	1.6282674	0.09566242	-1.32337649	2.74600053	-0.28867989	-0.0932113	-0.46120821	-0.6725412	-0.44325766	0.64662506
mc_turbina2	-2.76987159	-1.16120793	-1.40063293	-0.07886344	0.16802086	0.45912759	1.42650421	-0.13749817	-0.31791978	-0.30848621	1.85040232	1.08718276	-1.52641242	0.4324294	-0.19009549	2.14041972	0.12048322	-1.7363071	3.60437185	-0.37687761	-0.12473427	-0.61407158	-0.88399702	-0.5798174	0.84852043

Aterio eff fanduct	-1.42542729	-1.45165258	-1.44739864	-1.47104761	-1.48239536	-1.49706874	-1.52909363	-1.48596134	-1.46680192	-1.47032769	-1.52883205	-1.51161419	-1.45838697	-1.49335681	-1.47497195	-1.53337302	-1.49101157	-1.44700472	-1.55460979	-1.49466661	-1.48200189	-1.47023958	-1.45399681	-1.48198882	-1.51464233
Aterio eff turbina1	-9.1384245	-6.87381442	-7.04726015	-4.72108332	-4.26834037	-4.6593161	-6.16466074	-6.37172516	-4.66923848	-5.35693618	-4.71677754	-5.78847579	-9.04398356	-4.34088413	-5.3241214	-5.2571199	-6.2461806	-7.87413865	-1.80771117	-4.21034797	-5.57927694	-5.34851721	-6.42664045	-9.18025697	-6.55038076

Ilustración 0.13: Caso 19: Degradación -2% eficiencia fanduct y -5% eficiencia turbina 1 ((I))



	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	0.42488581	0.19151168	0.05000985	-0.5208802	0.61630328	0.58977256	-0.1219365	0.39893815	0.20732597	0.225281	0.3700614	-0.32647304	0.73025335	-0.00013162	0.68935043	-0.11010118	0.0777451	0.35247616	0.26829488	0.70304008	0.94521441	0.04512516	-0.60273871	0.111293832	-0.26093756
	-0.03322065	0.03356118	0.0133678	0.05975112	-0.04925653	-0.06040021	-0.00673246	-0.05327013	-0.00907998	-0.01058657	-0.00380373	0.03259874	-0.07237905	0.01785788	0.06689965	0.01967937	-5.4157E-05	-0.02190095	0.00453879	-0.05372182	-0.02089297	0.01332981	0.12022028	0.00557471	0.0267704
	-0.02493483	-0.01243475	-0.00331784	0.02996501	-0.03548326	-0.03379104	0.00684777	-0.02290124	-0.01205742	-0.01394865	-0.02194717	0.01868724	-0.04255131	-0.00027934	0.03962192	0.00662552	-0.00507823	-0.02018953	-0.01645848	-0.04094642	-0.02008208	-0.0035038	0.03373683	-0.00062894	0.01453069
	-0.00305083	-0.00759719	-0.00209002	0.0004098	-0.00054211	0.00021808	-0.00099806	-1.1443E-05	-0.00111478	-0.00320111	-0.00400495	-0.00048164	-0.00951476	-0.00156383	-0.00058045	-0.00384244	-0.00351901	-6.0721E-06	-0.00594196	-0.00376029	-0.00215568	-0.0050267	-0.00467399	-0.00066029	-0.00265942
	-1.4582684	-1.40018363	-1.45764038	-1.49904553	-1.45569795	-1.47128231	-1.51293032	-1.50545646	-1.46747535	-1.45835326	-1.41971517	-1.49594941	-1.4898895	-1.45417582	-1.50410585	-1.4937095	-1.46116479	-1.47929229	-1.42304313	-1.45459953	-1.48981478	-1.44336484	-1.41461596	-1.46256049	-1.48748951
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-1.39591131	-5.71145531	-2.9443459	-3.7190777	-0.22217336	-1.97557751	0.80045964	0.55665257	-1.66738179	-1.21243312	-2.77058224	-2.44649392	0.56541117	-2.80023913	-1.57083883	-2.6276939	-2.5319337	-0.88430296	-2.47771634	-0.76760586	-0.65320879	-2.72134962	-8.08735621	-3.07835276	-2.17529086
	0.10571564	0.23106797	0.1264931	0.14129301	0.04695685	0.14839537	2.5731E-05	0.03947563	0.08247228	0.074908	0.12374176	0.11690024	0.04838138	0.12470973	0.05736344	0.13704015	0.14419302	0.05129709	0.1042775	0.09396285	0.06990791	0.11460001	0.26638087	0.13291997	0.10297489
	2.95467576	6.9802565	3.95031611	3.37602061	2.21157707	3.46809084	-0.16810602	0.68424398	2.95102132	2.4855091	4.59731719	2.59143703	1.37552324	3.66008235	1.22924456	3.2483131	3.40354976	2.28590017	4.11538547	2.8270383	1.94275772	3.91163523	7.98636504	3.86533784	2.43612622
	0.14394018	0.34465403	0.198363	0.18605799	0.10403131	0.17251351	0.00027763	0.03876964	0.44765652	0.12530754	0.21827448	0.14052907	0.06545375	0.18647121	0.07869206	0.18658873	0.17177829	0.11769585	0.19863325	0.13221592	0.10110384	0.19285191	0.40561963	0.20108588	0.13271752
	-0.14096081	13.6912007	6.05139185	13.7527247	-4.98898482	3.56655801	-4.03904549	-3.91230888	1.43100021	0.4199514	1.48765594	7.54806351	-5.97169263	6.37611209	5.77248923	5.25682344	5.56296549	-0.06122721	1.02800186	-3.36117734	-0.24707799	-0.02498966	24.5192187	8.64971563	6.10736074
	-5.71078615	-9.79473284	-7.49941997	-9.61377032	-4.31794318	-6.76035896	-4.45766857	-4.53115501	-6.15335518	-5.84742264	-6.26048917	-7.84166024	-3.98833888	-7.57332589	-7.2895568	-7.2470592	-7.3276465	-5.70018893	-6.12975006	-4.79743743	-5.63373457	-6.93154671	-12.86902093	-8.21772512	-7.4378995
	-0.02240154	1.84395897	0.81457244	1.85676913	-0.67550803	0.48263132	-0.54436991	-0.52539675	0.19144078	0.05455655	0.19609942	1.01917453	-0.8059398	0.85949904	0.77890765	0.70688646	0.75024794	-0.01000164	0.14252429	-0.45742006	-0.03460558	0.540485	3.30829621	1.16755383	0.82469141
	-1.3200676	-5.67034273	-2.19267076	-0.53019504	-0.62221385	-0.99993325	2.4866295	1.8376056	-1.20479986	-0.6129512	-3.87054654	-0.2667931	0.82631727	-1.78484807	1.03017673	-1.71810814	-1.40033681	-0.02239012	-3.36161462	-1.31493155	0.37597206	-2.57348442	-6.39502883	-1.41660011	-0.21977999
	-0.61960561	-2.655203	-1.02602306	-0.24993534	-0.29312069	-0.46138637	1.16028868	0.85973853	-0.56420345	-0.2906533	-1.81511599	-0.12817579	0.39888199	-0.84049972	0.47374708	-0.8089948	-0.65930807	-0.01066044	-1.57627894	-0.61267518	0.17797757	-1.208186	-2.99894069	-0.66440066	-0.10527284
	-0.81465812	-3.48452054	-1.34652634	-0.32604546	-0.3818076	-0.60762614	1.52867435	1.12653125	-0.74127201	-0.37744501	-2.37882404	-0.16566873	0.50787282	-1.09975864	0.62987996	-1.0553245	-0.86037341	-0.014057	-2.06744363	-0.80931858	0.23051202	-1.58244262	-3.92956606	-0.86994665	-0.13507536

-1.45852684	-1.40018363	-1.45764038	-1.49904553	-1.47128231	-1.51293032	-1.50545646	-1.46747535	-1.45835326	-1.41971517	-1.49594941	-1.4898895	-1.45417582	-1.50410585	-1.4937095	-1.46116479	-1.47929229	-1.42304313	-1.45459953	-1.48981478	-1.44336484	-1.41461596	-1.46256049	-1.48748951	
-5.71078615	-9.79473284	-7.49941997	-9.61377032	-4.31794318	-6.76035896	-4.45766857	-4.53115501	-6.15335518	-5.84742264	-6.26048917	-7.84166024	-3.98833888	-7.57332589	-7.2895568	-7.2470592	-7.3276465	-5.70018893	-6.12975006	-4.79743743	-5.63373457	-6.93154671	-12.86902093	-8.21772512	-7.4378995

Ilustración 0.14: Caso 19: Degradación -2% eficiencia funduct y -5% eficiencia turbina 1 (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fanorc	2.2876428	1.1281663	0.9911928	-0.9124799	-0.22073514	0.23321744	0.0293444	0.17828793	0.93565312	-0.54870801	0.81303955	-0.51176705	0.0916119	1.63187467	1.0679900	-0.01974729	0.19019882	-1.17818213	-4.21374999	-0.48756182	0.05504254	3.37847856	0.86195394	0.24889228	-7.7518459	
eff_fanorc	-0.2418265	-0.13181625	-0.09925013	0.09143615	0.0314105	-0.03167093	-0.00996164	-0.0179122	-0.1067092	0.07296289	-0.087085	0.06701895	-0.01559855	-0.17747055	-0.11896478	-0.00248855	-0.03163358	1.19897684	0.41631766	0.04432258	-0.02750772	0.37335675	-0.06040406	0.03136948	0.88977613	
mc_fanorc	0.00179217	0.00375844	0.00454096	-0.02261001	-0.0259748	-0.02033148	-0.02178561	-0.02999936	-0.01685716	0.00666893	-0.0409269	0.00761244	-0.01518064	-0.01841793	0.00901362	-0.01913137	-0.0106569	0.30288828	-0.02999113	-0.01859007	-0.02145733	-0.06202817	-0.07188171	-0.00700783	0.196333949	
pr_fanduct	-0.5972677	-0.3276883	-0.32065393	0.15587127	0.05021026	-0.05165837	0.02534695	-0.09458922	-0.3079582	-0.12573885	-0.1676614	0.0863203	-0.02976978	-0.54318234	-0.49021887	0.09888303	-0.09252531	2.22796105	0.98767652	0.15177743	0.02187022	0.88727844	-0.00489514	0.09171643	1.40155881	
eff_fanduct	-3.8637833	-4.39603211	-4.37658306	-5.28166205	-5.04268035	-4.89141957	-5.04924044	-4.91798103	-4.42309719	-4.7558393	-4.67495949	-5.16641855	-4.95117358	-3.95628203	-4.07821851	-5.06375268	-4.83159612	9.14009658	-6.8684738	-5.25009885	-5.02744191	-6.36632303	-4.9835241	-5.15711081	-7.59639544	
mc_fanduct	0.06102192	0.03378448	0.03297684	-0.02591711	0.00061604	0.01058432	-0.00217802	0.00028936	0.00549421	0.02179864	0.00267519	-0.00925507	0.00268285	0.05264779	0.07337754	-0.00229355	0.0050208	-0.20532105	-0.10716152	0.00289183	-0.00112364	-0.13028904	0	0	-0.00765964	0.12084486
pr_compresor1	0.11132107	-0.00220415	0.08789515	1.17743552	-0.39013636	-0.04710817	0.1973746	-0.0240878	-0.34056252	1.98010079	-0.08933189	-0.080001	-0.06800323	-0.8819509	0.20960072	0.09410789	-0.14657843	0.45942233	0.09612078	0.03780094	0.08345502	1.96544456	0.67034002	0.31519501	-0.52489822	
eff_compresor1	-1.36772414	-0.29441919	-0.48502844	-0.6555401	-1.47365119	-0.58574891	-0.20058575	-0.62997529	-0.66736626	-0.20151517	-0.65860283	0.11249617	-0.22953576	-0.83666091	-0.62055908	-0.42127766	-0.40404814	1.15469238	3.15228101	-0.73870325	-0.45318665	-0.15879407	-0.18495406	0.08549004	0.31139815	
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	-0.98165444	4.02618699	-1.66547651	12.4703992	0.06778166	0.32029688	0.0965445	0.50887153	0.50762042	11.4614556	0.45345586	0.88224076	0.16231319	-5.7162396	9.67768966	0.15177845	0.22489295	4.54888868	9.44941007	0.98415086	0.19097598	13.410795	0	0	0.01832177	4.00496515
eff_compresor2	0.96999771	-3.28136297	1.36176822	-11.3529382	-0.32853441	-0.46577951	-0.16165177	-0.67417746	-0.78023764	-7.35574923	-0.66169245	-0.68387592	-0.66637515	3.59418336	-9.02675935	-0.22703145	-0.51931765	-0.80163747	7.59452847	-0.70569911	-0.29766207	8.91082527	0.00605389	0.04663801	-0.70750982	
mc_compresor2	0.33099176	1.08341645	0.44301085	3.65295737	0.03730954	0.03944498	0.048356515	-0.02977678	1.72059327	0.03025261	0.24711831	0.014754	-0.02582147	2.66879193	0.05949746	0.0114754	0.05959001	0.05959001	0.05959001	0.05959001	0.05959001	0.05959001	0.05959001	0.0187233	0.07449006	-0.06715214
pr_turbina1	5.75942888	6.27290999	3.1659967	9.0746176	-20.0848037	-8.63621946	-6.6115319	-11.3058815	-8.94288993	13.5204445	-10.4260177	1.42458242	-3.88684896	0.2563946	10.5622749	-7.97216246	-6.19406076	-27.0153032	4.36726943	-15.5759767	-8.2911855	12.78521	-23.6816829	-5.18503767	-26.4792318	
eff_turbina1	-1.78382787	-1.69650187	-2.29561395	1.7872735	2.9507767	-1.45002631	-1.54698595	-1.34857423	-1.43004773	-2.3902894	-1.3886432	-2.2279878	-1.70307639	-2.0489101	0.84019912	-1.47957251	-1.56729596	4.20350516	1.2539909	0.04908151	-1.46534076	-2.4976528	4.9191169	-1.62380963	4.09914772	
mc_turbina1	1.67439795	2.0024621	1.0828103	2.91600769	-5.64448968	-2.65365698	-1.96100589	-3.36534981	-2.65245679	4.36200157	-3.09895008	0.41139843	-1.1352235	0.07830504	3.41453698	-2.37005957	-1.83458611	-7.49148058	1.372982	-4.533959	-2.46471131	4.1285274	-9.48057234	-1.53767574	-7.3467183	
pr_turbina2	2.60152734	-0.39383485	1.63858527	-4.35791306	-4.28751813	0.64737463	-1.47580427	-1.72375574	2.87896447	-0.85728633	0.41337492	-1.05997245	1.80848005	3.61940678	-0.98887769	-1.94639144	1.58979287	-2.62308333	-5.32691783	-4.75909759	-1.71189445	-3.99123394	-0.35451642	-2.53924602	-0.87418627	
eff_turbina2	0.72703081	-0.10949571	0.45499125	-1.16685735	-2.5639427	-0.31723142	-0.57087815	-0.6309911	0.95848196	-0.248181605	-0.31918421	-0.30516319	0.84063095	1.02209906	-0.27751102	-0.79089592	0.62089445	-2.01350934	1.12656684	-2.05224448	-0.70630595	-1.10364116	-0.18137492	-0.98688989	-1.56975659	
mc_turbina2	1.34109592	-0.20179089	0.84579174	-2.2422647	-3.65403085	-0.47833062	-0.92574153	-1.26127899	1.64589519	-0.44321257	-0.44011929	-0.54848253	1.29159451	1.87041228	-0.51065816	-1.26144223	1.00344499	-3.14295338	-2.70883703	-0.09302268	-1.12316722	-2.06885422	-0.24432461	-1.58825524	-2.2179839	

Alerio.eff.fanduct	-3.86337833	-4.39603211	-4.37658306	-5.28166205	-5.04268035	-4.89141957	-5.04924044	-4.91798103	-4.42309719	-4.7558393	-4.67495949	-5.16641855	-4.95117358	-3.95628203	-4.07821851	-5.06375268	-4.83159612	9.14009658	-6.8684738	-5.25009885	-5.02744191	-6.36632303	-4.9835241	-5.15711081	-7.59639544
Alerio.eff.turbina1	-1.78382787	-1.69650187	-2.29561395	1.7872735	2.9507767	-1.45002631	-1.54698595	-1.34857423	-1.43004773	-2.3902894	-1.3886432	-2.2279878	-1.70307639	-2.0489101	0.84019912	-1.47957251	-1.56729596	4.20350516	1.2539909	0.04908151	-1.46534076	-2.4976528	4.9191169	-1.62380963	4.09914772

Ilustración 0.15: Caso 19: Degradación -5% eficiencia fanduct y -2% eficiencia turbina 1 (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
0.91440457	0.62794776	0.75933345	-0.43208315	0.34052147	1.10836039	-0.01993916	0.85918604	-0.01993916	0.68132218	-0.35136771	-0.73414129	-0.20337427	-1.43509759	-1.81547478	0.4793691	-0.95774859	2.97579938	-1.53895911	-0.98857679	0.26618133	-0.09354389	-0.77041738	-0.03361902	-0.49178995
-0.10188875	-0.06657795	-0.03614723	0.04666679	-0.02593649	-0.11646648	0.01622588	0.1096991	-0.07232917	0.06170704	0.07109381	0.05598823	0.1417163	0.19032104	-0.04392558	0.14826362	-0.35983752	0.233693	0.27568448	-0.10649072	-0.02532113	-0.0126081	0.07450971	-0.00122352	0.08308841
-0.02463774	-0.05185962	-0.06441013	0.00216932	-0.0280335	-0.05661273	-0.00529444	0.01181331	-0.05599575	0.01345663	-0.02462033	0.01519359	-0.0142265	-0.01943646	0.05278875	0.0204776	0.02087681	0.0057752	-0.01330172	-0.02382751	-0.02609347	-0.00457942	-0.00699002	-0.02151905	-0.00531722
-0.27494937	-0.00122074	-0.00829177	0.05904404	-0.06473234	-0.20883363	-0.00610749	0.16198863	-0.00021685	-0.02369934	0.24411572	-0.00627974	0.37817495	0.40682711	-0.14679936	0.06222048	-0.89141585	-0.0675914	-0.26429494	-0.29883177	-0.03989898	-0.02864618	0.19829058	0.09140844	0.03967481
-4.48853381	-5.09114217	-4.93710641	-5.11849474	-4.87908222	-4.59827881	-4.98622505	-5.30823881	-5.06057268	-4.96980206	-5.42632764	-4.97882243	-5.7430126	-5.7734974	-4.69208812	-5.09174077	-3.31022961	-4.84496944	-4.48482206	-4.43464038	-4.90194018	-4.95790858	-5.37544462	-5.14234122	-5.03823483
0.00671439	0	0	-0.00633337	0.00314713	0.00084606	0.00011456	-0.01692777	0	0.00191814	0.00448986	0	-0.04024602	-0.04982041	-0.00084473	0.0057335	0.11028138	0.01479872	0.04470729	0.02899862	5.886505	0.00234335	-0.02067603	-0.00839425	0.00036483
-3.03059329	0.4571702	0.7066465	-0.0194113	-0.02664541	-0.02111973	-0.0005205	0.03891694	0.52817452	0.04619855	-0.026725	-0.22570181	-0.06160865	0.3275239	0.49143897	-0.60242604	-0.82340579	-2.1256462	-3.63597872	-0.5753877	0.00659716	-0.1164211	-0.0083637	0.45292375	-0.39861493
-0.74070767	-0.12790272	-0.1782618	0.62449308	-0.49798884	-0.54816022	-0.46858566	0.35953442	-0.1715055	0.19400479	-1.02733094	0.4620272	1.14034841	-1.17560383	-1.10080333	-0.97776412	-0.58389953	-0.82705464	-0.13565178	-0.56567106	-0.60082666	-0.24199615	0.51271905	0.16971317	-1.29766124
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.47038133	0	0	2.6841403	0.20722618	0.43478561	0.19129757	1.81491552	0	5.70414147	1.33135925	0	3.80732243	9.55951769	2.15502839	2.7627487	5.31244944	11.8216818	21.367571	-3.15382674	0.52098275	0.17970771	2.07087354	-0.12538405	1.5613492
-0.71075806	-0.0108323	-0.00089411	-2.05511344	-0.38674544	-0.64460187	-0.34002965	-4.39956015	-0.02282454	-4.64748186	-0.78409101	0.06577214	-2.91949318	-7.78392794	-1.02176392	-0.84484915	-4.66423329	-10.265236	-18.3944331	1.95682145	-0.65192559	-0.76069809	-1.58010603	0.97612116	-1.08456502
-0.01044458	-0.0285887	0.03245545	0.60936576	0.03642963	0.03059399	0.03888692	0.48153367	-0.04007117	1.54457193	0.09218058	0.15326703	0.99360825	2.65738704	-0.05508694	-0.08597912	1.39790996	2.36548499	1.65351147	-0.65051427	0.04341822	0.01062904	0.55376176	0.10578902	-0.06657315
-8.7170117	-20.0843996	-22.2942689	3.59978946	-7.36806059	-11.5973643	-7.45187006	2.2403137	-24.3601158	5.88099047	-17.6351146	21.8789878	2.41580685	6.16471463	-22.7620408	-23.8025365	9.79501711	15.6083494	18.9650055	-0.65372184	-12.0165787	-3.62176811	2.20043677	-5.02996234	-21.8788604
-1.45159633	3.96059616	4.5194754	-2.0523292	-1.511230262	-1.37734513	-1.5019862	2.33991109	5.14029279	-1.56878956	2.56769383	-7.71641155	-2.28253906	-0.50163568	3.37831452	3.9388107	-1.00396528	-2.4706702	-2.80394691	-1.96053987	-1.35476463	-1.71095983	-2.33518713	-1.63719151	3.30477005
-2.58506743	-8.03913615	-8.92615215	1.0338736	-2.18459317	-3.45022606	-2.21179988	0.64924899	-9.75240778	1.87269218	-4.96028343	8.78529333	7.035476	1.97007447	-6.3338138	-6.61192813	3.16363107	5.03960069	6.11881911	-0.1885904	-3.57715038	-1.06927423	0.63926159	-1.48362023	-6.10014496
2.27606023	1.28098268	-1.1330281	-1.23199856	-0.06032482	-0.7686478	-0.6729012	-1.57064028	1.21756665	-1.78233833	-6.11364717	-1.90206554	-2.99203924	-4.34541466	0.26396323	1.32576442	1.32145579	-1.25081901	-3.40230022	1.65869453	-1.88058623	2.28604692	-1.81414795	-4.84708579	-2.26166661
0.75477538	0.68423505	-0.59497125	-0.34810979	-0.04620404	-0.52215294	-0.27661192	0.44933557	0.64375373	-0.50888181	-2.95437331	-1.0031019	-0.83901994	-1.16377904	-1.17497257	-0.85582989	0.36734908	-0.34487387	-0.93515182	0.47200497	-0.9292674	1.04559428	-0.51646402	-2.05488256	-1.98471042
1.29226389	0.88823586	-0.78959841	-0.63705462	-0.06849462	-0.73377544	-0.44111486	0.81246099	0.84232692	-0.1832151	-4.43808242	-3.31604575	-1.5425885	-2.23801228	-1.26677716	-0.75906357	0.68265078	-0.64450975	-1.75550792	0.85743186	-1.39769382	1.6213127	-0.93808252	-3.21411752	-2.5300734

Ilustración 0.16: Caso 19: Degradación -5% eficiencia fanduct y -2% eficiencia turbina 1 (II)

-4.48853381	-5.09114217	-4.93710641	-5.11849474	-4.87908222	-4.59827881	-4.98622505	-5.30823881	-5.06057268	-4.96980206	-5.42632764	-4.97882243	-5.7430126	-5.7734974	-4.69208812	-5.09174077	-3.31022961	-4.84496944	-4.48482206	-4.43464038	-4.90194018	-4.95790858	-5.37544462	-5.14234122	-5.03823483
-1.45159633	3.96059616	4.5194754	-2.0523292	-1.511230262	-1.37734513	-1.5019862	2.33991109	5.14029279	-1.56878956	2.56769383	-7.71641155	-2.28253906	-0.50163568	3.37831452	3.9388107	-1.00396528	-2.4706702	-2.80394691	-1.96053987	-1.35476463	-1.71095983	-2.33518713	-1.63719151	3.30477005



	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
Degradación																									
pr_fanorc	0.95010646	0.92108606	-1.95647158	1.50355452	3.68673429	0.22999961	2.10235539	2.57484961	0.34981668	0.19458284	0.04739631	-0.65334961	-0.14277933	-1.99757596	4.74406118	-0.11893651	-0.97386643	0.43395448	5.39432369	1.59310491	-1.39669135	0.29113593	0.33850108	0.90101351	-1.24074037
eff_fanorc	-0.08493509	-0.07642888	0.21190909	-0.1381979	-0.38551825	-0.02314371	-0.24266624	-0.27911979	-0.0299519	0.00622225	-0.01625631	0.03394371	-0.0016809	0.21446399	-0.51866871	-0.01969738	0.07774616	-0.06813692	-0.6949089	-0.17642034	0.17028373	-0.04466623	-0.05740276	-0.10593287	0.18170406
mc_fanorc	-0.06630307	-0.00164621	-0.02894785	-0.0290648	-0.11706899	0.01621284	0.01111399	-0.09145912	-0.02669047	0.01320118	-0.03974766	-0.04286921	-0.00843344	-0.05467748	-0.12414163	-0.00413663	-0.02468388	-0.00947313	0.17203811	-0.07586355	0.01702552	-0.00072866	-0.04734515	-0.0513008	0.00588271
pr_fanduct	-0.17768801	-0.38224022	0.54284846	-0.52692831	-0.91766387	0.14633388	-0.6224848	-0.64844075	-0.00116898	-0.16900188	0.11220588	0.30203228	0.04306235	0.66306437	-1.15087534	0.05167776	0.32629349	-0.16742913	1.79917315	-0.30878556	0.2972978	-0.12771673	0.04102135	-0.16675385	0.26767334
eff_fanduct	-3.66038078	-3.26283616	-5.03715826	-3.00429935	-2.26514216	3.72805118	-2.82625068	-2.81095747	-4.00660538	-3.67805536	-4.21853933	-4.58537975	-4.08261119	-5.3748264	-1.83021816	-3.90193308	-4.62776867	-3.67315142	-0.26884733	-3.40849165	-4.57206582	-3.75601828	-4.08146123	-3.69141023	-4.55119005
mc_fanduct	0.0217617	0.04237298	-0.06525367	0.04857536	0.06731362	0.01166479	0.07942673	0.05876161	0	0.01868572	-0.01246456	-0.03538233	-0.00475968	0.05472607	0.06635722	-0.03610847	0.03149306	0.31619364	0.03354394	-0.03306705	0.02022306	-0.00477238	0.01791088	-0.04635494	
pr_compressor1	-0.53994073	-0.17184882	-0.04940902	-0.11146078	-0.40936389	-0.77212113	-1.14622843	-0.08001103	0.75662001	-0.26496488	-0.03822663	-0.3123371	-0.25343929	-0.79497249	-0.73500424	-0.50966492	-0.37138698	-1.28054497	2.86016816	0.61042578	-0.43910443	-0.81679631	0.77935994	0.25902092	-0.08317368
eff_compressor1	-0.46986456	-0.32170507	-0.20007534	-1.21299132	-2.456490825	0.09148534	0.29949164	-1.59325607	-0.00735181	-0.16850101	-0.12516928	0.58303419	0.04796002	0.08606865	-3.63364927	-0.24231677	0.52202897	-0.11997555	0.44125664	-0.31525551	0.46118821	0.09618927	-0.11191461	-0.45781436	0.15900867
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-0.38974233	-0.31291483	2.66663746	0.71502315	0.91037917	1.1355061	0.12727684	1.27519908	0.15396082	0.04973279	3.07196169	2.79568494	1.5746581	6.58660531	1.86744999	0.11850686	2.33303228	4.12046329	17.1288336	4.44404016	1.68187552	2.37377216	5.14890877	3.60418174	5.2743555
eff_compressor2	0.88074902	-0.03077724	0.15536731	0.13035514	-0.90322087	-0.04170583	-0.04988316	-0.40993491	-0.00638043	0.155947	-0.50570302	0.00568531	-0.03402365	-1.09363577	-1.81096125	0.712516978	0.14720622	-1.77616894	-10.2092795	-1.61933398	0.12047035	-0.61901344	-1.42951899	-1.12039961	-2.01305224
mc_compressor2	-0.27930893	-0.01568443	0	0	0	0	0	0	0	-0.09151967	0.18604304	0.00690482	-0.00193397	0.51653262	0	-0.29507111	-0.04980703	0.35246718	0.68985027	0.65516102	-0.08272297	0.17014761	0.53925671	-0.43010527	0.69072714
pr_turbina1	-0.16488046	-3.21984123	1.16619729	-9.35735745	-11.5527246	0.52729576	0.10292647	-0.0868492	-5.2189146	-3.53023848	-6.767357	-4.82825179	-5.08386799	-14.32545556	-0.46773959	-0.46773959	-3.66684919	6.62996743	14.3820302	-7.68054528	-3.30468059	5.37027208	-8.84432867	-7.39628283	5.12227559
eff_turbina1	-4.08824732	-3.96902969	-4.11183493	-3.954195	-3.914443266	-3.32028368	-2.69716933	-3.98474866	-1.75838093	-3.94606647	-3.83526974	-3.83986784	-3.88482599	-4.35036178	-3.46590565	-4.06961055	-3.88717182	-3.79039088	-3.81230005	-3.91049102	-3.91425544	-3.93751578	-3.8564739	-3.88151841	-3.31770254
mc_turbina1	-0.0783192	-0.41845353	0.10952216	-1.2379838	-1.52750637	0.938540513	-1.93883485	-1.44061892	-2.13509505	-0.46085451	-0.886667789	-0.64199687	-0.6303346	0.70865963	-1.89379347	-0.0856279	-0.49318744	1.0780332	2.03923775	-1.00539769	-0.42023689	0.75160348	-1.16249955	-0.9698411	0.71506693
pr_turbina2	0.83349311	2.84853907	-2.9226932	-1.51802283	-0.42610612	-0.0540072	2.62323015	-2.33851386	0.18795047	0.9506734	-1.888663167	-2.86924014	-1.03061087	-4.4965839	-1.70066627	-0.06167626	-2.7552086	-0.37001721	-1.82197089	1.08527594	-2.57494233	-0.2942887	-1.61598353	0.1425119	-3.11779252
eff_turbina2	0.2046557	0.70640715	-0.7288985	-1.07115861	-0.97444462	-0.01699816	0.65240188	-1.48525655	0.08240759	0.23616328	-0.47188159	-0.71004269	-0.25935379	-1.04513639	-1.42793471	-0.0162018	-0.68503519	-0.08600055	0.44716646	0.27838601	-0.64782334	-0.07252531	-0.40445512	0.0358777	-0.77404433
mc_turbina2	0.38359625	1.31538088	-1.3524265	-1.45989175	-1.18219704	-0.02395509	1.21229281	-2.06851468	0.10672781	0.43986305	0.87462167	-1.32569998	-0.47655976	-2.07638039	-1.9050525	-0.02853932	-1.27460332	-0.17014792	-0.84333302	0.50500838	-1.19167565	-0.135421	-0.74819075	0.05267296	-1.44204743

Alerio eff fanduct	-3.66038078	-3.26283616	-5.03715826	-3.00429935	-2.26514216	3.72805118	-2.82625068	-2.81095747	-4.00660538	-3.67805536	-4.21853933	-4.58537975	-4.08261119	-5.3748264	-1.83021816	-3.90193308	-4.62776867	-3.67315142	-0.26884733	-3.40849165	-4.57206582	-3.75601828	-4.08146123	-3.69141023	-4.55119005
Alerio eff turbina1	-4.08824732	-3.96902969	-4.11183493	-3.954195	-3.914443266	-3.32028368	-2.69716933	-3.98474866	-1.75838093	-3.94606647	-3.83526974	-3.83986784	-3.88482599	-4.35036178	-3.46590565	-4.06961055	-3.88717182	-3.79039088	-3.81230005	-3.91049102	-3.91425544	-3.93751578	-3.8564739	-3.88151841	-3.31770254

Ilustración 0.17: Caso 19: Degradación -4% eficiencia fanduct y -4% eficiencia turbina 1 (I)

	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50		
6.6.0532	-1.4205214	0.1522692	0.99854068	-0.08951334	-0.26003185	-0.86289337	0.19619004	-0.94100152	-2.29929844	1.13564431	-4.79215729	0.47065888	-3.65491632	2.49381174	-0.13693238	0.049040695	-1.43676161	-0.66239234	0.40838128	0.55090887	0.288346	3.79786085	-0.42685677	0.04766992			
-0.6555616	0.15695502	-0.02845792	-0.10157288	0.06607342	0.01673959	0.12901427	0.0449124	0.14343408	0.25139523	-0.15197945	0.59926041	-0.07408115	0.38506462	-0.27183995	0.02690253	0.02217622	0.18311536	0.056952	-0.05178011	-0.07936056	-0.03874676	-0.40394625	0.02158208	-0.03203511			
-0.16608987	-0.01749577	-0.03873616	0.05468101	0.00558996	-0.01734485	0.01593515	0.01990105	3.7738E-05	-0.02778758	-0.02020726	-0.0785162	-0.04028718	-0.03290485	-0.08813304	0.00958038	0.0197434	-0.00837461	-0.02495158	-0.03065693	-0.0412364	-0.00880719	-0.10405836	-0.02520834	-0.00776229			
-1.55620361	0.37208429	0.07654988	-0.68302008	-0.00505017	0.11709307	0.1521164	-0.06463007	-0.10666348	0.6483462	-0.30378764	1.00272616	-0.0347674	0.96000656	0.63013787	-0.0284905	-0.09163633	0.33030865	0.23384447	0.00130986	0.00168956	-0.1321776	-0.09764477	0.20665547	-0.0088029			
-1.06427578	-4.78441	-1.13872637	-2.59122531	-3.93060253	-4.23687194	-4.29826086	-3.87098656	-3.79338326	-5.23134462	-3.42336599	-6.0737767	-3.93433328	-5.83212294	-2.84441739	-3.95147308	-3.82985492	-4.6837457	-4.46027872	-4.03371835	-4.0501492	-3.75184226	-2.1506564	-4.40327358	-3.96295004			
0.05959148	-0.06903287	-0.00814456	0.11550388	0	-0.01331615	-0.02467299	0.011276	0.01765972	-0.08023897	0.03536715	-0.1800594	0.00386184	-0.10556122	0.0567627	0.00370688	0.01065512	-0.06059052	-0.03971403	0	0	0.01377136	0.06342852	-0.0228352	0.00247742			
-0.62045127	-0.98178782	-0.01327239	-0.38703786	-2.70991257	-0.19698255	-0.28332202	0.56015399	-0.62978151	-0.8648606	-0.16505603	-0.14031177	-0.07563596	-0.69122627	-0.50565158	-1.53129496	-0.24242895	1.26545389	-0.78932545	0.03710286	-0.62826721	-0.19869503	-0.56628553					
-3.54213379	0.05373854	-0.36831936	-0.28292293	0.13007054	0.02515931	0.1145756	0.06238733	-0.38998518	-0.15094867	-0.50017574	-0.27191736	-0.01484869	0.03847068	-1.54442304	0.00661931	-0.42998505	-0.02955228	0.11175837	-0.04314604	0.00426558	-0.47476616	-3.03791875	0.09925274	0.27718774			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1.88401545	5.86578233	3.38692564	22.1005303	4.08165057	2.3057326	4.32151987	3.9134787	22.1555976	2.69388023	-0.60690316	19.1796832	2.05955304	3.59832859	1.24880523	1.46368482	-0.29230588	6.13184441	4.53719685	-0.82821199	-1.07820255	2.39555447	0.87514891	2.84469846	1.52124927			
-2.26210457	-1.6625188	-0.78889503	-13.0473974	0.25416053	-0.31208089	-1.57569046	-1.76116332	-12.8390366	0.23869401	0.76252707	-9.90343823	-0.20334081	-0.02460192	0.38629239	0.00681924	0.79039179	-1.86490936	-1.29716783	-0.06938098	-0.07907079	-0.86328327	-1.19266184	-0.36566265	0.03001519			
-15.0484738	6.12192657	-7.34020145	13.9441675	18.9193819	-5.80221993	5.07449133	6.23063615	13.2461871	2.02043425	-1.34792218	10.0770081	-5.4666493	-2.00366657	-0.9068276	1.17049599	-0.20264374	6.80319522	8.76523956	-2.03425271	-15.9663382	-6.57443658	-11.8850514	-6.31660086	-1.87099106			
-2.78183584	-4.1283164	-3.8436713	-3.8102066	-8.16685893	-3.85624551	-3.52977829	-3.49198076	-3.81208058	-4.46461082	-0.13136627	-3.88909458	-3.8737056	-4.12061553	-3.98302503	-3.62371585	-4.08407854	-4.74181873	-3.58625782	2.28122245	2.06471234	-3.89038224	3.86618596	-3.83076341	-3.215827			
-1.96275403	0.857194	-0.9665256	1.97946086	2.65753319	-0.76388721	0.70810144	0.8750055	1.89136507	0.5888136	-0.17101328	1.42573473	-0.71294334	-0.03032986	-1.44450127	-0.88680579	-0.02394411	0.93883663	0.6664326	-2.85307588	-2.23529019	-0.86184341	-1.57304582	-0.82831444	-1.25942346			
-0.98248915	-3.3871258	-1.67981533	-4.91967657	-4.85315268	-1.77566122	-2.30146783	-1.4468202	-5.70282388	-3.3321553	1.85154734	-7.89419906	-0.63878017	-4.77712311	-2.44632504	-0.64697128	0.31047194	-3.19269905	-2.50340796	1.89891809	3.1938632	0.15729005	-0.43928982	-2.45116085	-0.66596445			
-1.46647107	-0.83455585	-0.42228175	-1.06988299	-2.14054352	-0.44824189	-0.57778803	-0.2897023	-0.9537302	-0.83217007	0.4633281	-0.94753766	-0.15968004	-1.0591522	-1.51057395	-0.1589324	0.07286816	-0.79193996	-0.62431668	0.8384176	1.4062961	0.03903452	-0.96267078	-0.61624571	-0.16945659			
-1.78095161	-1.56985724	-0.77856929	-2.26378463	-2.81659341	-0.82150775	-1.06415694	0.52996657	-2.60628513	-1.54229392	0.85476055	-3.45651226	-0.29505283	-2.19877033	-2.11425537	-0.29913865	0.14202851	-1.07879846	-1.15702465	1.10134938	1.85493516	0.07286664	-1.17468241	-1.13678394	-0.30828242			

-1.06427578	-4.78441	-1.13872637	-2.59122531	-3.93060253	-4.23687194	-4.29826086	-3.87098656	-3.79338326	-5.23134462	-3.42336599	-6.0737767	-3.93433328	-5.83212294	-2.84441739	-3.95147308	-3.82985492	-4.6837457	-4.46027872	-4.03371835	-4.0501492	-3.75184226	-2.1506564	-4.40327358	-3.96295004
-2.78183584	-4.1283164	-3.8436713	-3.8102066	-8.16685893	-3.85624551	-3.52977829	-3.49198076	-3.81208058	-4.46461082	-0.13136627	-3.88909458	-3.8737056	-4.12061553	-3.98302503	-3.62371585	-4.08407854	-4.74181873	-3.58625782	2.28122245	2.06471234	-3.89038224	3.86618596	-3.83076341	-3.215827

Ilustración 0.18: Caso 19: Degradación -4% eficiencia fanduct y -4% eficiencia turbina 1 (II)

## 11.4 Anexo D

Se presentan a continuación los cuatro casos analizados con el método de optimización en el apartado 8.2.2. Siguiendo la misma numeración que en el apartado anterior, son los casos 10, 16, 19 y 26.

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanorc	-0.7568832	-0.7738174	-0.7539024	-0.7590204	-0.7570904	-0.7570904	-0.7570904	-0.7570904	-0.7590204	-0.7570904	-0.7590204	-0.7570904	-0.7590204	-0.7570904	-0.7590204	-0.7570904	-0.7590204	-0.7570904	-0.7590204	-0.7570904	-0.7590204	-0.7570904	-0.7590204	-0.7570904	-0.7590204	-0.7570904	-0.7590204	-0.7570904	-0.7590204		
eff_fanorc	-1.659498	-1.6466217	-1.64989719	-1.65883918	-1.6566684	-1.64794114	-1.6521682	-1.6483454	-1.6382877	-1.6382877	-1.6382877	-1.6382877	-1.6382877	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342		
mc_fanorc	0.2404016	0.2467874	0.24443389	0.2493209	0.2452762	0.2457925	0.2413426	0.2386792	0.2418468	0.2487447	0.2401857	0.2462795	0.24841526	0.23889191	0.23844232	0.2427241	0.23867156	0.23867156	0.23867156	0.23867156	0.23867156	0.23867156	0.23867156	0.23867156	0.23867156	0.23867156	0.23867156	0.23867156	0.23867156	0.23867156	
pr_fanulct	-0.0565316	-0.0202658	-0.050719	-0.020864	-0.051545	0.0019321	0.0063415	0.0072249	0.00812393	0.0077423	0.0041124	-0.0021511	0.0073773	0.0044166	0.0073991	-0.0044053	0.0092794	0.0017973	0.005665	0.0066854	-0.0043704	0.0043704	0.0083483	0.0001078	-0.0042948	0.0031894	-0.0029579	-0.0040428	0.0059411	0.00049387	
eff_fanulct	-0.008803	-0.0023907	0.00110115	0.004532	0.0018308	0.00038061	-0.0048886	-0.00210243	0.0003527	0.0004706	-0.0044359	-0.0004932	-3.528E-05	-0.00298616	-0.00181012	-0.00092115	-0.0003883	-0.0003782	-0.0005942	-0.0012243	-0.00188753	-0.0008302	0.0002863	0.000515197	0.0050582	-0.0035929	-0.0041853	0.00015944	0.00054663		
mc_fanulct	1.0598494	1.0697565	1.0605693	1.0603386	1.0638468	1.0681365	1.0647289	1.0647216	1.0602802	1.0639679	1.0668016	1.0638711	1.0638257	1.0679402	1.0637945	1.0639316	1.0711247	1.0607693	1.0634652	1.0638595	1.0629018	1.0635942	1.0630834	1.063735	1.0637359	1.0637359	1.0637359	1.0637359	1.0637359	1.0637359	
pr_compresor1	-5.0097569	-4.9909867	-5.0147915	-5.0138075	-5.0146652	-5.0085298	-5.0194674	-5.0280016	-5.0182899	-5.0081067	-5.0024643	-4.985794	-5.0218654	-5.0265249	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	
eff_compresor1	-0.2267208	-0.2273589	-0.2210743	-0.2196179	-0.2193283	-0.2171765	-0.2202364	-0.2228611	-0.2193567	-0.2194174	-0.2174687	-0.2193598	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	-0.2225242	
mc_compresor1	0.08912949	-0.0028532	0.0085424	0.0089082	0.0093768	0.0029284	0.0063257	0.0063257	0.0083166	0.0089498	0.0093226	0.0092703	0.0086907	0.0038602	0.0002914	0.0064848	0.00158173	-0.0087176	0.0062903	-0.0013593	0.0065531	0.0008964	0.00863296	0.0076265	0.0087116	0.0017237	0.0072425	-0.0008949	0.00051658		
pr_compresor2	0.0089097	-0.0088241	0.0038039	0.0042842	-0.0026602	0.0096352	0.0042333	0.0013735	-0.0018438	0.0032578	-0.0018804	-0.00196328	0.0006847	-0.0015769	-0.0013348	0.0052634	0.0012703	-0.0477125	0.0028287	-0.0015466	-0.0032072	-0.00183916	0.0002153	0.0032776	-0.0012331	0.0028242	-0.0028987	0.0063238	0.0007671	0.00015722	
mc_compresor2	-0.0017502	-0.0047874	-0.0043076	-0.0061539	-0.0112045	0.0001522	-0.0031247	-0.0050262	-0.0029398	-0.0029398	-0.0011572	-0.00105949	0.00121487	-0.00219355	0.00111404	-0.0061968	-0.00487546	-0.0615797	-0.0054253	-0.0038423	-0.0038916	-0.00378186	-0.00367515	-0.0021304	-0.0017662	-0.0040607	0.0008481	-0.0004037	-0.0041252	-0.0046843	
pr_turbina1	-0.0137417	-0.0150873	-0.0140899	-0.0141672	-0.0137652	-0.0135345	-0.0142647	-0.0137155	-0.0139398	-0.0137451	-0.0139398	-0.0137451	-0.0139398	-0.0144928	-0.0149528	-0.0138235	-0.015023	-0.0148934	0.0036803	0.0034733	-0.01371911	-0.0139391	-0.0139391	-0.0139391	-0.0139391	-0.0139391	-0.0139391	-0.0139391	-0.0139391	-0.0139391	-0.0139391
eff_turbina1	-0.0016945	0.0002625	-0.001785	0.0005477	0.004629	0.0003786	-3.663E-05	0.0026237	0.0038598	1.959E-05	0.0038889	0.0038768	-0.0010559	-0.0043773	0.0003473	-0.0038209	-0.0003247	0.00142075	0.0025007	0.0017838	0.0007781	-0.0013946	-8.407E-05	0.0010622	0.0046786	0.0039429	0.0032542	-0.003549	-0.0004422	0.0002923	
mc_turbina1	-0.0023454	-0.0016206	-0.0035715	-0.0022366	-0.0063499	-0.0037745	-0.0012238	-0.0006977	-0.00216497	-0.0054103	-0.0008984	-0.0049691	-0.0033456	-0.0043301	-0.0007566	-0.0043202	-0.0008972	2.7547E-05	-0.0016709	-0.0033717	7.547E-05	-0.0016709	-0.0038941	-0.0013894	-0.0008476	-0.0049814	0.0001984	-0.0028135	0.00053185	-0.00114782	
pr_turbina2	-0.0893932	0.08913265	-0.08959796	-0.0897173	-0.0883124	-0.0073407	-0.0943264	-0.0949477	-0.0042584	-0.0061545	-0.0066629	-0.0085437	-0.0086629	-0.0086629	-0.0085437	-0.00869	-0.0087291	0.0093329	0.0093329	0.0093329	0.0093329	0.0093329	0.0093329	0.0093329	0.0093329	0.0093329	0.0093329	0.0093329	0.0093329	0.0093329	0.0093329
eff_turbina2	-0.0026207	0.0021449	-0.0017577	-0.0031764	-0.0001901	-0.0047824	-0.0047148	-0.0042081	9.245E-05	-0.0038278	-0.0038394	-0.0037763	-0.0027876	-0.0048209	-0.0066279	-0.0008078	-0.0027609	0.0032148	0.0035336	-0.0025004	-0.0032148	-0.0032148	-0.0032148	-0.0032148	-0.0032148	-0.0032148	-0.0032148	-0.0032148	-0.0032148	-0.0032148	-0.0032148
mc_turbina2	-0.0026273	0.0007868	-0.0028678	-0.0029294	-0.0085654	-0.0042569	-0.0016749	-0.00135246	-0.0028667	-0.0013071	-0.0013722	-0.001299	-0.0033795	-0.00238473	-0.00231811	-0.0017463	0.0036261	0.0028949	0.0007338	0.0007338	0.0007338	0.0007338	0.0007338	0.0007338	0.0007338	0.0007338	0.0007338	0.0007338	0.0007338	0.0007338	

Acero eff_fanorc	-1.659498	-1.6466217	-1.64989719	-1.65883918	-1.6566684	-1.64794114	-1.6521682	-1.6483454	-1.6382877	-1.6382877	-1.6382877	-1.6382877	-1.6382877	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	-1.6496342	
Acero eff_compresor1	-5.0097569	-4.9909867	-5.0147915	-5.0138075	-5.0146652	-5.0085298	-5.0194674	-5.0280016	-5.0182899	-5.0081067	-5.0024643	-4.985794	-5.0218654	-5.0265249	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628	-5.0245628

Tabla 0.1: Caso 10: Degradación -2% eficiencia fancore y -5% eficiencia compresor 1

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanore	-1.8565528	-1.8625327	-1.8678605	-1.8643436	-1.8667631	-1.8693637	-1.8655881	-1.8653889	-1.8647903	-1.8640409	-1.8638832	-1.8633832	-1.8633372	-1.8634755	-1.8607640	-1.8701831	-1.8704084	-1.8734267	-1.8732475	-1.8690938	-1.8706040	-1.8705581	-1.8707618	-1.8708416	-1.8653567	-1.8713083	-1.8749825	-1.8693809	-1.8773716	-1.8695632	-1.8706886
eff_fanore	-4.2877702	-4.2501678	-4.2514690	-4.2557380	-4.2570540	-4.2521154	-4.2621215	-4.2541608	-4.2553995	-4.2722206	-4.2572953	-4.2567954	-4.2578951	-4.2559893	-4.2565554	-4.25682015	-4.25208946	-4.2577787	-4.25869938	-4.26040919	-4.2380807	-4.2397955	-4.25136276	-4.2381103	-4.2518285	-4.2612048	-4.25439881	-4.2722082	-4.25132774	-4.2578099	
mc_fanore	0.6384228	0.6263843	0.6314306	0.6282498	0.6263897	0.6302084	0.62618285	0.6282645	0.62637502	0.62799428	0.6284159	0.6294071	0.6286663	0.6294682	0.63336187	0.62958302	0.62575989	0.6297404	0.628376	0.6292301	0.6297681	0.6292772	0.6292301	0.6292957	0.6291886	0.6270745	0.6305422	0.62948231	0.6284711	0.6262355	0.6296746
pr_fanulot	-0.0014265	-0.0061434	-0.00083467	-0.00201302	-0.0022654	-0.0027084	-0.00180965	0.00214879	-0.0046631	-0.0069588	-0.0015805	-0.0074084	-0.00383095	-0.0029208	-0.0027671	-0.00442073	-0.002487	-0.0052399	0.0023425	-0.00181196	-0.00349827	-0.00465921	0.00290263	0.00222356	-0.0068035	-0.00661521	-0.0047204	-0.00000193	-0.00294738	0.00421906	
eff_fanulot	0.0511914	0.0713473	0.0039617	0.0897966	0.0473534	0.0947063	0.0654449	0.0186501	0.0541621	0.0046966	0.0194941	5.3867E-05	0.074154	0.0077929	0.00172359	0.0553044	0.0099779	0.0835466	0.0673529	-0.0665312	0.0107094	-0.060557	0.00224207	0.01919416	0.0834765	0.0012495	0.00439959	0.0133836	-0.0818519	0.001592032	
mc_fanulot	-0.0251414	-0.0008848	-0.0042005	6.656E-05	-0.00137472	-0.0011227	-0.00243346	-0.00094977	-0.00112694	-0.0011107	-0.0019588	-0.00108885	-0.0013847	0.00031612	-0.00143903	-0.00336615	-0.00175392	0.00048475	-0.00446934	-0.00662056	-0.00117218	-0.00025421	0.00083731	-0.00112315	-0.00215483	-0.00200772	0.00437676	-0.0018357	-0.00220991	0.00088704	
pr_compresor1	0.3989539	0.4010908	0.40222012	0.4000027	0.4000027	0.4018898	0.3962064	0.3924973	0.39322063	0.3959328	0.39709305	0.3936672	0.4025946	0.3960109	0.4094456	0.39846897	0.39875852	0.39739056	0.3975809	0.39811596	0.4001002	0.3980878	0.3960241	0.39920118	0.38870489	0.39621589	0.4009456	0.38836881	0.3968495	0.39395413	
eff_compresor1	-1.8759031	-1.91598	-1.8838963	-1.9179909	-1.9102354	-1.8945246	-1.9012812	-1.9114672	-1.8925005	-1.8921381	-1.8939408	-1.8977923	-1.89784909	-1.89170407	-1.8949208	-1.9000865	-1.9022429	-1.88686783	-1.88515235	-1.8891979	-1.88842833	-1.9074466	-1.8858748	-1.88263382	-1.89595294	-1.8858748	-1.88263382	-1.89595294	-1.8858748	-1.88263382	-1.89595294
mc_compresor1	-0.8072757	-0.8065475	-0.8065706	-0.8083183	-0.8084282	-0.80912319	-0.8081708	-0.80910885	-0.80807321	-0.80492139	-0.80866452	-0.8042162	-0.8088896	-0.80920202	-0.80886507	-0.8071947	-0.80902527	-0.8047483	-0.80912959	0.80913217	-0.8090783	-0.80985001	-0.8075104	-0.80941289	-0.80856643	-0.80857892	-0.80856643	-0.80857892	-0.80856643	-0.80857892	-0.80856643
pr_compresor2	-0.0100791	0.0671175	-0.0021664	0.00779	0.0047692	0.00550203	0.00532822	0.0079475	0.0074635	0.00638946	0.00794291	0.0667285	0.0078973	0.0079042	-0.0111285	0.0607756	0.00857432	0.00497346	0.0062354	0.0057587	-0.0314753	0.0671426	0.00662209	0.00865656	0.00740763	0.00630822	0.00613875	0.00824801	0.00892944	0.00666335	
eff_compresor2	-0.0516341	0.0388498	-0.0057327	0.0295413	0.0018676	0.0039488	0.0023976	-6.1375E-05	0.0012807	-0.0070253	-0.0088274	-0.00047502	-0.0015278	-0.0038139	0.0013284	-0.0005317	0.00245831	0.0004581	-0.0002033	0.0004159	-0.0024522	-0.00130487	-0.00289955	0.00290947	-0.00281647	0.00051704	0.00213176	-0.00463308	-0.00112881	0.00010405	
mc_compresor2	-0.1848329	-0.1037277	-0.046058	-0.0153257	-0.046869	-0.0153525	-0.0241031	-0.0186572	-0.0197973	-0.0194996	-0.01808532	-0.01785371	-0.01668284	-0.01682284	-0.0148485	-0.0074829	-0.01391937	-0.0584672	-0.0589704	-0.01483329	-0.0074726	-0.0485716	-0.0589704	-0.0155873	-0.01379296	-0.0094587	-0.0584142	-0.0073794	-0.01330968	-0.00721747	
pr_turbina1	0.044721	-0.0376681	-0.0139415	-0.040551	-0.01326247	-0.0073946	-0.01307134	-0.01370892	-0.01349406	-0.0072388	-0.0338397	-0.0585151	-0.0313267	-0.0139584	0.0448485	-0.0074829	-0.01391937	-0.0584672	-0.0589704	-0.01483329	-0.0074726	-0.0485716	-0.0589704	-0.0155873	-0.01379296	-0.0094587	-0.0584142	-0.0073794	-0.01330968	-0.00721747	
eff_turbina1	0.0029469	-0.0028875	0.00202139	-0.0003825	-0.00057511	0.00031095	0.0012881	0.00088685	-0.0033558	0.0001608	0.0073444	0.00195642	0.0003533	0.0017954	0.00140307	0.00010391	0.00483464	-0.00214579	-0.00021301	-0.00094666	0.0002738	0.000240019	-0.00019251	0.0002738	0.00048942	-0.00265576	0.0064232	0.0042532	-0.00016951	0.00031684	
pr_turbina2	-0.0025671	-0.0078073	-0.0063077	-0.0068884	-0.00281617	-0.0043506	-0.00415114	-0.0037866	-0.0055041	-0.00623269	-0.00547366	-0.0048664	-0.0071025	-0.0042507	-0.00083112	-0.00332746	-0.00327846	-0.00268082	-0.00604145	-0.00353403	-0.00233081	-0.0044247	0.00266189	-0.00713741	-0.0037725	-0.0089862	-0.00184911	-0.0063034	-0.00469476	-0.0058096	
eff_turbina2	0.0100323	-0.0080241	0.0097831	-0.0088347	-0.0082389	-0.0054237	-0.00895136	-0.0088777	-0.0082082	-0.0064257	-0.0065483	-0.00688835	-0.0078346	-0.0076076	0.0097167	-0.00486659	-0.00083198	-0.00393866	-0.0071682	-0.00895317	-0.0082939	-0.00370487	-0.0076487	-0.00319392	-0.00398918	-0.00493863	-0.0089706	-0.00538602	0.00446543		
mc_turbina2	-0.0045305	-0.0027941	-0.0038731	-0.008779	-0.0047954	-0.0051161	-0.00550766	-0.0046705	-0.0027795	-0.00147403	-0.0020274	-0.00140814	-0.0049956	-0.0055327	-0.0061386	-0.00215963	-0.00399794	-0.00057661	-0.0007944	0.0007884	-0.00094677	0.0005084	-0.0033887	-0.0055079	-0.0026531	0.0006656	-0.00424892	-0.0073431	-0.0005582	0.00220473	
pr_turbina3	-0.0016604	-0.0075421	-0.00020319	-0.0049513	-0.00284188	-0.00678872	-0.00704621	-0.0080115	-0.00592025	-0.0085111	-0.00801085	-0.0089299	-0.0068683	-0.00754014	-0.0065386	-0.00315986	-0.00262302	-0.00316561	-0.00676567	-0.000203056	-0.00156804	-0.00468638	0.00458675	-0.00303292	-0.0048124	-0.0048558	-0.00541187	-0.0085213	-0.0027586	-0.0044501	

Aleeth eff fanore	-4.2677702	-4.2501678	-4.2514690	-4.2557380	-4.2570540	-4.2521154	-4.2621215	-4.2541608	-4.2553995	-4.2722206	-4.2572953	-4.2567954	-4.2578951	-4.2559893	-4.2565554	-4.25682015	-4.25208946	-4.2577787	-4.25869938	-4.26040919	-4.2380807	-4.2397955	-4.25136276	-4.2381103	-4.2518285	-4.2612048	-4.25439881	-4.2722082	-4.25132774	-4.2578099	
Aleeth eff compresor 1	-1.8759031	-1.91598	-1.8838963	-1.9179909	-1.9102354	-1.8945246	-1.9012812	-1.9114672	-1.8925005	-1.8921381	-1.8939408	-1.8977923	-1.89784909	-1.89170407	-1.8949208	-1.9000865	-1.9022429	-1.88686783	-1.88515235	-1.8891979	-1.88842833	-1.9074466	-1.8858748	-1.88263382	-1.89595294	-1.8858748	-1.88263382	-1.89595294	-1.8858748	-1.88263382	-1.89595294

Tabla 0.2: Caso 10: Degradación -5% eficiencia fancore y -2% eficiencia compresor 1

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanore	-1.5751533	-1.5739329	-1.5524524	-1.5539529	-1.5502045	-1.5584029	-1.5600077	-1.5489204	-1.5558045	-1.5574205	-1.5538429	-1.5494729	-1.5566377	-1.5502649	-1.5518604	-1.5451925	-1.5695906	-1.5494882	-1.5575906	-1.5588565	-1.5540527	-1.5580319	-1.5570022	-1.5530674	-1.5445689	-1.5780613	-1.5761403	-1.5531975	-0.2071804	-1.5810196	
eff_fanore	-3.3598105	-3.3509459	-3.3696156	-3.3692404	-3.3617520	-3.3629389	-3.3693626	-3.3574285	-3.3774881	-3.3638766	-3.3711509	-3.3635679	-3.3632712	-3.3615863	-3.3640889	-3.3541735	-3.3715872	-3.3676444	-3.3646861	-3.3551607	-3.3625132	-3.3790746	-3.3695488	-3.3575195	-3.3876686	-3.3640895	-3.3676158	0.2071804	-3.3668074		
mc_fanore	0.4946649	0.5048113	0.4949317	0.4940737	0.4934109	0.4953298	0.4951001	0.4929169	0.4925984	0.4928473	0.4978405	0.4977115	0.4945920	0.4937845	0.4960642	0.5004722	0.4952645	0.4955055	0.4959135	0.4978806	0.4962056	0.5005767	0.4976830	0.4919623	0.5024802	0.4999559	0.4927919	0.0278877	0.4921125		
pr_fanukt	-0.0062273	1.1673E-05	0.0054989	-0.0010971	-0.0068320	0.0037456	0.0045745	-0.0040708	-0.0029725	0.0057594	-0.0028491	-0.0028473	0.0065475	-0.0046886	0.00233405	0.0040749	0.0062691	0.0053472	0.0013245	-0.0067236	-0.0025229	-0.0019286	0.00070916	0.0019429	0.0015929	-0.0047943	-0.0019075	-0.2071804	0.0036757		
eff_fanukt	0.0013923	0.0068377	0.0017894	0.0012491	0.00065404	0.0068420	0.0050161	0.0050262	0.0039041	0.0071901	-0.0055027	0.0137848	0.00233405	0.0040749	0.00233405	0.0040749	0.0062691	0.0053472	0.0013245	-0.0067236	-0.0025229	-0.0019286	0.00070916	0.0019429	0.0015929	-0.0047943	-0.0019075	-0.2071804	0.0036757		
mc_fanukt	-0.0016389	-0.001556	-0.0014489	-0.0014475	-0.0009829	-0.0023586	-0.0006889	-0.00030269	-0.0026198	0.0012304	0.0013306	-0.004655	-0.0017579	-0.0012307	0.0001358	-0.00060291	-0.0024062	-0.0011505	-0.0008223	0.0013705	-0.0015631	0.00020334	0.00011283	-0.0036747	-0.0013569	-0.00362019	-0.0026718	0.0001651	0.0014933		
pr_compressor1	<b>0.83077035</b>	<b>0.83669836</b>	<b>0.8307947</b>	<b>0.8279529</b>	<b>0.8326705</b>	<b>0.8329786</b>	<b>0.8303293</b>	<b>0.8299757</b>	<b>0.8277836</b>	<b>0.8329923</b>	<b>0.8323241</b>	<b>0.8327608</b>	<b>0.8279529</b>	<b>0.8329923</b>	<b>0.8323241</b>	<b>0.8299786</b>	<b>0.8329923</b>	<b>0.8323241</b>	<b>0.8299786</b>	<b>0.8329923</b>	<b>0.8323241</b>	<b>0.8299786</b>	<b>0.8329923</b>	<b>0.8323241</b>	<b>0.8299786</b>	<b>0.8329923</b>	<b>0.8323241</b>	<b>0.8299786</b>	<b>0.8329923</b>	<b>0.8323241</b>	
eff_compressor1	-3.910075	-3.9269445	-3.9285163	-3.9267125	-3.9458676	-3.9405789	-3.9202207	-3.9879721	-3.9265837	-3.9424536	-3.9400462	-3.9371058	-3.9431157	-3.9490165	-3.9295929	-3.9395175	-3.9168486	-3.93285591	-3.9303899	-3.9396259	-3.9376529	-3.9310432	-3.9129372	-3.9536736	-3.9579668	-3.9382295	-3.9525256	-0.2071804	-3.9321948		
mc_compressor1	-0.1791057	-0.1752342	-0.1744971	-0.1782063	-0.1779593	-0.1784796	-0.1796857	-0.1817539	-0.1797409	-0.1781856	-0.1771588	-0.1789332	-0.1802571	-0.1790787	-0.1761703	-0.1789332	-0.1774429	-0.1800155	-0.1770423	-0.1849083	-0.1789336	-0.1776202	-0.1771989	-0.1809642	-0.1779409	-0.1776209	-0.1811894	-0.14300519	-0.1768393		
pr_compressor2	0.0062408	-0.0060033	0.0054584	0.0094135	0.0071457	0.0061119	0.0057942	0.0082158	0.0084624	0.0070398	0.0075824	0.0050386	0.0069773	0.0063671	0.0093028	0.0022598	0.0049336	0.0072073	0.00594794	0.0055551	0.0074803	0.0068296	0.0092979	0.0037131	-0.0022587	3.5504E-05	0.0074948	0.0071804	0.00722975		
eff_compressor2	0.0054877	-0.0077605	0.0011128	8.1047E-05	0.0048253	0.0056799	0.0024315	-0.00248494	0.000544	-0.0023973	0.0031354	0.0010666	-0.00081367	-0.00146737	-0.0059088	-0.00159421	0.0026661	0.0060226	0.0030788	-0.0030388	-0.00175311	0.0049537	-0.0025387	0.0015854	-0.0062717	-0.0030063	0.0062386	0.2071804	3.3379E-05		
mc_compressor2	-0.0136294	-0.0077896	-0.0113536	-0.012244	-0.0112416	-0.0119564	-0.0097586	-0.00945629	-0.0088971	-0.004877	-0.0090509	-0.0082723	-0.0118395	-0.0105528	-0.0112783	-0.0099506	-0.0088316	-0.0150297	-0.01904674	-0.01027451	-0.0168368	-0.01197788	-0.0128219	-0.0177391	-0.0127205	-0.0089216	-0.01716438	0.2071804	-0.01183877		
pr_turbina1	-0.0053045	0.0451712	-0.0132856	-0.0139575	-0.0073206	-0.0075246	-0.0157996	-0.0079538	-0.0381469	-0.0145702	-0.0073157	-0.0149867	-0.0139843	-0.0131965	0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	-0.0139543	
eff_turbina1	-0.00217361	9.8324E-05	0.0018865	0.0002961	-0.006135	-0.0017451	-0.0027451	-0.0028229	-0.0118749	-0.0046294	0.004444	-0.0139543	-0.0029377	0.0020545	0.0065764	0.0064782	-0.0032887	-0.0032887	-0.0032887	-0.0032887	-0.0032887	-0.0032887	-0.0032887	-0.0032887	-0.0032887	-0.0032887	-0.0032887	-0.0032887	-0.0032887	-0.0032887	
mc_turbina1	-0.0048406	-0.0050298	-0.00215737	-0.0057206	-0.0053353	-0.0052925	-0.0063098	-0.0068031	-0.0053918	-0.0045142	-0.00413511	-0.0043747	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	-0.0030765	
pr_turbina2	-0.0053033	0.0098655	-0.0088117	-0.0080668	-0.0094464	-0.0046147	-0.0046194	-0.0074572	-0.0080192	-0.0048056	-0.0071586	-0.0089605	-0.0078607	-0.0088898	-0.0073872	-0.0072019	0.0089349	-0.0083732	-0.0088936	-0.0050513	-0.0042487	-0.0044764	-0.0082569	-0.0081174	-0.0079353	0.0045045	0.0066323	-0.0072743	0.2071804	0.0042365	
eff_turbina2	-0.0029514	-0.0050159	-0.0076105	-0.0134433	-0.0021183	-0.0016849	-0.00185749	-0.0057686	-0.0059373	-0.0023267	-0.0036273	-0.0016761	-0.0055224	-0.0044567	-0.0073737	-0.0014109	-0.0023892	-0.007754	-0.0057492	-0.0052493	-0.0023586	0.0013533	-0.0023586	-0.0023586	-0.0023586	-0.0023586	-0.0023586	-0.0023586	-0.0023586	-0.0023586	-0.0023586
mc_turbina2	-0.0046059	-2.0013E-05	-0.0032494	-0.0051208	-0.00471416	-0.0044758	-0.0046956	-0.0058174	-0.0074339	-0.0068954	-0.0023433	-0.0034138	-0.0057279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	-0.0027279	

Tabla 0.3: Caso 10: Degradación -4% eficiencia fancore y -4% eficiencia compresor 1

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30
Aerofan eff_fanore	-3.3598105	-3.3509459	-3.3696156	-3.3692404	-3.3617520	-3.3629389	-3.3693626	-3.3574285	-3.3774881	-3.3638766	-3.3711509	-3.3635679	-3.3632712	-3.3615863	-3.3640889	-3.3541735	-3.3715872	-3.3676444	-3.3646861	-3.3551607	-3.3625132	-3.3790746	-3.3695488	-3.3575195	-3.3876686	-3.3640895	-3.3676158	0.2071804	-3.3668074	
Aerofan eff_compressor1	-3.910075	-3.9269445	-3.9285163	-3.9267125	-3.9458676	-3.9405789	-3.9202207	-3.9879721	-3.9265837	-3.9424536	-3.9400462	-3.9371058	-3.9431157	-3.9490165	-3.9295929	-3.9395175	-3.9168486	-3.93285591	-3.9303899	-3.9396259	-3.9376529	-3.9310432	-3.9129372	-3.9536736	-3.9579668	-3.9382295	-3.9525256	-0.2071804	-3.9321948	



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanore	-0.0038955	-0.007152	-0.002213	0.003722	8.653E-05	-0.0040557	-0.004935	-0.0004239	-0.0017946	0.00025454	-0.0016595	-0.0646E-05	-0.0035165	-0.0072357	0.0074573	-0.0038601	0.0021639	-0.0091363	0.00244594	1.0895E-05	-0.0040133	-0.048895	-0.0036547	0.0007799	0.0023836	-0.0028021	0.0062213	0.0026645	-0.0006336	-6.4737E-05	
eff_fanore	-0.0043884	-0.0346791	-0.0544834	-0.0044952	-0.0038799	-0.0120429	-0.0085204	-0.0041266	0.0134411	0.0003578	-0.0054907	0.0010284	-0.0045353	-0.0045734	0.0134463	-0.0093929	0.0022125	-0.0035263	-0.00025133	-0.0050719	-0.0034719	-0.0194984	-0.0024489	-0.0017038	0.00083241	-0.0030469	-0.0075835	0.00361946	-0.0039766	0.00088935	
mc_fanore	-0.0013708	-0.0010873	-0.0025952	-0.0008791	0.0007784	-0.00025072	-0.0012212	-0.00042829	-0.0029469	-0.0028385	-0.000751	-0.0053497	0.0018203	-0.0024448	-0.0029295	-0.0015986	-0.0035344	-0.0063463	-0.00163463	-0.0028465	-0.0020868	-0.0023705	-0.0004372	-0.0023967	-0.0011551	-0.0016007	-0.0094938	-0.0091256	-0.0019736	-0.0021527	-0.003106
pr_fanotur	-1.2529373	-1.2526248	-1.2628847	-1.2546031	-1.2581447	-1.2600456	-1.26142461	-1.2597526	-1.2576082	-1.25978674	-1.2575329	-1.2679974	-1.2553809	-1.2600296	-1.2610198	-1.2569951	-1.2619295	-1.2573354	-1.2585382	-1.2575946	-1.257157	-1.2594942	-1.25600873	-1.2561621	-1.2531299	-1.2615996	-1.2597574	-1.254672	-1.2599789		
eff_fanotur	-0.374919	-0.3791789	-0.3913785	-0.375457	-0.3903778	-0.39105346	-0.3897195	-0.3794284	-0.3812392	-0.386444	-0.3820268	-0.4016747	-0.3794584	-0.386568	-0.3954998	-0.38017572	-0.3842315	-0.3821206	-0.3778972	-0.375463	-0.3846265	-0.3871628	-0.3779584	-0.3838423	-0.3795536	-0.3894268	-0.3788248	-0.3846149	-0.3749798	0.38618884	
mc_fanotur	-0.23265464	-0.23530289	-0.23525789	-0.2354943	-0.23353822	-0.23384468	-0.233904	-0.2339748	-0.2358552	-0.2349525	-0.23447383	-0.2367334	-0.2320283	-0.2354974	-0.2387766	-0.2360648	-0.2483534	-0.2351975	-0.2347929	-0.2347984	-0.2362681	-0.23670231	-0.23388817	-0.23573793	-0.2353793	-0.2359398	-0.2367535	-0.23444	-0.2363985	-0.23597124	
pr_compresor	-0.0045957	-0.0018979	-0.0079853	-0.0072838	-0.00462735	-0.0121951	-0.01210815	-0.00233489	-0.00019103	-0.00257496	-0.00492415	-0.0042765	-0.00488534	-0.0049722	0.0022804	-0.0068343	-0.0073933	-0.0038765	-0.0043108	-0.0085225	-0.0079051	-0.0075074	-0.0069166	-0.0064712	-0.00513708	-0.00391635	-0.0104949	-0.0014242	-0.0048974	-0.00163502	
eff_compresor	-0.00458416	-0.00599788	-0.0135252	-0.0069281	-0.00297982	-0.0028979	-0.01395363	-0.0074787	-0.0117885	-0.0038482	-0.00388468	0.00177881	0.00416403	0.00292366	-0.009532	0.0098403	0.00828194	-0.0032718	-0.0044615	-0.0028094	0.01256974	0.0086699	0.0088875	-0.0027888	0.0002745	-0.0077829	-0.00708407	0.00236356	-0.00897429		
mc_compresor1	-0.0008091	-0.00538789	-0.0035659	-0.0088143	-0.00397557	-0.0015878	-0.007332	-0.00466084	-0.0072002	-0.00584434	-0.0046642	-0.00448901	-0.0024215	-0.0085322	-0.0020469	-0.00401332	-0.0066749	-0.0063308	-0.0053843	-0.0029591	-0.0053843	-0.0019483	-0.0033947	-0.0029282	-0.0077942	-0.0066663	-0.00784297	-0.00444014	-0.0078733	0.00631204	
pr_compresor2	-0.0035358	-0.0014648	-7.811E-05	0.00095623	-5.2247E-05	-0.00355415	-0.01846956	-0.00294613	-0.0009676	-0.0008813	-0.0064105	0.0005529	-0.0047869	-0.0027531	-0.0093538	-0.00155731	-0.0194877	-0.0057444	-0.0085324	-0.0077916	-0.0037459	-6.8168E-05	0.0007656	-0.0001827	-0.00981279	0.0004601	-0.0191595	-0.0004489	0.0061394	6.1657E-05	
eff_compresor2	-0.0046433	0.0062968	0.00047035	-0.0008807	0.0033315	-0.0017009	-0.00799071	0.0070256	0.0527144	0.0062854	0.0094532	0.0008472	0.00280752	0.0028071	0.0049156	0.00578213	-0.0061077	0.0027533	-0.00607294	-0.0073924	-0.0074137	0.0019137	-0.0013307	-0.0009391	-0.0005944	-0.0005425	-0.0073552	0.00287	-0.0002685	0.00074901	
mc_compresor2	-0.0069366	-0.00717571	-0.01004625	-0.0048355	-0.0046222	-0.0095868	-0.0028265	-0.0125492	-0.0059422	-0.00891649	-0.0075984	-0.0552473	-0.0078409	-0.00654	-0.0081596	-0.008662	-0.0068018	-0.006347	-0.0002999	-0.00495331	-0.0087655	-0.0070337	-0.00878216	-0.0075571	-0.0091205	-0.0090446	-0.00680625	-0.0058065	-0.0079469	0.00069975	
pr_turbina1	-0.00047016	-0.0027242	0.0029792	0.0006887	0.0042655	-0.00474736	-0.02395112	0.0035338	0.000773	0.0006602	0.00049316	0.00012473	0.0003911	0.0004769	0.00022805	0.00042884	-0.0035947	0.0004145	-0.00379873	-0.0020199	0.00407907	0.000232	0.0003584	0.0004174	-0.0046193	0.0003959	-0.02388717	0.0007127	0.00056623	0.00061656	
eff_turbina1	-0.0020087	-0.0028851	-0.0031597	-0.0042788	-0.0027858	-0.00196238	-0.0009209	-0.0009397	-0.0052583	-0.0052912	-0.0046677	-0.00288267	-0.00335538	-0.0040677	-0.0040887	-0.00489626	-0.0044747	-0.0023007	-0.0023379	-0.0020406	-0.0001874	-0.0021686	-0.00193871	-0.0038663	-0.0013194	-0.0015717	-0.0006251	-0.0019687	0.00027873		
mc_turbina1	-0.00497362	-0.0029979	-0.0033898	-0.0037612	-0.00483175	-0.00497195	-0.00464845	-0.0066297	-0.0035611	-0.00381524	-0.0037211	-0.0059106	-0.0080719	-0.0045123	-0.0062008	-0.0062477	-0.0023922	-0.0097983	-0.0049091	-0.0048992	-0.0049972	-0.0051983	-0.0040993	-0.0053618	-0.0076753	-0.0069407	-0.0027647				
pr_turbina2	0.268675	0.2632345	0.2615208	0.262829	0.262831	0.2597809	0.2584802	0.2649287	0.2628966	0.2620497	0.2646399	0.2603784	0.26248657	0.2620298	0.2617384	0.2625505	0.25275946	0.2626848	0.2528025	0.2568801	0.2635332	0.26173311	0.26227492	0.2628621	0.2678256	0.2615792	0.2529204	0.2625283	0.2631032	0.2620651	
eff_turbina2	-4.98055292	-4.97880206	-4.97297548	-4.9791776	-4.9756864	-4.9718002	-4.97591769	-4.97658176	-4.9710779	-4.9748973	-4.9770147	-4.9826115	-4.9753611	-4.9743303	-4.9792824	-4.97845611	-4.97768634	-4.9775935	-4.9793837	-4.9807844	-4.9778496	-4.9732807	-4.9789498	-4.9775939	-4.9805168	-4.9764413	-4.98002768	-4.9770495	-4.9781822	4.97432928	
mc_turbina2	0.6531293	0.6549262	0.6568869	0.6567026	0.6545103	0.6676747	0.66359548	0.6613565	0.6648264	0.66562019	0.6546395	0.6687699	0.6569553	0.6657666	0.6603016	0.6630196	0.6623562	0.6644784	0.6623562	0.6630196	0.6623562	0.6648264	0.6687699	0.6656357	0.6638604	0.6623562	0.6658212	0.6623562	0.6658212	0.6657649	

Tabla 0.4: Caso 16: Degradación -2% relación de compresión fanduct y -5% eficiencia turbina 2

Aeroto prfanotur	-1.2529373	-1.2526248	-1.2628847	-1.2546031	-1.2581447	-1.2600456	-1.26142461	-1.2597526	-1.2576082	-1.25978674	-1.2575329	-1.2679974	-1.2553809	-1.2600296	-1.2610198	-1.2569951	-1.2619295	-1.2573354	-1.2585382	-1.2575946	-1.257157	-1.2594942	-1.25600873	-1.2561621	-1.2531299	-1.2615996	-1.2597574	-1.254672	-1.2599789	
Aeroto effturbina2	-4.98055292	-4.97880206	-4.97297548	-4.9791776	-4.9756864	-4.9718002	-4.97591769	-4.97658176	-4.9710779	-4.9748973	-4.9770147	-4.9826115	-4.9753611	-4.9743303	-4.9792824	-4.97845611	-4.97768634	-4.9775935	-4.9793837	-4.9807844	-4.9778496	-4.9732807	-4.9789498	-4.9775939	-4.9805168	-4.9764413	-4.98002768	-4.9770495	-4.9781822	4.97432928





Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30		
pr_fanore	0.0041774	-0.0095625	-0.0374814	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637	-0.008637		
eff_fanore	-0.0125931	-0.0116385	-0.0127284	-0.0101321	-0.00982176	-0.004673	-0.0077228	-0.0082318	-0.0079639	-0.01788619	-0.00108798	-0.0094577	-0.00193315	-0.0038732	-0.0067504	-0.0087129	-0.0181241	-0.0161738	-0.0173874	-0.00483633	-0.00166394	-0.0206791	-0.00346465	-0.0158817	-0.0063322	-0.0061534	-0.0020795	-0.00942304	-0.0116221	-0.00188379		
mc_fanore	-0.0051536	-0.0005426	0.0066783	4.492E-05	-0.0049562	0.0004301	-0.0023164	-0.001281	0.00023396	0.0014749	-0.00102393	-2.49E-05	-0.00089838	-0.00245483	-0.0004765	-0.00229688	0.00183101	0.00145	0.0005574	-0.0001744	-0.00049188	0.00107114	-0.0007835	0.00228038	-0.0007932	-0.0022201	-0.00632308	-4.544E-05	-0.00046012	-0.0034233		
pr_compresor	-2.55078789	-2.55020122	-2.54934521	-2.54949376	-2.54938312	-2.54948747	-2.54935204	-2.54939582	-2.54939659	-2.54932625	-2.5493309	-2.54940217	-2.54935775	-2.55183708	-2.54965989	-2.5521397	-2.54931909	-2.54865228	-2.54872659	-2.54929219	-2.549381	-2.54929733	-2.54929733	-2.54929733	-2.549381	-2.54929666	-2.5476556	-2.5496582	-2.5482767	-2.5473845	-2.5488891	
eff_compresor	-0.7783193	-0.793583	-0.78286238	-0.7842164	-0.7879548	-0.7871358	-0.78651239	-0.7802398	-0.7802454	-0.78453935	-0.7843082	-0.7802776	-0.78153833	-0.7888363	-0.7914584	-0.79072	-0.7828181	-0.7810893	-0.7910851	-0.79455276	-0.78523273	-0.7878088	-0.78017565	-0.7888611	-0.7856291	-0.7890656	-0.78453945	-0.7859042	-0.7903302	-0.79217812		
mc_compresor	-0.00193693	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	0.0019567	-0.0019567	
pr_turbina1	0.00832139	0.0065808	0.00598843	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301	0.00585301
mc_turbina1	-0.0026377	-0.0013233	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267	0.0034704	-0.0031267
pr_turbina2	0.2610492	0.2786627	0.2811567	0.2792047	0.2802788	0.2790693	0.2790693	0.2790693	0.2790693	0.2804086	0.2791918	0.280176	0.27926973	0.28021782	0.2794485	0.2794407	0.2801893	0.2806695	0.2797953	0.2801564	0.28011432	0.2797857	0.2801306	0.2798046	0.2807427	0.2799861	0.2795826	0.2808779	0.2798692	0.2794734		
eff_turbina2	-3.9737354	-3.9610754	-3.9621492	-3.9628457	-3.9655054	-3.9657478	-3.96312918	-3.9675832	-3.9670879	-3.9670465	-3.96608754	-3.9680754	-3.9686729	-3.9594661	-3.9631763	-3.9588802	-3.9673835	-3.9687064	-3.9643282	-3.9640758	-3.96521447	-3.96365302	-3.9688881	-3.9659411	-3.9661665	-3.96521025	-3.96673782	-3.9605382	-3.9644031	-3.9631024		
mc_turbina2	0.16768205	0.07651065	0.0715355	0.0754978	0.073482	0.0759207	0.0761373	0.0744063	0.0752489	0.0733139	0.0758931	0.0747776	0.0746019	0.0748936	0.0732968	0.0737902	0.0726798	0.0754804	0.0742061	0.0766975	0.0761891	0.0766975	0.0761891	0.0766975	0.0761891	0.0766975	0.0761891	0.0766975	0.0761891	0.0766975	0.0761891	0.0766975

Tabla 0.6: Caso 16: Degradación -4% relación de compresión fanduct y -4% eficiencia turbina 2

Acero pr_fanduct	-2.55078789	-2.55020122	-2.54934521	-2.54949376	-2.54938312	-2.54948747	-2.54935204	-2.54939582	-2.54939659	-2.54932625	-2.5493309	-2.54940217	-2.54935775	-2.55183708	-2.54965989	-2.5521397	-2.54931909	-2.54865228	-2.54872659	-2.54929219	-2.549381	-2.54929733	-2.54929733	-2.54929733	-2.549381	-2.54929666	-2.5476556	-2.5496582	-2.5482767	-2.5473845	-2.5488891
Acero eff_turbina 2	-3.9737354	-3.9610754	-3.9621492	-3.9628457	-3.9655054	-3.9657478	-3.96312918	-3.9675832	-3.9670879	-3.9670465	-3.96608754	-3.9680754	-3.9686729	-3.9594661	-3.9631763	-3.9588802	-3.9673835	-3.9687064	-3.9643282	-3.9640758	-3.96521447	-3.96365302	-3.9688881	-3.9659411	-3.9661665	-3.96521025	-3.96673782	-3.9605382	-3.9644031	-3.9631024	

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30
pr_fanone	-0.0258163	0.0292474	-0.0207867	-0.0360807	0.00149134	-0.0507247	-0.0353636	0.0124249	-0.0695172	-0.0411138	-0.0307153	-0.0272775	-0.0557929	0.0275346	0.0328864	-0.0062863	-0.0572108	-0.0215753	-0.0560013	0.0371294	-0.0374904	0.0131949	-0.0005399	-0.0448262	-0.0493790	-0.0646713	-0.0462876	0.0141291	-0.0537466	
eff_fanone	0.0789387	-0.0364735	0.0627095	-0.0647622	-0.0695782	-0.0797942	0.00859159	-0.0897393	-0.0082594	-0.0795593	0.0374052	-0.0807798	-0.0570792	-0.03465118	0.1166437	0.0156643	0.0196642	-0.0597094	0.0760598	-0.0166967	0.0271863	0.0411757	0.0476551	0.0313607	0.0263495	0.0182596	0.0253904	-0.0826228	-0.0445594	
mc_fanone	-0.0004165	0.0190468	0.0164901	-0.0621404	0.0147107	0.0441391	0.0266467	0.0515104	-0.0230123	-0.0300234	0.0429219	-0.0114108	-0.0165969	-0.0309451	-0.1202956	0.0223378	-0.0271965	0.0016471	0.0993778	0.0461161	0.0780621	-0.0621428	0.01381974	0.0362664	-0.0035714	-0.0886228	-0.0169237	-0.0739525		
pr_fanulct	-0.6918485	0.7285213	-0.6655583	-0.7242709	-0.6790108	-0.66860951	-0.72621268	-0.64164708	-0.6171891	-0.6451208	-0.605309	-0.65838709	-0.66183977	-0.66378084	-0.65670057	-0.58799524	-0.669435	-0.6008296	-0.6789173	-0.577738	-0.6258779	-0.187474	-0.6002067	-0.70614691	-0.66645669	-0.5982541	-0.6192077	-0.5794477	-0.10399525	
eff_fanulct	-1.461221	-1.442399	-1.3851928	-1.4001317	-1.4806049	-1.44271493	-1.447432	-1.3828248	-1.4233869	-1.4086337	-1.4654065	-1.4297248	-1.42432089	-1.2983394	-1.339574	-1.3893199	-1.41464689	-1.5434057	-1.3740181	-1.3007467	-1.4382399	-1.4053738	-1.44853565	-1.4402156	-1.4239796	-1.6241026	-1.49300458			
mc_fanulct	0.290395	0.146204	-0.242217	0.1853453	0.2549618	0.2068057	0.23272964	0.2686594	0.23272964	0.2181658	0.2302739	0.17417961	0.27482493	0.24951393	0.4064723	0.20790655	0.18149076	0.17489334	0.1842756	0.15563471	0.2002939	0.22860254	0.24488366	0.18801325	0.22404765	0.22714339	0.11375983	0.23657764		
pr_compressor1	0.4551608	0.4127592	0.4389278	0.3465431	0.4992391	0.4663897	0.3743637	0.3853305	0.3767091	0.4741569	0.5023016	0.4525321	0.4142231	0.4779096	0.4597406	0.5054915	0.45975161	0.4733094	0.4717006	0.37799875	0.4027127	0.44953018	0.3962444	0.36161038	0.40010784	0.5355318	0.3810292	0.3944472	0.4645257	
eff_compressor1	-0.0785689	-0.5011754	-0.4505046	-0.4029674	-0.5170426	-0.5267533	-0.4818174	-0.4813498	-0.4717509	-0.4657645	-0.5610571	-0.4591407	-0.5828051	-0.5397739	-0.46407918	-0.5385302	-0.48711812	-0.6385598	-0.6001506	-0.2004605	-0.2004605	-0.7494668	-0.5126994	-0.5417942	-0.47823115	-0.5126993	-0.50439576	-0.3945169	-0.6162427	
mc_compressor1	-0.2323391	-0.2922595	-0.1469325	-0.1900354	-0.2611997	-0.1961935	-0.2018817	-0.236638	0.3443667	-0.1863109	-0.2770092	-0.168344	-0.2529193	-0.278264	-0.25249045	-0.2785129	-0.1683393	-0.1762381	-0.1921203	-0.31739834	-0.1663861	-0.2448945	-0.3143285	-0.1088558	-0.1088558	-0.1088558	-0.1088558	-0.1088558	-0.1088558	
pr_compressor2	0.07624107	-0.0979407	-0.05138074	-0.1514827	-0.0931005	-0.1240013	-0.0822081	-0.0208701	-0.1403264	-0.0825406	-0.0976739	-0.0705211	-0.09531936	0.0523154	-0.0922927	-0.05459638	-0.07919138	-0.09491763	-0.02251323	-0.094547	-0.01708407	-0.016531	0.0026705	0.03276512	0.07559501	0.04052413	-0.0089359	-0.07851602	-0.03550291	
eff_compressor2	-0.2338216	-0.2238924	-0.1628404	-0.2076753	-0.1441765	-0.2038456	-0.2532544	-0.09471527	-0.13567951	-0.1929488	-0.1306837	-0.1467949	-0.1836605	-0.2556194	-0.05408485	-0.11341312	-0.15518891	-0.09372788	-0.1371125	-0.1209249	-0.1024531	-0.15839681	-0.06415489	-0.15431742	-0.13689316	-0.12494904	-0.7254008	-0.6163678	-0.2068454	-0.18061923
mc_compressor2	-0.6651964	-0.7536255	-0.6241689	-0.6497959	-0.5964282	-0.79800829	-0.6274903	-0.6337643	-0.6919455	-0.6419805	-0.62811512	-0.7004248	-0.61556594	-0.61247581	-0.5953425	-0.6408485	-0.5894944	-0.6372144	-0.5467765	-0.71953206	-0.6321646	-0.67424389	-0.7049016	-0.68852403	-0.6772946	-0.6116378	-0.6733552	-0.60655101		
pr_turbina1	-2.0021123	-2.0075609	-1.9041716	-2.0854695	-2.0170463	-1.9732064	-1.9593721	-1.9918059	-2.0314067	-1.9351848	-1.9799345	-2.002835	-1.9814573	-2.0780016	-1.9433844	-2.0436169	-1.9339329	-2.0036169	-2.0036169	-2.0036169	-2.0036169	-2.0036169	-2.0036169	-2.0036169	-2.0036169	-2.0036169	-2.0036169	-2.0036169	-2.0036169	-2.0036169
eff_turbina1	-4.9186278	-4.9596745	-4.9596745	-5.0229473	-5.0086599	-5.04955118	-4.9710531	-5.0063246	-5.0086746	-4.971829	-4.9453883	-4.9504687	-4.9820181	-5.0087086	-5.0522776	-5.0433866	-5.02979416	-4.964681	-4.9751381	-4.951381	-4.9644709	-5.0352672	-5.0352672	-5.0352672	-5.0352672	-5.0352672	-5.0352672	-5.0352672	-5.0352672	-5.0352672
mc_turbina1	-0.42149284	-0.50339631	-0.5070793	-0.4397499	-0.4634897	-0.5066529	-0.45815754	-0.48109285	-0.5187659	-0.4251071	-0.4616885	-0.4492976	-0.53322107	-0.4593238	-0.5059306	-0.49015947	-0.49015947	-0.49015947	-0.49015947	-0.49015947	-0.49015947	-0.49015947	-0.49015947	-0.49015947	-0.49015947	-0.49015947	-0.49015947	-0.49015947	-0.49015947	-0.49015947
pr_turbina2	0.0447288	0.0115023	0.0689566	0.02500599	0.0763997	0.0836626	-0.0259635	0.191284	0.022869	0.0395982	0.00794633	-0.0431691	0.0881781	0.0770644	0.0587448	0.04767171	0.0265764	0.015174811	-0.0421289	0.02735137	0.00715386	-0.0258943	-0.0102803	0.06855621	0.06280526	0.0002518	-0.0282237	-0.06578497	0.048316	0.0676808
eff_turbina2	-0.1394386	-0.187367	-0.0897013	-0.13676102	-0.20424571	-0.1308194	-0.10420762	-0.0726914	-0.1197866	-0.1547585	-0.15719949	-0.1081686	-0.17617821	-0.0817972	-0.06511795	-0.06380728	-0.06143462	-0.07850707	-0.04024202	-0.0720895	-0.1973534	-0.15022891	-0.11166424	-0.1640315	-0.12126362	-0.17506147	-0.09375248	-0.22676941	-0.11261119	-0.06095513
mc_turbina2	-0.0235498	0.0521694	-0.0181257	-0.07709462	-0.0710024	-0.0490164	-0.05600048	0.0893177	-0.0854654	-0.00445961	-0.12957807	-0.07021073	-0.0262212	-0.0680043	-0.0889019	-0.0942751	0.07451615	-0.04469816	-0.00023867	-0.00225284	-0.0298136	-0.1184776	-0.00644687	0.08521999	-0.01497613	-0.00081904	-0.1329702	-0.11861778	-0.02485126	-0.0353464

Tabla 0.7: Caso 19: Degradación -2% eficiencia fanduct y -5% eficiencia turbina 1

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
Degradación																															
pr_fanone	-0.004817	-0.193595	-0.046617	-0.057861	-0.076419	-0.054487	-0.065564	-0.002932	0.133584	0.093929	0.095277	0.023912	0.028709	0.047903	-0.063282	0.158592	0.082947	-0.062299	-0.023798	0.007042	0.051078	-0.117648	0.079411	-0.084319	0.053532	-0.140026	0.013502	0.073591	0.026246	0.163953	
eff_fanone	0.089385	0.009408	-0.094306	0.033879	0.065751	0.155687	-0.038327	-0.083207	-0.034328	0.053209	0.131769	0.065317	-0.034625	-0.006807	-0.084808	0.130908	-0.140303	-0.151972	-0.068644	0.052363	0.043330	-0.089597	-0.001664	-0.016896	-0.023403	-0.082716	0.036646	0.001296	-0.016576	0.083395	
mc_fanone	-0.028834	-0.180514	-0.059610	-0.029644	-0.144738	-0.092791	0.059237	0.075669	-0.188662	-0.104627	0.125594	0.054502	-0.042333	-0.007254	-0.144644	0.005498	0.052158	-0.146519	-0.151109	-0.038644	0.207007	0.025124	-0.028073	-0.040289	-0.184301	0.048384	-0.008074	-0.079348	-0.007934	-0.013506	
pr_fanulct	-1.697659	-1.818362	-1.978168	-1.947531	-2.067578	-2.023599	-2.048732	-1.917944	-1.801694	-2.008742	-1.727795	-1.889727	-2.004951	-1.804454	-1.973325	-1.887404	-1.944881	-1.797949	-1.937898	-1.897349	-1.797949	-1.911630	-1.781674	-1.893966	-1.926656	-1.945047	-2.068	-1.907982	-1.718649		
eff_fanulct	-0.077991	-0.248024	-0.199523	-0.234640	-0.197166	-0.157064	-0.184879	-0.331289	-0.306177	-0.218674	-0.437168	-0.268683	-0.436327	-0.216822	-0.222308	-0.268827	-0.157809	-0.298467	-0.206367	-0.268791	-0.156798	-0.339459	-0.353807	-0.278371	-0.373733	-0.170984	-0.248279	-0.150824	-0.279725	-0.243066	
mc_fanulct	0.566012	0.541758	0.477949	0.432948	0.442402	0.601152	0.603021	0.642032	0.397318	0.571954	0.754082	0.642826	0.394516	0.586887	0.466673	0.520071	0.615826	0.354608	0.494285	0.440211	0.645025	0.388078	0.478371	0.412084	0.494285	0.400211	0.645025	0.388078	0.478371	0.412084	0.494285
pr_compressor1	-0.091339	0.045268	-0.086631	-0.003561	-0.101505	0.060436	0.011294	0.072116	0.038218	-0.027618	0.039134	0.025483	-0.030801	0.005637	-0.109779	-0.064382	0.150548	-0.099787	-0.016643	-0.123844	0.009787	-0.016643	0.138635	-0.016643	0.138635	-0.016643	0.138635	-0.016643	0.138635	-0.016643	0.138635
eff_compressor1	0.164438	0.074896	-0.018074	0.042829	0.095402	0.153582	-0.210882	-0.069873	-0.116001	-0.027540	0.063847	-0.009543	0.089821	0.058450	-0.174738	0.169594	-0.043482	-0.097235	-0.006746	0.010644	-0.087646	-0.104984	0.084659	-0.292348	0.084659	-0.292348	0.084659	-0.292348	0.084659	-0.292348	0.084659
mc_compressor1	-0.072915	-0.041529	0.061782	-0.029381	-0.042388	-0.082925	-0.124618	0.327289	-0.070822	-0.082301	-0.152947	-0.035443	-0.035443	-0.348361	-0.029264	0.104838	-0.135601	-0.012706	-0.163806	0.037247	-0.071629	0.057478	-0.05215	-0.106108	-0.048028	-0.191319	-0.048028	-0.191319	-0.048028	-0.191319	
pr_compressor2	0.045619	0.162761	-0.189577	-0.051879	0.013858	-0.026525	0.007884	0.098997	0.055553	0.067821	-0.032408	-0.040584	0.192403	-0.278989	-0.054218	-0.093456	-0.114610	-0.033476	0.052367	0.145853	-0.200607	-0.185376	0.099867	0.074485	-0.163761	0.059182	0.021096	0.143625	-0.057783	-0.077328	
eff_compressor2	-0.078615	-0.080853	0.183758	-0.033781	0.028799	0.207816	-0.067348	0.015275	-0.028087	0.197835	0.026426	0.043479	0.094072	0.040722	0.094482	-0.042489	-0.088357	-0.048466	0.23743	0.024957	-0.062975	0.008128	-0.128376	0.110108	-0.016796	0.043973	0.097372	0.142807	0.205799	0.063395	
mc_compressor2	-0.079306	-0.246479	-0.134574	0.097578	0.028716	-0.084155	-0.049402	-0.029758	-0.104689	0.047584	-0.108083	0.004283	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347	-0.063347
pr_turbina1	-0.009408	-0.122429	0.007327	-0.137559	0.050495	-0.076402	-0.041127	-0.131828	-0.015807	-0.048946	-0.180125	-0.090231	-0.187162	-0.041127	-0.180125	-0.090231	-0.187162	-0.041127	-0.180125	-0.090231	-0.187162	-0.041127	-0.180125	-0.090231	-0.187162	-0.041127	-0.180125	-0.090231	-0.187162	-0.041127	-0.180125
eff_turbina1	-0.038438	-0.542204	-1.929435	-2.195448	-2.094958	-2.128734	-1.918384	-2.182844	-2.038244	-2.103807	-2.097541	-2.115614	-2.080369	-1.945156	-2.186484	-1.955294	-2.160235	-2.137546	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235
mc_turbina1	-0.049408	-0.073761	0.062094	-0.030784	-0.029183	-0.174464	-0.023261	-0.020763	0.031091	0.038796	0.043406	0.025356	0.007844	0.026013	-0.261831	0.007765	0.094148	-0.082736	-0.126564	-0.089748	0.068675	-0.204396	-0.070476	-0.152105	-0.058876	-0.005487	0.097176	-0.094129	-0.010454	0.010454	
pr_turbina2	0.216867	-0.083572	-0.095559	-0.042441	0.102548	-0.057168	0.105458	-0.089175	0.016289	-0.047104	-0.068943	-0.001534	0.227794	-0.149526	0.181681	0.044957	0.278023	0.017493	-0.067012	0.140854	0.074739	-0.154972	0.004632	-0.035303	0.111807	-0.109424	-0.096735	-0.127284	-0.085747	0.032302	0.032302
eff_turbina2	-0.150718	0.124239	-0.007881	0.077005	-0.108761	0.186654	-0.021971	0.021971	-0.194918	0.035446	-0.147404	0.070404	-0.015803	-0.178201	-0.035806	-0.094876	-0.058347	-0.116819	-0.013439	-0.007051	-0.104349	-0.128647	0.184973	-0.179847	-0.054968	0.065184	0.007828	0.151379	-0.065819	0.181440	
mc_turbina2	-0.025484	-0.184713	-0.093369	-0.044634	0.102480	-0.062419	-0.087929	-0.168756	0.061029	0.054742	-0.022692	-0.022807	-0.178841	0.057976	0.108542	-0.153806	0.023343	0.021943	-0.049028	-0.083587	-0.091028	-0.069772	-0.041033	-0.184973	-0.041033	-0.184973	-0.041033	-0.184973	-0.041033	-0.184973	-0.041033

Tabla 0.8: Caso 19: Degradación -5% eficiencia fanulct y -2% eficiencia turbina 1

Aerio eff_fanulct	-0.077991	-0.248024	-0.199523	-0.234640	-0.197166	-0.157064	-0.184879	-0.331289	-0.306177	-0.218674	-0.437168	-0.268683	-0.436327	-0.216822	-0.222308	-0.268827	-0.157809	-0.298467	-0.206367	-0.268791	-0.156798	-0.339459	-0.353807	-0.278371	-0.373733	-0.170984	-0.248279	-0.150824	-0.279725	-0.243066	
Aerio eff_turbina 1	-0.038438	-0.542204	-1.929435	-2.195448	-2.094958	-2.128734	-1.918384	-2.182844	-2.038244	-2.103807	-2.097541	-2.115614	-2.080369	-1.945156	-2.186484	-1.955294	-2.160235	-2.137546	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235	-2.160235

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanone	-0.1809137	-0.06907639	-0.0278777	-0.1380235	-0.1340575	-0.05514705	0.02762733	-0.2594029	0.11148056	0.06214946	-0.1329618	-0.1489878	-0.1899382	-0.0273875	-0.1853456	-0.06114643	-0.00533285	0.07739635	0.097884	-0.16151945	-0.00696994	-0.04642409	0.00887034	-0.00694848	-0.1724311	-0.0692486	0.01880586	-0.05942204	-0.02631555	0.06428942	
eff_fanone	-0.01564916	-0.03087264	-0.05556725	-0.05118371	-0.0597475	0.01649172	-0.06314128	0.05940132	-0.04492772	-0.02854655	-0.07006367	-0.18472295	-0.05539321	-0.11438395	-0.14225018	-0.05433388	-0.22167407	-0.03334625	-0.033772	0.05429207	0.09763843	-0.0438255	0.07655004	-0.03294723	0.15404774	-0.01346115	0.13532013	-0.06384431	0.056800158		
mc_fanone	-0.1901148	-0.1056616	-0.0293235	0.18742706	-0.13801796	-0.13300783	-0.18289843	-0.04897676	-0.06424016	-0.01639902	0.00278905	-0.087751	-0.05203343	0.06664448	-0.0274555	0.04732251	-0.22821766	0.04409296	-0.04960813	-0.10630441	-0.077154	-0.1582382	0.06789925	0.10620701	-0.09091516	-0.06900997	-0.0479431	4.69611405	-1.3934788	-1.34388896	
pr_fanulct	-1.4413188	-4.49666546	-1.47455131	-1.66445203	-1.43663884	-1.50488054	-1.42722867	-1.67479641	-4.49200104	-1.4751181	-1.5324972	-1.65389551	-1.42424078	-1.78865814	-1.4707359	-1.36673833	-1.47410783	-1.41487145	-1.41814653	-1.38591006	-1.59313267	-1.3371623	-1.50565267	-1.35718889	-1.5933548	-1.45597195	-1.7880129	-1.67218354	-1.394768	-1.34388896	
eff_fanulct	-3.4483488	-3.1946219	-3.4086163	-3.4953124	-3.3744551	-3.4115946	-3.39835555	-3.2376489	-3.3544965	-3.2642864	-3.137743	-3.3587624	-3.3380846	-3.2539251	-3.4075022	-3.4788218	-3.32328195	-3.3128019	-3.3128019	-3.33221584	-3.3392825	-3.4575188	-3.49713277	-3.5292988	-3.4239946	-3.2774504	-3.2729091	-3.3979493	-3.2106049	-3.38020874	
mc_fanulct	0.3346572	0.49788078	0.52471151	0.45422848	0.35494683	0.35276924	0.41172089	0.47891089	0.39254669	0.3637228	0.39488079	0.49442879	0.2949452	0.39274657	0.2519734	0.22388018	0.47855792	0.53488153	0.48551848	0.45019327	0.46546887	0.3640281	0.55680779	0.46521655	0.53097827	0.48951653	0.32922785	0.55905094	0.54885744	0.45484478	
pr_compressor1	0.3375599	0.0587832	0.17746961	0.29615263	0.0851077	0.2349535	0.1515338	-0.0919932	0.1474099	-0.0200007	-0.0749447	0.10242834	0.2288832	0.00539878	0.216572	0.27831081	0.02839348	0.46131987	0.46131987	0.2745524	0.09024382	0.03138666	0.21228268	0.10007901	0.9983051	0.2030984	0.0899133	0.20102911	0.19504519	0.07702078	
eff_compressor1	-0.4658158	-0.64200159	-0.72403308	-0.62667488	-0.63935052	-0.6797651	-0.421216	-0.7672358	-0.46549815	-0.6871892	-0.7087742	-0.78075074	-0.6647551	-0.6776781	-0.5596249	-0.6029272	-0.74881623	-0.55194133	-0.6736299	-0.6546884	-0.78084087	-0.58041615	-0.58055044	-0.79494928	-0.57099777	-0.61616704	-0.80559404	-0.66039156	-0.75008861	-0.602952821	
mc_compressor1	-0.13482775	-0.1228827	-0.02510482	-0.08528402	-0.28995321	0.08220965	0.17646367	0.2441029	0.00122811	-0.13519134	-0.08083369	-0.2189551	-0.1348708	-0.02954473	0.06384429	0.06488865	-0.14453273	-0.16521838	-0.087751	-0.0199349	-0.0095842	-0.11091061	0.07317841	-0.0931737	-0.11621914	-0.00773599	0.04444223	0.21564055	0.04018181	0.01958878	
pr_compressor2	-0.03169496	0.17403148	0.0705271	0.02731166	0.033662	-0.13557143	-0.15976609	-0.02907663	-0.09340853	0.01459814	-0.07851438	0.27334866	0.01247101	-0.07031957	-0.084933	0.07065314	0.15085532	-0.11088851	-0.0862531	-0.13389028	-0.02619114	0.01383024	-0.03869185	0.00532481	0.07389894	0.02282758	-0.01152007	-0.08667115	-0.16293883	-0.11634418	
eff_compressor2	0.179004	-0.19966955	0.0791074	0.0493445	0.0076465	0.0377165	-0.0671347	-0.2025391	0.1075287	-0.2057684	-0.0397482	0.12978405	0.05531574	-0.16724487	-0.0988976	-0.14215784	-0.10234035	-0.03247787	0.04134211	-0.08463692	-0.05659856	-0.1851125	0.07801573	0.10282094	-0.00310743	-0.05128991	0.049795747	0.00560363	0.05974895	0.01102694	
mc_compressor2	-0.3552468	-0.0278947	-0.11149884	-0.30740764	0.08975065	-0.06128024	-0.31230264	-0.26259802	-0.1469024	-0.26259802	-0.05107718	-0.11648799	-0.1493765	-0.08526578	-0.07997941	-0.3824893	-0.30087113	-0.34549511	-0.3338999	-0.2535592	-0.34432375	-0.33846755	-0.27863674	-0.26751371	-0.28394741	-0.2065707	-0.38983676	-0.36838385	-0.22723626	-0.35468384	
pr_turbina1	0.6675508	-0.0278947	-0.11149884	-0.30740764	0.08975065	-0.06128024	-0.31230264	-0.26259802	-0.1469024	-0.26259802	-0.05107718	-0.11648799	-0.1493765	-0.08526578	-0.07997941	-0.3824893	-0.30087113	-0.34549511	-0.3338999	-0.2535592	-0.34432375	-0.33846755	-0.27863674	-0.26751371	-0.28394741	-0.2065707	-0.38983676	-0.36838385	-0.22723626	-0.35468384	
eff_turbina1	-3.9707197	-4.1347411	-4.1147086	-3.9509191	-0.850744	-3.92219558	-3.9282939	-3.8824216	-3.8701948	-4.1265932	-4.0180989	-4.0822061	-4.12338755	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752
mc_turbina1	-0.0284792	-0.0661118	-0.0698957	-0.4375418	-0.1864523	-0.12012407	-0.1153372	-0.08661374	-0.13888056	0.0332673	-0.0554789	0.00282024	-0.08962652	-0.14153638	-0.09870719	-0.03308518	-0.1924032	-0.03308518	-0.03308518	-0.03308518	-0.03308518	-0.03308518	-0.03308518	-0.03308518	-0.03308518	-0.03308518	-0.03308518	-0.03308518	-0.03308518	-0.03308518	-0.03308518
pr_turbina2	-0.0254123	0.07553557	-0.0871362	0.02084896	0.1278644	-0.20163825	0.149094	0.0005766	-0.1046955	0.0986627	0.0466704	-0.1827999	0.0466704	0.0185455	0.01549853	0.0080753	0.1574093	0.13644315	0.06474029	0.16165304	0.1229554	0.04554891	0.26307956	0.04057474	0.21531267	0.04057474	0.26307956	0.04057474	0.21531267	0.04057474	0.21531267
eff_turbina2	0.14071493	0.09748889	-0.06150869	-0.1843315	0.06115828	0.03987289	-0.11628814	-0.0808385	-0.01623907	0.21434653	0.00477605	0.06510248	-0.0338807	-0.15505156	0.05981575	0.23380418	0.05644163	-0.05106057	-0.08464654	-0.1380822	-0.0454579	-0.4954467	0.00123379	-0.0722488	-0.11324115	-0.15864241	-0.08202842	0.05159417	-0.0826486	0.04324201	
mc_turbina2	0.02490594	-0.138918	0.04628148	-0.0817109	-0.0644936	-0.04532907	-0.13844725	-0.1423271	-0.10055384	-0.08131084	-0.1808867	-0.1603168	-0.25164112	0.0519501	0.05951262	0.07732971	0.02132373	0.02132373	0.02132373	0.02132373	0.02132373	0.02132373	0.02132373	0.02132373	0.02132373	0.02132373	0.02132373	0.02132373	0.02132373	0.02132373	0.02132373

Tabla 0.9: Caso 19: Degradación -4% eficiencia fanduct y -4% eficiencia turbina 1

Aerío eff_fanulct	-3.4483488	-3.1946219	-3.4086163	-3.4953124	-3.3744551	-3.4115946	-3.39835555	-3.2376489	-3.3544965	-3.2642864	-3.137743	-3.3587624	-3.3380846	-3.2539251	-3.4075022	-3.4788218	-3.32328195	-3.3128019	-3.3128019	-3.33221584	-3.3392825	-3.4575188	-3.49713277	-3.5292988	-3.4239946	-3.2774504	-3.2729091	-3.3979493	-3.2106049	-3.38020874	
Aerío eff_turbina 1	-3.9707197	-4.1347411	-4.1147086	-3.9509191	-0.850744	-3.92219558	-3.9282939	-3.8824216	-3.8701948	-4.1265932	-4.0180989	-4.0822061	-4.12338755	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752	-4.0746752



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanorc	-1.8495321	-1.8042876	-1.7995472	-1.7419531	-1.6744285	-1.7693899	-1.8042871	-1.6512819	-1.7868412	-1.7366504	-1.8407507	-1.6830772	-1.8614803	-1.7953419	-1.8207807	-1.8268454	-1.7616329	-1.807093	-1.9471904	-1.8695565	-1.8205049	-1.8267889	-1.8267889	-1.7683762	-1.7653449	-1.8524406	-1.8207665	-1.8065075	-1.8270019	-1.7681991	
eff_fanorc	-1.2857213	-1.1980067	-1.3948515	-1.2819751	-1.2620137	-1.2802039	-1.2466292	-1.2516706	-1.2646768	-1.2964632	-1.2415139	-1.2712181	-1.241589	-1.2974486	-1.2378133	-1.2489235	-1.2894067	-1.3410484	-1.1940673	-1.3392322	-1.2972897	-1.3044071	-1.2757411	-1.2651802	-1.2835846	-1.2408677	-1.2764063	-1.3314848	-1.2575286	-1.3703329	
mc_fanorc	-0.4807865	-0.6373449	-0.5302483	-0.4346517	-0.4942008	-0.5100385	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4907895	-0.5029696	-0.5029696	-0.5029696	-0.4907895	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	
pr_fanidct	0.02853051	-0.01192078	-0.11623394	-0.124945	-0.02462601	-0.06446818	-0.1429936	-0.02989328	-0.07357429	-0.0487319	-0.07295029	-0.0970822	-0.0291955	0.0055862	-0.0517292	-0.0792324	-0.0103394	-0.0108451	0.01286729	-0.010707	-0.02986816	0.0007701	0.02224751	-0.0147184	-0.0569287	-0.0299249	-0.0229974	-0.0400344	0.00879425	-0.06749655	
eff_fanidct	0.05211059	-0.01520945	0.01693878	-0.03498491	-0.0917839	0.02538426	-0.0975486	-0.03231688	-0.03289705	-0.01397739	0.00446656	-0.1347215	-0.0862372	-0.02614288	-0.06490731	-0.09566975	-0.06889371	0.03133683	0.05466576	-0.0786162	0.0573548	-0.0179606	-0.06195299	-0.0360768	-0.05552893	-0.0470077	0.04959445	0.01008644	0.00088644		
mc_fanidct	-0.02193944	0.05138495	-0.0706016	-0.0865927	0.0307461	-0.03186807	-0.00952446	-0.03708032	-0.03230273	-0.01239569	-0.1044528	-0.04010321	-0.0932918	-0.14216402	-0.04532924	-0.11646807	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	
pr_compresor1	-1.07457952	-1.0402233	-0.99495958	-0.854596	-0.90249103	1.0357651	-0.9849332	-1.0515538	-0.8083228	-0.7230287	-1.0422897	-0.7886422	-0.9824894	-0.9940031	-0.9675604	-0.8911106	-0.9107005	-1.0411466	-1.0797471	-0.9352246	-0.9029923	-1.0379474	-0.9053931	-0.9915266	-0.95447587	-0.98053689	-0.9847498	-0.9302274	-0.9485575	-1.05777647	
eff_compresor1	0.7656491	0.8453222	0.7947355	0.8419604	0.7917467	0.8742629	0.8232897	0.8078328	0.8380518	0.828711	0.8889732	0.7231997	0.6897226	0.7592795	0.8479636	0.8666327	0.776475	0.8019879	0.7912853	0.8394724	0.8220119	0.8251334	0.8166594	0.7932483	0.8510543	0.8442645	0.7395564	0.7918514	0.8795989	0.86122375	
mc_compresor1	-5.0597909	-4.9320459	-4.9842396	-4.9310514	-4.9808551	-5.0112855	-5.0651423	-4.9974548	-5.04378647	-4.9804629	-4.9930261	-4.9764128	-4.9531053	-4.9794247	-5.0207478	-5.1248443	-4.9848201	-4.9812893	-5.028505	-4.9429416	-4.9075731	-5.076213	-5.0669102	-5.0039944	-4.9110871	-5.0516922	-4.9428165	-4.9976243	-5.0448053	-5.0448053	
pr_compresor2	0.5132286	0.3381424	0.3857887	0.3408989	0.3807003	0.3643485	0.4029845	0.4551034	0.3660925	0.3312605	0.3958688	0.3331574	0.4657805	0.4276489	0.3702465	0.4158663	0.4219585	0.3465573	0.3425132	0.4001475	0.3576439	0.4755998	0.3576384	0.4235578	0.4387238	0.4598313	0.4636079	0.3721899	0.48111284	0.36046504	
eff_compresor2	-1.7672809	-1.757165	-1.720013	-1.7599078	-1.8240162	-1.7519768	-1.7680716	-1.6601517	-1.7230023	-1.7238905	-1.7720846	-1.731905	-1.7710086	-1.6986137	-1.7294876	-1.8064689	-1.7380205	-1.75991282	-1.7819378	-1.7693408	-1.7101716	-1.757252	-1.7616523	-1.6841536	-1.7273483	-1.8066284	-1.5744516	-1.6878711	-1.7287362	-1.6932053	
mc_compresor2	-0.90119616	-0.9988972	-0.93063104	-0.9512247	-0.9518825	-0.9799631	-0.9444992	-0.9445248	-0.963062	-0.974653	-0.9914069	-0.9448221	-0.9701778	-0.9727579	-0.9521937	-0.9828361	-0.9206886	-0.9409487	-1.0116895	-0.9586154	-0.901283	-0.9175518	-0.9479793	-0.9236049	-0.9236049	-0.9236049	-0.9236049	-0.9236049	-0.9236049	-0.9236049	
pr_turbina1	0.0532309	-0.0830964	0.0598949	0.0221213	-0.0672683	-0.0817644	-0.0978472	-0.0531198	-0.0510088	-0.048035	-0.09347	0.0393859	-0.023212	-0.0169007	-0.070798	-0.0408873	-0.1149296	-0.1164432	-0.1028356	0.0149667	-0.0091169	-0.0206276	0.0193967	-0.0193912	-0.0168711	-0.0168711	-0.0168711	-0.0168711	-0.0168711	-0.0168711	
eff_turbina1	0.0831062	0.0484374	0.0088982	0.0247664	-0.0039602	0.1648998	0.0613548	0.0698592	0.0428649	0.0225712	0.0591938	0.0273188	-0.0419952	0.0486167	0.0585965	0.075967	0.032355	0.093898	0.0688003	0.0795257	0.0602954	-0.0624975	0.058243	0.0268842	0.0605961	-0.0518193	0.0235945	0.00219265	0.08279849		
mc_turbina1	-0.07864246	-0.0042873	-0.4913176	-0.0053293	-0.0902108	0.0423488	-0.0828347	-0.0312364	0.0361063	-0.0297655	-0.0594044	0.0090386	-0.0416231	0.0009035	-0.0689308	-0.0540235	0.0395492	0.0002306	-0.0462891	-0.0550294	-0.1497018	-0.0895058	-0.0390533	-0.0289206	-0.0351688	-0.0370215	0.0110629	-0.0610861	-0.0472283	-0.01339712	
pr_turbina2	-0.0491345	0.1524956	-0.0877944	-0.0793881	-0.0047786	0.0857676	0.0045456	-0.0282888	0.01074876	-0.1282387	0.013727	-0.0094359	-0.0942428	0.0500785	0.01021501	-0.0094078	0.0717093	0.0515802	-0.0083893	-0.0451516	0.0382556	0.0639443	0.0451999	0.1625676	0.0497397	0.0059467	0.00028647	0.0807709	0.05404273		
eff_turbina2	-0.2848388	-0.1470453	-0.14957028	-0.2313925	-0.1388179	-0.1765559	-0.1866083	-0.16623891	-0.26691067	-0.23655073	-0.11251546	-0.2084719	-0.1628751	-1.6880538	-0.3203073	-0.23774686	-0.1744668	-0.2294886	-0.02021757	-0.2923209	-0.2875908	-0.2164431	-0.1737555	-0.245433	-0.2770325	-0.1029416	-0.1530591	-0.1135047	-0.1991948	-0.17955179	
mc_turbina2	-0.0188903	-0.0337345	-0.0687076	-0.0847933	0.0511147	-0.0813794	0.0085453	-0.0277469	0.0370786	0.0191242	-0.154071	-0.0931889	-1.4185456	-0.0496689	0.0141809	-0.0257949	-0.0276884	-0.0276884	-0.0276884	-0.0276884	-0.0276884	-0.0276884	-0.0276884	-0.0276884	-0.0276884	-0.0276884	-0.0276884	-0.0276884	-0.0276884	-0.0276884	-0.0276884

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30
pr_fanorc	-1.8495321	-1.8042876	-1.7995472	-1.7419531	-1.6744285	-1.7693899	-1.8042871	-1.6512819	-1.7868412	-1.7366504	-1.8407507	-1.6830772	-1.8614803	-1.7953419	-1.8207807	-1.8268454	-1.7616329	-1.807093	-1.9471904	-1.8695565	-1.8205049	-1.8267889	-1.8267889	-1.7683762	-1.7653449	-1.8524406	-1.8207665	-1.8065075	-1.8270019	-1.7681991
eff_fanorc	-1.2857213	-1.1980067	-1.3948515	-1.2819751	-1.2620137	-1.2802039	-1.2466292	-1.2516706	-1.2646768	-1.2964632	-1.2415139	-1.2712181	-1.241589	-1.2974486	-1.2378133	-1.2489235	-1.2894067	-1.3410484	-1.1940673	-1.3392322	-1.2972897	-1.3044071	-1.2757411	-1.2651802	-1.2835846	-1.2408677	-1.2764063	-1.3314848	-1.2575286	-1.3703329
mc_fanorc	-0.4807865	-0.6373449	-0.5302483	-0.4346517	-0.4942008	-0.5100385	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4907895	-0.5029696	-0.5029696	-0.5029696	-0.4907895	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284	-0.4529284
pr_fanidct	0.02853051	-0.01192078	-0.11623394	-0.124945	-0.02462601	-0.06446818	-0.1429936	-0.02989328	-0.07357429	-0.0487319	-0.07295029	-0.0970822	-0.0291955	0.0055862	-0.0517292	-0.0792324	-0.0103394	-0.0108451	0.01286729	-0.010707	-0.02986816	0.0007701	0.02224751	-0.0147184	-0.0569287	-0.0299249	-0.0229974	-0.0400344	0.00879425	-0.06749655
eff_fanidct	0.05211059	-0.01520945	0.01693878	-0.03498491	-0.0917839	0.02538426	-0.0975486	-0.03231688	-0.03289705	-0.01397739	0.00446656	-0.1347215	-0.0862372	-0.02614288	-0.06490731	-0.09566975	-0.06889371	0.03133683	0.05466576	-0.0786162	0.0573548	-0.0179606	-0.06195299	-0.0360768	-0.05552893	-0.0470077	0.04959445	0.01008644	0.00088644	
mc_fanidct	-0.02193944	0.05138495	-0.0706016	-0.0865927	0.0307461	-0.03186807	-0.00952446	-0.03708032	-0.03230273	-0.01239569	-0.1044528	-0.04010321	-0.0932918	-0.14216402	-0.04532924	-0.11646807	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089	-0.01659089
pr_compresor1	-1.07457952	-1.0402233	-0.99495958	-0.854596	-0.90249103	1.0357651	-0.9849332	-1.0515538	-0.8083228	-0.7230287	-1.0422897	-0.7886422	-0.9824894	-0.9940031	-0.9675604	-0.8911106	-0.9107005	-1.0411												

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanorc	-2.2391394	-2.1962228	-2.2903332	-2.3296262	-2.1874192	-2.1787939	-2.4988639	-2.3762462	-2.4029567	-2.2770578	-2.2770578	-2.1204438	-2.2837397	-2.2946878	-2.1786722	-2.3275785	-2.4857997	-2.3732102	-2.2753408	-2.2353887	-2.3167265	-1.9338222	-2.2703897	-2.1024391	-2.4528543	-2.1699525	-2.3640462	-2.2148763	-2.4628249	-2.3214266	
eff_fanorc	-1.6207673	-1.5762127	-1.9511305	-1.9242227	-1.6954929	-1.6290646	-1.8712878	-1.8802682	-1.7594701	-1.7183356	-1.8363876	-1.9764977	-1.8533803	-1.7041239	-1.7071354	-1.8186339	-1.6737343	-1.7798743	-1.6849488	-1.8567882	-1.8333543	-1.7724867	-1.7897763	-1.6575107	-1.5671355	-1.6402176	-1.6828283	-1.8938616	-1.7409693	-1.6202888	
mc_fanorc	-1.22113915	-1.1310676	-1.4361978	-1.2067625	-0.9722275	-1.2447705	-1.3689773	-1.1951844	-1.3309332	-1.1531794	-1.3170365	-1.1692806	-1.2072636	-1.3466548	-1.3552833	-1.1007029	-1.2648638	-1.2425683	-1.455721	-1.1379572	-1.4002294	-1.1794959	-1.0833842	-1.1323104	-1.3318695	-1.1748459	-1.0825893	-1.3238619	-1.1041066	-1.0731672	
pr_fanduct	-0.0242894	0.0071974	-0.1371923	0.0182269	0.0684936	-0.0294768	-0.0135434	-0.1040942	0.0289253	0.0775447	-0.1440868	-0.1733872	-0.0463382	0.0945438	-0.2398242	-0.1675352	0.0194457	-0.0886653	0.1720102	-0.1341507	-0.0494733	0.0093819	0.0831065	-0.0729986	0.0595683	-0.0978231	-0.1270684	0.0485793	0.1555376		
eff_fanduct	-0.1693347	0.0686615	-0.0955322	-0.0231905	0.1159217	-0.1173558	-0.0462509	-0.0779138	-0.0765202	0.0575366	0.0492906	-0.0281428	-0.0414975	-0.094527	-0.0576243	0.0054072	-0.0393897	0.0156641	-0.0466883	0.0604861	0.0666887	0.0175981	0.0939292	0.0665726	0.1922758	-0.0212513	-0.1270684	0.0485793	0.1555376		
pr_compresor1	-0.0640717	0.0294854	-0.1304823	-0.1279923	-0.0078022	-0.1516267	-0.0489017	-0.1339621	-0.1765429	0.0678972	0.2638011	-0.0630652	-0.0842327	-0.1958959	0.0082965	-0.1597946	0.0278382	0.1135585	-0.0225259	-0.0912599	0.0756571	-0.0800113	0.0016188	0.01132495	0.0016188	0.0512759	0.0307745	0.0422089	-0.0280334	0.0717261	
eff_compresor1	-0.6323855	-0.657235	-0.8046478	-0.4236674	-0.7609386	-0.6014917	-0.7681931	-0.6602268	-0.4609868	-0.6474756	-0.539428	-0.3937976	-0.6295545	-0.4935015	-0.5376231	-0.7946803	-0.7463482	-0.6726651	-0.7036651	-0.6721327	-0.6246701	-0.4023342	-0.3892107	-0.6564734	-0.7281648	-0.7957447	-0.9574667	-0.5767003	0.1576703		
pr_compresor2	-0.4783934	0.3354538	-0.3489218	-0.2057394	0.2819311	0.2466386	0.3289375	0.1957568	0.3380884	0.4025709	0.2756687	0.3015219	0.2835459	0.3057415	0.3885178	0.4353748	0.3771573	0.2694489	0.5592624	0.3189883	0.2978029	0.2601562	0.2600865	0.3204225	0.1471938	0.4037455	0.2426253	0.4572302	0.5596738	0.3668944	
eff_compresor2	-1.3578785	-1.4031577	-1.3065933	-1.5230282	-1.4058614	-1.2705487	-1.3528319	-1.5028458	-1.3462285	-1.4967226	-1.6038470	-1.523272	-1.5925898	-1.5649334	-1.5786349	-1.4537019	-1.3312165	-1.6007276	-1.5830834	-1.5646915	-1.527848	-1.5678901	-1.5677612	-1.5046534	-1.4978993	-1.4546464	-1.4260946	-1.2989428	-1.6322449	-1.3474937	
mc_compresor2	-0.7641429	-0.9395001	-0.7955228	-0.7635186	-0.8597781	-0.7830769	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979	-0.8362979
pr_turbina1	-0.0871685	-0.0914833	-0.0022821	0.0042048	-0.0901131	0.0951033	0.0318703	-0.0421347	0.0165804	-0.0888455	-0.0739085	-0.0754908	-0.0830773	0.0630279	-0.0749735	-0.1242364	0.0349374	0.0435864	0.0435864	0.0435864	0.0435864	0.0435864	0.0435864	0.0435864	0.0435864	0.0435864	0.0435864	0.0435864	0.0435864	0.0435864	0.0435864
eff_turbina1	0.0881686	0.09152919	0.0063151	-0.0939511	-0.0943277	0.0888079	0.0664412	0.2529378	0.1203774	-0.1235455	0.0630863	-0.1538081	0.0853633	0.0038315	-0.0914396	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695	0.0862695
mc_turbina1	-0.1886212	-0.1867515	-0.1988676	0.0271005	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888	-0.0668888
pr_turbina2	0.0524747	0.0626926	0.0235384	0.0901389	0.0888344	0.0964919	-0.0450473	0.0028977	-0.167754	0.0216869	0.0680246	0.0493782	0.0221296	0.0684654	-0.0620950	-0.1414947	0.4752505	0.0121157	-0.0693472	0.2656419	0.5867715	-0.0086282	0.0548407	-0.1163379	0.2386297	0.0473554	-0.2220534	-0.0336573	0.0221939	0.0435348	
eff_turbina2	-0.0815582	-0.1805842	-0.0663148	-0.0776691	-0.2576686	-0.0683423	-0.1297158	-0.3193155	-0.10293163	-0.0424971	-0.0643397	-0.227671	-0.1343207	-0.3043485	-0.1909681	-0.2073974	-0.1503717	-0.1944962	0.050216	-0.097922	0.1420779	0.0144996	-0.4188494	-0.0221498	-0.3238874	-0.1344215	-0.1791539	-0.0309845	-0.03216379	0.00167461	
mc_turbina2	-0.0519583	-0.1545448	0.11732449	-0.0939637	-0.0247625	-0.168255	-0.1079816	-0.1042307	-0.064062	0.0236704	-0.2170802	-0.0087777	0.0074513	-0.1294452	-0.10274215	-0.0649291	-0.1601844	0.0225163	-0.0400118	-0.0394695	-0.0199928	0.0945304	-0.0091359	0.08449115	-0.08455157	-0.0513797	-0.02211947	-0.2020066	-0.1697938	0.0452503	

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30
Adieto pr_fanorc	-2.2391394	-2.1962228	-2.2903332	-2.3296262	-2.1874192	-2.1787939	-2.4988639	-2.3762462	-2.4029567	-2.2770578	-2.2770578	-2.1204438	-2.2837397	-2.2946878	-2.1786722	-2.3275785	-2.4857997	-2.3732102	-2.2753408	-2.2353887	-2.3167265	-1.9338222	-2.2703897	-2.1024391	-2.4528543	-2.1699525	-2.3640462	-2.2148763	-2.4628249	-2.3214266
Adieto mc_compresor1	-1.22113915	-1.1310676	-1.4361978	-1.2067625	-0.9722275	-1.2447705	-1.3689773	-1.1951844	-1.3309332	-1.1531794	-1.3170365	-1.1692806	-1.2072636	-1.3466548	-1.3552833	-1.1007029	-1.2648638	-1.2425683	-1.455721	-1.1379572	-1.4002294	-1.1794959	-1.0833842	-1.1323104	-1.3318695	-1.1748459	-1.0825893	-1.3238619	-1.1041066	-1.0731672

Tabla 0.11: Caso 26: Degradación -5% relación de compresión fancore y -2% flujo corregido compresor 1



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30
pr_fanorc	-1.0786240	-1.0076839	-1.1034623	-1.1377844	-1.1054709	-1.1262656	-0.9597864	-0.7749789	-0.9135713	-1.1495929	-1.0621887	-1.2865953	-1.1043764	-0.9545403	-0.8717714	-0.96132168	-0.8468075	-1.0155445	-1.1332512	-1.1658009	-1.2157588	-0.9842388	-0.6803327	-1.2084513	-1.1888045	-1.0031943	-1.0060865	-1.0162536	-1.0119547	-1.0232423
eff_fanorc	-1.38893404	-1.5316528	-1.4492794	-1.4850315	-1.6781483	-1.3023894	-1.3055501	-1.4442437	-1.2202021	-1.3356972	-1.5325767	-1.4831273	-1.3951766	-1.438165	-1.3514504	-1.6791308	-1.3029329	-1.4388541	-1.4938541	-1.651006	-1.4038515	-1.4572338	-1.0384676	-1.4477256	-1.4739563	-1.4607642	-1.5383146	-1.4997872	-1.7028006	-1.5100465
mc_fanorc	-1.0551008	-1.0377884	-0.7396745	-1.0605782	-1.0281031	-0.9873683	-0.9539048	-1.0670295	-0.9825842	-0.8085123	-1.0200043	-1.0496258	-0.8888356	-1.0242872	-0.9547356	-1.1593874	-0.9688393	-0.9764069	-1.0959369	-0.9314940	-0.9378248	-0.8501908	-0.8733082	-1.0095908	-0.9618802	-1.0578069	-0.944483	-0.9577168	-1.0916034	-0.8619045
pr_fanodot	0.0231436	-0.0316678	-0.1356807	-0.1074485	0.0739274	0.0476408	0.1413385	0.0593380	-0.0446441	-0.0513795	-0.0944153	-0.0940164	0.0867401	-0.0148587	-0.0248071	-0.2634749	-0.1149485	0.0245912	-0.1259181	0.1790424	-0.0126957	0.0577257	-0.1618215	0.0244073	0.0312945	-0.1782466	0.0884538	0.0752739	-0.0638467	0.07161906
eff_fanodot	-0.0627651	-0.06518291	0.0624987	0.0789444	-0.0782936	0.0789444	0.1154333	-0.1247907	-0.0567067	0.0603304	-0.0292925	0.0113572	0.0848848	0.0280715	-0.0462242	-0.0211829	-0.1666804	0.0531518	-0.0631586	0.2295327	0.0229381	0.0212317	-0.1216374	-0.1256536	0.0748788	-0.0286216	0.03931807	-0.01839748	0.01496687	0.01544089
mc_fanodot	-0.02333282	0.01168809	-0.1291454	-0.1157663	0.2078286	-0.1291353	8.9476E-05	-0.0488458	0.1396915	0.0291655	-0.0907784	-0.0873804	0.2474804	-0.1613124	0.0027557	0.0390863	-0.0198029	-0.1072029	-0.0516545	0.0707776	-0.0742945	0.0794794	-0.0799693	-0.0534866	0.0459957	-0.0436145	-0.0199887	0.1676756	0.1575938	0.05628023
pr_compresor1	-1.18972106	-0.9927753	-1.1327804	-1.0161163	-1.2191273	-1.2448673	-1.1481988	-1.2086133	-1.2433487	-1.1154748	-1.2183603	-1.2986515	-1.2922376	-1.2179126	-1.2458649	-1.21768307	-1.2388409	-1.19973511	-1.1538405	-1.2404029	-1.1634938	-1.2637983	1.29774057	-1.1523585	-1.1679601	-1.2893128	-1.3527495	-1.35782541	-1.5607369	-1.13640375
eff_compresor1	1.1793155	0.3347693	1.0445298	0.8026563	0.7668592	0.9564282	1.001407	1.3365535	0.9487629	1.0389407	0.9610436	1.0426351	1.0748494	1.0748494	0.81919516	0.9871292	1.0682806	1.1700847	0.9791677	0.951253	0.8967683	0.912175	1.035201	0.9587702	0.9504403	0.9550278	1.03118407	0.9440629	0.9744493	1.0145462
mc_compresor1	-4.3011254	-4.2815518	-4.2810753	-4.1645873	-4.1778607	-4.2781762	-4.3877822	-4.2025835	-4.1278792	-4.3065359	-4.3615615	-4.280665	-4.3863245	-4.3171779	-4.4971422	-4.2775463	-4.4419387	-4.3788018	-4.3228284	-4.3807626	-4.4293984	-4.4986243	-4.2980023	-4.3200749	-4.3087562	-4.4584149	-4.4678849	-4.3405709	-4.4021091	4.4671853
pr_compresor2	0.6353887	0.3525753	0.4008388	0.4012584	0.56882807	0.48938637	0.47454587	0.4594386	0.5198811	0.3904180	0.4474882	0.6325844	0.4931854	0.5959979	0.5413184	0.2993927	0.5181794	0.3374276	0.3423769	0.34682304	0.5112376	0.40082751	0.44954751	0.3488005	0.2134018	0.4966235	0.577788	0.2438663	0.5207963	0.3754812
eff_compresor2	-2.146236	-1.0944454	-1.9388804	-2.0887407	-2.016631	-1.8893485	-1.9397773	-1.8510687	-1.8717657	-1.9665497	-1.8975718	-1.9131526	-1.8997804	-1.8873504	-2.0291275	-1.8086343	-1.9365702	-1.9672545	-1.8300774	-1.9334665	-1.7745435	-1.9634525	-1.9744847	-2.1591037	-2.1602387	-2.1608206	-1.8807525	-1.88885794	-1.6704596	-2.047971
mc_compresor2	-1.1536258	-1.2056404	-0.9644865	-1.1705818	-1.0684385	-1.2519394	-1.1451631	-1.14082804	-1.2095711	-1.0795408	-0.9805888	-1.1028681	-0.9956873	-1.1507446	-0.9006652	-1.19806517	-1.1860689	-1.1570048	-1.2671054	-1.1123443	-1.1473384	-1.0950288	-2.2012844	-1.0993931	-0.9803594	-1.0942853	-1.0821804	-1.1082015	-1.0191569	-1.0180293
pr_turbina1	0.0439373	0.0271554	0.2377405	0.832301	0.6774515	-0.1064938	1.1680016	0.0591249	0.0313866	0.1580835	0.0518001	-0.0671634	0.08517707	-0.0235944	-0.2323866	-0.0064253	0.06721618	-0.0439445	-0.0497947	-0.1327127	-0.06070784	-0.08853489	-0.1053185	-0.0767386	0.0507034	-0.0652932	-0.178081	0.1197078	-0.0808652	0.0229337
eff_turbina1	-0.2095952	-0.307844	-0.40404311	-0.0659727	-0.02126331	-0.1167878	0.1910376	-0.0663404	-0.1912445	-0.2026039	-0.0219843	-0.0876133	-0.1000163	-0.0578095	-0.0819379	-0.0670443	-0.0510505	-0.0950049	-0.1146272	0.1542486	0.02523561	-0.4238749	0.0392688	0.0915099	0.0688171	-0.0877904	-0.2015654	0.0223888	-0.0459881	0.27268402
mc_turbina1	0.1892051	0.0485542	-0.0179769	0.0764003	0.06622844	0.176388	0.0178836	0.01744635	0.0749205	0.0908064	0.0254973	-0.1280775	0.0677204	0.1236864	-0.0281239	-0.14645181	0.2352292	-0.0139533	-0.04849159	0.03418543	0.1442929	0.0164777	0.0656821	0.0103304	-0.0413989	0.0766783	0.08493284	0.1777846	0.076479	0.04346013
pr_turbina2	-0.1847285	-0.1538886	-0.27563483	-0.1827884	-0.4988237	-0.1118863	-0.1857044	-0.2960348	-0.28649218	-0.2531207	-0.4240772	-0.2717376	-0.1632547	-0.2751909	-0.0556792	-0.0936051	-0.1880766	-0.2987669	-0.3034835	-0.28561193	-0.1288545	-0.23861704	-0.1602303	-0.1267139	-0.34192846	-0.3076185	-0.00475569	-0.29388244	-0.1245917	0.17628067
mc_turbina2	-0.0636188	0.0230925	-0.24202109	-0.2389019	-0.08379114	-0.1516797	0.0565607	-0.0295286	-0.0388408	-0.1170954	-0.3273292	-0.01764581	-0.05138923	-0.0467546	-0.1719829	-0.0380189	-0.0362739	-0.2248526	-0.1660767	0.02654686	-0.1584065	-0.1208475	0.0027448	-0.14187193	-0.0994432	-0.01857528	-0.0972924	-0.1847056	0.07571974	

Abierto pr fanore	-1.0786240	-1.0076839	-1.1034623	-1.1377844	-1.1054709	-1.1262656	-0.9597864	-0.7749789	-0.9135713	-1.1495929	-1.0621887	-1.2865953	-1.1043764	-0.9545403	-0.8717714	-0.96132168	-0.8468075	-1.0155445	-1.1332512	-1.1658009	-1.2157588	-0.9842388	-0.6803327	-1.2084513	-1.1888045	-1.0031943	-1.0060865	-1.0162536	-1.0119547	-1.0232423
Abierto mc compresor1	-4.3011254	-4.2815518	-4.2810753	-4.1645873	-4.1778607	-4.2781762	-4.3877822	-4.2025835	-4.1278792	-4.3065359	-4.3615615	-4.280665	-4.3863245	-4.3171779	-4.4971422	-4.2775463	-4.4419387	-4.3788018	-4.3228284	-4.3807626	-4.4293984	-4.4986243	-4.2980023	-4.3200749	-4.3087562	-4.4584149	-4.4678849	-4.3405709	-4.4021091	4.4671853

Tabla 0.12: Caso 26: Degradación -4% relación de compresión fancore y -4% flujo corregido compresor 1

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanore	-1.0097332	-1.0246209	-1.0377885	-1.0515104	-1.0721462	-1.0955637	-1.1248348	-1.1649896	-1.2149454	-1.2831732	-1.3724318	-1.4871734	-1.6339249	-1.8190846	-2.0452929	-2.325367	-2.6645889	-3.0670051	-3.5459805	-4.1127548	-4.7807518	-5.5528038	-6.4319551	-7.5211732	-8.9341757	-1.0672732	-1.2749389	-1.5203251	-1.8041406	-2.1255904	-2.4961003
eff_fanore	-1.3952189	-1.4102501	-1.3947854	-1.4071768	-1.4114387	-1.4023383	-1.4075689	-1.4093585	-1.4177051	-1.4601267	-1.465209	-1.3687404	-1.4052833	-1.4144953	-1.4652974	-1.4654581	-1.4112526	-1.3944676	-1.4670137	-1.3924538	-1.3994016	-1.3977941	-1.4024705	-1.4007625	-1.4197838	-1.4044556	-1.3983779	-1.4065083	-1.3921654	-1.4006056	-1.4006056
mc_fanore	-0.9912285	-0.95162705	-0.95057129	-0.9504051	-0.9531182	-0.9480833	-0.95119674	-0.9519674	-0.952487	-0.9499773	-0.9514383	-0.9512777	-0.9559863	-0.9556691	-0.9574267	-0.94827479	-0.9553015	-0.9554637	-0.9560326	-0.9498028	-0.9486446	-0.9507045	-0.9504916	-0.9497166	-0.9494324	-0.94796291	-0.9557305	-0.9497314	-0.9517382	-0.9517382	
pr_fanduct	-0.0075759	-0.0048205	-0.0040765	0.0059554	0.0029319	0.0091661	0.0072481	-0.0021289	-0.0038142	0.0029231	0.0045281	0.004189	-0.0037061	-0.0041653	-0.0046233	0.00770659	-0.0034966	-0.0058427	-0.0032325	-0.0021231	0.00469516	0.00578658	0.00400167	-0.0004911	0.0073176	0.0012028	0.0024136	-0.0012029	0.00562077	0.00562077	
eff_fanduct	-0.0016656	-0.0043755	-0.0036258	-0.0034795	0.0028272	0.0070968	0.0013675	0.0073213	-0.0023994	-0.0047458	-0.0051514	-0.0048397	0.0023999	0.0038301	0.0053983	-0.0008944	0.00107546	-0.0047871	-0.0010821	0.0011633	-0.0032805	-0.0029451	-0.000464	-0.0046346	0.005191	0.0022924	0.00545016	0.0041722	0.00203786	0.00203786	
mc_fanduct	0.0016615	0.00175287	0.00047394	-0.0023279	-0.0006764	9.0161E-05	-0.00191655	0.0096077	0.0068825	-0.0019784	-0.0029411	-0.0020494	0.0013522	0.00253103	0.0003987	0.001635	0.0008096	0.0024656	-0.0015603	0.0005086	0.0042889	-0.0020253	-0.0015646	0.00071881	-0.00094601	0.00156287	0.0042151	8.644E-05	-0.003882	-0.003882	
pr_compresor1	0.910974	0.93077445	0.8995594	0.9033882	0.9039564	0.9033907	0.9046538	0.8970264	0.8993879	0.9033906	0.9071586	0.9016381	0.899661	0.8997331	0.8973623	0.9057806	0.89867132	0.9027332	0.8973463	0.9019301	0.9054035	0.9023083	0.9080384	0.9050637	0.8990022	0.9068463	0.9048026	0.8996879	0.9047035	0.90598925	0.90598925
eff_compresor1	-0.6929235	-0.6852972	-0.6853765	-0.6738569	-0.6773658	-0.6565061	-0.6588343	-0.6697316	-0.6512687	-0.6546395	-0.6728548	-0.6812497	-0.6753568	-0.6681013	-0.6703373	-0.6657661	-0.6689367	-0.6918673	-0.6616472	-0.6619514	-0.67284798	-0.6782443	-0.66550219	-0.66366395	-0.6588838	-0.6616157	-0.6611638	-0.6735585	-0.6701384	-0.66707644	-0.66707644
mc_compresor1	3.6984068	3.70194971	3.7028811	3.6987237	3.7018732	3.7027153	3.6985106	3.7026636	3.7058693	3.7036633	3.7027246	3.6988671	3.7018109	3.7061519	3.7053302	3.7044409	3.7021067	3.6993975	3.7081071	3.6944553	3.6989167	3.7049486	3.7047285	3.7045357	3.7061545	3.7049588	3.7030313	3.7029201	3.7001907	3.6979355	3.6979355
pr_compresor2	0.0049432	0.0051791	0.0073839	-0.0056522	-0.00010837	-0.0024756	-0.0078059	0.0090043	0.0047712	-0.0083685	-0.0096084	-0.0046392	0.0081129	0.0084524	0.0094807	-0.0086458	0.0065625	0.0038219	0.0008389	4.8295E-05	-0.0017816	-0.0085308	-0.0008949	-0.00679703	0.0011025	-0.00097476	-0.0027382	0.0021916	0.0006923	0.0008022	0.0008022
eff_compresor2	0.0045978	0.006351	-0.0048711	-0.0016804	0.0051544	0.0017053	-0.0040247	0.0047801	0.0049403	0.0042437	0.0020299	0.0024406	0.0047007	0.0054847	0.0024783	-0.0022455	0.0034936	0.0056148	0.0053409	0.0017976	0.00074423	-0.0166384	-0.0058423	-0.0028528	0.00151406	-0.00088646	0.0006516	0.0004579	-0.0008946	0.00049335	0.00049335
mc_compresor2	0.0020546	-0.0013645	-0.0017022	0.0074106	0.0004278	-0.00219163	-0.0002935	0.0085722	-0.0046795	0.00431051	-0.00195491	0.0041676	-0.0021945	-0.0004367	-0.00083843	0.00196209	0.0014821	-0.0013945	-0.00131603	-0.00162845	0.0006602	0.0013977	-0.0005944	-0.0005537	-0.0005537	-0.00023457	-0.0006557	-0.00219457	-0.0004682	-0.0004682	-0.0004682
pr_turbina1	-0.0029289	-0.0053556	0.00423957	-0.0137318	-0.01397642	0.00475609	0.0071803	-0.0044282	0.01413895	0.01418936	-0.0033265	-0.0148936	-0.0133265	-0.0148936	-0.0133265	0.00716609	-0.0037365	-0.0134293	-0.0147298	0.0145356	0.0137642	0.0142727	0.0142155	0.0134957	0.0137641	0.0147676	-0.0147079	0.01434826	0.0142007	0.0142007	0.0142007
eff_turbina1	0.0044889	-0.0032168	0.0034663	-0.0041643	0.00338812	0.00059163	0.0009689	-0.007879	0.0083882	-0.0035891	-0.0021943	-0.0055965	-0.0021943	-0.0055965	-0.0021943	0.00155719	-0.0005436	-0.0015886	-0.0027744	-0.0019388	0.0008542	-0.0011164	0.0039844	0.0021671	0.00007811	-0.0001962	-0.0017634	0.0008829	0.0021359	0.0006326	0.0006326
mc_turbina1	0.0004827	-0.0052162	0.0020786	0.0020939	7.91E-05	0.0011063	0.0023272	-0.0017375	0.0039265	-0.00116745	0.0025988	-0.0028192	-0.0025988	-0.0028192	-0.0025988	0.0017723	-0.0003674	0.0005104	-0.0024795	-0.0026807	0.0008764	0.00253116	0.0034044	0.00229107	0.00096624	0.0005998	0.0003347	-0.00033813	0.00073109	0.00217695	0.00217695
pr_turbina2	-0.0018316	-0.0039286	0.0078498	-0.0094804	-0.0075203	0.0093868	0.0051525	-0.0088328	-0.0109214	0.0087480	0.0038762	0.0095645	-0.0091669	-0.0094702	-0.0095684	0.0050348	-0.0085866	-0.0094984	-0.0095702	0.0092859	0.0087044	0.00918862	0.0093434	0.0086832	0.00827204	0.00974127	-0.008419	0.0085037	0.00949819	0.00949819	
eff_turbina2	-0.00118702	-0.0011451	0.00257807	-0.00136317	-0.0039966	0.0023574	-0.0010704	-0.005606	0.0052795	0.00416231	0.00311323	0.0021697	-0.0027258	-0.00217611	-0.00292049	0.00026109	-0.0007565	0.00204318	-0.0016597	0.0008355	0.0007471	0.00098076	-0.0000289	-0.00059108	0.00178345	-0.0009495	-0.000437493	0.0006349	0.0006349	0.0006349	
mc_turbina2	-0.0036163	-0.0050738	0.0040129	0.0024577	-0.00421563	0.0035886	0.0033347	-0.003749	-0.00163387	0.0045339	0.0015123	0.0027326	-0.0028637	-0.0028637	-0.0031775	0.0023694	-0.00226795	-0.00183429	-0.0017659	-0.00043578	0.0003161	0.00049753	0.00047753	0.00027095	-0.0014928	0.0039911	-0.00167601	-0.003353	0.0026624	0.0026624	

Aireto pr fanore	-1.0097332	-1.0246209	-1.0377885	-1.0515104	-1.0721462	-1.0955637	-1.1248348	-1.1649896	-1.2149454	-1.2831732	-1.3724318	-1.4871734	-1.6339249	-1.8190846	-2.0452929	-2.325367	-2.6645889	-3.0670051	-3.5459805	-4.1127548	-4.7807518	-5.5528038	-6.4319551	-7.5211732	-8.9341757	-1.0672732	-1.2749389	-1.5203251	-1.8041406	-2.1255904	-2.4961003
Aireto mc compresor 1	3.6984068	3.70194971	3.7028811	3.6987237	3.7018732	3.7027153	3.6985106	3.7026636	3.7058693	3.7036633	3.7027246	3.6988671	3.7018109	3.7061519	3.7053302	3.7044409	3.7021067	3.6993975	3.7081071	3.6944553	3.6989167	3.7049486	3.7047285	3.7045357	3.7061545	3.7049588	3.7030313	3.7029201	3.7001907	3.6979355	3.6979355

Tabla 0.13: Caso 26: Degradación -4% relación de compresión fancore y 4% flujo corregido compresor 1

## 11.5 Anexo E

Se muestran en este anexo los casos con tres fallos simultáneos analizados mediante el método del Gas Path Analysis en el apartado 8.3.1.

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	-0.54863	-3.20693	-3.47873	-2.81476	-1.71233	-2.16499	-2.43008	-5.2018	-1.52454	0.128252	-0.7741	-2.00988	-1.43809	-1.80206	-3.76779	-3.37028	-3.48109	-0.00984	-1.50226	-4.22371	-0.0436	-3.01367	-3.0341	-0.83015	-3.92559
eff_fancore	-5.0494	-4.76035	-4.51947	-4.4419	-5.01353	-5.09243	-4.5207	-4.34215	-5.04564	-5.03881	-5.08634	-5.14358	-5.08184	-5.12297	-4.4144	-5.00884	-4.74476	-5.09011	-5.05876	-4.06165	-5.10123	-4.85582	-4.35453	-4.96526	-4.07879
mc_fancore	-0.22358	-0.16961	-0.19549	-0.22601	-0.17887	-0.13748	-0.22871	-0.15905	-0.18414	-0.24609	-0.20935	-0.13695	-0.18404	-0.15038	-0.20148	-0.09643	-0.1612	-0.2381	-0.18431	-0.22394	-0.23377	-0.1561	-0.2287	-0.22411	-0.23365
pr_fanduct	-0.19313	0.590005	0.789828	0.654865	0.125916	0.105508	0.583055	1.233605	-0.01184	-0.3889	-0.18929	-0.10683	-0.13244	-0.10849	0.858775	0.349851	0.610156	-0.3784	-0.04382	1.1576	-0.40222	0.395508	0.73052	-0.13136	1.058489
eff_fanduct	-5.79508	-7.03682	-7.72546	-7.79851	-6.01928	-5.73273	-7.54191	-8.45452	-5.8978	-5.65884	-5.69178	-5.47017	-5.75638	-5.51318	-8.05393	-6.07372	-7.09676	-5.5808	-5.86243	-8.91085	-5.51799	-6.62811	-8.03954	-6.03859	-8.85867
mc_fanduct	0.181995	0.090638	0.093271	0.145783	0.103735	0.072889	0.137323	0.036801	0.136004	0.227293	0.169781	0.110035	0.159976	0.117103	0.110227	0.041404	0.079609	0.143085	0.109585	0.212099	0.093587	0.149771	0.194874	0.135803	
pr_compresor1	0.474701	1.915223	2.513443	3.15277	1.063972	0.473719	2.846388	2.918033	0.874661	0.502535	0.28312	-0.31754	0.614484	-0.25679	2.878426	1.255379	2.097474	-0.21749	0.824779	3.782537	-0.42138	1.697721	3.429142	1.236977	4.066562
eff_compresor1	0.460467	0.844094	-0.02986	2.193617	0.286369	0.240161	1.859746	0.227235	0.36084	0.503936	0.362413	0.024912	0.400964	0.032525	0.575562	-0.04055	-0.27613	0.093371	0.390968	1.710658	-0.06002	-0.20143	2.661999	1.105568	2.959267
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	-0.19319	-0.48572	6.964973	5.180487	-0.27364	-0.12237	4.500626	-0.89378	-0.2261	-1.21994	-0.09963	0.060532	-0.16212	0.045122	7.421837	-0.34904	7.187561	0.008358	-0.2084	7.651453	0.083246	5.599347	5.441121	0.415733	6.781996
eff_compresor2	0.016811	-0.07415	-4.52969	-4.01431	0.920952	0.417826	-3.32351	-2.10284	0.749621	0.420325	0.028786	-0.26089	0.537213	-0.244	-5.01189	1.156564	-4.94359	-0.36625	0.70123	-6.02462	-0.4176	-3.5002	-4.37979	-0.36071	-5.53409
mc_compresor2	-0.00692	-0.05135	2.593049	1.488371	-0.03389	-0.00874	1.316842	-0.08929	-0.02557	-0.22988	0.000257	0.01966	-0.01447	0.016062	2.166857	-0.04262	6.236931	0.009678	-0.022	2.176532	0.016509	4.706204	1.551581	0.228423	1.920555
pr_turbina1	-0.00473	12.0911	-0.01922	-0.02125	-0.00334	-0.00159	-0.01774	20.23965	-0.00712	-0.01065	-0.00513	-0.00412	0.000599	-0.0244	0.01619	-0.00072	-0.0107	-0.0084	-0.00417	-0.07657	-0.00786	-0.00574	-0.01911	-0.00757	-0.11436
eff_turbina1	0.042488	-2.96451	0.059667	0.083689	0.027417	0.024029	0.069533	-5.15623	0.03391	0.041076	0.043122	0.036347	0.033175	0.035015	0.083179	0.010046	0.044548	0.048418	0.094323	0.159263	0.051513	0.03017	0.088935	0.041617	0.212616
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	-3.06531	-5.72431	-8.27148	-8.3073	-3.89898	-1.06412	-7.72719	-8.11515	-3.95868	-4.67574	-2.36745	0.573056	-3.6855	0.079987	-8.98476	-3.40051	-7.0189	-2.16649	-3.93369	-10.3127	-1.80667	-6.00951	-8.75772	-5.18118	-10.0994
eff_turbina2	-0.58027	-1.08049	-1.2999	-1.3135	-1.02821	0.03759	-1.25747	-1.2807	-1.02588	-1.22247	-0.29342	0.860526	-0.91383	0.6765	-1.3647	-0.95537	-1.18388	-0.13439	-1.01645	-1.47742	0.020021	-1.09422	-1.35112	-1.18052	-1.46599
mc_turbina2	-1.29921	-3.00643	-4.18065	-4.20095	-1.99394	-0.11736	-3.93141	-4.10644	-2.00848	-2.50636	-0.84936	1.067355	-1.80442	0.75603	-4.51253	-1.7895	-3.58435	-0.64868	-1.98952	-5.12395	-0.40242	-3.1274	-4.40684	-2.76071	-5.02592

Acierto pr fancore	-0.54863	-3.20693	-3.47873	-2.81476	-1.71233	-2.16499	-2.43008	-5.2018	-1.52454	0.128252	-0.7741	-2.00988	-1.43809	-1.80206	-3.76779	-3.37028	-3.48109	-0.00984	-1.50226	-4.22371	-0.0436	-3.01367	-3.0341	-0.83015	-3.92559
Acierto eff fancore	-5.0494	-4.76035	-4.51947	-4.4419	-5.01353	-5.09243	-4.5207	-4.34215	-5.04564	-5.03881	-5.08634	-5.14358	-5.08184	-5.12297	-4.4144	-5.00884	-4.74476	-5.09011	-5.05876	-4.06165	-5.10123	-4.85582	-4.35453	-4.96526	-4.07879
Acierto eff fanduct	-5.79508	-7.03682	-7.72546	-7.79851	-6.01928	-5.73273	-7.54191	-8.45452	-5.8978	-5.65884	-5.69178	-5.47017	-5.75638	-5.51318	-8.05393	-6.07372	-7.09676	-5.5808	-5.86243	-8.91085	-5.51799	-6.62811	-8.03954	-6.03859	-8.85867

Tabla 0.1: Caso A: Degradación -2% relación de compresión fancore, -5% eficiencia fancore y -5% eficiencia fanduct (I)

	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	-3.19934	-1.25121	-4.63689	-3.37352	-1.91038	-2.26326	-0.41577	-1.98506	-4.02984	-2.08672	-2.38107	-1.7327	-2.13081	-3.47904	-1.10405	-2.68876	-2.73229	-2.7903	-3.5429	-1.88494	-0.97495	-2.48626	-2.08925	-2.61869	-3.60771
	-5.0412	-4.82813	-4.46534	-4.78983	-5.10396	-5.0724	-5.01287	-5.16966	-4.73751	-5.05543	-5.06399	-5.14008	-5.06318	-4.74461	-5.08419	-4.8726	-4.55029	-5.07186	-4.95583	-5.12952	-5.13302	-5.02848	-5.04383	-4.63092	-4.99823
	-0.08635	-0.22842	-0.16556	-0.15683	-0.14845	-0.14475	-0.23181	-0.12997	-0.14153	-0.15672	-0.13568	-0.15171	-0.15227	-0.16156	-0.19707	-0.16773	-0.21554	-0.10395	-0.03491	-0.14366	-0.19178	-0.14075	-0.15801	-0.2102	-0.08287
	0.267959	0.061043	1.023695	0.567136	0.005464	0.075417	-0.21555	-0.30716	0.729694	0.078771	0.105019	-0.09557	0.049037	0.604841	-0.25017	0.291334	0.611801	0.154272	0.380274	-0.05826	-0.32708	0.155244	0.094473	0.537769	0.38563
	-5.83839	-6.50433	-8.10295	-6.94192	-5.64624	-5.85024	-5.84908	-5.18093	-7.17759	-5.90791	-5.82635	-5.4991	-5.85173	-7.1085	-5.6855	-6.54604	-7.51683	-5.7325	-5.7326	-5.51411	-5.44104	-5.9887	-5.93447	-7.30329	-6.07306
	0.036819	0.187206	0.062989	0.075642	0.095276	0.100624	0.196168	0.139122	0.051096	0.108412	0.086776	0.109581	0.082915	0.192285	0.118228	0.126717	0.056825	-0.02342	0.100276	0.181449	0.093983	0.105882	0.125131	0.03308	
	0.5024	1.922262	2.785268	2.013567	0.149729	0.897759	0.659278	-1.81126	2.657546	1.020287	0.808499	-0.46674	0.89267	2.076873	0.529796	1.54971	2.698615	0.329832	-0.96742	-0.3221	-0.39315	1.29257	1.043989	2.472303	1.159732
	0.043782	1.750338	0.613132	-0.29815	0.150005	0.222553	0.583153	-0.72855	-0.21248	0.253562	0.177635	-0.0798	0.259764	-0.28032	0.518535	0.013368	1.280853	0.138837	0.184074	0.009352	-0.02209	0.069443	0.223137	1.060251	-0.07954
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.16827	2.204702	-0.82255	6.868291	-0.04854	-0.24047	-0.27347	0.314643	9.226483	-0.26637	-0.23331	0.095545	-0.23543	7.114416	-0.18008	4.807144	5.134826	-0.11766	0.057301	0.062406	0.04424	-0.38676	-0.28767	4.856966	-0.32979
	0.561824	-1.65457	-1.7721	-4.52414	0.103258	0.896661	-0.00572	-1.25701	-6.05958	0.976803	0.851882	-0.46132	0.873233	-4.92603	0.253597	-3.10191	-3.49379	0.408487	-0.31265	-0.28832	-0.27127	1.488974	1.039251	-3.19631	1.090615
	-0.0119	0.673974	-0.07997	5.819309	0.000875	-0.10266	-0.01051	0.063718	7.453298	-0.03079	-0.02531	0.023879	-0.02608	6.214386	-0.00741	4.205769	1.543659	-0.00582	0.052478	0.019606	0.015729	-0.04322	-0.03424	1.659511	-0.0393
	0.005036	-0.00783	17.41645	-0.00392	-0.0014	0.002829	-0.00905	0.000868	-0.00708	-0.00181	-0.00087	0.000411	-0.00426	-0.00868	-0.00459	-0.00426	-0.0179	0.001474	0.004484	0.001289	-0.0006	0.003578	-0.0062	-0.01509	0.010371
	0.013184	0.050512	-4.44879	0.036451	0.031666	0.020663	0.048683	0.045972	0.032912	0.022827	0.018953	0.035395	0.028217	0.043258	0.039432	0.033259	0.069473	0.018693	0.024904	0.035912	0.041717	0.012058	0.02428	0.062065	0.006166
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.85899	-6.08415	-7.6609	-6.60515	-6.60308	-3.31705	-3.86402	3.505143	-7.01981	-3.8776	-2.78055	0.910316	-3.50457	-7.05511	-3.74403	-6.04797	-7.77881	-0.58296	5.131253	0.691703	-1.25665	-5.16389	-4.02271	-7.38305	-3.12984
	0.091375	-1.12827	-1.24176	-1.14495	0.349943	-0.83371	-0.89458	2.192148	-1.166	-1.05131	-0.62632	1.04498	-0.90458	-1.18543	-0.90481	-1.10839	-1.26312	0.251723	2.422563	0.911973	0.191862	-1.49	-1.10658	-1.22908	-0.86787
	-0.07524	-3.1735	-3.89923	-3.39448	-5.85024	-5.64624	-1.63542	-1.84093	3.181968	-3.58207	-1.99802	-1.29123	1.337867	-1.7452	-3.60231	-1.80819	-3.14405	-3.95504	3.897448	1.153531	-0.08531	-2.97209	-2.10645	-3.77281	-1.63133

Tabla 0.3: Caso A: Degradación -2% relación de compresión fancore, -5% eficiencia fancore y -5% eficiencia fanduct (II)



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	3.587249	2.795014	-6.50611	-0.753618	-1.3071	3.984079	-0.19861	3.263872	4.407591	7.737128	1.966448	0.713	-1.9385	-1.11037	-3.45117	-0.51323	-3.12278	-0.32125	-6.61207	2.641553	8.431096	3.312961	-2.20843	19.08995	
eff_fancore	-1.7036	-1.63455	-1.72504	-1.73975	-1.93159	-1.17132	-2.00964	-1.52371	-0.99513	-1.55619	-1.48872	-1.96827	-2.23826	-1.23509	-2.18528	-2.13621	-1.79469	-2.05419	-2.00972	-1.63991	-1.59044	-0.07659	-1.86948	-2.11277	2.050963
mc_fancore	-0.26677	-0.25563	0.014365	-0.21958	-0.17407	-0.2694	-0.19894	-0.25987	-0.26643	-0.31107	-0.24032	-0.22181	-0.12606	-0.1985	-0.16554	-0.08568	-0.19678	-0.11082	-0.19827	0.050516	-0.25208	-0.26174	-0.25002	-0.13257	-0.17886
pr_fanduct	-0.14347	0.064188	0.431921	0.206927	0.282025	0.220541	0.029147	0.029793	0.247869	-0.76694	0.216251	0.031549	-0.2022	1.011922	-0.09616	0.14468	0.421526	0.349775	0.111754	0.394211	0.097558	0.324358	-0.04552	0.152415	-1.06811
eff_fanduct	-4.80877	-5.21892	-5.85447	-5.50444	-5.61241	-5.53426	-5.1334	-5.16147	-5.59371	-3.60972	-5.53979	-5.13518	-4.65457	-7.07239	-4.87962	-5.31468	-5.89773	-5.70968	-5.2785	-5.80651	-5.29565	-5.72169	-4.98539	-5.33716	-3.23171
mc_fanduct	0.144229	0.110655	-0.03053	0.09066	0.05543	0.116607	0.091391	0.132466	0.132745	0.273685	0.110566	0.085193	0.09056	-0.01166	0.068558	0.001831	0.038994	0.006833	0.065147	-0.08025	0.113792	0.161593	0.100212	0.028743	0.504203
pr_compressor1	-1.75326	-1.55857	0.740176	-1.70358	-0.96917	-0.33321	-1.53518	-2.02587	-2.4659	-2.95341	-2.08702	-1.4071	-0.7197	-1.42914	-1.08296	0.239252	-0.75872	0.153486	-1.11703	1.652186	-1.76587	-2.50723	-1.23726	-0.27785	-4.75673
eff_compressor1	-0.81372	-0.39134	-0.11675	-0.28775	-0.06351	-0.39455	-0.42633	-0.71335	-0.70971	-1.77248	-0.25038	-0.49219	-0.20105	0.286723	-0.46756	0.050648	0.073704	0.21907	-0.36077	-0.15846	-0.45233	-1.0835	-0.15372	-0.01829	-2.95235
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-2.47232	-2.01218	-0.09309	-1.12331	0.10614	-0.80398	0.357865	-1.53874	-0.24722	-2.08347	-0.77494	0.403539	0.307882	1.854744	0.313447	-0.0044	0.108961	-0.13092	0.214692	0.25348	-1.6514	0.704678	-2.96732	0.061696	1.334891
eff_compressor2	1.15922	0.746019	0.269567	-0.07526	-0.40702	-0.20566	-0.91547	0.379373	-0.71122	1.12699	-0.32381	-0.72877	-0.59669	-2.50371	-0.92141	0.054047	-0.59122	0.299329	-0.94574	0.151071	0.440223	-1.70929	1.545171	-0.19285	-3.21109
mc_compressor2	-0.58291	-0.4687	-0.03625	-0.25642	0.069686	-0.18131	0.113896	-0.35933	-0.05591	-0.48265	-0.17996	0.098646	0.079843	0.467003	0.090181	0.014424	0.054813	0.000344	0.07938	-0.08566	-0.3842	0.178547	-0.69683	0.03529	0.376676
pr_turbina1	-0.00287	-0.00555	0.003429	-0.00661	-0.00743	-0.01265	-0.00028	-0.00203	-0.01076	0.005537	-0.00919	-0.00372	0.004097	-0.01859	0.001942	0.000676	-0.00843	-0.001	-0.00335	-0.00199	-0.00275	-0.01687	-0.00454	-0.00312	1.140985
eff_turbina1	0.009495	0.019067	-0.00025	0.026328	0.027312	0.032804	0.030923	0.018618	0.039843	-0.01814	0.032008	0.028645	0.020066	0.060483	0.024463	0.010243	0.028862	0.009042	0.028395	-0.00454	0.017309	0.055913	0.011696	0.015703	-0.62385
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.880391
pr_turbina2	-0.69655	-1.39413	-1.10742	-2.15433	-1.6563	-2.01607	1.108622	-1.40829	-2.26291	1.218776	-2.22233	1.381087	3.395018	-4.56527	2.73314	0.744198	-1.94304	-1.68928	1.057824	0.251903	-1.59374	-2.70248	-0.90391	0.356781	-1.05555
eff_turbina2	-0.19488	-0.38704	-0.32741	-0.59849	-0.32422	-0.55964	0.926339	-0.39218	-0.63444	0.3306	-0.62038	1.064871	1.711446	-1.13764	1.551984	0.555949	-0.38296	-0.41846	0.921299	0.093455	-0.43963	-0.75431	-0.2498	0.482688	-0.30577
mc_turbina2	-0.35348	-0.70844	-0.59075	-1.09442	-0.68578	-1.02589	1.242764	-0.71712	-1.1541	0.616375	-1.12921	1.447581	2.629269	-2.30541	2.286812	0.783341	-0.81949	-0.80704	1.226238	0.150371	-0.81093	-1.37815	-0.45905	0.615229	-0.54243

Acuerdo pr_fancore	3.587249	2.795014	-6.50611	-0.753618	-1.3071	3.984079	-0.19861	3.263872	4.407591	7.737128	1.966448	0.713	-1.9385	-1.11037	-3.45117	-0.51323	-3.12278	-0.32125	-6.61207	2.641553	8.431096	3.312961	-2.20843	19.08995	
Acuerdo eff_fancore	-1.7036	-1.63455	-1.72504	-1.73975	-1.93159	-1.17132	-2.00964	-1.52371	-0.99513	-1.55619	-1.48872	-1.96827	-2.23826	-1.23509	-2.18528	-2.13621	-1.79469	-2.05419	-2.00972	-1.63991	-1.59044	-0.07659	-1.86948	-2.11277	2.050963
Acuerdo eff_fanduct	-4.80877	-5.21892	-5.85447	-5.50444	-5.61241	-5.53426	-5.1334	-5.16147	-5.59371	-3.60972	-5.53979	-5.13518	-4.65457	-7.07239	-4.87962	-5.31468	-5.89773	-5.70968	-5.2785	-5.80651	-5.29565	-5.72169	-4.98539	-5.33716	-3.23171

Tabla 0.2: Caso A: Degradación -5% relación de compresión fancore, -2% eficiencia fancore y -5% eficiencia fanduct

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-0.74197	1.99443	-2.15579	-4.81219	-3.66349	-5.08872	-0.3392	6.121344	-1.44824	-0.91795	0.034266	11.63806	-2.29799	-2.1912	-3.00899	0.22834	2.092316	-4.75356	0.278828	3.123585	2.733055	6.894023	-1.43147	-6.59132	5.676668
-2.15024	-1.31816	-1.79082	-2.01188	-1.98646	-1.93954	-1.67053	-0.40932	-1.93256	-2.14863	-1.86997	-0.48377	-2.01332	-1.87574	-2.14037	-1.63307	-1.3329	-1.97419	-1.26031	-0.85557	-0.7913	-0.47621	-2.18977	-1.70639	-0.74902
-0.17847	-0.24366	-0.15776	-0.05508	-0.09983	-0.03198	-0.20151	-0.26773	-0.17019	-0.17235	-0.20758	-0.28322	-0.14162	-0.15306	-0.10088	-0.21298	-0.24412	-0.04388	-0.21898	-0.25614	-0.25235	-0.2733	-0.15317	0.01224	-0.27315
-0.09234	0.400394	0.665966	0.47257	0.505216	0.288546	0.537145	0.518589	0.377111	0.019213	0.269302	-0.85343	0.280296	0.61938	0.053307	0.46807	0.363922	0.277378	0.726286	0.601937	0.686496	0.297411	-0.01971	0.501048	0.2948
-4.88815	-5.90619	-6.32343	-5.9192	-5.99925	-5.57127	-6.12086	-6.07456	-5.77139	-5.10118	-5.59652	-3.53792	-5.58272	-6.19649	-5.14283	-5.99985	-5.83485	-5.55669	-6.53444	-6.26068	-6.43003	-5.66199	-5.01614	-5.98258	-5.65912
0.08937	0.083271	-0.00078	-0.02023	-0.00575	-0.01126	0.028138	0.111407	0.027475	0.05805	0.053525	0.333898	0.044345	-0.0324	0.029134	0.043077	0.0928	-0.01489	0.034414	0.079583	0.067079	0.142771	0.052068	-0.03479	0.131398
-1.5027	-1.90021	0.052822	0.618057	0.29685	0.345078	-0.84312	-2.30614	-0.51682	-0.81014	-1.05258	-3.82319	-0.6661	0.167507	-0.28785	-1.08896	-1.9448	0.444176	-1.72053	-2.10601	-2.13356	-2.46161	-0.66008	0.846168	-2.34556
-0.57843	0.151258	0.579275	0.077011	0.350168	-0.03065	0.045551	-1.05059	0.052401	-0.30515	-0.20164	-1.30201	0.030505	0.568411	0.039431	-0.01957	0.090602	-0.03082	0.57471	0.086112	0.054502	-0.98863	-0.23506	-0.15289	-0.75802
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.347739	-0.40942	-0.27149	-0.26525	-0.27437	-0.08363	-0.2236	0.455259	-0.01729	0.228565	0.222711	0.150575	0.014356	-0.21189	0.121349	-0.56101	-0.40704	-0.09565	0.611365	0.355815	0.515829	0.235897	0.223339	-0.18899	-0.11611
-1.14809	-0.60772	0.193677	0.476771	0.730222	0.198562	-0.5652	-1.39182	-0.11248	-0.7774	-0.59553	-0.90938	-0.0755	0.528833	-0.21541	-0.44689	-0.61822	0.20938	-1.50809	-1.27507	-1.42744	-1.15855	-0.65139	0.370062	-0.81975
0.111905	-0.08913	0.004259	-0.03581	-0.01662	-0.005	-0.01419	0.111222	0.034293	0.071751	0.067724	0.091552	0.051174	-0.00476	0.048698	-0.10688	-0.09074	-0.00997	0.158106	0.082664	0.118514	0.067736	0.066036	-0.05048	-0.0185
0.005548	-0.01178	-0.00386	0.000674	-0.0048	0.00469	-0.01148	-0.01926	-0.00635	-0.00268	-0.00767	-0.00342	-0.00214	-0.00598	0.00047	-0.01037	-0.01397	-0.00216	-0.01265	-0.01784	-0.0174	-0.01952	-0.00139	0.003999	-0.01199
0.026186	0.037869	0.014928	0.001758	0.010092	0.001388	0.03249	0.057345	0.0202	0.02714	0.029718	0.001253	0.015968	0.012481	0.016542	0.030542	0.039798	0.006445	0.052731	0.055461	0.059989	0.05149	0.024009	-0.0039	0.039887
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.601989	-2.71949	-4.59265	-2.3049	-3.62245	-0.296	-2.88342	-2.99886	-1.76217	1.777763	-0.48439	0.181136	-1.74061	-3.89125	1.113184	-2.75558	-2.63329	-0.14848	-3.79691	-3.30868	-3.57725	-2.42	2.033973	-1.69696	-2.3131
1.536003	-0.75528	-1.64753	-0.74266	-1.28205	0.073323	-0.79917	-0.83492	-0.37063	1.168093	0.260421	0.044918	-0.40384	-1.35324	0.746959	-0.76049	-0.73474	0.141034	-1.05669	-0.92556	-0.99706	-0.67733	1.226552	-0.57495	-0.64622
2.235174	-1.38332	-2.73705	-1.29517	-2.1514	0.034152	-1.46493	-1.52629	-0.76741	1.656886	0.178277	0.090297	-0.79255	-2.27748	1.078741	-1.3961	-1.33818	0.138998	-1.93181	-1.6819	-1.82073	-1.23094	1.787331	-0.99416	-1.17738

-0.74197	1.99443	-2.15579	-4.81219	-3.66349	-5.08872	-0.3392	6.121344	-1.44824	-0.91795	0.034266	11.63806	-2.29799	-2.1912	-3.00899	0.22834	2.092316	-4.75356	0.278828	3.123585	2.733055	6.894023	-1.43147	-6.59132	5.676668
-2.15024	-1.31816	-1.79082	-2.01188	-1.98646	-1.93954	-1.67053	-0.40932	-1.93256	-2.14863	-1.86997	-0.48377	-2.01332	-1.87574	-2.14037	-1.63307	-1.3329	-1.97419	-1.26031	-0.85557	-0.7913	-0.47621	-2.18977	-1.70639	-0.74902
-4.88815	-5.90619	-6.32343	-5.9192	-5.99925	-5.57127	-6.12086	-6.07456	-5.77139	-5.10118	-5.59652	-3.53792	-5.58272	-6.19649	-5.14283	-5.99985	-5.83485	-5.55669	-6.53444	-6.26068	-6.43003	-5.66199	-5.01614	-5.98258	-5.65912

Tabla 0.4: Caso A: Degradación -5% relación de compresión fancore, -2% eficiencia fancore y -5% eficiencia fanduct (II)



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	-1.05402	-7.12276	-2.55596	-3.73775	-0.32322	-2.48334	0.865658	-4.12828	2.965484	-2.78365	-4.94861	-0.543	-5.57932	-5.1613	-2.64662	-4.12835	-5.65766	-3.94537	0.776221	-4.39408	-4.60178	-2.46841	-2.91592	-4.24735	-7.2986
eff_fancore	-5.2392	-4.69261	-5.02355	-5.23041	-5.40588	-4.93379	-5.2175	-5.17037	-3.66578	-5.31646	-5.06116	-5.44339	-4.96433	-5.05473	-5.33016	-5.15428	-5.06771	-5.21474	-5.33004	-5.12608	-5.13526	-5.34739	-5.31051	-5.15137	-4.71735
mc_fancore	-0.09947	0.04543	-0.09288	-0.05447	-0.10263	-0.09707	-0.11215	-0.06037	-0.09014	-0.07068	-0.00499	-0.0979	0.01394	-0.00404	-0.06915	-0.06366	-0.03933	-0.03766	-0.11141	-0.02326	-0.02217	-0.07412	-0.06946	-0.037	0.040189
pr_fanduct	0.412385	0.584456	1.011907	0.574269	0.022896	1.113121	0.180126	0.8804	1.478394	0.338773	0.147822	-0.12499	0.249038	0.188807	0.119465	0.951209	1.261859	0.164148	-0.02216	0.142992	0.307079	0.17634	0.394844	0.422169	0.782972
eff_fanduct	-2.75633	-3.23621	-3.95653	-3.06242	-1.98159	-4.15773	-2.28166	-3.69695	-4.66295	-2.63666	-2.28735	-1.67723	-2.52881	-2.361	-2.20277	-3.84606	-4.42755	-2.29845	-1.88225	-2.26532	-2.59701	-2.30386	-2.74325	-2.77521	-3.62233
mc_fanduct	0.016201	-0.05975	-0.06964	-0.0398	0.061805	-0.07711	0.068989	-0.06329	-0.0825	-0.00386	-0.01274	0.090612	-0.03587	-0.00388	0.016494	-0.07048	-0.11011	0.005942	0.094233	-0.00202	-0.02193	0.027738	-0.00927	-0.02288	-0.08629
pr_compresor1	-1.38892	0.845052	-0.96551	0.920852	-1.37923	-1.0921	-1.90004	0.599345	-0.51931	-0.13406	-0.4823	-1.7153	0.107258	-0.4572	-1.22383	0.357995	2.370725	-0.73238	-1.93047	-0.72917	0.263937	-1.05616	0.050489	0.37285	2.026874
eff_compresor1	0.185117	-0.10725	0.605211	0.813008	-0.44315	1.380493	-0.15425	0.806334	-0.9042	0.211235	-0.06503	-0.69996	0.109832	-0.06676	-0.54182	0.606491	2.226483	-0.25169	-0.61018	-0.31321	0.178265	-0.22275	0.385475	0.480941	-0.10924
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	0.774721	-0.22619	2.856041	-0.42843	-1.0482	3.190678	0.274131	3.457072	0.499442	-0.09232	0.174297	-1.41645	0.01764	0.10395	0.259596	3.593045	6.647024	0.168625	-0.47455	0.17142	-0.07841	0.249848	-0.17478	-0.20183	-0.58309
eff_compresor2	-1.27207	0.465117	-2.93056	0.33886	0.148094	-3.21951	-0.84134	-3.03717	-1.56283	-0.24241	-0.38065	0.366899	0.010385	-0.2558	-0.96784	-3.3605	-4.62411	-0.63258	-0.26111	-0.52474	0.151148	-0.59706	-0.2359	0.672826	1.069318
mc_compresor2	0.182548	-0.03353	0.701992	-0.04199	-0.26047	0.769956	0.052127	0.818119	0.090842	0.01308	0.063641	-0.35664	0.035942	0.049716	0.072258	0.869055	1.56484	0.061681	-0.12877	0.059653	-0.00203	0.064102	0.00621	-0.0164	-0.12141
pr_turbina1	-0.0046	0.004414	-0.01429	-0.00117	-0.00361	-0.016	-0.00827	-0.00674	4.391669	-0.00187	0.006345	0.007343	0.002935	0.008597	-0.00127	-0.01109	-0.00797	0.005417	-0.00572	0.004144	0.000969	-0.00026	-0.00079	0.004244	0.0027
eff_turbina1	0.017534	0.007556	0.037499	-0.00889	0.003746	0.050837	0.011746	0.026156	-0.06747	0.004266	0.02152	-0.0076	0.020047	0.014125	0.02883	0.033864	0.027994	0.015567	0.002056	0.017553	0.000545	0.013006	0.002336	-0.00397	-0.01201
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	-1.66962	2.301946	-3.6363	-3.82795	-0.05889	-4.01389	-0.8281	-3.27422	-4.24892	-1.46648	4.45957	0.369603	4.999557	2.474772	3.29531	-3.59497	-4.4298	2.535614	-0.05199	3.472373	0.303828	0.34124	-2.43758	-2.75413	-1.99812
eff_turbina2	-0.48912	1.098994	-1.05977	-1.62064	-0.02074	-1.14374	-0.24176	-0.96288	-1.17435	-0.51362	2.081792	0.100405	2.265768	1.235273	1.709432	-1.05085	-1.9081	1.324692	-0.02072	1.703187	0.27938	0.330892	-0.96718	-1.1489	-0.78563
mc_turbina2	-0.87737	1.703361	-1.90702	-2.53319	-0.03045	-2.10458	-0.43385	-1.71848	-2.22983	-0.85931	3.23982	0.191465	3.570549	1.876814	2.53159	-1.88603	-2.31228	1.965134	-0.02639	2.594331	0.367296	0.424303	-1.54456	-2.77521	-3.62233

Acuerto pr fancore	-1.05402	-7.12276	-2.55596	-3.73775	-0.32322	-2.48334	0.865658	-4.12828	2.965484	-2.78365	-4.94861	-0.543	-5.57932	-5.1613	-2.64662	-4.12835	-5.65766	-3.94537	0.776221	-4.39408	-4.60178	-2.46841	-2.91592	-4.24735	-7.2986
Acuerto eff fancore	-5.2392	-4.69261	-5.02355	-5.23041	-5.40588	-4.93379	-5.2175	-5.17037	-3.66578	-5.31646	-5.06116	-5.44339	-4.96433	-5.05473	-5.33016	-5.15428	-5.06771	-5.21474	-5.33004	-5.12608	-5.13526	-5.34739	-5.31051	-5.15137	-4.71735
Acuerto eff fanduct	-2.75633	-3.23621	-3.95653	-3.06242	-1.98159	-4.15773	-2.28166	-3.69695	-4.66295	-2.63666	-2.28735	-1.67723	-2.52881	-2.361	-2.20277	-3.84606	-4.42755	-2.29845	-1.88225	-2.26532	-2.59701	-2.30386	-2.74325	-2.77521	-3.62233

Tabla 0.5: Caso A: Degradación -5% relación de compresión fancore. -5% eficiencia fancore y -2% eficiencia fanduct (I)

	caso 25	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	-4.66988	-3.34605	-4.20516	-7.05886	-3.81003	-3.59682	-5.48401	-1.71014	-8.58375	-2.84728	-4.68141	3.505871	1.956844	-2.20704	-5.14275	-2.47452	-1.87655	-2.84129	-3.03317	-5.13311	-4.58509	-4.56443	-1.98382	0.577832	-4.55711
	-5.10046	-5.25733	-4.73507	-4.72432	-5.06578	-5.25071	-4.99415	-5.333	-4.40182	-5.31432	-5.12083	-4.47288	-4.73972	-5.35732	-5.04835	-5.34183	-5.32807	-5.10996	-5.29439	-5.03692	-5.11677	-5.13072	-5.01594	-5.50325	-5.12969
	-0.02198	-0.05478	-0.09167	0.042249	-0.07392	-0.04882	0.002497	-0.08901	0.074469	-0.07015	-0.0221	-0.08831	-0.10358	-0.07881	-0.00229	-0.07308	-0.0873	-0.08536	-0.0631	-0.00456	-0.01517	-0.0175	-0.09846	-0.10803	-0.02325
	0.364291	0.217554	1.582792	0.592096	1.18258	0.254302	0.352152	0.330864	0.897861	0.418162	0.3766	0.527554	0.5688	0.224144	0.215011	0.103204	0.373728	0.934818	0.338321	0.255669	0.159885	0.198673	0.942036	-0.41457	0.33612
	-2.70661	-2.39557	-5.09511	-3.23556	-4.29172	-2.45942	-2.70366	-2.60368	-3.90234	-2.78386	-2.72851	-2.96232	-3.04131	-2.41598	-2.43653	-2.16766	-2.69812	-3.80606	-2.63081	-2.50843	-2.32462	-2.39297	-3.81994	-1.09559	-2.66128
	-0.02907	0.00065	-0.13938	-0.09926	-0.10691	-0.00523	-0.03212	0.007692	-0.07168	-0.01905	-0.0299	0.07813	0.049095	0.008601	-0.01905	0.028136	0.002732	-0.06459	-0.02399	-0.02125	-0.0173	-0.01817	-0.0583	0.142133	-0.03087
	0.412759	-0.61882	-1.07804	0.967422	0.908307	-0.34693	0.402481	-0.8297	1.225758	0.235393	0.499368	-2.13431	-2.15446	-0.63753	-0.04662	-1.09963	-0.74616	-0.72681	0.163048	0.019696	-0.24144	-0.10518	-1.05418	-2.06248	0.398917
	0.204108	-0.21099	2.097924	-0.09382	0.887614	-0.0473	0.212125	-0.15355	-0.36791	0.392548	0.282592	-1.46655	-1.49876	-0.10902	0.157015	-0.25748	-0.10372	-0.0326	0.161221	0.124924	-0.04082	0.024811	0.901177	-1.59739	0.208226
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.16077	0.096223	5.645771	-0.28952	3.924431	0.04647	-0.12097	0.161844	-0.28262	-0.22069	-0.16641	0.865611	1.8725	0.123898	0.066221	0.242571	0.376568	2.752397	-0.0124	0.007835	0.133783	0.087269	2.511094	-2.38823	-0.11815
	0.389311	-0.53579	-5.17802	0.585478	-3.61818	-0.32252	0.28572	-0.78532	0.5663	-0.10046	0.429274	-1.68026	-2.22611	-0.40558	-0.15559	-0.47411	-0.96439	-2.84345	-0.27182	-0.0329	-0.37296	-0.27649	-2.65012	1.133339	0.257968
	-0.02149	0.040825	1.367243	-0.0491	0.954583	0.029918	-0.01041	0.048105	-0.05643	-0.00535	-0.02031	0.167343	0.399086	0.038873	0.034123	0.072266	0.101364	0.686944	0.003497	0.019825	0.044227	0.034044	0.611227	-0.59568	-0.01383
	0.001521	-0.00301	-0.02306	0.005951	-0.0151	-0.00337	0.003358	-0.00603	0.003776	-0.00141	0.001541	1.907358	-0.01711	-0.00383	0.001606	-0.00073	-0.01096	-0.00968	-0.0053	0.003042	0.002195	-0.00087	-0.01682	0.003777	0.000657
	0.000449	0.013467	0.067415	0.000366	0.034131	0.008897	0.003946	0.012695	0.008533	0.00428	0.00164	-0.85748	0.044043	0.013836	0.014892	0.016954	0.01823	0.033204	0.013242	0.01242	0.019866	0.019755	0.042105	-0.01219	0.005225
	0	0	0	0	0	0	0	0	0	0	0	1.50473	0	0	0	0	0	0	0	0	0	0	0	0	0
	-0.69354	1.523719	-5.46118	0.834192	-4.01216	0.926748	0.508623	-1.22086	2.779371	-1.96501	-0.92494	-2.16967	-2.42003	0.552586	3.035929	1.6757	-1.40279	-3.35563	0.77501	1.986918	4.116205	3.10143	-3.39957	1.684085	0.121746
	-0.17739	0.878817	-1.07719	0.457837	-1.14141	0.592269	0.3447	-0.36004	1.307592	-0.74462	-0.28569	-0.63816	-0.71062	0.428727	1.464568	0.928889	-0.40581	-0.9787	0.542306	1.007757	1.955687	1.516592	-0.98872	0.48575	0.194116
	-0.33826	1.264528	-2.80715	0.682738	-2.09953	0.836123	0.489781	-0.64285	2.041451	-1.21266	-0.50355	-1.14167	-1.27657	0.570658	2.250994	1.345909	-0.73608	-1.76184	0.741127	1.525964	3.015217	2.316465	-1.78254	0.881343	0.234943

-4.66988	-3.34605	-4.20516	-7.05886	-3.81003	-3.59682	-5.48401	-1.71014	-8.58375	-2.84728	-4.68141	3.505871	1.956844	-2.20704	-5.14275	-2.47452	-1.87655	-2.84129	-3.03317	-5.13311	-4.58509	-4.56443	-1.98382	0.577832	-4.55711
-5.10046	-5.25733	-4.73507	-4.72432	-5.06578	-5.25071	-4.99415	-5.333	-4.40182	-5.31432	-5.12083	-4.47288	-4.73972	-5.35732	-5.04835	-5.34183	-5.32807	-5.10996	-5.29439	-5.03692	-5.11677	-5.13072	-5.01594	-5.50325	-5.12969
-0.02198	-0.05478	-0.09167	0.042249	-0.07392	-0.04882	0.002497	-0.08901	0.074469	-0.07015	-0.0221	-0.08831	-0.10358	-0.07881	-0.00229	-0.07308	-0.0873	-0.08536	-0.0631	-0.00456	-0.01517	-0.0175	-0.09846	-0.10803	-0.02325
0.364291	0.217554	1.582792	0.592096	1.18258	0.254302	0.352152	0.330864	0.897861	0.418162	0.3766	0.527554	0.5688	0.224144	0.215011	0.103204	0.373728	0.934818	0.338321	0.255669	0.159885	0.198673	0.942036	-0.41457	0.33612
-2.70661	-2.39557	-5.09511	-3.23556	-4.29172	-2.45942	-2.70366	-2.60368	-3.90234	-2.78386	-2.72851	-2.96232	-3.04131	-2.41598	-2.43653	-2.16766	-2.69812	-3.80606	-2.63081	-2.50843	-2.32462	-2.39297	-3.81994	-1.09559	-2.66128
-0.02907	0.00065	-0.13938	-0.09926	-0.10691	-0.00523	-0.03212	0.007692	-0.07168	-0.01905	-0.0299	0.07813	0.049095	0.008601	-0.01905	0.028136	0.002732	-0.06459	-0.02399	-0.02125	-0.0173	-0.01817	-0.0583	0.142133	-0.03087
0.412759	-0.61882	-1.07804	0.967422	0.908307	-0.34693	0.402481	-0.8297	1.225758	0.235393	0.499368	-2.13431	-2.15446	-0.63753	-0.04662	-1.09963	-0.74616	-0.72681	0.163048	0.019696	-0.24144	-0.10518	-1.05418	-2.06248	0.398917
0.204108	-0.21099	2.097924	-0.09382	0.887614	-0.0473	0.212125	-0.15355	-0.36791	0.392548	0.282592	-1.46655	-1.49876	-0.10902	0.157015	-0.25748	-0.10372	-0.0326	0.161221	0.124924	-0.04082	0.024811	0.901177	-1.59739	0.208226
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0.16077	0.096223	5.645771	-0.28952	3.924431	0.04647	-0.12097	0.161844	-0.28262	-0.22069	-0.16641	0.865611	1.8725	0.123898	0.066221	0.242571	0.376568	2.752397	-0.0124	0.007835	0.133783	0.087269	2.511094	-2.38823	-0.11815
0.389311	-0.53579	-5.17802	0.585478	-3.61818	-0.32252	0.28572	-0.78532	0.5663	-0.10046	0.429274	-1.68026	-2.22611	-0.40558	-0.15559	-0.47411	-0.96439	-2.84345	-0.27182	-0.0329	-0.37296	-0.27649	-2.65012	1.133339	0.257968
-0.02149	0.040825	1.367243	-0.0491	0.954583	0.029918	-0.01041	0.048105	-0.05643	-0.00535	-0.02031	0.167343	0.399086	0.038873	0.034123	0.072266	0.101364	0.686944	0.003497	0.019825	0.044227	0.034044	0.611227	-0.59568	-0.01383
0.001521	-0.00301	-0.02306	0.005951	-0.0151	-0.00337	0.003358	-0.00603	0.003776	-0.00141	0.001541	1.907358	-0.01711	-0.00383	0.001606	-0.00073	-0.01096	-0.00968	-0.0053	0.003042	0.002195	-0.00087	-0.01682	0.003777	0.000657
0.000449	0.013467	0.067415	0.000366	0.034131	0.008897	0.003946	0.012695	0.008533	0.00428	0.00164	-0.85748	0.044043	0.013836	0.014892	0.016954	0.01823	0.033204	0.013242	0.01242	0.019866	0.019755	0.042105	-0.01219	0.005225
0	0	0	0	0	0	0	0	0	0	0	0	1.50473	0	0	0	0	0	0	0	0	0	0	0	0
-0.69354	1.523719	-5.46118	0.834192	-4.01216	0.926748	0.508623	-1.22086	2.779371	-1.96501	-0.92494	-2.16967	-2.42003	0.552586	3.035929	1.6757	-1.40279	-3.35563	0.77501	1.986918	4.116205	3.10143	-3.39957	1.684085	0.121746
-0.17739	0.878817	-1.07719	0.457837	-1.14141	0.592269	0.3447	-0.36004	1.307592	-0.74462	-0.28569	-0.63816	-0.71062	0.428727	1.464568	0.928889	-0.40581	-0.9787	0.542306	1.007757	1.955687	1.516592	-0.98872	0.48575	0.194116
-0.33826	1.264528	-2.80715	0.682738	-2.09953	0.836123	0.489781	-0.64285	2.041451	-1.21266	-0.50355	-1.14167	-1.27657	0.570658	2.250994	1.345909	-0.73608	-1.76184	0.741127	1.525964	3.015217	2.316465	-1.78254	0.881343	0.234943

Tabla 0.6: Caso A: Degradación -5% relación de compresión fancore, -5% eficiencia fancore y -2% eficiencia fanduct (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	-4.33126	-3.39353	-4.026	-2.40446	-2.22259	-1.51406	-1.76788	1.214187	-0.67931	0.055404	-1.60246	-5.21034	-3.10728	-2.95198	-3.93023	-2.43282	0.236008	-2.92755	-2.03378	-1.45291	1.066002	-0.22668	-3.405	-2.24239	-4.95072
eff_fancore	-3.95428	-4.071	-3.99652	-4.18471	-4.20828	-3.73452	-4.21375	-4.26713	-4.1422	-4.27476	-4.00755	-3.82118	-4.13441	-4.15779	-4.02042	-4.20337	-3.96831	-4.14603	-4.17714	-4.2236	-4.38132	-4.01976	-4.10159	-4.21216	-3.82769
mc_fancore	-0.0143	-0.04163	-0.03332	-0.08723	-0.10077	-0.17128	-0.11922	-0.18735	-0.15891	-0.163	-0.1467	0.008242	-0.06831	-0.07836	-0.03812	-0.08815	-0.18907	-0.07311	-0.11388	-0.12823	-0.17738	-0.17636	-0.06125	-0.09927	0.011924
pr_fanduct	0.290664	0.091331	0.262116	-0.12687	-0.03109	0.642369	-0.14053	-0.53361	-0.02548	-0.37843	0.426518	0.458728	0.130792	0.177841	0.247631	-0.13806	0.043041	0.125192	0.029529	-0.06312	-0.68636	0.062157	0.23195	-0.04925	0.335966
eff_fanduct	-4.51059	-4.1597	-4.50456	-3.86563	-4.06385	-5.56846	-3.92419	-3.2342	-4.1925	-3.48985	-4.95895	-4.81694	-4.30265	-4.39981	-4.48468	-3.85824	-4.42454	-4.288	-4.19897	-4.02588	-2.88795	-4.41447	-4.47599	-4.02573	-4.5854
mc_fanduct	-0.03999	-0.01539	-0.01538	0.059102	0.055988	0.024777	0.096357	0.182015	0.095096	0.143167	0.019512	-0.05142	0.016294	0.012598	-0.00735	0.068596	0.115336	0.012465	0.059833	0.067803	0.18544	0.098991	0.001104	0.057062	-0.04687
pr_compressor1	0.525457	0.014495	0.391525	-1.24869	-0.67808	-0.79907	-1.17233	-2.01717	-1.17372	-1.64475	1.248898	0.881561	0.007439	0.173895	0.34062	-1.3116	-1.61596	-0.01636	-0.46623	-0.92604	-1.92363	-1.45317	0.307471	-0.83425	0.367574
eff_compressor1	0.042593	0.07081	0.079004	-0.48334	-0.15253	-0.11812	-0.23414	-0.95906	-0.30852	-0.51378	1.263551	-0.03943	0.124626	0.19652	0.141754	-0.42858	0.134864	0.081142	0.080055	-0.23975	-0.88432	-0.24908	0.197876	-0.22332	-0.05459
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	-0.08792	0.091962	-0.12166	0.29059	0.108612	3.825104	0.129716	-1.30479	0.582188	-1.13676	-0.7323	-0.21886	-0.03781	-0.09928	-0.11702	0.282258	1.42083	-0.01082	-0.04601	0.14095	-2.74469	1.232564	-0.13907	0.140566	-0.03858
eff_compressor2	0.1936	-0.18888	0.282772	-0.89842	-0.38843	-3.60333	-0.29	0.307151	-0.93934	0.291694	0.235569	0.469245	0.088073	0.292885	0.296619	-0.86739	-1.75334	-0.00157	0.247902	-0.54795	1.400606	-1.62847	0.399464	-0.48213	0.125055
mc_compressor2	-0.00902	0.033851	-0.01769	0.087339	0.045669	0.940116	0.069666	-0.34471	0.136007	-0.30737	-0.05396	-0.04453	0.005671	-0.06653	0.0191065	0.324602	0.009057	0.020658	0.057213	-0.72034	0.285247	-0.01623	0.053268	0.003297	
pr_turbina1	0.003828	-0.00037	0.002418	0.003821	-0.005	-0.02043	-0.00194	-0.0022	-0.00541	-5.5E-05	0.000853	0.002907	-0.00046	-0.00104	0.004133	0.002503	-0.01019	-0.00027	0.002852	0.000635	0.001616	-0.0096	0.00506	0.000404	-0.00138
eff_turbina1	0.005524	0.015331	0.002478	0.018129	0.013591	0.046729	0.012986	0.001437	0.015836	0.003767	-0.01383	-0.00099	0.009291	0.003264	0.004809	0.021383	0.028071	0.009989	-0.0001	0.015923	-0.0064	0.026664	0.000693	0.011609	0.012108
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	1.559896	3.306835	-0.48297	3.070801	0.425562	-4.39496	-0.92866	-0.254983	-1.6934	-0.24551	-6.87454	-0.55986	-0.47729	-1.44883	-0.92778	2.483242	-2.41194	0.096225	-2.27352	0.530838	1.197463	-2.32197	-1.66421	0.843757	2.507712
eff_turbina2	0.802452	1.552129	-0.03119	1.559063	0.408056	-1.14549	-0.22733	0.066221	-0.47695	-0.07698	-2.61299	-0.09888	-0.0159	-0.48453	-0.22515	1.301268	-0.68379	0.237235	-0.83354	0.466196	0.330708	-0.65615	-0.53866	0.591638	1.196619
mc_turbina2	1.223132	2.42456	-0.13314	2.357523	0.536392	-2.23805	-0.43605	0.127679	-0.86514	-0.12681	-4.61423	-0.22066	-0.10733	-0.77044	-0.43243	1.948237	-1.23572	0.283816	-1.36397	0.614071	0.611836	-1.18882	-0.92807	0.823463	1.86217

Acierto pr_fancore	-4.33126	-3.39353	-4.026	-2.40446	-2.22259	-1.51406	-1.76788	1.214187	-0.67931	0.055404	-1.60246	-5.21034	-3.10728	-2.95198	-3.93023	-2.43282	0.236008	-2.92755	-2.03378	-1.45291	1.066002	-0.22668	-3.405	-2.24239	-4.95072
Acierto eff_fancore	-3.95428	-4.071	-3.99652	-4.18471	-4.20828	-3.73452	-4.21375	-4.26713	-4.1422	-4.27476	-4.00755	-3.82118	-4.13441	-4.15779	-4.02042	-4.20337	-3.96831	-4.14603	-4.17714	-4.2236	-4.38132	-4.01976	-4.10159	-4.21216	-3.82769
Acierto eff_fanduct	-4.51059	-4.1597	-4.50456	-3.86563	-4.06385	-5.56846	-3.92419	-3.2342	-4.1925	-3.48985	-4.95895	-4.81694	-4.30265	-4.39981	-4.48468	-3.85824	-4.42454	-4.288	-4.19897	-4.02588	-2.88795	-4.41447	-4.47599	-4.02573	-4.5854

Tabla 0.7: Caso A: Degradación -4% relación de compresión fancore, -4% eficiencia fancore y -4% eficiencia fanduct (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50	
-2.85233	-5.21159	-3.33929	-1.34701	-7.27778	-3.34817	-4.3206	-2.29233	-4.67537	-8.13784	-1.56162	-2.46504	-2.90157	-3.12267	-2.22917	-6.24479	-1.822	-5.84603	1.56386	-2.14105	-2.26819	-2.97349	-3.43905	1.182129	-0.19707	
-4.08015	-3.84239	-4.12762	-3.71513	-3.4229	-4.11036	-3.93446	-4.2149	-3.88566	-3.26066	-4.17592	-4.18012	-4.15069	-4.11477	-4.16143	-3.60559	-4.14965	-3.73573	-3.28012	-4.12604	-4.07025	-4.13568	-4.06508	-4.14556	-3.94214	
-0.10116	0.002791	-0.063	-0.17425	0.075846	-0.06546	-0.00546	-0.09402	0.003053	0.096443	-0.13195	-0.09258	-0.07378	-0.06875	-0.10827	0.05494	-0.12548	0.01782	-0.23367	-0.11908	-0.12128	-0.05581	-0.03507	-0.19529	-0.18333	
0.472972	0.506213	0.220706	0.725836	0.952965	0.228783	0.132017	-0.09371	0.320125	1.125717	0.049476	0.086568	0.160873	0.115713	0.071546	0.634558	0.048594	0.674412	0.448781	0.289637	0.408607	-0.01326	-0.09621	-0.33158	0.079473	
-4.92145	-4.90715	-4.45657	-5.68803	-5.64049	-4.48746	-4.23371	-3.94007	-4.55332	-5.96144	-4.2731	-4.24846	-4.33639	-4.29088	-4.27062	-5.09901	-4.2844	-5.1845	-5.42445	-4.63763	-4.85583	-3.98581	-3.84682	-3.67485	-4.52961	
-0.01147	-0.05066	0.002479	0.001668	-0.10188	0.007929	-0.0203	0.059871	-0.05338	-0.10076	0.066018	0.028477	0.00251	0.022451	0.054243	-0.08053	0.071246	-0.07307	0.101211	0.018221	0.0121	0.002972	0.017681	0.166422	0.117359	
1.238384	1.088935	0.40194	-0.11423	1.669009	0.341864	-0.18282	-1.04156	0.528764	1.908908	-0.29156	-0.23357	0.202498	-0.15556	0.781107	-0.21747	1.533501	-1.77266	0.489935	1.068904	-0.32788	1.068904	-0.32788	-0.85318	-1.94804	-1.76286
0.703704	-0.03016	0.226809	0.193114	-0.14332	0.213499	0.032445	-0.35151	-0.02494	-0.18692	0.227565	-0.00182	0.1446	0.057402	0.156552	-0.23133	0.29748	-0.10845	-0.09005	0.561687	1.082328	0.056782	-0.08316	-0.49829	0.337424	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
-0.6267	-0.3108	-0.1312	3.456952	-0.03327	-0.1751	0.119439	0.225001	-0.04522	0.037128	-0.04268	0.01201	-0.02828	-0.03203	-0.10259	0.041141	-0.10638	-0.45225	3.210864	-0.2741	-0.51286	0.201336	0.294903	-0.05934	1.909053	
2.331505	0.63167	0.352696	-3.29184	0.38194	0.529514	-0.15801	-0.72731	0.106911	0.423575	-0.02331	-0.08552	0.050514	0.113062	0.429446	0.138563	0.068906	0.848634	-3.18374	0.974521	1.224434	-0.47407	-0.56902	-0.61548	-2.16257	
-0.0925	-0.06687	-0.01609	0.871415	-0.07703	-0.02116	0.051041	0.072954	-0.0008	-0.09454	0.022383	0.017188	0.00336	0.010556	0.00639	-0.01668	0.012724	-0.10294	0.725453	-0.03818	-0.05806	0.056052	0.093901	-0.04242	0.438644	
0.001932	-0.0022	0.003506	-0.01783	-0.00011	-0.00044	0.002276	0.000365	0.00207	-0.0001	0.001169	-0.00211	-0.00152	0.002307	-0.00122	0.003986	-0.00325	0.004051	-0.0245	-0.00581	-0.00106	-8.9E-05	0.004646	-0.00219	-0.01275	
-0.04344	-0.0006	0.003186	0.041247	0.003216	-7.4E-05	0.018924	0.016293	0.014298	-0.00273	-1.8E-06	0.010706	0.011317	0.003823	0.003866	0.015191	-0.00196	-0.00828	0.070449	-0.00496	-0.01947	0.019846	0.022159	0.009648	0.03213	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
-8.43216	-1.9301	-1.42232	-4.29042	1.11375	-2.40873	3.919102	1.992507	2.973486	-0.0923	-2.56798	-0.19207	0.078698	-0.77697	-2.88227	3.333716	-3.39719	-2.92431	-4.31343	-4.36044	-6.66131	4.03596	5.018446	-0.83167	-2.83076	
-3.07876	-0.67463	-0.4298	-1.1325	0.551758	-0.863	1.792041	1.100139	1.386983	0.041555	-0.94251	0.129456	0.228268	-0.14179	-1.11038	1.507774	-1.32847	-1.11002	-1.14439	-1.76251	-2.65553	1.88241	2.272653	-0.23675	-0.79684	
-5.87311	-1.14009	-0.76005	-2.18629	0.854908	-1.43077	2.831004	1.619366	2.172742	0.033165	-1.54664	0.100665	0.270401	-0.3115	-1.78808	3.399984	-2.12593	-1.83654	-2.2048	-2.80131	-4.47956	2.94184	3.593898	-0.42538	-1.44791	

-2.85233	-5.21159	-3.33929	-1.34701	-7.27778	-3.34817	-4.3206	-2.29233	-4.67537	-8.13784	-1.56162	-2.46504	-2.90157	-3.12267	-2.22917	-6.24479	-1.822	-5.84603	1.56386	-2.14105	-2.26819	-2.97349	-3.43905	1.182129	-0.19707
-4.08015	-3.84239	-4.12762	-3.71513	-3.4229	-4.11036	-3.93446	-4.2149	-3.88566	-3.26066	-4.17592	-4.18012	-4.15069	-4.11477	-4.16143	-3.60559	-4.14965	-3.73573	-3.28012	-4.12604	-4.07025	-4.13568	-4.06508	-4.14556	-3.94214
-4.92145	-4.90715	-4.45657	-5.68803	-5.64049	-4.48746	-4.23371	-3.94007	-4.55332	-5.96144	-4.2731	-4.24846	-4.33639	-4.29088	-4.27062	-5.09901	-4.2844	-5.1845	-5.42445	-4.63763	-4.85583	-3.98581	-3.84682	-3.67485	-4.52961

Tabla 0.8: Caso A: Degradación -4% relación de compresión fancore, -4% eficiencia fancore y -4% eficiencia fanduct (II)



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	-0.26856	0.205972	0.013774	0.232376	-0.02241	-0.2872	-0.44228	0.106309	0.091523	-0.13724	-0.61389	0.2294	0.226031	-0.42318	-0.02202	-0.05541	-0.06202	0.159457	-0.48468	0.253144	-0.18567	-0.79915	-0.27329	-0.14245	0.013792
eff_fancore	-1.47354	-1.48219	-1.44591	-1.46473	-1.43506	-1.40335	-1.39953	-1.46099	-1.41423	-1.41752	-1.35415	-1.47662	-1.49761	-1.41031	-1.46721	-1.43637	-1.43245	-1.44708	-1.38443	-1.49251	-1.40922	-1.33449	-1.40911	-1.42924	-1.43998
mc_fancore	0.015406	-0.01301	-0.00122	-0.01463	0.000115	0.016546	0.025837	-0.00734	-0.00694	0.007315	0.035986	-0.01429	-0.01389	0.024675	0.000511	0.002647	0.002578	-0.01041	0.028166	-0.01637	0.01031	0.046837	0.015103	0.007373	-0.00139
pr_fanduct	-0.00528	-0.00416	-0.00208	-0.00374	-0.00562	-0.00191	-0.00178	-0.00515	-0.00676	-0.00363	-0.00209	-0.0035	-0.00269	-0.00495	-0.00412	-0.00344	-0.00552	-0.00468	-0.00307	-0.00674	-0.00344	-0.00356	-0.00532	-0.00533	-0.00319
eff_fanduct	-6.10532	-6.00291	-6.03879	-6.02553	-6.00837	-6.04491	-6.07885	-6.01254	-5.95807	-6.01833	-6.06863	-6.0039	-6.02629	-6.06941	-6.05908	-6.02546	-6.0099	-5.97419	-6.06205	-6.04143	-6.01187	-6.06895	-6.01912	-6.01843	-6.03396
mc_fanduct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor1	1.106649	1.431249	1.285781	1.407729	1.293781	1.111021	1.044515	1.362991	1.374446	1.258433	0.940673	1.446388	1.408156	1.072279	1.261788	1.289907	1.262429	1.472207	1.025973	1.420331	1.197525	0.832094	1.196778	1.239883	1.288253
eff_compressor1	-5.36736	-5.49784	-5.42566	-5.49584	-5.44312	-5.29764	-5.31833	-5.44449	-5.43714	-5.40025	-5.2515	-5.50732	-5.39184	-5.35221	-5.39525	-5.4356	-5.43444	-5.50667	-5.29501	-5.46576	-5.38885	-5.28222	-5.3491	-5.35465	-5.44889
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eff_compressor2	-0.47954	0.399	-0.16356	0.191604	-0.15764	-1.12628	-0.99358	0.07866	-0.16311	-0.37965	-1.53794	0.393703	-0.16085	-0.65079	-0.27472	-0.16358	-0.18416	0.434828	-1.05604	0.232799	-0.50255	-1.3611	-0.4915	-0.47667	-0.20175
mc_compressor2	0.027503	-0.02858	-0.01951	-0.03028	-0.02933	-0.01836	-0.01836	-0.02989	-0.06027	-0.03238	-0.00966	-0.02873	-0.02898	0.005673	-0.00475	-0.02705	-0.02262	-0.05079	-0.01075	-0.0178	-0.02786	0.004019	-0.02587	-0.02574	-0.02001
pr_turbina1	0.158938	0.540719	2.349684	1.537509	2.997274	6.257742	4.426439	2.098771	5.370553	4.17275	7.425698	0.590879	2.87513	2.540279	1.673779	2.866903	2.643761	2.14687	5.523051	0.425595	4.405919	5.837463	4.289358	4.119244	2.427901
eff_turbina1	-0.05045	-0.26684	-1.0279	-0.692	-1.31288	-2.68175	-1.89104	-0.93068	-2.35208	-1.81477	-3.17045	-0.29	-1.25744	-1.08092	-0.72421	-1.25427	-1.15602	-0.97274	-2.36422	-0.20667	-1.90858	-2.48543	-1.85794	-1.78188	-1.06214
mc_turbina1	0.213771	0.722389	3.158173	2.066304	4.028962	8.422164	5.953767	2.819496	7.222707	5.611657	9.990528	0.791782	3.8688	3.416584	2.252927	3.854853	3.55382	2.884012	7.430456	0.57113	5.925285	7.852347	5.767859	5.54101	3.263501
pr_turbina2	1.578135	-2.26043	-1.95405	-2.47959	-2.65037	-2.29288	-0.89781	-2.63079	-5.10525	-3.09402	-1.92753	-2.28473	-2.50539	-0.27957	-0.80508	-2.50052	-2.18031	-4.0938	-1.81894	-1.46513	-2.79295	-0.96826	-2.72647	-2.60217	-1.86804
eff_turbina2	0.963035	-1.38887	-1.19806	-1.51419	-1.62438	-1.40751	-0.55205	-1.61471	-3.12832	-1.85915	-1.18366	-1.40316	-1.53229	-0.1787	-0.49352	-1.53334	-1.34091	-2.51181	-1.11911	-0.89247	-1.71705	-0.60331	-1.67602	-1.59909	-1.14622
mc_turbina2	1.273018	-1.82745	-1.58046	-2.00376	-2.14172	-1.85262	-0.72634	-2.12906	-4.12391	-2.45007	-1.55755	-1.84533	-2.02079	-0.22765	-0.65045	-2.02112	-1.76236	-3.30733	-1.47173	-1.18389	-2.25837	-0.78587	-2.2021	-2.10208	-1.50966

Acierto eff fancore	-1.47354	-1.48219	-1.44591	-1.46473	-1.43506	-1.40335	-1.39953	-1.46099	-1.41423	-1.41752	-1.35415	-1.47662	-1.49761	-1.41031	-1.46721	-1.43637	-1.43245	-1.44708	-1.38443	-1.49251	-1.40922	-1.33449	-1.40911	-1.42924	-1.43998
Acierto eff fanduct	-6.10532	-6.00291	-6.03879	-6.02553	-6.00837	-6.04491	-6.07885	-6.01254	-5.95807	-6.01833	-6.06863	-6.0039	-6.02629	-6.06941	-6.05908	-6.02546	-6.0099	-5.97419	-6.06205	-6.04143	-6.01187	-6.06895	-6.01912	-6.01843	-6.03396
Acierto eff compresor 1	-5.36736	-5.49784	-5.42566	-5.49584	-5.44312	-5.29764	-5.31833	-5.44449	-5.43714	-5.40025	-5.2515	-5.50732	-5.39184	-5.35221	-5.39525	-5.4356	-5.43444	-5.50667	-5.29501	-5.46576	-5.38885	-5.28222	-5.3491	-5.35465	-5.44889

Tabla 0.9: Caso B: Degradación -2% eficiencia fancore, -5% eficiencia fanduct y -5% eficiencia compresor 1 (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
0.062822	0.311022	-0.01216	-0.12904	-0.46359	-0.11058	-0.43724	-0.17595	-0.35875	0.001906	-0.22002	0.210288	-0.35638	-0.32952	0.206957	0.03451	-0.3805	0.200757	0.273256	-0.09496	0.177899	0.070183	-0.17078	0.108003	-0.08933
-1.43317	-1.48565	-1.43412	-1.42085	-1.32123	-1.42057	-1.39031	-1.45369	-1.39451	-1.4254	-1.41487	-1.48698	-1.41784	-1.42462	-1.47621	-1.45627	-1.39802	-1.4657	-1.48712	-1.43656	-1.44072	-1.49006	-1.42968	-1.45876	-1.4371
-0.00507	-0.01955	-0.0002	0.006398	0.026705	0.005944	0.024943	0.010314	0.020591	-0.0012	0.012232	-0.01338	0.020374	0.019138	-0.01315	-0.00286	0.021866	-0.01292	-0.01742	0.004988	-0.01188	-0.00472	0.009793	-0.00714	0.004799
-0.00649	-0.00589	-0.00518	-0.00598	-0.00349	-0.00296	-0.005	-0.00049	-0.00362	-0.00551	-0.00426	-0.00485	-0.00375	-0.00194	-0.00425	-0.00425	-0.0036	-0.0053	-0.00627	-0.00315	-0.0063	-0.00288	-0.00162	-0.00374	-0.00272
-5.97677	-6.00563	-6.04592	-6.00122	-5.98627	-6.01998	-6.04989	-6.05077	-6.0599	-5.99438	-6.00693	-6.0361	-6.04302	-6.08644	-6.00831	-6.03117	-6.05273	-6.00615	-5.99297	-6.02446	-5.99256	-6.04596	-6.04331	-6.01096	-6.06225
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.406524	1.468113	1.238089	1.289252	1.096266	1.211107	1.069945	1.198847	1.047427	1.292223	1.212275	1.379972	1.130818	1.057504	1.429279	1.371433	1.101195	1.412165	1.488845	1.290417	1.407741	1.409903	1.202775	1.394713	1.201704
-5.50289	-5.49372	-5.42022	-5.4297	-5.31788	-5.37811	-5.31718	-5.33371	-5.33077	-5.43526	-5.46021	-5.44864	-5.315	-5.26042	-5.50295	-5.50683	-5.36354	-5.48442	-5.48738	-5.4318	-5.43414	-5.47259	-5.35955	-5.48472	-5.30389
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.319362	0.441823	-0.27862	-0.15517	-1.19717	-0.66894	-0.91632	-0.69523	-0.88524	-0.17213	-0.07007	0.14611	-0.82123	-1.20762	0.340966	0.444171	-0.64714	0.283513	0.357901	-0.13171	-0.0919	0.335355	-0.56185	0.158196	-0.96003
-0.04494	-0.03378	-0.01549	-0.0363	-0.05477	-0.02572	-0.01151	-0.01211	0.002511	-0.03683	-0.0184	-0.01595	-0.0142	0.001334	-0.02752	-0.02027	-0.00877	-0.03474	-0.04195	-0.02531	-0.04889	-0.02045	-0.01675	-0.0386	-0.01853
2.28748	0.805511	2.49308	3.54616	9.378469	4.893113	5.019485	3.952089	3.760513	3.637667	1.905482	4.74586	5.09437	0.673254	-0.06955	3.618111	1.543129	1.711055	2.616842	4.075106	0.269871	3.826099	2.345595	5.547278	2.361777
-1.02914	-0.38385	-1.08734	-1.5514	-4.0435	-2.11478	-2.154	-1.69647	-1.60217	-1.59265	-0.84073	-0.30165	-2.03859	-2.16802	-0.32238	-0.0037	-1.55585	-0.70228	-0.77797	-1.14597	-1.7877	-0.14687	-1.65142	-1.04942	-2.38177
3.074502	1.079035	3.351508	4.768162	12.61875	6.582864	6.75285	5.316375	5.057289	4.899652	2.557182	0.874732	6.38542	6.854726	0.901443	-0.09924	4.864256	2.073145	2.301976	3.518433	5.481905	0.359194	5.145669	3.150606	7.46435
-3.77082	-2.69298	-1.63519	-3.25852	-5.3123	-2.62785	-1.82127	-1.56831	-0.6268	-3.26898	-1.87424	-1.36822	-1.91149	-0.76222	-2.1669	-1.80123	-1.42445	-2.84242	-3.30857	-2.37299	-4.03463	-1.73771	-1.95433	-3.19945	-2.17109
-2.31348	-1.64832	-1.0015	-2.00058	-3.25912	-1.61224	-1.11948	-0.96575	-0.39189	-2.00585	-1.15803	-0.83872	-1.17606	-0.46741	-1.32977	-1.10587	-0.87574	-1.74115	-2.02584	-1.45665	-2.4686	-1.06285	-1.19977	-1.95397	-1.32624
-3.04792	-2.177	-1.32185	-2.6334	-4.29075	-2.12238	-1.47153	-1.26859	-0.50758	-2.64134	-1.51608	-1.10696	-1.54352	-0.61536	-1.75065	-1.45802	-1.15057	-2.29679	-2.67091	-1.91709	-3.25645	-1.40377	-1.57911	-2.57988	-1.75305

Tabla 0.10: Caso B: Degradación -2% eficiencia fancore, -5% eficiencia fanduct y -5% eficiencia compresor 1 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	-1.85764	-0.1177	-0.96541	-0.11858	-0.26248	-0.17778	-1.53276	-0.50779	-1.68637	-0.25371	-3.92702	-5.56635	-0.24815	-1.12486	-0.60634	-3.48881	-1.24976	0.137647	-5.1223	-0.14274	-1.72348	-0.3456	-0.28753	0.012095	-1.67818
eff_fancore	-4.96779	-5.04348	-4.94983	-5.07344	-4.9989	-5.02306	-4.91757	-4.9361	-4.91634	-4.99742	-4.77019	-4.55398	-4.99836	-4.9678	-5.02876	-4.71511	-4.9246	-5.09212	-4.63497	-5.03748	-4.83866	-4.97464	-5.04062	-5.05198	-4.91769
mc_fancore	-0.05584	-0.00253	0.003177	-0.03494	0.006286	-0.00038	-0.02173	0.023249	-0.0275	0.002387	-0.05647	-0.08826	-0.00025	-0.02385	-0.0318	-0.05536	-0.01272	-0.0199	-0.03864	-0.00497	0.004427	0.012599	-0.02313	-0.01723	-0.0286
pr_fanduct	-0.07945	0.171645	0.154884	-0.22217	0.254821	0.148103	0.136455	0.361116	0.254209	0.208856	0.608532	1.093732	0.089405	0.007393	-0.17767	0.778206	0.272858	-0.19389	1.082661	0.10644	0.564317	0.293466	-0.18239	-0.25655	0.207291
eff_fanduct	-2.8011	-2.22645	-2.41514	-2.0178	-2.2903	-2.21562	-2.70926	-2.36503	-2.92866	-2.2597	-4.02528	-5.10865	-2.1588	-2.45722	-2.17198	-4.29048	-2.72899	-1.86311	-4.67575	-2.17805	-3.08707	-2.90979	-2.0221	-1.8056	-2.87626
mc_fanduct	0.084611	-0.0277	-0.00465	0.065306	-0.0439	-0.02286	0.021063	-0.06551	0.005085	-0.03169	-0.01423	-0.07476	-0.01027	0.08834	0.066034	-0.04216	-0.01257	0.042889	-0.09684	-0.0132	-0.06211	0.05217	0.064766	0.056304	0.015245
pr_compressor1	2.209812	1.443825	2.162158	2.136215	1.546426	1.450287	2.987689	1.370394	3.218394	1.58186	1.581246	0.761705	1.618604	2.693373	2.422674	1.287168	2.733912	1.421288	1.611233	1.585492	2.95876	1.457324	2.0298	1.579058	3.224086
eff_compressor1	-4.2687	-5.00834	-4.03483	-4.3092	-4.80099	-4.99234	-3.36012	-4.95724	-3.14648	-4.76254	-4.70179	-5.13047	-4.70383	-3.67988	-4.00448	-4.9269	-3.51122	-5.195	-4.59261	-4.85002	-3.09544	-4.91396	-4.38903	-4.88011	-3.18167
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	6.162292	0.064113	3.088069	1.663445	-0.12743	-0.00472	5.636691	0.119591	6.369614	-0.14527	9.582273	12.00124	-0.15971	4.318878	2.89882	10.32021	4.939689	0.179166	12.83111	-0.08323	6.694715	-0.01155	1.6199	0.031414	6.26713
eff_compressor2	-4.32329	-0.17245	-1.87972	-0.98457	0.250306	0.01121	-3.63039	-0.61209	-4.11003	0.194272	-7.26889	-9.31916	0.202933	-2.75542	-1.81108	-7.94168	-3.15989	-0.07557	-9.69306	0.125835	-4.20311	-0.05033	-0.98916	0.023268	-4.05246
mc_compressor2	1.397359	-0.00204	0.752591	0.378339	-0.0043	-0.00275	1.27008	-0.00101	1.434033	-0.00417	2.302207	2.910624	-0.00887	0.975651	0.646736	2.513616	1.167683	-0.00073	3.076765	-0.00333	1.625277	-0.00316	0.372196	-0.00441	1.404367
pr_turbina1	-0.00717	-0.0039	0.005294	0.000573	0.004083	0.001974	-0.00185	-0.00147	-0.0021	0.010492	-0.02027	-0.13561	0.009962	-0.00041	0.001089	-0.01424	-0.0204	-0.00142	-0.01924	3.91E-05	0.000751	0.007286	0.002128	0.005024	-0.0096
eff_turbina1	0.044113	0.021496	0.004765	0.015274	-0.00655	0.009337	0.026357	0.030876	0.025825	-0.01218	0.070476	0.220801	-0.01215	0.019823	0.018931	0.074508	0.020204	0.021339	0.077506	0.002975	0.012385	0.005626	0.008712	0.00805	0.030365
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	-5.60568	0.236012	-3.56208	-3.25993	-2.49073	-0.8925	-4.94818	1.860029	-5.20484	-2.87806	-7.50297	-8.92971	-3.3401	-4.47412	-3.93858	-7.87067	-4.49287	-0.30765	-8.58548	-2.08715	-4.82227	-0.8988	-3.15821	-2.27645	-5.19765
eff_turbina2	-1.13418	0.457143	-1.15889	-1.0598	-0.92157	-0.09973	-1.32252	1.195133	-1.27363	-1.10056	-1.32688	-1.45825	-1.31757	-3.3883	-1.27512	-1.35672	-1.33384	0.241944	-1.41135	-0.69213	-1.33295	-0.13729	-1.02462	-0.74493	-1.28283
mc_turbina2	-3.1617	0.528326	-2.06353	-1.89058	-1.56059	-0.32954	-2.83357	1.702235	-2.96653	-1.88807	-4.08303	-4.78537	-2.17321	-2.57855	-2.28356	-4.26769	-2.58797	0.166029	-4.60881	-1.22451	-2.76261	-0.35887	-1.83152	-1.32238	-2.96285

Acierto eff fancore	-4.96779	-5.04348	-4.94983	-5.07344	-4.9989	-5.02306	-4.91757	-4.9361	-4.91634	-4.99742	-4.77019	-4.55398	-4.99836	-4.9678	-5.02876	-4.71511	-4.9246	-5.09212	-4.63497	-5.03748	-4.83866	-4.97464	-5.04062	-5.05198	-4.91769
Acierto eff fanduct	-2.8011	-2.22645	-2.41514	-2.0178	-2.2903	-2.21562	-2.70926	-2.36503	-2.92866	-2.2597	-4.02528	-5.10865	-2.1588	-2.45722	-2.17198	-4.29048	-2.72899	-1.86311	-4.67575	-2.17805	-3.08707	-2.90979	-2.0221	-1.8056	-2.87626
Acierto eff compressor 1	-4.2687	-5.00834	-4.03483	-4.3092	-4.80099	-4.99234	-3.36012	-4.95724	-3.14648	-4.76254	-4.70179	-5.13047	-4.70383	-3.67988	-4.00448	-4.9269	-3.51122	-5.195	-4.59261	-4.85002	-3.09544	-4.91396	-4.38903	-4.88011	-3.18167

Tabla 0.11: Caso B: Degradación -5% eficiencia fancore, -2% eficiencia fanduct y -5% eficiencia compresor 1 (I)



caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-0.99958	-0.74093	-0.54186	-0.26466	-0.45141	-0.26089	-0.25993	-4.72343	-0.06572	-0.12001	-0.30101	-4.95407	-0.24449	-4.14403	-0.41137	-0.563	-0.61041	-0.35201	-1.74989	-0.05936	-0.91354	-0.03937	-0.18855	-0.72424	0.037196
-4.97901	-4.86401	-4.93365	-5.01094	-4.96136	-4.99851	-5.0453	-4.67544	-5.03577	-5.05028	-4.94251	-4.6598	-5.00888	-4.74272	-4.99601	-4.89722	-5.02199	-4.9909	-4.87571	-5.05073	-4.8432	-5.0624	-5.02056	-5.02195	-5.072
-0.02733	0.04427	0.026434	0.002029	0.015428	0.001274	-0.0159	-0.03823	-0.01228	-0.01545	0.029819	-0.06073	-0.00185	-0.07004	0.009771	0.037765	-0.03832	0.008239	-0.01639	-0.00667	0.048363	-0.02132	-0.00297	-0.03861	-0.01231
0.154495	0.527464	0.360685	0.005833	0.2621	0.156199	-0.06557	1.057431	0.030067	-0.17112	0.540922	0.952079	-0.07502	0.634591	0.060606	0.642701	-0.25162	0.017251	0.475371	-0.01414	0.655034	-0.3132	0.100106	-0.111376	-0.33729
-2.61657	-2.48529	-2.3407	-2.06378	-2.31373	-2.21172	-2.08918	-4.57994	-2.10201	-1.93108	-2.43062	-4.63718	-1.97989	-4.18811	-2.1217	-2.54747	-2.14878	-2.06854	-3.12733	-2.04228	-2.61793	-1.77809	-2.1778	-2.3363	-1.66749
0.010613	-0.09817	-0.06788	0.003628	-0.0448	-0.02321	0.028262	-0.0965	0.002085	0.043502	-0.10472	-0.06532	0.020079	-0.10142	-0.00634	-0.12089	0.083261	0.000449	-0.03799	0.007093	-0.11787	0.070839	-0.01206	0.059506	0.066716
2.720524	1.288467	1.389522	1.411968	1.420819	1.685192	1.881595	2.213794	1.857367	1.724782	1.353353	1.131157	1.628598	1.189622	1.316205	1.319768	2.490028	1.293157	3.236733	1.365653	1.280304	1.728453	1.612567	2.638789	1.199739
-3.62858	-4.79111	-4.8333	-5.04269	-5.00988	-4.61073	-4.48749	-4.03649	-4.47456	-4.72989	-4.83027	-5.00138	-4.71533	-4.99435	-5.11606	-4.76082	-3.96176	-5.15475	-3.01963	-5.17849	-4.72785	-4.72238	-4.77194	-3.80709	-5.52937
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.321222	0.131829	0.234588	0.03946	0.122545	-0.24022	1.159326	12.59926	-0.31176	0.51121	-0.17784	11.36014	-0.11846	9.549343	0.236434	0.062713	3.07651	0.133215	6.973158	0.126613	0.205211	0.538247	-0.13826	3.557415	0.406423
-2.74026	-0.5292	-0.99763	-0.01472	-0.68587	0.290899	-0.67578	-9.24554	0.324071	-0.26905	0.657992	-8.80343	0.156921	-7.37422	-0.84245	-0.33739	-1.92815	-0.24031	-4.48599	-0.10913	-0.6539	-0.28939	0.181726	-2.23842	-0.29777
1.007579	0.000111	0.001185	-0.002	-0.00109	-0.0048	0.282296	2.957412	-0.00483	0.119453	-0.00583	2.776071	-0.0032	2.317119	0.000732	-0.00126	0.665569	-0.00077	1.62497	-0.00105	0.003606	0.110654	-0.00377	0.793908	0.001652
-0.00155	-0.002155	-0.00462	0.004971	0.001426	0.008111	0.004604	-0.01363	0.006743	0.000171	0.011564	-0.01876	0.009692	-0.01467	0.002068	-0.00232	-0.00204	0.001299	-7.9E-05	-0.00139	-0.00226	0.003522	0.011185	-0.00362	0.000823
0.021408	0.039436	0.054203	0.005893	0.031881	-0.01805	0.004735	0.068706	-0.01652	0.007141	-0.02605	0.081007	-0.0105	0.075597	0.04117	0.032419	0.022329	0.021546	0.020498	0.022364	0.070267	0.005817	-0.00931	0.024103	0.039849
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-4.41279	3.61631	4.637646	-1.15838	1.384489	-3.96042	-2.76856	-8.27164	-4.50969	-2.48298	-2.96544	-8.38867	-3.41921	-7.7135	2.16933	3.333237	-4.09228	0.248439	-5.20836	0.282006	7.852471	-2.59074	-2.84689	-4.25585	1.294323
-1.33017	1.933569	2.496369	-0.2181	1.014873	-1.64327	-0.90267	-1.3822	-1.91365	-0.80849	-1.25714	-1.40255	-1.34919	-1.35075	1.441089	1.760906	-1.29627	0.477895	-1.27485	0.497809	3.823213	-0.84899	-1.068	-1.31215	1.042811
-2.5439	2.929532	3.769481	-0.50957	1.39103	-2.65719	-1.60558	-4.45922	-3.064	-1.43969	-2.03176	-4.51707	-2.21884	-4.19104	2.026133	2.681264	-2.36814	0.551846	-2.96727	0.57925	6.013982	-1.50362	-1.80008	-2.45796	1.391076

-4.97901	-4.86401	-4.93365	-5.01094	-4.96136	-4.99851	-5.0453	-4.67544	-5.03577	-5.05028	-4.94251	-4.6598	-5.00888	-4.74272	-4.99601	-4.89722	-5.02199	-4.9909	-4.87571	-5.05073	-4.8432	-5.0624	-5.02056	-5.02195	-5.072
-2.61657	-2.48529	-2.3407	-2.06378	-2.31373	-2.21172	-2.08918	-4.57994	-2.10201	-1.93108	-2.43062	-4.63718	-1.97989	-4.18811	-2.1217	-2.54747	-2.14878	-2.06854	-3.12733	-2.04228	-2.61793	-1.77809	-2.1778	-2.3363	-1.66749
-3.62858	-4.79111	-4.8333	-5.04269	-5.00988	-4.61073	-4.48749	-4.03649	-4.47456	-4.72989	-4.83027	-5.00138	-4.71533	-4.99435	-5.11606	-4.76082	-3.96176	-5.15475	-3.01963	-5.17849	-4.72785	-4.72238	-4.77194	-3.80709	-5.52937

Tabla 0.12: Caso B: Degradación -5% eficiencia fancore, -2% eficiencia fanduct y -5% eficiencia compresor 1 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	0.620982	0.206005	0.389078	-0.11941	0.219381	0.450245	0.391775	0.101344	0.371506	0.227293	-0.11708	0.062677	0.042707	0.204723	<b>0.962932</b>	-0.23876	0.310572	0.133072	0.252482	-0.09895	0.162601	0.371745	0.559027	-0.11287	0.001634
eff_fancore	-6.20358	-6.10142	-6.09927	-6.03256	-6.09214	-6.09804	-6.1345	-6.09904	-6.10273	-6.10508	-6.03682	-6.09033	-6.00592	-6.08527	-6.17444	-6.01548	-6.15727	-6.06132	-6.07152	-6.04175	-6.06959	-6.12452	-6.2154	-6.03987	-6.03989
mc_fancore	-0.03974	-0.01398	-0.02585	0.006895	-0.01482	-0.02916	-0.02557	-0.00718	-0.02432	-0.01494	0.006041	-0.0044	-0.00388	-0.01323	-0.06209	0.014076	-0.01984	-0.00931	-0.01693	0.005693	-0.01087	-0.02412	-0.03554	0.00566	-0.00109
pr_fanduct	-0.006	-0.00492	-0.00801	-0.00301	-0.00616	-0.00564	-0.00602	-0.00436	-0.0059	-0.00433	-0.00594	-0.00257	-0.00586	-0.00278	-0.01044	-0.004	-0.0032	-0.0052	-0.00646	-0.00273	-0.00366	-0.00507	-0.00505	-0.00639	-0.00523
eff_fanduct	-6.0408	-6.01939	-5.9911	-6.05774	-6.03314	-5.98169	-6.01919	-6.0514	-6.04227	-6.04129	-6.02675	-6.08294	-5.97628	-6.03098	-5.92745	-6.07391	-6.04366	-6.01322	-6.03256	-6.0602	-6.02928	-6.02368	-6.05917	-6.03091	-6.05332
mc_fanduct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor1	<b>1.070465</b>	<b>0.681051</b>	<b>1.07657</b>	<b>-0.86688</b>	<b>0.366633</b>	<b>1.586947</b>	<b>1.063436</b>	<b>0.001664</b>	<b>0.314096</b>	<b>0.162393</b>	<b>0.200833</b>	<b>-0.57352</b>	<b>0.718826</b>	<b>0.14112</b>	<b>3.222577</b>	<b>-0.77213</b>	<b>0.122896</b>	<b>0.539042</b>	<b>0.578685</b>	<b>-0.44245</b>	<b>0.328337</b>	<b>1.046618</b>	<b>1.219421</b>	<b>-0.17058</b>	<b>-0.25685</b>
eff_compressor1	-2.18968	-2.48159	-2.47688	-3.01204	-2.56532	-2.34524	-2.33888	-2.62307	-2.64193	-2.74551	-2.65927	-2.72394	-2.79435	-2.68375	-1.85675	-2.83452	-2.51476	-2.66612	-2.48378	-2.87163	-2.59378	-2.35864	-2.04393	-2.81657	-2.77408
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eff_compressor2	0.187283	-0.38539	-0.20324	-1.47586	-0.54407	0.143757	-0.0719	-0.69487	-0.65545	-0.87194	-0.72576	-1.02128	-0.77119	-0.79543	1.23123	-1.22474	-0.5669	-0.62611	-0.32273	-1.19333	-0.56691	-0.04539	0.44199	-1.06531	-0.95696
mc_compressor2	-0.00666	-0.01824	-0.0312	-0.00084	-0.01221	-0.03874	-0.02088	-0.00072	-0.0158	-0.02028	-0.01337	0.012348	-0.04546	-0.01342	-0.06318	0.010101	0.001151	-0.02651	-0.01157	-0.00572	-0.01095	-0.01934	8.35E-05	-0.01348	-0.00366
pr_turbina1	-0.49679	2.850689	2.962669	6.11484	3.012918	2.112864	1.747638	2.805633	3.688187	4.94664	4.007661	3.193585	6.521973	4.220012	0.68313	4.321771	2.125471	4.477434	2.088697	5.280151	3.051459	1.426716	-2.08812	5.419351	4.187351
eff_turbina1	0.19548	-1.26674	-1.33503	-2.66539	-1.33305	-0.97485	-0.79472	-1.23159	-1.6266	-2.18327	-1.76753	-1.3805	-2.89032	-1.8575	0.214534	-1.87895	-0.93196	-1.98578	-0.93354	-2.30469	-1.34771	-0.65384	0.891874	-2.38184	-1.83552
mc_turbina1	-0.68104	3.888488	4.042051	8.348716	4.11072	2.881179	2.382342	3.82866	5.036172	6.751847	5.468974	4.361305	8.904538	5.763054	-0.93802	5.897408	2.900098	6.111025	2.848485	7.211335	1.641448	1.943329	-2.85693	7.396737	5.716052
pr_turbina2	-0.77268	-2.30107	-3.18054	-1.39484	-1.7789	-3.70507	-2.32878	-0.87169	-2.07041	-2.61924	-2.19818	0.081092	-4.98532	-2.10524	-5.13466	-0.37973	-0.61293	-3.16256	-1.63721	-1.67126	-1.74107	-2.07187	-0.01267	-2.36185	-1.36369
eff_turbina2	-0.45304	-1.36431	-1.87994	-0.82773	-1.05322	-2.19077	-1.37757	-0.51828	-1.2202	-1.54428	-1.30538	0.045238	-2.95	-1.25076	-3.03279	-0.23128	-0.36834	-1.86997	-0.96969	-0.98984	-0.0332	-1.22404	-0.00614	-1.40079	-0.80828
mc_turbina2	-0.60321	-1.79953	-2.48254	-1.09083	-1.38917	-2.89426	-1.82078	-0.68116	-1.6171	-2.04501	-1.71891	0.063871	-3.89441	-1.64527	-4.00954	-0.29739	-0.48018	-2.4698	-1.27975	-1.30554	-1.3593	-1.618	-0.01065	-1.84678	-1.06692

Acierto eff fancore	-6.20358	-6.10142	-6.09927	-6.03256	-6.09214	-6.09804	-6.1345	-6.09904	-6.10273	-6.10508	-6.03682	-6.09033	-6.00592	-6.08527	-6.17444	-6.01548	-6.15727	-6.06132	-6.07152	-6.04175	-6.06959	-6.12452	-6.2154	-6.03987	-6.03989
Acierto eff fanduct	-6.0408	-6.01939	-5.9911	-6.05774	-6.03314	-5.98169	-6.01919	-6.0514	-6.04227	-6.04129	-6.02675	-6.08294	-5.97628	-6.03098	-5.92745	-6.07391	-6.04366	-6.01322	-6.03256	-6.0602	-6.02928	-6.02368	-6.05917	-6.03091	-6.05332
Acierto eff compresor 1	-2.18968	-2.48159	-2.47688	-3.01204	-2.56532	-2.34524	-2.33888	-2.62307	-2.64193	-2.74551	-2.65927	-2.72394	-2.79435	-2.68375	-1.85675	-2.83452	-2.51476	-2.66612	-2.48378	-2.87163	-2.59378	-2.35864	-2.04393	-2.81657	-2.77408

Tabla 0.13: Caso B: Degradación -5% eficiencia fancore, -5% eficiencia fanduct y -2% eficiencia compresor 1()

	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	0.705957	0.16703	0.240957	0.141897	0.307136	-0.26465	0.187955	0.235392	0.37613	-0.07625	-0.37566	0.001262	0.03	-0.09936	0.376157	0.263934	0.454164	0.112398	0.426902	0.22228	0.37848	0.446621	-0.16159	0.160323	-0.04424
	-6.21751	-6.07107	-6.07325	-6.06611	-6.08917	-6.04009	-6.04066	-6.1512	-6.11334	-6.07894	-6.02822	-6.02808	-6.07955	-6.04424	-6.1578	-6.11112	-6.1543	-6.04105	-6.14596	-6.08637	-6.08273	-6.18992	-5.99614	-6.0905	-6.00069
	-0.04458	-0.01157	-0.01612	-0.00983	-0.02006	0.016229	-0.01288	-0.01591	-0.02455	0.004162	0.022945	-0.00048	-0.00228	0.0051	-0.02457	-0.01732	-0.02889	-0.00895	-0.02729	-0.01486	-0.02495	-0.02869	0.008924	-0.01051	0.001518
	-0.00406	-0.00557	-0.00641	-0.00454	-0.00467	-0.00095	-0.00575	-0.00634	-0.00604	-0.00343	-0.00292	-0.00173	-0.00189	-0.00587	-0.00647	-0.00442	-0.00364	-0.00577	-0.0037	-0.00523	-0.00689	-0.00495	-0.00553	-0.00281	-0.00582
	-6.01335	-6.00884	-6.0288	-6.03984	-6.03474	-6.07558	-5.97272	-6.09198	-6.02326	-6.09058	-6.11717	-6.04986	-6.05575	-6.04322	-6.05411	-6.04619	-6.05588	-5.98976	-6.02565	-6.03842	-5.97715	-6.06493	-6.03328	-6.05533	-6.01828
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2.001488	0.610869	0.686798	-0.13445	0.209431	-1.13047	0.728721	-0.03322	0.82236	-1.01838	-1.8109	-0.32867	-0.29757	-0.35031	0.430067	0.910165	0.514288	0.465828	1.161154	0.156572	1.235378	0.394775	-0.4623	0.012212	0.030358
	-1.91411	-2.61171	-2.41558	-2.85193	-2.7251	-3.02873	-2.72718	-2.48189	-2.54207	-2.94196	-3.03995	-2.86239	-2.81059	-2.72832	-2.39223	-2.29623	-2.42046	-2.80854	-2.20285	-2.71463	-2.46958	-2.37073	-2.94862	-2.7068	-2.88022
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.79919	-0.55133	-0.18535	-1.08486	-0.79319	-1.63104	-0.66076	-0.53049	-0.39744	-1.45981	-1.75034	-1.11324	-1.08566	-0.97925	-0.25068	-0.02724	-0.25071	-0.88124	0.23165	-0.82596	-0.15005	-0.23785	-1.3062	-0.85166	-1.06236
	-1.97145	4.149613	1.38443	5.586401	4.425657	6.207241	5.594561	1.168961	3.419655	5.178252	4.628909	5.143851	4.899386	4.03498	0.756431	0.78047	0.980522	6.367365	-0.41085	4.537584	3.273934	0.328295	6.313457	4.111097	6.223428
	0.816281	-1.84491	-0.62452	-2.4534	-1.9505	-2.48291	-0.50499	-1.52082	-2.24677	-1.98151	-2.25307	-1.76236	-0.3373	-0.36054	-0.43829	-0.36054	-0.43829	-2.8168	0.151819	-2.00001	-1.4775	-0.14738	-2.76202	-1.80522	-2.73841
	-2.69827	5.662308	1.886557	7.62631	6.042564	8.477313	7.637309	1.594251	4.67137	7.073721	6.319644	7.022551	6.688593	5.507602	1.030396	1.061075	1.338407	8.690987	-0.56913	6.194397	4.465857	0.446614	8.622132	5.613547	8.496548
	-1.71423	-3.10058	-1.4234	-2.45655	-2.34747	-0.8468	-4.34971	0.367666	-2.90509	-0.33882	1.556221	-1.82537	-1.6543	-1.1158	-0.36166	-1.41305	-0.61931	-4.29334	-1.09714	-2.34538	-3.79409	0.103734	-2.39234	-1.73742	-3.35017
	-1.01471	-1.83284	-0.84572	-1.45109	-1.38509	-0.50856	-2.57355	0.222752	-1.71455	-0.19953	0.91304	-1.08179	-0.97941	-0.66817	-0.21239	-0.83656	-0.36694	-2.53936	-0.65186	-1.38334	-2.24629	0.063463	-1.42038	-1.02709	-1.98257
	-1.34033	-2.42108	-1.11259	-1.91927	-1.83235	-0.66288	-3.39562	0.286138	-2.26674	-0.26324	1.214713	-1.42681	-1.29263	-0.874	-0.28439	-1.10775	-0.48561	-3.35384	-0.85871	-1.83041	-2.96434	0.081007	-1.86975	-1.35612	-2.61749

	-6.21751	-6.07107	-6.07325	-6.06611	-6.08917	-6.04009	-6.04066	-6.1512	-6.11334	-6.07894	-6.02822	-6.02808	-6.07955	-6.04424	-6.1578	-6.11112	-6.1543	-6.04105	-6.14596	-6.08637	-6.08273	-6.18992	-5.99614	-6.0905	-6.00069
	-6.01335	-6.00884	-6.0288	-6.03984	-6.03474	-6.07558	-5.97272	-6.09198	-6.02326	-6.09058	-6.11717	-6.04986	-6.05575	-6.04322	-6.05411	-6.04619	-6.05588	-5.98976	-6.02565	-6.03842	-5.97715	-6.06493	-6.03328	-6.05533	-6.01828
	-1.91411	-2.61171	-2.41558	-2.85193	-2.7251	-3.02873	-2.72718	-2.48189	-2.54207	-2.94196	-3.03995	-2.86239	-2.81059	-2.72832	-2.39223	-2.29623	-2.42046	-2.80854	-2.20285	-2.71463	-2.46958	-2.37073	-2.94862	-2.7068	-2.88022

Tabla 0.14: Caso B: Degradación -5% eficiencia fancore, -5% eficiencia fanduct y -2% eficiencia compresor 1 (II)

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
Degradación																										
pr_fancore	-0.05	0.006325	-0.1784	-0.18663	0.37211	0.089004	-0.26982	0.280351	-0.05627	0.065342	0.299129	0.253114	0.327087	-0.24327	-0.30338	-0.11821	-0.51305	0.19594	0.132838	0.14153	0.318596	0.4363	-0.18988	-0.04204	0.122009	
eff_fancore	-3.98895	-4.05216	-3.97489	-3.99166	-4.0666	-4.07077	-3.97535	-4.08133	-3.97438	-4.03497	-4.04427	-4.0028	-4.07127	-3.97635	-3.96137	-4.03257	-3.90358	-4.07791	-4.06448	-4.00701	-4.01605	-4.0642	-3.98234	-4.00016	-4.03509	
mc_fancore	0.002538	-0.00053	0.010675	0.011023	-0.02387	-0.02609	0.016311	-0.01809	0.002733	-0.0049	-0.0201	-0.0172	-0.02101	0.014702	0.018645	0.006904	0.031422	-0.01265	-0.00899	-0.00957	-0.02093	-0.02822	0.011771	0.002395	-0.00794	
pr_fanduct	-0.00207	-0.00106	-0.0025	-0.00307	-0.0031	-0.0027	-0.00267	-0.00326	-0.00318	-0.00428	-0.00662	-0.00597	-0.00266	-0.00251	-0.00175	-0.0032	-0.00906	-0.00233	-0.00264	-0.00321	-0.0048	-0.00447	-0.00068	-0.00163	-0.00168	
eff_fanduct	-3.98619	-4.06519	-4.02848	-4.03	-3.98983	-3.96446	-4.02208	-4.0365	-3.96773	-4.01227	-3.9514	-3.94587	-3.95882	-4.0116	-4.03211	-4.03297	-4.03166	-4.01557	-3.99456	-3.94121	-3.99314	-3.95954	-4.04228	-4.01531	-3.98798	
mc_fanduct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_compressor1	1.602891	1.383834	1.400359	1.397978	1.761642	1.851978	1.371908	1.530531	1.663205	1.545677	1.829765	1.84003	1.788679	1.418032	1.323158	1.364764	1.230488	1.588203	1.608793	1.763317	1.921514	1.893683	1.345322	1.483033	1.633164	
eff_compressor1	-4.46697	-4.40634	-4.42677	-4.44458	-4.53678	-4.54661	-4.41896	-4.4741	-4.47058	-4.45099	-4.52495	-4.5057	-4.56361	-4.47937	-4.41133	-4.42592	-4.38396	-4.48005	-4.44429	-4.52367	-4.59027	-4.4966	-4.42365	-4.47865	-4.49482	
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_compressor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
eff_compressor2	-0.27335	-0.77921	-0.71294	-0.46721	0.827751	1.115472	-0.6877	0.040092	-0.0059	-0.02855	0.905532	0.336048	1.178064	-0.09265	-0.97408	-0.37464	-1.50946	0.431542	0.019071	0.647699	1.309442	0.747381	-0.86249	-0.01898	0.267815	
mc_compressor2	-0.0508	0.025381	0.001056	0.007697	-0.02572	-0.04292	0.005064	0.01439	-0.04304	-0.00569	-0.04989	-0.06134	-0.03399	-0.00033	0.0064	0.021993	0.00491	0.0022	-0.01159	-0.04721	-0.0684	-0.0528	0.008622	-0.00203	-0.0211	
pr_turbina1	3.221399	1.194736	2.710996	1.311668	-1.30859	-1.14177	2.440597	-1.1868	3.152215	0.625302	0.169115	2.969256	-1.93028	0.612367	3.388287	-0.09247	5.471617	-1.69022	0.794343	0.947714	-0.09962	0.859026	2.751409	0.407246	0.508629	
eff_turbina1	-1.4509	-0.51426	-1.19881	-0.5763	0.55148	0.46194	-1.07992	0.528831	-1.432	-0.28433	-0.12197	-1.36695	0.814472	-0.27709	-1.49644	0.059385	-2.41251	0.739921	-0.36602	-0.46176	-0.01624	-0.4233	-1.21483	-0.18899	-0.24549	
mc_turbina1	4.561747	1.693768	3.843334	1.858866	-1.85744	-1.62319	3.456533	-1.68167	4.464489	0.886396	0.233552	4.205935	-2.74104	0.864735	4.801729	-0.13028	7.756529	-2.39784	1.21041	1.338422	-0.14679	1.215348	3.896884	0.57273	0.717813	
pr_turbina2	-2.24005	1.218192	-0.43157	0.137116	-1.30845	-2.3344	-0.24643	0.980165	-2.98436	-0.53376	-2.92758	-3.83061	-1.77555	-0.33473	-0.26888	1.167055	-0.62464	0.2541	-0.83301	-2.88955	-3.90867	-3.10827	-0.0071	-0.3594	-1.32921	
eff_turbina2	-1.31697	0.720327	-0.25442	0.078571	-0.7656	-1.37061	-0.14792	0.580322	-1.75718	-0.31319	-1.71959	-2.24875	-1.04506	-0.2013	-0.15988	0.680313	-0.36814	0.148104	-0.49153	-1.7046	-2.29733	-1.8243	-0.00287	-0.21446	-0.78865	
mc_turbina2	-1.741	0.946809	-0.33587	0.105599	-1.01666	-1.81423	-0.19164	0.761241	-2.31878	-0.41601	-2.27468	-2.97299	-1.38178	-0.26256	-0.20968	0.905411	-0.48414	0.196242	-0.64901	-2.24549	-3.03842	-2.41482	-0.00684	-0.2815	-1.03391	

Acierito eff fancore	-3.98895	-4.05216	-3.97489	-3.99166	-4.0666	-4.07077	-3.97535	-4.08133	-3.97438	-4.03497	-4.04427	-4.0028	-4.07127	-3.97635	-3.96137	-4.03257	-3.90358	-4.07791	-4.06448	-4.00701	-4.01605	-4.0642	-3.98234	-4.00016	-4.03509
Acierito eff fanduct	-3.98619	-4.06519	-4.02848	-4.03	-3.98983	-3.96446	-4.02208	-4.0365	-3.96773	-4.01227	-3.9514	-3.94587	-3.95882	-4.0116	-4.03211	-4.03297	-4.03166	-4.01557	-3.99456	-3.94121	-3.99314	-3.95954	-4.04228	-4.01531	-3.98798
Acierito eff compresor 1	-4.46697	-4.40634	-4.42677	-4.44458	-4.53678	-4.54661	-4.41896	-4.4741	-4.47058	-4.45099	-4.52495	-4.5057	-4.56361	-4.47937	-4.41133	-4.42592	-4.38396	-4.48005	-4.44429	-4.52367	-4.59027	-4.4966	-4.42365	-4.47865	-4.49482

Tabla O.15: Caso B: Degradación -4% eficiencia fancore, -4% eficiencia fanduct y -4% eficiencia compresor 1 (I)



caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
0.007244	-0.01318	0.046795	0.228147	-0.19792	-0.04845	-0.22314	0.220721	0.035521	0.18342	0.146164	-0.31329	0.04098	0.108063	0.036255	-0.42962	0.059973	-0.10563	-0.09018	0.037189	0.148303	0.358015	0.116124	0.1029	-0.19935
-3.93007	-3.98583	-4.01288	-4.03092	-3.91742	-3.98955	-4.00112	-4.06849	-4.03623	-4.01879	-4.06772	-3.97539	-3.99264	-4.02999	-3.97579	-3.93658	-4.03148	-3.97024	-3.94649	-4.02958	-4.02673	-4.04714	-4.04063	-4.02354	-3.98545
-0.00168	0.000292	-0.00339	-0.01487	0.011236	0.002262	0.013871	-0.01439	-0.003	-0.01243	-0.00952	0.019593	-0.00297	-0.00714	-0.00278	0.026734	-0.00439	0.005999	0.004718	-0.00279	-0.00977	-0.02304	-0.00794	-0.0069	0.011772
-0.00539	-0.00236	-0.00228	-0.00324	-0.00561	-0.00379	-0.00072	-0.00325	-0.00395	-0.00436	-0.00195	-0.00045	-0.00186	-0.00162	-0.00319	-0.00056	-0.00298	-0.00296	-0.00356	-0.00238	-0.00244	-0.00355	-0.00312	-0.0018	-0.00372
-3.924	-3.98018	-4.01014	-3.98409	-3.97336	-3.98103	-4.04991	-4.0292	-3.98853	-3.94123	-4.00949	-4.0317	-3.95242	-3.98733	-3.97927	-4.0214	-3.98942	-3.99371	-3.94971	-4.00836	-3.97258	-3.95251	-3.98256	-3.974	-4.03582
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.825465	1.65788	1.577904	1.663142	1.533281	1.521639	1.321446	1.577072	1.54835	1.82364	1.593383	1.326917	1.727609	1.70145	1.642681	1.346778	1.587586	1.552087	1.676923	1.524428	1.675762	1.871514	1.688742	1.69486	1.373974
-4.50533	-4.46119	-4.45808	-4.50256	-4.46149	-4.5164	-4.40657	-4.46563	-4.48456	-4.51819	-4.49394	-4.41161	-4.47064	-4.50652	-4.47716	-4.40538	-4.46413	-4.46589	-4.52525	-4.46715	-4.51504	-4.54472	-4.45468	-4.46351	-4.41532
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.184927	-0.15513	-0.10245	0.310702	-0.43171	0.208944	-0.791	0.064391	0.235886	0.742062	0.479856	-0.78106	0.145125	0.596599	-0.07956	-0.70194	0.081066	-0.21475	0.23441	0.001396	0.51269	0.934398	0.059439	0.035974	-0.57488
-0.08336	-0.03901	-0.01499	-0.02306	-0.03619	-0.01229	0.018955	0.000416	-0.00531	-0.05749	-0.00394	0.007479	-0.05177	-0.02751	-0.04048	-0.00177	-0.01538	-0.02653	-0.05137	-0.00252	-0.02765	-0.05273	-0.03241	-0.03303	0.008319
5.239283	3.323297	1.484494	0.479436	4.292309	0.250714	1.809969	-0.26356	-0.37415	1.307209	-1.45326	2.656409	3.183487	-0.21897	3.151089	3.10407	0.89984	2.831828	2.809051	0.224914	0.163989	0.160562	2.107021	2.225419	1.779052
-2.38546	-1.50333	-0.66993	-0.23772	-1.92843	-0.12922	-0.79047	0.112935	0.151577	-0.63143	0.631102	-1.17199	-1.45226	0.066387	-1.42506	-1.37577	-0.41747	-1.27614	-1.2853	-0.10683	-0.1008	-0.11936	-0.9617	-1.01344	-0.78434
7.420948	4.707294	2.105851	0.676925	6.080668	0.350517	2.564933	-0.37475	-0.53414	1.845341	-2.06402	3.763562	4.507683	-0.31415	4.464393	4.39854	1.727074	4.012576	3.977025	0.317038	0.228415	0.223367	2.984308	3.154363	2.521875
-5.52505	-2.69415	-1.13089	-1.41561	-2.76823	-0.89896	0.660597	0.024277	-0.38465	-3.50884	-0.11907	-0.17255	-3.47499	-1.63508	-2.77227	-0.84477	-1.12305	-2.04895	-3.39664	-0.25038	-1.73986	-3.00909	-2.1941	-2.23225	0.031931
-3.24654	-1.58525	-0.66304	-0.83294	-1.6292	-0.53206	0.38619	0.01853	-0.23094	-2.06462	-0.07101	-0.10592	-2.04643	-0.96424	-1.62803	-0.50469	-0.66242	-1.20517	-2.00098	-0.14963	-1.02556	-1.7682	-1.28794	-1.31624	0.018326
-4.28951	-2.09159	-0.87758	-1.09972	-2.14916	-0.69872	0.511793	0.01827	-0.29958	-2.72629	-0.09478	-0.13656	-2.69995	-1.27062	-2.15253	-0.65892	-0.87304	-1.59345	-2.64139	-0.19469	-1.35364	-2.3378	-1.70322	-1.73459	0.024353

-3.93007	-3.98583	-4.01288	-4.03092	-3.91742	-3.98955	-4.00112	-4.06849	-4.03623	-4.01879	-4.06772	-3.97539	-3.99264	-4.02999	-3.97579	-3.93658	-4.03148	-3.97024	-3.94649	-4.02958	-4.02673	-4.04714	-4.04063	-4.02354	-3.98545
-3.924	-3.98018	-4.01014	-3.98409	-3.97336	-3.98103	-4.04991	-4.0292	-3.98853	-3.94123	-4.00949	-4.0317	-3.95242	-3.98733	-3.97927	-4.0214	-3.98942	-3.99371	-3.94971	-4.00836	-3.97258	-3.95251	-3.98256	-3.974	-4.03582
-4.50533	-4.46119	-4.45808	-4.50256	-4.46149	-4.5164	-4.40657	-4.46563	-4.48456	-4.51819	-4.49394	-4.41161	-4.47064	-4.50652	-4.47716	-4.40538	-4.46413	-4.46589	-4.52525	-4.46715	-4.51504	-4.54472	-4.45468	-4.46351	-4.41532

Tabla 0.16: Caso B: Degradación -4% eficiencia fandroct y -4% eficiencia compresor 1 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	-27.1489	-6.48146	0.457395	-3.87653	-8.82779	-0.42958	-6.71358	-10.4125	-8.33471	-0.57223	-7.97819	-1.25787	-11.7346	-14.6282	-19.8709	-8.98367	-13.8047	-22.815	-14.4648	3.349071	2.691062	-0.25144	0.08427	-1.09909	-9.48479
eff_fancore	-0.00377	-0.00884	0.018021	-0.01081	-0.00556	0.016131	0.000619	-0.017	-0.03343	0.007025	-0.00893	0.011539	0.00478	-0.03003	-0.00784	-0.00977	-0.00796	-0.00627	-0.02908	0.022594	0.006158	0.014257	0.007661	-0.01033	-0.01119
mc_fancore	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_fanduct	4.338376	0.727188	-0.3635	0.007339	1.010668	-0.16954	0.621259	1.300107	0.893225	-0.36874	0.773129	-0.26808	1.560002	1.939909	3.064599	0.986277	1.893873	3.334581	1.877142	-0.91508	-0.80471	-0.4742	-0.53155	-0.36675	1.155877
eff_fanduct	-3.83128	-0.64034	0.324318	-0.02259	-0.89075	-0.17243	-0.54597	-1.15195	-0.82015	0.326733	-0.69642	0.231394	-1.36781	-1.73269	-2.69964	-0.87554	-1.66727	-2.95371	-1.67507	0.814841	0.713571	0.419129	0.46954	0.30053	-1.01889
mc_fanduct	-1.03552	-0.17371	0.084935	-0.00067	-0.24091	0.0382	-0.14826	-0.30853	-0.2109	0.086841	-0.18354	0.063207	-0.37263	-0.46054	-0.73166	-0.23396	-0.45193	-0.79381	-0.44636	0.216692	0.191311	0.112368	0.126233	0.088406	-0.27597
pr_compresor1	20.83431	4.149845	-1.66427	2.127797	5.738009	-1.4749	3.856137	7.542424	6.500554	-1.41424	5.119857	-0.39581	7.689453	11.33453	14.89906	5.741429	9.598708	17.18625	10.92616	-4.16559	-3.16945	-1.55269	-1.68786	0.414348	5.999432
eff_compresor1	2.096517	0.647561	0.163297	0.457576	0.786075	0.182142	0.642674	0.941985	0.852014	0.190119	0.732729	0.236713	0.972206	1.267489	1.599002	0.801655	1.141493	1.779873	1.24535	-0.0712	-0.00909	0.146683	0.146809	0.303798	0.837747
mc_compresor1	-1.24341	-0.37209	-0.07492	-0.2664	-0.46484	-0.10028	-0.3754	-0.5422	-0.46529	-0.10627	-0.42958	-0.14624	-0.57937	-0.72727	-0.93464	-0.46678	-0.67126	-1.06022	-0.7145	0.046072	0.011945	-0.09757	-0.08274	-0.1581	-0.48366
pr_compresor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eff_compresor2	2.066263	0.341596	-0.18687	-0.00764	0.477444	-0.09173	0.283794	0.610346	0.412963	-0.1907	0.365124	-0.1336	0.738051	0.91804	1.454885	0.460028	0.896347	1.585462	0.89198	-0.44814	-0.39379	-0.23908	-0.26851	-0.18745	0.541921
mc_compresor2	-0.59609	-0.08131	0.07964	0.027892	-0.10778	0.061681	-0.0443	-0.16522	-0.11942	0.096399	-0.06856	0.068708	-0.1743	-0.26031	-0.41162	-0.09713	-0.22949	-0.43326	-0.24201	0.158738	0.130382	0.107092	0.115899	0.063108	-0.12237
pr_turbina1	-0.01654	-0.00301	-0.00274	-0.00217	-0.00471	0.000264	-0.00213	-0.00474	-0.00822	0.000364	0.000687	-0.0017	0.000603	-0.00682	-0.01158	-0.00304	-0.00142	-0.00968	-0.00569	0.006559	-0.001	0.00384	0.002269	-0.00629	-0.00457
eff_turbina1	-0.01494	0.004949	0.018495	0.012723	0.007219	0.017375	0.01482	0.003141	0.004375	0.019449	0.004794	0.013222	0.001935	-0.00508	-0.00602	0.006714	0.000816	-0.01018	-0.00408	0.017284	0.018665	0.017335	0.02262	0.016489	0.008168
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	-2.95488	2.474301	4.574559	3.06789	2.372189	5.191237	3.199293	1.155722	0.644169	5.254003	2.474462	4.347212	2.21443	-0.57596	-0.94765	2.537174	1.30077	-1.51689	-0.10395	5.61447	4.725674	5.186645	5.041544	2.933033	2.59477
eff_turbina2	-4.76763	-1.46998	-0.17061	-1.13507	-1.54611	0.203397	-1.03988	-2.29486	-2.58846	0.23502	-1.47668	-0.32807	-1.62923	-3.35027	-3.55136	-1.44113	-2.1902	-3.91608	-3.06514	0.45519	-0.09481	0.169639	0.088944	-1.20769	-1.39253
mc_turbina2	-0.90038	0.769346	1.417869	0.949499	0.735743	1.60795	0.99257	0.362387	0.206267	1.624949	0.768447	1.345039	0.689308	-0.17083	-0.28164	0.788353	0.407983	-0.45964	-0.02507	1.733973	1.461434	1.597127	1.558399	0.90753	0.806855

Acierto pr_fancore	-27.1489	-6.48146	0.457395	-3.87653	-8.82779	-0.42958	-6.71358	-10.4125	-8.33471	-0.57223	-7.97819	-1.25787	-11.7346	-14.6282	-19.8709	-8.98367	-13.8047	-22.815	-14.4648	3.349071	2.691062	-0.25144	0.08427	-1.09909	-9.48479
Acierto pr_compresor1	20.83431	4.149845	-1.66427	2.127797	5.738009	-1.4749	3.856137	7.542424	6.500554	-1.41424	5.119857	-0.39581	7.689453	11.33453	14.89906	5.741429	9.598708	17.18625	10.92616	-4.16559	-3.16945	-1.55269	-1.68786	0.414348	5.999432
Acierto eff_turbina1	-4.76763	-1.46998	-0.17061	-1.13507	-1.54611	0.203397	-1.03988	-2.29486	-2.58846	0.23502	-1.47668	-0.32807	-1.62923	-3.35027	-3.55136	-1.44113	-2.1902	-3.91608	-3.06514	0.45519	-0.09481	0.169639	0.088944	-1.20769	-1.39253

Tabla 0.17: Caso C: Degradación -2% relación de compresión fancore, -5% relación de compresión compresor 1 y -5% eficiencia turbina 1 (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-6.05902	-6.37796	-8.87927	-2.59281	0.253842	2.898793	-1.28407	-9.21705	-0.19752	-1.23725	-18.3373	-5.50688	-9.64132	-12.4462	-12.2274	-11.177	-12.2122	-5.78753	-13.1315	4.915649	-13.0652	-12.3197	-7.7779	-5.93692	-1.32199
-0.00817	-2.8E-05	-0.01798	0.007803	0.0176	0.017661	0.008859	0.000436	0.023884	0.032633	-0.02355	-0.01382	-0.00384	-0.01768	-0.01018	-0.02534	-0.01516	-0.00296	-0.00143	0.013522	-0.02367	-0.01779	-0.01175	-0.00569	0.010454
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.54884	0.659125	0.90469	0.153802	-0.46795	-0.83838	-0.22137	1.05559	-0.34451	-0.09751	2.49048	0.329239	1.211209	1.598961	1.541251	1.373987	1.631312	0.423947	1.925849	-1.32439	1.641269	1.572149	0.82634	0.589519	-0.16774
-0.48981	-0.57954	-0.81653	-0.12405	0.424482	0.74401	0.201197	-0.93899	0.310838	0.110218	-2.21496	-0.30998	-1.06854	-1.42964	-1.36403	-1.22999	-1.44872	-0.38506	-1.69445	1.152559	-1.47084	-1.40042	-0.74441	-0.52341	0.159654
-0.13256	-0.15703	-0.21346	-0.03802	0.109567	0.19918	0.051761	-0.2523	0.080291	0.019846	-0.59272	-0.07816	-0.28883	-0.38001	-0.36747	-0.32547	-0.38835	-0.09931	-0.46046	0.314479	-0.3901	-0.37396	-0.19588	-0.14067	0.038927
3.720713	3.810044	6.686729	0.828322	-2.02531	-3.55986	-0.51709	5.945809	-1.10399	-1.61944	13.8088	3.394481	6.74941	9.505562	8.477594	8.721249	9.107069	3.730041	9.195144	-5.2147	9.86733	9.333533	5.76425	3.636427	-0.44919
0.618038	0.631262	0.849569	0.355275	0.127458	-0.04281	0.246074	0.80578	0.161908	0.180186	1.500314	0.5831	0.862282	1.099005	1.041497	1.015272	1.061712	0.593622	1.103766	-0.17101	1.148755	1.10031	0.776184	0.606033	0.233161
-0.35032	-0.36103	-0.48765	-0.20487	-0.07542	0.026825	-0.14537	-0.47941	-0.10725	-0.12095	-0.8745	-0.3311	-0.5081	-0.63769	-0.6075	-0.58628	-0.62008	-0.34737	-0.64543	0.112128	-0.65703	-0.62955	-0.43802	-0.3475	-0.14527
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.251909	0.304264	0.418977	0.061389	-0.23559	-0.41037	-0.11843	0.494985	-0.17622	-0.05962	1.178683	0.147613	0.573562	0.755508	0.729037	0.647361	0.771442	0.189203	0.910778	-0.64223	0.773148	0.738841	0.384201	0.267506	-0.08976
-0.05035	-0.06207	-0.11067	0.001395	0.109608	0.138346	0.066501	-0.11228	0.069703	0.073113	-0.31987	-0.01805	-0.14671	-0.21504	-0.17898	-0.18749	-0.21539	-0.0324	-0.24516	0.216506	-0.21366	-0.20577	-0.10378	-0.06234	0.052364
-0.00379	-0.00131	-0.00622	-0.00184	0.000861	-0.00254	0.002845	-0.00394	-0.00082	0.007672	-0.0072	-0.00386	-0.00067	-0.00656	-0.0019	-0.00671	-0.00779	-0.00488	-0.00479	-0.00049	-0.00586	-0.00697	-0.00728	-0.00311	0.00312
0.010222	0.008102	0.005731	0.014404	0.020373	0.020536	0.016947	0.007856	0.017291	0.019649	-0.00307	0.010381	0.001109	-0.00308	0.002076	-7.9E-05	-0.00073	0.011537	0.000818	0.02338	-0.00098	0.001341	0.006116	0.008101	0.015838
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.730148	2.92597	0.959075	3.748406	5.38567	5.135152	4.57298	2.402467	4.371311	6.213379	-0.7339	2.681323	1.576568	0.08572	1.485123	0.605516	0.45747	2.476278	1.211636	5.668657	0.134299	0.234326	1.257556	2.721793	4.496089
-1.37631	-1.20255	-2.42632	-0.6813	0.304255	0.156517	-0.19284	-1.51382	-0.31148	0.837542	-3.44815	-1.35448	-0.20402	-2.94154	-2.09026	-2.96721	-2.70204	-1.48509	-2.22212	0.484707	-2.91263	-2.86007	-2.22848	-1.31465	-0.2343
0.849028	0.907592	0.30042	1.162425	1.666013	1.588973	1.41366	0.74701	1.353274	1.918761	-0.22044	0.832031	0.492648	0.032252	0.463789	0.023632	0.150508	0.76867	0.382323	1.751456	0.048653	0.079323	0.395178	0.845169	1.393634

-6.05902	-6.37796	-8.87927	-2.59281	0.253842	2.898793	-1.28407	-9.21705	-0.19752	-1.23725	-18.3373	-5.50688	-9.64132	-12.4462	-12.2274	-11.177	-12.2122	-5.78753	-13.1315	4.915649	-13.0652	-12.3197	-7.7779	-5.93692	-1.32199
3.720713	3.810044	6.686729	0.828322	-2.02531	-3.55986	-0.51709	5.945809	-1.10399	-1.61944	13.8088	3.394481	6.74941	9.505562	8.477594	8.721249	9.107069	3.730041	9.195144	-5.2147	9.86733	9.333533	5.76425	3.636427	-0.44919
-1.32631	-1.20255	-2.42632	-0.6813	0.304255	0.156517	-0.19284	-1.51382	-0.31148	0.837542	-3.44815	-1.35448	-0.20402	-2.94154	-2.09026	-2.96721	-2.70204	-1.48509	-2.22212	0.484707	-2.91263	-2.86007	-2.22848	-1.31465	-0.2343

Tabla 0.18: Caso C: Degradación -2% relación de compresión compresor 1 y -5% eficiencia turbina 1 (II)



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	-27.4494	-4.07636	-4.63256	-10.1672	-1.19605	-1.27643	-3.34552	-2.34365	-3.31105	-1.86734	-3.11921	-1.65468	-2.52332	-1.5963	-3.95313	-3.3687	-1.68232	-2.31169	-2.44626	-12.5403	-11.9843	-6.8838	-11.844	-22.2445	-4.13204
eff_fancore	3.116407	0.128317	0.23322	0.968625	-0.44932	-0.38439	0.001047	-0.12079	0.037268	-0.20651	-0.03381	-0.26197	-0.14289	-0.39895	0.124187	-0.00935	-0.27481	-0.16264	-0.15288	1.291893	1.203217	0.518017	1.179877	2.570669	0.149368
mc_fancore	0.156825	-0.1945	-0.1736	-0.04736	-0.4091	-0.37516	-0.24319	-0.23394	-0.19806	-0.27164	-0.2668	-0.31776	-0.26345	-0.3776	-0.18969	-0.25427	-0.31122	-0.27565	-0.29951	0.006624	-0.01041	-0.09195	-0.00736	0.107105	-0.1626
pr_fanduct	5.394196	-0.08488	0.216394	1.752794	-2.27342	-1.9076	-0.59515	-0.58244	-0.09625	-0.9302	-0.78467	-1.35925	-0.89995	-2.15437	0.014198	-0.73839	-1.36603	-0.97021	-1.15144	2.504536	2.263363	1.013226	2.328993	4.523146	0.209749
eff_fanduct	-7.2777	-1.11877	-1.49245	-4.20896	1.618692	1.259517	-0.58546	-0.01414	-0.73657	0.376195	-0.40833	0.675863	0.038829	1.361615	-1.09516	-0.51312	0.701245	0.156225	0.12751	-4.6791	5.05288	-2.60611	-4.74507	-6.823	-1.1851
mc_fanduct	-0.16434	0.129742	0.092633	-0.01537	0.47282	0.403395	0.211914	0.158242	0.096593	0.215226	0.24644	0.304031	0.23668	0.460423	0.104258	0.244385	0.303521	0.245	0.295919	-0.08685	-0.04342	0.004288	-0.06552	-0.14254	0.064088
pr_compressor1	2.295809	-2.56086	-1.91877	-0.43114	-6.4281	-5.65545	-3.47482	-3.53502	-2.68738	-4.01377	-3.67608	-4.64146	-3.91325	-6.05005	-2.36004	-3.69364	-4.68095	-4.00417	-4.15987	-0.16844	-0.25732	-0.91695	-0.15178	2.080981	-2.14726
eff_compressor1	-1.25834	-0.1547	0.22213	0.491333	-2.21093	-2.06645	-0.43805	-0.41383	-0.26812	-0.44417	-0.39287	-0.75212	-0.35973	-2.2342	-0.07876	-0.40977	-0.78856	-0.39513	-0.37369	-0.77658	-0.14	0.943864	-0.46832	-0.31654	0.05577
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	0.781626	-0.10161	-0.19865	-0.75084	0.857907	0.693963	0.043339	0.189957	-0.01751	0.324084	0.087263	0.446365	0.232978	0.770009	-0.10215	0.063599	0.458791	0.263278	0.263017	-0.7356	-0.82912	-0.42924	-0.76592	0.027684	-0.11271
eff_compressor2	0.726021	0.204133	0.384114	1.372661	-2.53621	-1.9683	-0.12098	-0.44905	0.041476	-0.80217	-0.24106	-1.17771	-0.57884	-2.18226	0.203246	-0.17953	-1.20906	-0.66518	-0.67558	1.502247	1.568863	0.828125	1.491064	1.201752	0.254038
mc_compressor2	-0.14565	0.087141	0.066613	-0.0084	0.315287	0.269137	0.125735	0.122888	0.08088	0.158267	0.140308	0.203229	0.156606	0.301577	0.078539	0.139044	0.205165	0.161216	0.17949	-0.05538	0.02689	0.022094	-0.04056	-0.12063	0.06719
pr_turbina1	1.382009	0.478465	0.499526	1.169073	-0.23461	-0.14373	0.539971	-0.0239	0.149365	-0.08862	0.560959	0.008059	0.249767	0.075551	0.349615	0.630137	0.000792	0.188908	0.415841	1.16212	1.290806	0.685219	1.168923	1.455768	0.261133
eff_turbina1	0.24226	-0.04896	-0.05318	-0.15062	0.068146	0.045458	-0.05483	0.014202	-0.01213	0.024896	-0.0608	0.016267	-0.01431	0.024465	-0.0343	0.06458	0.016498	-0.00662	-0.0341	-0.15217	-0.13957	-0.08191	-0.14461	0.008365	-0.02511
mc_turbina1	0.791557	0.200805	0.210573	0.491137	-0.0975	-0.06244	0.22627	-0.01178	0.061556	-0.0397	0.235795	0.002861	0.10306	0.030156	0.145194	0.263592	-0.0018	0.081077	0.176676	0.488252	0.554446	0.283302	0.493802	0.710436	0.103863
pr_turbina2	-13.4315	-0.44505	-0.76145	-4.73619	5.167683	4.139231	-0.31033	1.907128	0.805836	2.481235	-0.26546	6.665717	1.225609	3.902014	-0.03857	-0.5409	2.754631	1.506633	0.725216	-5.24358	-5.75625	-1.98998	-5.2057	-9.96485	0.233483
eff_turbina2	-8.79181	-4.91879	-5.02548	-6.50066	-2.84822	-3.27566	-4.86587	-4.17097	-4.52184	-3.97269	-4.84483	-3.85086	-4.34625	-3.26348	-4.78959	-4.94992	-3.82051	-4.25365	-4.49114	-6.70265	-6.89597	-5.47212	-6.68662	-8.40757	-4.71501
mc_turbina2	-9.05922	0.060234	-0.12016	-2.57543	3.385746	2.725961	0.145466	1.320153	0.727121	1.640304	0.184148	1.821968	1.07726	2.723851	1.669771	1.167674	0.768688	-2.91996	-3.24062	-0.85799	-2.88903	-6.27358	-6.27358	-8.40757	0.415815

Acierto pr fancore	-27.4494	-4.07636	-4.63256	-10.1672	-1.19605	-1.27643	-3.34552	-2.34365	-3.31105	-1.86734	-3.11921	-1.65468	-2.52332	-1.5963	-3.95313	-3.3687	-1.68232	-2.31169	-2.44626	-12.5403	-11.9843	-6.8838	-11.844	-22.2445	-4.13204
Acierto pr compresor 1	2.295809	-2.56086	-1.91877	-0.43114	-6.4281	-5.65545	-3.47482	-3.53502	-2.68738	-4.01377	-3.67608	-4.64146	-3.91325	-6.05005	-2.36004	-3.69364	-4.68095	-4.00417	-4.15987	-0.16844	-0.25732	-0.91695	-0.15178	2.080981	-2.14726
Acierto eff turbina 1	-8.79181	-4.91879	-5.02548	-6.50066	-2.84822	-3.27566	-4.86587	-4.17097	-4.52184	-3.97269	-4.84483	-3.85086	-4.34625	-3.26348	-4.78959	-4.94992	-3.82051	-4.25365	-4.49114	-6.70265	-6.89597	-5.47212	-6.68662	-8.40757	-4.71501

Tabla 0.19: Caso C: Degradación -5% relación de compresión compresor 1 y -5% eficiencia turbina 1 (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-5.25514	-6.16092	-8.99104	-2.37538	-4.05369	-1.52735	-10.3035	-9.89095	-11.2248	-6.98202	-10.9318	-4.85301	-3.06364	-3.32788	-1.48266	-2.15428	-5.10059	-13.8754	-2.47813	-3.58373	-10.1702	-4.83641	-3.30019	-4.19017	-24.9763
0.28214	0.463483	0.829137	-0.12384	0.093683	-0.39063	0.986152	0.950946	1.111241	0.498943	1.080152	0.213985	-0.04231	0.009642	-0.33877	-0.19294	0.286781	1.469774	-0.07755	0.027033	0.97956	0.240331	0.00961	0.144895	2.904598
-0.17198	-0.11913	-0.073	-0.26179	-0.1983	-0.37867	-0.04693	-0.0344	-0.03198	-0.11634	-0.02005	-0.15924	-0.23555	-0.22743	-0.3578	-0.2711	-0.17322	0.02341	-0.25513	-0.23457	-0.02398	-0.17888	-0.20543	-0.16659	0.301938
0.096146	0.942538	1.601423	-0.75382	-0.21744	-2.04411	1.93013	1.996022	2.042653	0.755072	2.119466	0.168338	-0.60326	-0.47377	-1.83825	-1.01295	0.276215	2.818454	-0.55439	-0.59657	2.033524	0.087563	-0.32856	0.117552	5.255771
-1.7179	-2.355	-3.73652	-0.01463	-1.02628	1.226273	-4.34326	-3.63406	-4.72613	-2.63487	-4.56871	-1.5035	-0.37861	-0.5961	1.129113	0.303672	-1.74666	-4.58862	-0.21225	-0.66476	-3.7533	-1.53413	-0.58898	-1.17181	-3.24091
0.143643	-0.00113	-0.021	0.201549	0.156174	0.442166	-0.03542	-0.08033	-0.02899	0.069586	-0.05226	0.105786	0.195977	0.18165	0.39412	0.24354	0.104341	-0.11742	0.168223	0.22032	-0.0797	0.127729	0.144031	0.086192	-0.52809
-2.26923	-0.94181	-0.42489	-3.70713	-2.79377	-5.73313	-0.26731	-0.26385	-0.30473	-1.11045	-0.30362	-2.13591	-3.57387	-3.29877	-5.47947	-4.14146	-1.81693	0.343362	-3.39024	-3.51154	-0.31163	-2.29711	-3.10024	-2.29569	5.166729
0.053383	0.859795	0.495773	-0.38192	-0.19079	-1.96741	0.158316	-0.14615	0.122374	0.950142	0.011619	0.082959	-0.42857	-0.39789	-2.08327	-0.42045	0.364408	-0.92664	-0.40196	-0.45488	-0.09818	-0.01698	-0.33879	-0.07776	-4.01697
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0.22739	-0.40886	-0.66314	0.207176	-0.0581	0.695768	-0.72592	-0.61669	-0.81035	-0.43583	-0.76788	-0.1872	0.108444	0.041569	0.638436	0.326175	-0.2592	-0.59786	0.124701	0.038691	-0.64652	-0.19785	0.041706	-0.12694	3.531312
0.469178	0.74407	1.204722	-0.5001	0.13811	-1.97924	1.357813	1.219423	1.495078	0.831545	1.44325	0.386425	-0.25216	-0.10585	-1.79992	-0.79255	0.490822	1.420547	-0.32325	-0.08506	1.265985	0.397485	-0.08697	0.254685	-0.36856
0.088663	0.012241	-0.01076	0.140234	0.10309	0.281531	-0.02141	-0.04012	-0.02181	0.047175	-0.02786	0.076593	0.129753	0.116649	0.260264	0.171774	0.066036	-0.07628	0.116271	0.13236	-0.03734	0.081632	0.104959	0.070155	-0.32975
0.815611	0.524414	0.950401	0.132087	0.543721	1.02356	1.096903	0.813133	1.253864	0.924939	1.139089	0.576095	0.363653	0.421447	-0.01926	0.091767	0.643531	1.115829	0.100404	0.632762	0.866603	0.666586	0.282807	0.344128	-1.87578
-0.09484	-0.05841	-0.11741	-0.00692	-0.05762	0.018572	-0.13765	-0.10122	-0.14318	-0.10781	-0.14732	-0.06247	-0.03363	-0.04068	0.02844	0.002094	-0.07299	-0.14697	-0.0013	-0.07016	-0.10911	-0.07491	-0.02502	-0.03428	3.7423
0.339258	0.21173	0.400164	0.052947	0.226075	0.040647	0.461575	0.338823	0.533756	0.388003	0.47683	0.240017	0.150022	0.176678	-0.00865	0.033833	0.267873	0.468441	0.041594	0.263297	0.362151	0.278336	0.116392	0.142571	0.917464
-1.90006	-1.45226	-3.78358	1.462672	-0.58655	3.450659	-4.66877	-3.42153	-5.47104	-2.86038	-4.74183	-0.90536	0.504927	0.105223	3.623405	1.981926	-1.41837	-5.40204	1.284888	-0.63321	-3.56109	-1.29258	0.58208	0.018141	-50.8374
-5.43501	-5.28536	-6.13756	-4.27687	-4.97408	-3.44303	-6.47398	-6.01668	-6.78508	-5.77929	-6.50102	-5.08248	-4.59583	-4.73186	-3.44442	-4.10676	-5.262	-6.78185	-4.3498	-4.97983	-6.06918	-5.21377	-4.58347	-4.77607	-8.47622
-0.79159	-0.54971	-1.97293	1.124019	-0.02179	2.436706	-2.5344	-1.76714	-3.05674	-1.37463	-2.57737	-0.2039	0.600507	0.378183	2.457604	1.410605	-0.50774	-3.05155	1.010885	-0.03715	-1.84936	-0.43007	0.627661	0.308326	-40.8336

-5.25514	-6.16092	-8.99104	-2.37538	-4.05369	-1.52735	-10.3035	-9.89095	-11.2248	-6.98202	-10.9318	-4.85301	-3.06364	-3.32788	-1.48266	-2.15428	-5.10059	-13.8754	-2.47813	-3.58373	-10.1702	-4.83641	-3.30019	-4.19017	-24.9763
-2.26923	-0.94181	-0.42489	-3.70713	-2.79377	-5.73313	-0.26731	-0.26385	-0.30473	-1.11045	-0.30362	-2.13591	-3.57387	-3.29877	-5.47947	-4.14146	-1.81693	0.343362	-3.39024	-3.51154	-0.31163	-2.29711	-3.10024	-2.29569	5.166729
-5.43501	-5.28536	-6.13756	-4.27687	-4.97408	-3.44303	-6.47398	-6.01668	-6.78508	-5.77929	-6.50102	-5.08248	-4.59583	-4.73186	-3.44442	-4.10676	-5.262	-6.78185	-4.3498	-4.97983	-6.06918	-5.21377	-4.58347	-4.77607	-8.47622

Tabla 0.20: Caso C: Degradación -5% relación de compresión fancore, -2% relación de compresión compresor 1 y -5% eficiencia turbina 1 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	-0.98263	-0.89	-0.55197	0.561101	-0.85481	-2.84984	-0.60543	1.428297	2.232521	-1.79445	0.571917	0.469662	1.724628	0.733503	-1.5991	-5.77092	1.21589	-5.29244	0.629935	-6.36172	-2.73335	1.485476	-1.45533	-2.58993	-2.93178
eff_fancore	-0.36352	-0.35089	-0.38168	-0.49186	-0.35684	-0.14246	-0.38412	-0.57211	-0.62812	-0.26652	-0.49529	-0.47699	-0.59394	-0.48893	-0.2967	0.155426	-0.55704	0.111383	-0.50664	0.215675	-0.16758	-0.58433	-0.29792	-0.17899	-0.13231
mc_fancore	-0.1458	-0.15858	-0.14977	-0.17568	-0.16803	-0.14052	-0.15777	-0.18295	-0.19153	-0.11795	-0.1754	-0.15966	-0.17352	-0.17678	-0.13359	-0.07102	-0.18885	-0.09416	-0.16946	-0.05816	-0.12811	-0.17654	-0.15921	-0.14854	-0.14073
pr_fanduct	-0.4905	-0.48328	-0.43231	-0.96416	-0.49682	0.134658	-0.57879	-1.29366	-1.49235	-0.05325	-1.06689	-0.82048	-1.17752	-0.92577	-0.12757	1.059963	-1.27117	0.819254	-0.93901	1.294458	0.160668	-1.21136	-0.37917	-0.01439	0.183114
eff_fanduct	0.250952	0.180702	0.342262	1.100167	0.142383	-1.06957	0.393872	1.706711	2.160648	-0.28009	1.197799	1.038626	1.780775	1.128396	-0.2483	-2.59738	1.564461	-2.36323	1.46272	-2.96148	0.94556	1.69241	-0.15314	-0.88387	-1.15119
mc_fanduct	0.122457	0.124611	0.097726	0.190102	0.131974	0.051693	0.134582	0.237339	0.262385	0.039986	0.210845	0.154053	0.201079	0.176666	0.058367	-0.0881	0.242072	-0.09816	0.179528	-0.12486	0.033317	0.216151	0.122593	0.079187	0.044498
pr_compressor1	-3.47188	-3.39339	-3.52295	-3.12812	-3.27216	-3.58857	-3.35743	-3.00748	-2.89852	-3.81942	-3.10537	-3.38093	-3.21314	-3.18294	-3.65911	-4.06216	-2.91269	-4.02808	-3.20862	-4.10307	-3.72962	-3.11855	-3.3502	-3.47019	-3.58635
eff_compressor1	0.241803	0.282155	0.113005	-0.10232	0.356266	0.739341	0.184236	-0.23697	-0.39929	0.31699	-0.08941	-0.19491	-0.40821	-0.18933	0.372367	1.634783	-0.15306	1.610003	-0.15807	1.814031	0.657966	-0.31069	0.489133	0.721965	0.743345
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	0.058007	0.151327	0.239314	0.281916	0.237692	-0.27792	0.086479	0.827643	1.529773	0.014723	0.386483	0.143085	1.000612	0.250688	0.027657	-0.24948	0.711914	-0.16844	0.259905	-0.2766	-0.21764	0.817566	0.396295	-0.2055	-0.2994
eff_compressor2	-0.42739	-0.48302	-0.47999	-0.55036	-0.56246	0.00051	-0.43687	-0.86248	-1.23207	-0.19225	-0.64826	-0.41435	-0.92011	-0.48623	-0.25176	-0.69284	-0.8132	-1.09126	-0.5138	-0.49078	0.029823	-0.83266	-0.72268	-0.18318	0.049402
mc_compressor2	-0.01855	0.013873	0.040879	-0.01037	0.038296	-0.00992	-0.01651	0.083998	0.222634	0.016359	0.005862	-0.03757	0.117261	-0.01563	0.018757	-0.04408	0.065856	-0.03036	-0.01833	-0.05485	-0.00851	0.080877	0.093847	0.001133	-0.01324
pr_turbina1	0.568082	0.640801	0.144579	-0.01357	0.719734	1.620108	0.467075	-0.45929	-1.02783	0.552345	0.073346	-0.27998	-1.08089	-0.20525	0.643132	8.02111	-0.18364	7.95129	-0.18848	11.18401	1.366818	-0.70169	1.010941	1.60292	1.654849
eff_turbina1	-0.06217	-0.07531	-0.00998	-0.00099	-0.0835	-0.1413	-0.0523	0.057951	0.120077	-0.05699	-0.01118	0.028264	0.114205	0.021158	-0.07738	-0.05941	0.020062	-1.86921	0.02016	-2.64865	-0.14003	0.081802	-0.11953	-0.14713	-0.13078
mc_turbina1	0.272286	0.307808	0.065203	-0.00934	0.346853	0.817903	0.224993	-0.22397	-0.4927	0.264343	0.034053	-0.13784	-0.1422	-0.09905	0.308423	6.586371	-0.09118	5.885904	-0.09459	8.602554	0.672782	-0.34182	0.488878	0.805814	0.837901
pr_turbina2	-0.92548	-1.14026	0.071358	0.403723	-1.34076	-4.4216	-0.7241	1.474072	2.735797	-0.98213	0.284066	0.956641	2.765919	0.780802	-1.2358	-4.3857	0.858204	-4.51309	0.784033	-4.56262	-3.46962	1.969022	-1.96124	-4.22589	-4.60327
eff_turbina2	-2.26603	-2.31125	-1.91113	-1.91285	-2.36727	-3.5633	-2.20335	-1.64961	-1.33404	-2.25696	-1.94996	-1.76188	-1.30771	-1.80938	-2.33932	-3.14859	-1.80989	-3.17014	-1.81195	-3.17097	-3.17637	-1.51351	-2.53405	-3.47732	-3.63815
mc_turbina2	-0.46225	-0.5646	0.108335	0.189534	-0.66164	-2.56831	-0.36135	0.708213	1.322509	-0.47261	0.127654	0.457721	1.339257	0.373745	-0.6126	-2.14831	0.406976	-2.21064	0.373222	-2.22855	-1.96135	0.949546	-0.96494	-2.43487	-2.6893

Acuerdo pr fancore	-0.98263	-0.89	-0.55197	0.561101	-0.85481	-2.84984	-0.60543	1.428297	2.232521	-1.79445	0.571917	0.469662	1.724628	0.733503	-1.5991	-5.77092	1.21589	-5.29244	0.629935	-6.36172	-2.73335	1.485476	-1.45533	-2.58993	-2.93178
Acuerdo pr compresor 1	-3.47188	-3.39339	-3.52295	-3.12812	-3.27216	-3.58857	-3.35743	-3.00748	-2.89852	-3.81942	-3.10537	-3.38093	-3.21314	-3.18294	-3.65911	-4.06216	-2.91269	-4.02808	-3.20862	-4.10307	-3.72962	-3.11855	-3.3502	-3.47019	-3.58635
Acuerdo eff turbina 1	-2.26603	-2.31125	-1.91113	-1.91285	-2.36727	-3.5633	-2.20335	-1.64961	-1.33404	-2.25696	-1.94996	-1.76188	-1.30771	-1.80938	-2.33932	-3.14859	-1.80989	-3.17014	-1.81195	-3.17097	-3.17637	-1.51351	-2.53405	-3.47732	-3.63815

Tabla 0.21: Caso C: Degradación -5% relación de compresión compresor 1 y -2% eficiencia turbina 1 (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-1.30221	-0.02013	-0.51274	0.408909	-2.52699	0.549724	-5.01861	-0.20475	-2.58329	-5.58218	0.060984	-3.05171	3.797515	-3.1073	1.510743	1.364165	-2.23843	-2.65467	-2.13449	-2.66316	-1.76028	1.413279	0.393313	1.11447	2.198855
-0.31862	-0.44655	-0.39291	-0.46695	-0.18617	-0.4998	0.103569	-0.4262	-0.18256	0.147105	-0.44789	-0.14482	-0.76553	-0.12312	-0.58805	-0.56442	-0.22014	-0.17489	-0.22343	-0.17963	-0.26987	-0.57162	-0.47909	-0.55766	-0.64285
-0.14257	-0.17783	-0.15751	-0.18253	-0.15074	-0.16182	-0.11572	-0.16966	-0.15466	-0.08836	-0.174	-0.13849	-0.20802	-0.12015	-0.19116	-0.18472	-0.1264	-0.12153	-0.13737	-0.12582	-0.14188	-0.19703	-0.18975	-0.18883	
-0.34622	-0.89224	-0.60595	-0.95625	-0.03778	-0.8677	0.694085	-0.65905	-0.19403	0.885567	-0.82675	-0.05088	-2.2025	0.258337	1.37684	-1.22436	0.066718	0.105742	0.088947	0.111041	-0.14371	-1.19011	-1.10123	-1.33941	-1.42414
0.00936	0.782895	0.462431	0.990315	-0.8497	1.103804	-2.30079	0.554231	-0.76342	-2.4968	0.787942	-0.96257	3.350296	-1.1326	1.76338	1.609314	-0.63676	-0.8091	-0.65276	-0.85118	-0.36151	1.620262	1.011199	1.58154	2.104122
0.100909	0.193187	0.137328	0.196141	0.083272	0.16253	-0.0066	0.145329	0.119829	-0.04652	0.17486	0.095776	0.37983	0.021132	0.25638	0.225333	0.035052	0.037995	0.044182	0.040122	0.072784	0.215218	0.234241	0.25879	0.248155
-3.53236	-3.08252	-3.37884	-3.06044	-3.44647	-3.29176	-3.84615	-3.25832	-3.39653	-4.08941	-3.1643	-3.57156	-2.70134	-3.75994	-2.85777	-2.99032	-3.74928	-3.78175	-3.65259	-3.73326	-3.59332	-3.05964	-2.82399	-2.84416	-2.95472
0.315512	0.134545	0.133715	0.012486	0.718812	-0.17777	1.320437	0.146852	0.851439	1.697602	0.060975	0.931122	-0.11342	0.722776	-0.18479	-0.25373	0.49871	0.618713	0.514559	0.638286	0.455309	-0.29924	0.129513	-0.07755	-0.38462
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.167257	0.303483	0.065637	0.316576	-0.20609	0.182559	3.257103	0.111091	1.063301	-0.10877	0.197921	1.130562	3.880297	-0.26499	0.920467	0.709444	-0.11241	-0.14809	-0.13212	-0.17865	-0.01302	0.717809	0.559648	0.772289	1.48448
-0.47859	-0.65024	-0.41923	-0.60504	-0.19801	-0.44992	-2.99856	-0.43276	-1.40266	-1.39919	-0.52409	-1.41038	-2.6915	0.161211	-0.92429	-0.77387	-0.04582	-0.06028	-0.06857	-0.04228	-0.26388	-0.77292	-0.8193	-0.8804	-1.19432
0.033079	0.09148	-0.02691	0.003712	0.001324	-0.03224	1.373139	-0.01892	0.289028	-0.03533	-0.01384	0.32186	0.656636	-0.01388	0.103927	0.063765	0.002461	0.000274	0.001089	-0.00291	0.016131	0.066845	0.061436	0.077209	0.211485
0.668759	0.470234	0.409516	0.19877	1.594379	-0.29097	2.307537	0.327653	1.652842	9.114571	0.293224	1.720187	-1.7938	1.513807	-0.44429	0.989161	1.254249	1.059259	1.312327	0.918691	-0.58578	0.523378	-0.0041	-1.11654	
-0.07498	-0.057	-0.04579	-0.02075	-0.14849	0.031965	-0.15706	-0.03967	-0.19659	-1.88417	-0.03641	-0.2039	0.234062	-0.13578	0.042365	0.050587	-0.11126	-0.13549	-0.1197	-0.13413	-0.10474	0.071047	-0.06497	-0.00011	0.126014
0.319958	0.227548	0.197293	0.095555	0.799485	-0.14202	1.110097	0.154841	0.800317	6.870605	0.141364	0.831341	-0.85806	0.756171	-0.16953	-0.21562	0.477449	0.609631	0.514694	0.643645	0.4441706	-0.28375	0.252778	-0.00232	-0.53909
-1.15426	-0.65045	-0.5875	-0.07758	-4.19507	0.993965	-4.97945	-0.44746	-3.34593	-4.66376	-0.30134	-3.4911	4.600443	-4.04519	1.247261	1.398978	-2.26207	-2.99873	-2.49548	-3.22336	-1.97643	1.696878	-0.73314	0.518832	2.895538
-2.30287	-2.19269	-2.16943	-2.04531	-3.46726	-1.75568	-3.20628	-2.13005	-2.90658	-3.18449	-2.09964	-2.94986	-0.92338	-3.41932	-1.714	-1.66527	-2.71604	-2.99043	-2.79918	-3.07911	-2.60506	-1.5861	-2.21592	-1.90316	-1.29142
-0.55248	-0.32529	-0.29335	-0.04653	-2.41652	0.478085	-2.43432	-0.22542	-1.6461	-2.2831	-0.15415	-1.71852	2.221371	-2.33503	0.596431	0.674582	-1.22148	-1.6644	-1.35959	-1.80311	-1.04742	0.816202	-0.36837	0.239403	1.399496

-1.30221	-0.02013	-0.51274	0.408909	-2.52699	0.549724	-5.01861	-0.20475	-2.58329	-5.58218	0.060984	-3.05171	3.797515	-3.1073	1.510743	1.364165	-2.23843	-2.65467	-2.13449	-2.66316	-1.76028	1.413279	0.393313	1.11447	2.198855
-3.53236	-3.08252	-3.37884	-3.06044	-3.44647	-3.29176	-3.84615	-3.25832	-3.39653	-4.08941	-3.1643	-3.57156	-2.70134	-3.75994	-2.85777	-2.99032	-3.74928	-3.78175	-3.65259	-3.73326	-3.59332	-3.05964	-2.82399	-2.84416	-2.95472
-2.30287	-2.19269	-2.16943	-2.04531	-3.46726	-1.75568	-3.20628	-2.13005	-2.90658	-3.18449	-2.09964	-2.94986	-0.92338	-3.41932	-1.714	-1.66527	-2.71604	-2.99043	-2.79918	-3.07911	-2.60506	-1.5861	-2.21592	-1.90316	-1.29142

Tabla 0.22: Caso C: Degradación -5% relación de compresión compresor 1 y -2% eficiencia turbina 1 (II)



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	
pr_fancore	-52.1448	7.360419	-19.9268	-6.09949	38.67832	-0.64618	5.889453	1.594052	23.99325	7.049948	-30.9073	-41.1327	7.650537	2.130716	-79.9013	-0.71637	0.250512	-1.1354	-4.99397	-61.5796	-52.8489	-15.3525	-60.9885	4.284098	2.022646	
eff_fancore	10.00965	-0.41868	-0.11078	0.331941	5.891093	-0.39098	-0.79807	-0.49096	2.734134	-0.73722	5.57576	7.645771	-0.91892	-0.5321	21.36976	-0.40343	-0.39196	-0.36621	0.153083	16.54671	12.84241	-0.08148	13.75591	-0.06059	-0.53489	
mc_fancore	0.892327	-0.04543	0	0.031167	0.307456	-0.0484	-0.11588	-0.0727	0.090162	-0.0763	0.466499	0.684838	-0.09111	-0.07782	1.775284	-0.04781	-0.05871	-0.04244	0.014171	1.401833	1.037903	0	1.174801	-0.0372	-0.03827	
pr_fanduct	12.09505	-0.70801	-1.5731	0.19444	-0.7312	-0.99095	-2.02113	-1.20721	-0.00798	-1.14386	6.120714	9.077901	-1.59212	-1.23816	19.56985	-1.02462	-1.19071	-0.75326	-0.18837	15.61761	12.16289	-1.01933	14.05648	-0.05978	-1.28938	
eff_fanduct	-28.9757	1.214202	1.626269	-1.1605	0.763739	1.792965	3.806518	2.227187	0.378475	1.939615	-15.8145	-21.7579	2.722353	2.321613	-49.4566	1.833573	2.077482	1.454185	-0.37089	-39.7412	-31.4775	1.053908	-35.3288	0.241103	2.597605	
mc_fanduct	0.910624	0.066949	0.36967	0.10251	0.147354	0.079471	0.241938	0.128897	-0.03587	0.11673	0.635384	0.710173	0.177618	0.129435	1.985142	0.08497	0.128878	0.043833	0.107657	1.62875	1.335974	0.239728	1.387509	-0.00805	0.119245	
pr_compresor1	-0.11065	-1.70203	0.489663	-1.30874	-3.08314	-1.55987	-1.54535	-1.21721	-2.58962	-1.33266	-0.98142	-1.20548	-1.39831	-1.19775	-3.17652	-1.65613	-1.30772	-1.68701	-1.50848	-2.25053	-1.44467	-0.02157	-2.44069	-1.38602	-1.34098	
eff_compresor1	2.574509	0.078472	0.36669	0.567981	2.819543	0.085066	-0.20702	0.650457	1.739388	0.061158	-0.50887	-0.96977	-0.22283	0.761696	-11.2842	0.192424	0.311503	0.139165	0.397547	-8.42417	-6.70561	0.321956	-6.39472	0.242285	0.833562	
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
pr_compresor2	11.79417	8.055503	0	-0.00937	5.771506	0.365604	0.377135	0.232347	5.575047	0.129386	5.749282	10.10944	0.360856	0.22403	22.32994	0.393243	0.302597	0.313001	0.115983	1.391014	29.59776	0	0	0	0	0
eff_compresor2	-6.38249	-5.02873	-1.38465	-0.06064	-5.72116	-0.77191	0.517766	-0.20149	-3.90825	0.510499	-3.19606	-5.47517	0.391571	-0.07513	-12.4855	-0.84662	-0.60805	-0.6466	-0.26342	-2.74104	-14.6549	-0.95791	-13.7381	-4.1322	-0.57264	
mc_compresor2	0.147347	1.87444	0.306113	0.10758	1.418475	0.012521	0.008076	-0.0183	1.215487	-0.07914	0.146441	0.108414	-0.05125	-0.02173	0.219484	0.026792	-0.0025	0.016504	0.112959	0.186282	0.192466	0.201454	0.164618	1.394908	-0.00675	
pr_turbina1	-1.45343	0.329793	-0.90108	-0.77413	0.984228	-0.04355	-0.53347	0.327656	0.921813	0.296727	-0.58544	-0.94616	-0.17284	0.251658	-1.70785	-0.25271	0.473169	-0.46915	-0.72644	-1.21802	-0.92207	-0.77659	-1.26173	1.034751	-0.29667	
eff_turbina1	0.27224	-0.02872	0.211316	0.087844	-0.15243	-0.00168	-0.02563	-0.05214	-0.11805	-0.07739	0.143207	0.202218	-0.0529	-0.04645	0.435843	0.018193	-0.0579	0.036915	0.080489	0.337534	0.286415	0.178611	0.325116	-0.09587	-0.00692	
mc_turbina1	-0.5875	0.135352	-0.61767	-0.31976	0.406097	-0.0151	-0.23089	0.135421	0.383569	0.11981	-0.2333	-0.37638	-0.06093	0.10686	-0.67558	-0.10279	0.199926	-0.1879	-0.30317	-0.47919	-0.36025	-0.52984	-0.4989	0.430631	-0.12491	
pr_turbina2	13.7988	-0.9761	3.674359	2.774305	-2.71422	-0.82763	-2.226	-2.75528	-2.6153	-3.8393	8.071317	10.69678	-3.11603	-2.71966	24.21167	-0.19167	-2.80953	0.412882	2.430772	18.99398	17.27977	3.004322	18.3988	-2.82381	-1.17139	
eff_turbina2	3.74943	-4.20186	-0.17942	-3.14011	-4.51274	-4.5578	-6.37929	-5.43309	-4.49121	-6.24319	0.671867	2.113276	-6.37481	-5.49821	10.08726	-4.42513	-5.27499	-4.22752	-3.3382	7.081547	6.331918	-0.58356	6.827887	-4.52699	-5.17165	
mc_turbina2	11.32558	-0.33667	1.3672	1.371243	-0.93421	-0.80418	-3.1365	-2.09084	-0.89829	-3.18379	6.963143	9.107608	-3.23862	-2.16622	21.21559	-0.56535	-1.91564	-0.26106	1.082743	16.81414	15.5601	1.119285	16.20096	-0.96787	-1.58513	

Acuerdo pr fancore	-52.1448	7.360419	-19.9268	-6.09949	38.67832	-0.64618	5.889453	1.594052	23.99325	7.049948	-30.9073	-41.1327	7.650537	2.130716	-79.9013	-0.71637	0.250512	-1.1354	-4.99397	-61.5796	-52.8489	-15.3525	-60.9885	4.284098	2.022646
Acuerdo pr compresor1	-0.11065	-1.70203	0.489663	-1.30874	-3.08314	-1.55987	-1.54535	-1.21721	-2.58962	-1.33266	-0.98142	-1.20548	-1.39831	-1.19775	-3.17652	-1.65613	-1.30772	-1.68701	-1.50848	-2.25053	-1.44467	-0.02157	-2.44069	-1.38602	-1.34098
Acuerdo eff turbina 1	3.74943	-4.20186	-0.17942	-3.14011	-4.51274	-4.5578	-6.37929	-5.43309	-4.49121	-6.24319	0.671867	2.113276	-6.37481	-5.49821	10.08726	-4.42513	-5.27499	-4.22752	-3.3382	7.081547	6.331918	-0.58356	6.827887	-4.52699	-5.17165

Tabla 0.23: Caso C: Degradación -4% relación de compresión compresor 1 y -4% eficiencia turbina 1 (I)

	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	2.698059	-47.9955	5.154523	-83.8745	-6.31562	-3.79569	-32.9294	16.03649	0.00916	11.07812	-9.01786	-14.549	-16.0802	6.467012	-24.4147	5.035937	3.01443	-34.4294	0.584379	8.200175	25.4359	-17.938	12.00202	4.634631	-46.571
	-0.58298	9.867703	-0.78064	27.1733	0.368965	-0.02498	5.616036	-0.31753	-0.40078	0.239245	0.851172	1.985876	2.231359	-0.36929	3.981941	-0.03748	-0.56568	6.123018	-0.42044	-0.30057	1.519331	-0.08407	0.406478	-0.71921	10.19122
	-0.08452	0.833955	-0.10896	2.071982	0.034348	-0.00356	0.513658	-0.02475	-0.05788	-0.01468	0.077275	0.175363	0.197284	-0.04741	0.350746	-0.04671	-0.09056	0.5384	-0.06822	-0.04284	0.101672	0	-0.01544	-0.09534	0.860404
	-1.26544	10.40177	-1.69233	22.5687	0.375053	-0.20532	7.456689	-1.32338	-1.17932	-0.30721	1.031665	2.37691	2.906308	-0.53498	4.857405	0.075693	-1.62037	7.267103	-1.17038	-0.58942	-0.9837	-1.42013	-0.19104	-1.33221	10.26636
	2.51644	-26.2728	3.195457	-58.7125	-1.40718	0.086402	-17.667	1.486917	2.145706	0.567445	-3.05784	-6.26648	-7.51771	0.996845	-12.1047	0.249573	2.850001	-17.7734	2.352587	1.055637	1.083596	1.476278	0.454422	2.47342	-26.2678
	0.117629	1.037391	0.186402	2.584824	0.089979	0.050007	0.474254	0.17062	0.111484	0.013807	0.129826	0.255174	0.242406	0.040023	0.412783	-0.05268	0.217926	0.605011	0.103746	0.046952	0.154959	0.333418	-0.00794	0.139194	1.086984
	-1.25796	-1.92053	-1.46497	-2.07499	-0.96904	-1.42113	-0.11605	-2.67398	-1.58826	-1.80773	-0.87818	-0.85566	-0.53498	-1.58621	-0.77142	-1.41978	-1.09671	-0.91594	-1.57164	-1.70232	-3.20762	-0.22391	-1.84441	-1.28742	-1.94399
	0.840968	-3.87047	0.280849	-11.7304	0.421033	0.179958	2.970572	3.060788	0.426701	1.278815	0.997611	-0.30202	1.964774	-0.09109	0.42322	0.216512	0.62879	-0.00072	0.738818	0.269239	2.049523	0.293719	1.553885	0.501346	-5.88775
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.269505	15.27032	0.199916	-11.6245	-0.001	0.076521	4.697092	11.37575	0.427284	6.757887	0.025852	1.699503	0.752569	7.396007	3.479569	6.063751	0.31027	6.575107	0.458761	7.925256	7.898396	0	6.72085	0.120065	20.36522
	-0.20409	-8.11163	0.802344	6.212479	-0.01375	-0.20636	-2.28907	-6.73657	-0.96643	-4.2828	0.083849	-0.95517	-0.14658	-4.71086	-1.8162	-4.02447	0.1223	-3.61061	-1.03066	-4.97444	-5.33161	-1.38431	-4.19302	0.768222	-10.4236
	-0.02801	0.147647	-0.01547	0.22272	0.062719	0.04839	0.124332	2.437701	0.022039	1.467788	0.098684	0.074824	0.128331	1.729827	0.108838	1.427102	0.016506	0.117942	0.025775	1.822701	1.675203	0.312969	1.449024	-0.04503	0.14056
	-0.1059	-0.85949	-0.32875	-1.44662	-0.39631	-0.53299	-1.32135	-0.17785	-0.12666	0.756581	-0.64865	-0.25964	-0.88078	0.455315	-0.68113	0.846587	0.37482	-0.80085	0.051457	0.385929	0.514131	-1.18088	0.736377	0.09189	-0.80645
	-0.02528	0.227698	-0.02732	0.52921	0.05278	0.055102	0.204879	0.006108	0.00863	-0.03352	0.084015	0.057593	0.129968	-0.0382	0.129694	-0.06991	-0.07108	0.168634	0.029151	0.010514	-0.07667	0.272499	-0.03094	-0.05149	0.231971
	-0.04627	-0.33884	-0.14344	-0.56458	-0.16167	-0.21896	-0.53905	-0.07886	-0.05397	0.312969	-0.26697	-0.10216	-0.36317	0.187689	-0.27276	0.357492	0.151284	-0.32181	-0.21721	0.162005	0.208796	-0.81209	0.303474	0.037623	-0.31464
	-1.89733	13.26416	-2.41452	27.68408	1.752514	1.416523	9.30721	0.3527	-0.84976	-2.07283	3.10217	3.275037	5.235186	-1.3521	6.489842	-2.51539	-3.21695	8.873093	-0.14069	-1.16502	-1.43239	4.875536	-2.08708	-3.11274	13.94125
	-5.39368	3.845692	-6.12029	12.24083	-3.25353	-3.6565	0.786542	-3.97408	-4.74107	-4.39494	-2.71183	-2.04471	-1.58112	-4.26604	-0.43919	-4.46568	-5.82294	1.018723	-4.76982	-4.24426	-4.29732	0.588015	-4.39941	-5.97851	4.35393
	-1.94315	11.7168	-2.86354	25.07282	1.126254	0.567068	7.0578	0.115092	-1.02127	-0.71288	1.961023	2.883793	3.659668	-0.46452	5.307923	-0.86139	-2.60295	7.472787	-0.97948	-0.40047	-0.49473	1.813344	-0.71711	-2.78893	12.52522

	2.698059	-47.9955	5.154523	-83.8745	-6.31562	-3.79569	-32.9294	16.03649	0.00916	11.07812	-9.01786	-14.549	-16.0802	6.467012	-24.4147	5.035937	3.01443	-34.4294	0.584379	8.200175	25.4359	-17.938	12.00202	4.634631	-46.571
	-1.25796	-1.92053	-1.46497	-2.07499	-0.96904	-1.42113	-0.11605	-2.67398	-1.58826	-1.80773	-0.87818	-0.85566	-0.53498	-1.58621	-0.77142	-1.41978	-1.09671	-0.91594	-1.57164	-1.70232	-3.20762	-0.22391	-1.84441	-1.28742	-1.94399
	-5.39368	3.845692	-6.12029	12.24083	-3.25353	-3.6565	0.786542	-3.97408	-4.74107	-4.39494	-2.71183	-2.04471	-1.58112	-4.26604	-0.43919	-4.46568	-5.82294	1.018723	-4.76982	-4.24426	-4.29732	0.588015	-4.39941	-5.97851	4.35393

Tabla 0.24: Caso C.: Degradación -4% relación de compresión compresor 1 y -4% eficiencia turbina 1 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	1.177709	-1.00516	0.363506	1.10879	0.394377	-0.23613	1.195293	1.573081	1.704518	-0.9496	-0.4698	0.695001	0.28125	1.834914	0.509424	0.340992	-0.09507	0.91855	0.737497	0.017345	1.383919	0.583382	0.117945	-0.4793	1.121176
eff_fancore	-1.59882	-1.32341	-1.489	-1.55389	-1.46205	-1.40921	-1.60081	-1.63569	-1.63759	-1.33024	-1.37859	-1.52808	-1.46557	-1.66773	-1.52466	-1.47129	-1.43396	-1.55769	-1.51958	-1.44851	-1.62421	-1.50286	-1.46869	-1.39639	-1.57259
mc_fancore	-0.09428	0.080185	-0.02927	-0.08988	-0.03218	0.019035	-0.09579	-0.1272	-0.13686	0.076025	0.036538	-0.05667	-0.02318	-0.14798	-0.04112	-0.02833	0.007983	-0.07415	-0.0603	-0.00243	-0.11158	-0.04762	-0.00906	0.037591	-0.09129
pr_fanduct	-0.92497	0.804998	-0.14149	-0.58788	-0.08205	0.183709	-0.82648	-1.10175	-0.99747	0.5335	0.457463	-0.53677	-0.01253	-1.29294	-0.43195	0.048005	0.013662	-0.53675	-0.29418	-0.21991	-1.15449	-0.3755	-0.22304	0.393726	-0.50779
eff_fanduct	0.622331	-0.54094	0.098549	0.405766	0.064237	-0.1208	0.561634	0.743826	0.677002	-0.35389	-0.30246	0.355563	0.005393	0.867803	0.292897	-0.01836	-0.01049	0.36392	0.207418	0.146597	0.778253	0.252187	0.152999	-0.25588	0.353333
mc_fanduct	0.204338	-0.17815	0.030954	0.128902	0.017737	-0.04066	0.182721	0.24186	0.220076	-0.11823	-0.10203	0.116867	0.002276	0.284096	0.095036	-0.01133	-0.00299	0.11805	0.063676	0.046814	0.253564	0.08172	0.049577	-0.0878	0.111012
pr_compresor1	-3.59947	-4.99727	-4.0761	-3.66295	-3.74223	-4.69536	-3.78442	-3.66011	-3.33732	-5.18311	-4.6521	-4.6447	-3.83524	-3.61412	-4.2596	-3.97435	-4.81158	-4.02763	-3.56669	-5.47573	-4.46157	-4.2889	-4.31054	-4.70995	-3.3629
eff_compresor1	0.159136	0.052317	0.125528	0.133164	0.129261	0.070269	0.143045	0.16403	0.181111	0.014468	0.072203	0.092589	0.120555	0.166558	0.118734	0.124194	0.058364	0.154612	0.150853	0.006952	0.082271	0.081603	0.08155	0.100963	0.174419
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eff_compresor2	-0.35016	0.196611	-0.09843	-0.23422	0.026829	-0.042	-0.37456	-0.49333	-0.37849	0.052738	0.090497	-0.41773	0.039139	-0.57111	-0.27303	-0.00212	-0.16199	-0.30409	-0.04974	-0.43911	-0.68732	-0.25296	-0.14521	0.05216	-0.13416
mc_compresor2	0.080558	-0.02873	0.01641	0.041409	-0.01975	0.024048	0.081651	0.108633	0.070955	0.01379	-0.01585	0.109178	-0.01702	0.124891	0.068076	-0.01525	0.053072	0.068306	-0.00342	0.132391	0.169623	0.057711	0.044795	-0.00285	0.010165
pr_turbina1	0.002777	0.000646	-0.00663	-0.00325	0.001906	0.000629	-0.00045	-0.00579	-0.00581	0.003719	0.002177	-0.00234	-0.00129	-0.00223	-0.00268	-0.00433	0.000312	-0.0025	-0.00055	-0.00015	-0.00041	-0.00172	0.002653	0.002837	-0.00787
eff_turbina1	-0.00893	0.015665	0.006952	-0.00028	-0.000771	0.013974	0.000786	0.005987	-0.00365	0.020925	0.012873	0.019187	-0.00756	0.002146	0.011839	0.005396	0.016579	0.010256	-0.00733	0.038626	0.020877	0.012299	0.002824	0.013047	-0.00787
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	-2.22585	5.339063	0.794297	-1.20828	-2.04134	3.785621	-0.37297	-0.63329	-2.57575	5.851144	3.544409	5.067849	-1.2336	-0.84969	2.029981	0.509044	5.013152	1.481733	-2.5044	10.0175	4.559919	2.273468	1.33464	3.849061	-2.98318
eff_turbina2	-4.49196	0.337617	-2.56041	-3.8284	-4.35308	-0.6723	-3.31295	-3.47964	-4.69998	0.625233	-0.81109	0.139652	-3.81708	-3.61474	-1.79557	-2.73576	0.10556	-2.13309	-4.64445	3.261301	-0.21075	-1.62307	-2.23213	-0.63538	-4.94598
mc_turbina2	-0.69467	1.662244	0.249655	-0.3742	-0.63504	1.17484	-0.11705	-0.19574	-0.80139	1.815919	1.099947	1.575228	-0.38299	-0.26617	0.630795	0.161298	1.560057	0.45928	-0.77687	3.113178	1.414522	0.705931	0.414792	1.195653	-0.92458

Acuerdo eff fancore	-1.59882	-1.32341	-1.489	-1.55389	-1.46205	-1.40921	-1.60081	-1.63569	-1.63759	-1.33024	-1.37859	-1.52808	-1.46557	-1.66773	-1.52466	-1.47129	-1.43396	-1.55769	-1.51958	-1.44851	-1.62421	-1.50286	-1.46869	-1.39639	-1.57259
Acuerdo pr compresor 1	-3.59947	-4.99727	-4.0761	-3.66295	-3.74223	-4.69536	-3.78442	-3.66011	-3.33732	-5.18311	-4.6521	-4.6447	-3.83524	-3.61412	-4.2596	-3.97435	-4.81158	-4.02763	-3.56669	-5.47573	-4.46157	-4.2889	-4.31054	-4.70995	-3.3629
Acuerdo eff turbina 1	-4.49196	0.337617	-2.56041	-3.8284	-4.35308	-0.6723	-3.31295	-3.47964	-4.69998	0.625233	-0.81109	0.139652	-3.81708	-3.61474	-1.79557	-2.73576	0.10556	-2.13309	-4.64445	3.261301	-0.21075	-1.62307	-2.23213	-0.63538	-4.94598

Tabla 0.25: Caso D: Degradación -2% eficiencia fancore, -5% relación de compresión compresor 1 y -5% eficiencia turbina 2 (I)



caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
-0.05425	0.774384	0.205425	0.162594	0.490715	1.330166	2.264358	1.142062	-0.93006	-1.01574	-1.28863	2.577808	-0.46181	0.802389	0.550881	1.689695	-0.11275	0.842171	0.96658	-0.85816	0.350669	0.504977	0.115707	1.63018	1.411796
-1.42916	-1.52445	-1.46257	-1.4451	-1.49692	-1.61234	-1.69769	-1.59923	-1.32175	-1.29773	-1.30113	-1.74506	-1.40075	-1.56273	-1.49614	-1.63315	-1.42232	-1.52489	-1.55917	-1.30659	-1.47307	-1.48652	-1.46149	-1.62442	-1.59616
0.004613	-0.06222	-0.01678	-0.01355	-0.03918	-0.10678	-0.18295	-0.09202	0.073818	0.080852	0.103074	-0.20758	0.036613	-0.06441	-0.04527	-0.13665	0.008447	-0.06769	-0.07736	0.068735	-0.02831	-0.04101	-0.00964	-0.13113	-0.11404
-0.07815	-0.59191	-0.01309	0.032325	-0.35932	-0.90684	-1.33513	-0.74738	0.752664	0.753332	0.801484	-1.65275	0.305405	-0.58133	-0.1404	-1.00821	0.217314	-0.40955	-0.34512	0.829275	-0.38023	-0.33435	-0.06732	-0.95566	-0.97415
0.057663	0.39511	0.01276	-0.01141	0.244767	0.611962	0.901967	0.510095	-0.49992	-0.50392	-0.5436	1.117049	0.19456	0.39142	0.108786	0.682032	-0.13699	0.282575	0.2526	-0.53875	0.250569	0.223199	0.046116	0.656239	0.655796
0.017463	0.13033	0.002638	-0.00776	0.079414	0.199939	0.293201	0.164462	-0.16713	-0.16707	-0.17725	0.363617	-0.06788	0.128201	0.030076	0.221213	-0.04867	0.090588	0.077009	-0.18257	0.083342	0.073024	0.014512	0.210624	0.213833
-4.57304	-4.14472	-4.16442	-4.11135	-4.2264	-3.75273	-3.02091	-3.74626	-4.86022	-4.8776	-5.32927	-3.20974	-4.63999	-4.17781	-3.51292	-3.54636	-4.53956	-3.79279	-2.81892	-4.21485	-4.69722	-4.29458	-4.25023	-3.16305	-4.01235
0.066603	0.103725	0.089963	0.093423	0.098386	0.149358	0.197287	0.174074	0.036432	0.035623	0.050824	0.202311	0.075671	0.140606	0.144076	0.165054	0.089093	0.137187	0.225434	0.070459	0.060634	0.085309	0.104226	0.174638	0.127255
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0.13156	-0.32073	-0.03848	0.005753	-0.22073	-0.40547	-0.48019	-0.32788	0.210869	0.215421	0.126038	-0.69979	0.028275	-0.34626	0.044	-0.43681	-0.01868	-0.17581	0.08186	0.404167	-0.33467	-0.22331	-0.07853	-0.29416	-0.51278
0.046685	0.079106	0.005892	-0.00652	0.056274	0.090473	0.08308	0.072819	-0.04261	-0.03688	-0.00109	0.139874	0.00267	0.084001	-0.02618	0.086268	0.01114	0.03534	-0.04942	-0.09527	0.095433	0.054062	0.019545	0.048653	0.118504
0.003011	-0.00064	-0.0004	-0.00173	-0.00151	-0.00271	-0.00481	-0.00247	-0.00096	-9.7E-05	0.00067	-0.00776	0.001885	-0.00338	-0.00187	-0.00771	-0.00282	-0.00581	-0.00752	0.000178	-0.0033	0.000354	0.001252	-0.00375	-0.00721
0.010141	0.005617	-0.0013	0.001099	0.008825	-4.8E-05	-0.00954	0.00073	0.014188	0.014062	0.027356	0.002214	0.012504	0.011977	-0.01268	0.003506	0.016307	0.002157	-0.02226	-0.00315	0.021593	0.008438	0.003573	-0.01436	0.014905
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.853856	1.438004	1.110013	0.219212	1.493844	-0.40379	-4.20169	-0.53772	4.048654	3.924512	7.181098	-2.14737	3.309286	2.154564	-3.12496	-0.99102	3.422263	-0.5369	-7.4014	-0.66618	4.656006	1.981472	1.392518	-4.33951	1.668792
-1.27784	-2.16444	-2.34901	-2.92316	-2.12461	-3.3298	-5.72077	-3.42076	-0.48178	-0.574	1.478065	-4.44022	-0.98306	-1.70923	-5.03507	-3.69797	-0.89613	-3.40128	-7.74966	-3.48213	-0.12617	-1.80854	-2.18514	-5.82462	-2.02024
0.884361	0.446816	0.347334	0.070137	0.463838	-0.1264	-1.30712	-0.1678	1.258821	1.220889	2.231648	-0.66746	1.029963	0.669647	-0.96897	-0.30947	1.064363	-0.16504	-2.29804	-0.20749	1.447183	0.615823	0.433317	-1.35014	0.519166

-1.42916	-1.52445	-1.46257	-1.4451	-1.49692	-1.61234	-1.69769	-1.59923	-1.32175	-1.29773	-1.30113	-1.74506	-1.40075	-1.56273	-1.49614	-1.63315	-1.42232	-1.52489	-1.55917	-1.30659	-1.47307	-1.48652	-1.46149	-1.62442	-1.59616
-4.57304	-4.14472	-4.16442	-4.11135	-4.2264	-3.75273	-3.02091	-3.74626	-4.86022	-4.8776	-5.32927	-3.20974	-4.63999	-4.17781	-3.51292	-3.54636	-4.53956	-3.79279	-2.81892	-4.21485	-4.69722	-4.29458	-4.25023	-3.16305	-4.01235
-1.27784	-2.16444	-2.34901	-2.92316	-2.12461	-3.3298	-5.72077	-3.42076	-0.48178	-0.574	1.478065	-4.44022	-0.98306	-1.70923	-5.03507	-3.69797	-0.89613	-3.40128	-7.74966	-3.48213	-0.12617	-1.80854	-2.18514	-5.82462	-2.02024

Tabla 0.26: Caso D: Degradación -2% eficiencia fancore, -5% relación de compresión compresor 1 y -5% eficiencia turbina 2 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	1.014859	0.748342	-0.49172	1.073687	1.617792	2.380024	1.939762	0.010242	0.340118	1.438031	-0.35553	1.194928	1.916161	0.202813	-0.58086	1.175442	0.466366	2.592921	1.539358	1.534539	-0.46229	0.485795	0.021978	1.362652	-1.45709
eff_fancore	-5.19523	-4.97786	-4.95222	-5.16072	-5.26394	-5.36507	-5.28331	-5.06338	-5.0668	-5.22319	-4.94018	-5.16401	-5.23413	-5.03843	-4.90375	-5.16883	-5.03811	-5.39123	-5.25775	-5.28397	-4.94586	-5.06332	-4.97386	-5.16821	-4.78211
mc_fancore	-0.10217	-0.01014	-0.00684	-0.08191	-0.11198	-0.16042	-0.12134	0.025978	-0.07097	-0.0954	-0.00649	-0.09146	-0.08213	-0.10646	0.026507	-0.06009	-0.01506	-0.17567	-0.13217	-0.15437	0.007294	-0.13363	-0.02588	-0.05952	0.058371
pr_fanduct	-0.90356	-0.02904	0.19864	-0.5584	-1.20582	-1.71243	-1.12558	0.124619	-0.26794	-0.88834	0.399343	-0.57683	-0.90939	-0.34812	0.212292	-0.79045	-0.42611	-1.73037	-1.07858	-1.80715	0.142878	-0.47304	0.245988	-0.72513	0.885042
eff_fanduct	0.64459	0.366744	-0.30727	0.489272	1.105622	1.671628	1.165132	0.257201	0.001469	0.783955	-0.34005	0.515068	1.129885	-0.18689	-0.2729	0.824551	0.40262	1.700986	0.891125	1.597901	-0.25539	-0.09934	-0.1959	0.842354	-0.88085
mc_fanduct	0.184972	-0.01836	-0.01883	0.105615	0.235704	0.33717	0.212309	-0.04247	0.069651	0.17155	-0.06734	0.109602	0.159331	0.109757	-0.03478	0.147037	0.079883	0.339793	0.216075	0.367386	-0.01494	0.135265	-0.04388	0.129334	-0.15103
pr_compressor1	-2.61013	-2.20474	-1.35642	-2.19739	-3.21925	-3.65474	-2.96506	-2.93152	-1.6525	-2.67117	-1.1875	-2.2104	-2.87052	-1.49943	-2.40816	-3.04499	-3.01576	-3.61228	-2.81396	-4.56573	-2.01361	-1.62439	-1.2974	-2.91587	-1.36136
eff_compressor1	-0.06933	-0.25896	0.084992	-0.02002	-0.45643	-0.65374	-0.45516	0.224884	0.06458	-0.20991	0.172879	-0.07625	-0.53267	-0.38933	-0.14384	-0.4812	-0.48937	-0.62169	-0.24234	-0.40922	0.023347	-0.0378	0.102778	-0.52874	0.44594
mc_compressor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compressor2	0.11605	-0.27948	-0.15336	0.083043	0.233343	0.289958	0.197676	-0.64511	-0.1018	0.152031	-0.16532	0.091863	0.074684	-0.4662	-0.11843	0.121146	-0.00068	0.281686	0.167734	4.982047	-0.04043	-0.33682	-0.13832	0.067343	-0.33811
eff_compressor2	-0.27711	1.819934	0.261685	-0.24628	-0.60543	-0.58285	-0.47815	1.402459	0.094551	-0.44713	0.31334	-0.24928	0.346779	0.43121	0.574985	-0.04667	0.451275	-0.58627	-0.45105	-3.88651	0.128321	0.293975	0.236613	0.214941	1.062308
mc_compressor2	0.040421	0.02432	-0.04278	0.01095	0.074965	0.113828	0.059144	0.059879	-0.02793	0.037075	-0.04505	0.013926	0.063713	-0.04459	0.028883	0.069302	0.063342	0.107398	0.052773	1.071964	0.006885	-0.03106	-0.04513	0.05816	-0.00231
pr_turbina1	-0.00274	0.021466	0.001075	-0.00749	-0.00326	-0.00501	-0.00422	0.04796	-0.01216	-0.00119	-0.0048	1.84E-05	0.011254	0.031076	0.017635	0.008511	0.020366	-0.00805	-0.00815	0.012964	0.000952	0.015439	-0.00458	0.010486	0.010365
eff_turbina1	-0.00411	-0.09122	-0.00817	-0.00133	0.000138	-0.00728	-0.00392	-0.17803	-0.01021	-0.00103	-0.0047	0.000491	-0.03598	-0.17616	-0.03425	-0.02309	-0.04195	-0.00042	0.001576	-0.00484	-0.00099	-0.11981	-0.00023	-0.034	-0.03569
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	-3.96457	0.292714	-3.85769	-1.68386	-1.29771	-1.02054	-0.75038	-0.93122	-5.21232	-1.81786	-1.12084	-1.98272	0.129828	-21.4691	1.260183	0.401413	0.756666	-1.23641	-2.97554	2.77721	0.000413	-16.2186	-1.54932	0.38472	1.735559
eff_turbina2	-5.9577	-7.16722	-5.85466	-5.36682	-5.38024	-5.51152	-5.40979	-9.53863	-6.29706	-5.43215	-5.15417	-5.43897	-6.06946	-7.34709	-5.56603	-5.59871	-5.94757	-5.54759	-5.70711	-4.58886	-5.01519	-6.97895	-5.25902	-5.8546	-5.57394
mc_turbina2	-1.64176	-2.81118	-1.51088	-0.64716	-0.6191	-0.76115	-0.60572	-5.85769	-2.23379	-0.74669	-0.32215	-0.77383	-1.38881	-14.6016	-0.66807	-0.75553	-1.18397	-0.82557	-1.20989	0.789901	-0.03833	-10.537	-0.5013	-1.09218	-0.65601

Acuerdo eff fancore	-5.19523	-4.97786	-4.95222	-5.16072	-5.26394	-5.36507	-5.28331	-5.06338	-5.0668	-5.22319	-4.94018	-5.16401	-5.23413	-5.03843	-4.90375	-5.16883	-5.03811	-5.39123	-5.25775	-5.28397	-4.94586	-5.06332	-4.97386	-5.16821	-4.78211
Acuerdo pr compresor 1	-2.61013	-2.20474	-1.35642	-2.19739	-3.21925	-3.65474	-2.96506	-2.93152	-1.6525	-2.67117	-1.1875	-2.2104	-2.87052	-1.49943	-2.40816	-3.04499	-3.01576	-3.61228	-2.81396	-4.56573	-2.01361	-1.62439	-1.2974	-2.91587	-1.36136
Acuerdo eff turbina 2	-5.9577	-7.16722	-5.85466	-5.36682	-5.38024	-5.51152	-5.40979	-9.53863	-6.29706	-5.43215	-5.15417	-5.43897	-6.06946	-7.34709	-5.56603	-5.59871	-5.94757	-5.54759	-5.70711	-4.58886	-5.01519	-6.97895	-5.25902	-5.8546	-5.57394

Tabla 0.2.7: Caso D: Degradación -5% eficiencia fancore, -2% relación de compresión compresor 1 y -5% eficiencia turbina 2 (I)

caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
0.051038	2.231491	-0.83408	2.405372	-0.36257	-6.35732	0.744767	1.549605	1.315718	1.608308	1.674509	1.649301	-0.26615	-0.52317	-1.00861	1.357043	-3.83521	0.214383	-1.39391	-0.46852	1.869565	2.215061	-0.2757	1.325487	0.700111
-4.99465	-5.30652	-4.90194	-5.3832	-4.94176	-4.31613	-5.10026	-5.25133	-5.23861	-5.21131	-5.31226	-5.19838	-4.99415	-4.96162	-4.79343	-5.21863	-4.46001	-5.04561	-4.76747	-4.95843	-5.20655	-5.21681	-4.97652	-5.22282	-5.09054
-0.01238	-0.12047	0.02203	-0.18363	-0.00072	0.071671	-0.0455	-0.11245	-0.13339	-0.08834	-0.17253	-0.21283	-0.04444	-0.00074	0.042496	-0.0999	0.118443	-0.09492	0.06048	0.009717	-0.07356	-0.07047	-0.00356	-0.15755	-0.05228
0.073986	-1.27726	0.297686	-1.95825	0.278331	1.502927	-0.37449	-1.30254	-1.03414	-1.0979	-1.68162	-1.18436	-0.00045	0.083388	0.776429	-1.24841	1.877422	-0.25404	0.955773	0.045876	-1.02907	-0.7945	0.136388	-1.02525	-0.21476
-0.07427	1.408193	-0.43603	1.788525	-0.30324	-3.14226	0.392982	1.19188	0.733001	1.144175	1.279618	0.539002	-0.28214	-0.24728	-0.68095	1.122925	-1.75069	-0.17219	-0.87775	-0.20005	1.264964	1.203408	-0.20989	0.592913	0.234707
-0.01371	0.237545	-0.0351	0.396938	-0.04388	-0.19358	0.067509	0.257035	0.213521	0.207334	0.35158	0.269398	0.029196	0.005061	-0.14369	0.246511	-0.28302	0.082323	-0.17304	0.003524	0.18453	0.124529	-0.01611	0.222738	0.036607
-1.90507	-3.20083	-1.71834	-4.11861	-1.60052	-4.37212	-2.32696	-3.40314	-2.68247	-3.34367	-3.71684	-1.80228	-1.28159	-1.57615	-1.46932	-3.4949	-0.58108	-1.52757	-1.3737	-2.2228	-3.31484	-2.83637	-1.76301	-2.36705	-1.97093
0.085899	-0.56035	0.082284	-0.85695	0.114132	5.927845	-0.09411	-0.5529	-0.13321	-0.54843	-0.57804	0.992005	0.018393	0.094107	0.44684	-0.55391	0.801827	0.053113	0.521002	-0.02879	-0.1016	-0.36112	0.090689	0.118528	0.048608
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0.04188	0.188042	-0.10777	0.320709	-0.1	18.39744	0.06522	0.250538	0.095568	0.156264	0.235301	-0.37531	-0.20794	-0.11493	-0.33805	0.243263	-0.63212	-0.16762	-0.43155	-0.01703	0.041234	-0.12261	-0.05601	0.007528	0.031305
0.139149	-0.15878	0.239261	-0.71037	0.215755	-13.2744	-0.11751	-0.61962	-0.26071	-0.10592	-0.58413	0.738326	0.272825	0.186368	1.149186	-0.58557	1.446113	0.189596	1.523379	0.089015	0.471074	0.985565	0.128988	-0.08493	-0.09005
0.002829	0.082759	-0.01219	0.13162	-0.01885	4.774349	0.027557	0.088838	0.039257	0.081011	0.103504	0.024015	-0.04876	-0.0293	-0.00525	0.990424	-0.04095	-0.03022	-0.00325	0.017876	0.09226	0.056381	-0.00703	0.026105	0.00136
0.008246	0.000504	-0.00109	0.009931	-0.00857	0.01752	-0.00266	0.003639	-0.00542	0.008616	0.00342	0.009918	-0.00174	0.002852	0.013198	0.003179	0.011385	-0.00555	0.021396	0.004631	0.027022	0.024278	-0.00473	-0.01344	-0.00363
-0.01149	-0.0183	-0.00092	-0.00737	0.004409	-0.02357	-0.00532	-0.00367	-0.00907	-0.02313	-0.01044	-0.09826	-0.02722	-0.00226	-0.0486	-0.00503	-0.02407	-0.02794	-0.06284	-0.00484	-0.08355	-0.09767	0.000392	-0.01345	-0.00195
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.454115	-0.24602	-0.575	-1.59201	-0.36686	7.79696	0.229694	-0.82102	-4.49131	0.131489	-4.09486	-13.9822	-7.58733	-3.69388	1.536448	-0.5319	2.227697	-7.42426	1.544136	0.257142	-0.03663	-0.43375	-0.45008	-5.93426	-0.56486
-5.12663	-5.70056	-5.02993	-5.54162	-5.04655	-3.78664	-5.26141	-5.32909	-6.13689	-5.65395	-6.05996	-7.45409	-6.95912	-5.80801	-5.86849	-5.295	-5.06337	-6.89265	-6.22469	-5.01526	-7.10933	-7.62703	-5.05907	-6.61473	-5.17459
-0.16171	-0.94373	-0.10661	-0.85192	-0.11825	2.218916	-0.34433	-0.50874	-1.93102	-0.8491	-1.78186	-8.91577	-3.7683	-1.42395	-1.05322	-0.43769	0.036561	-3.62483	-1.52462	-0.01837	-2.71222	-3.41299	-0.13756	-2.71585	-0.3026

-4.99465	-5.30652	-4.90194	-5.3832	-4.94176	-4.31613	-5.10026	-5.25133	-5.23861	-5.21131	-5.31226	-5.19838	-4.99415	-4.96162	-4.79343	-5.21863	-4.46001	-5.04561	-4.76747	-4.95843	-5.20655	-5.21681	-4.97652	-5.22282	-5.09054
-1.90507	-3.20083	-1.71834	-4.11861	-1.60052	-4.37212	-2.32696	-3.40314	-2.68247	-3.34367	-3.71684	-1.80228	-1.28159	-1.57615	-1.46932	-3.4949	-0.58108	-1.52757	-1.3737	-2.2228	-3.31484	-2.83637	-1.76301	-2.36705	-1.97093
-5.12663	-5.70056	-5.02993	-5.54162	-5.04655	-3.78664	-5.26141	-5.32909	-6.13689	-5.65395	-6.05996	-7.45409	-6.95912	-5.80801	-5.86849	-5.295	-5.06337	-6.89265	-6.22469	-5.01526	-7.10933	-7.62703	-5.05907	-6.61473	-5.17459

Tabla 0.28: Caso D: Degradación -5% eficiencia fancore, -2% relación de compresión compresor 1 y -5% eficiencia turbina 2 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	0.827724	0.776846	1.493563	0.307522	0.885101	-0.25364	-0.1379	1.194164	0.396908	1.825786	1.338698	0.967221	1.310723	0.064839	0.388712	0.2286	0.1114	1.116269	1.228849	0.926871	0.586055	0.946913	0.843464	0.373768	0.751276
eff_fancore	-5.19804	-5.23887	-5.38161	-5.10919	-5.21003	-5.04067	-5.12861	-5.27015	-5.1255	-5.47824	-5.37292	-5.25788	-5.34879	-5.21098	-5.17804	-5.1336	-5.1565	-5.24968	-5.35967	-5.24095	-5.15	-5.29924	-5.28279	-5.12209	-5.17539
mc_fancore	-0.03476	-0.03231	-0.06161	-0.01274	-0.03692	0.010541	0.005638	-0.04984	-0.01678	-0.07511	-0.05556	-0.04006	-0.05414	-0.02703	-0.01622	-0.00976	-0.00452	-0.04651	-0.05059	-0.03879	-0.02485	-0.03927	-0.03501	-0.01557	-0.08145
pr_fanduct	-0.34434	-0.33749	-0.64313	0.09195	-0.44475	0.251176	0.09288	-0.40539	-0.09495	-0.80452	-0.47307	-0.32709	-0.64491	-0.27832	-0.14012	-0.0149	-0.09972	-0.40333	-0.56825	-0.36261	-0.23488	-0.3892	-0.37408	0.059342	-0.17149
eff_fanduct	0.525456	0.515951	0.995092	-0.1084	0.677922	-0.37868	-0.16731	0.646048	0.160376	1.200654	0.724648	0.512326	0.962719	0.416	0.206724	0.022181	0.13824	0.651277	0.830287	0.56741	0.375644	0.585898	0.548298	-0.05856	0.280398
mc_fanduct	0.072267	0.071534	0.137026	-0.0202	0.094206	-0.05389	-0.02006	0.085206	0.019396	0.171716	0.099901	0.069267	0.137458	0.058721	0.029377	0.002357	0.0214	0.085041	0.121197	0.076248	0.049121	0.082499	0.079382	-0.01345	0.035475
pr_compresor1	-4.11914	-4.11635	-3.65117	-4.34057	-4.04661	-4.69536	-4.6692	-3.8758	-4.31105	-3.56661	-3.83938	-3.99976	-3.8536	-4.17452	-4.36424	-4.43451	-4.50765	-3.86532	-3.92183	-3.97908	-4.1707	-4.01167	-4.1141	-4.32722	-4.11445
eff_compresor1	-0.0569	-0.03273	-0.16237	0.084538	-0.10201	0.198786	0.221709	-0.11957	0.014781	-0.1696	-0.08814	-0.05271	-0.11974	-0.00661	0.068618	0.092488	0.115133	-0.13957	-0.05234	-0.06889	-0.03231	-0.02092	0.010517	0.053597	-0.02076
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
eff_compresor2	-0.20113	-0.28136	0.119287	-0.14489	-0.1936	-0.55638	-0.81947	0.073162	-0.24507	-0.11525	-0.09608	-0.29936	-0.33581	-0.48056	-0.45135	-0.66996	0.18843	-0.4207	-0.01995	-0.14226	-0.28002	-0.4228	-0.15378	-0.06415	0
mc_compresor2	0.016219	0.020173	0.005228	-0.0016	0.019058	0.01911	0.039852	0.000177	0.010846	0.023171	0.008668	0.00813	0.029875	0.021767	0.02615	0.020505	0.03788	-0.00667	0.035294	0.004969	0.009069	0.021484	0.030195	-0.00081	0.001238
pr_turbina1	0.000776	-0.00189	0.001698	-0.0015	0.000341	-0.00276	-0.00349	-0.00221	-0.00027	0.000216	-0.00181	-0.00059	-0.00198	-0.0034	-0.00059	-0.00205	-0.00034	0.002894	-0.00302	0.001577	0.001196	-0.00411	-0.00096	0.000399	4.91E-05
eff_turbina1	0.001122	0.014525	-0.02682	0.000679	0.001144	0.037424	0.057144	-0.01666	0.006232	-0.00378	-0.00876	-0.0055	0.014306	0.016521	0.028066	0.025192	0.044545	-0.03024	0.023756	-0.01491	0.000559	0.013533	0.021734	-0.000264	-0.00846
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	0.17523	0.740262	-2.472	-0.00656	0.004458	3.200938	5.143888	-1.93875	0.642093	-0.7273	-1.08491	-0.61753	0.703335	1.216451	2.390846	2.282795	3.826486	-2.88661	1.741745	-1.25578	-0.3001	0.746214	1.868193	0.074949	-0.75945
eff_turbina2	-1.38096	-1.01167	-3.14845	-1.49376	-1.50269	0.635557	1.923222	-2.78791	-1.07083	-1.98023	-2.21584	-1.90717	-1.03893	-0.68871	0.089869	0.022623	1.033247	-3.41819	-0.34071	-2.3323	-1.70121	-1.00362	-0.25574	-1.4392	-1.99309
mc_turbina2	0.10287	0.43848	-1.47725	-0.0037	-5.6E-05	1.910042	3.071161	-1.15876	0.381439	-0.43586	-0.6487	-0.3702	0.418364	0.726419	1.425498	1.361867	2.27946	-1.72573	1.039395	-0.74853	-0.18058	0.445181	1.112423	0.045686	-0.4529

Acuerdo eff fancore	-5.19804	-5.23887	-5.38161	-5.10919	-5.21003	-5.04067	-5.12861	-5.27015	-5.1255	-5.47824	-5.37292	-5.25788	-5.34879	-5.21098	-5.17804	-5.1336	-5.1565	-5.24968	-5.35967	-5.24095	-5.15	-5.29924	-5.28279	-5.12209	-5.17539
Acuerdo pr compresor1	-4.11914	-4.11635	-3.65117	-4.34057	-4.04661	-4.69536	-4.6692	-3.8758	-4.31105	-3.56661	-3.83938	-3.99976	-3.8536	-4.17452	-4.36424	-4.43451	-4.50765	-3.86532	-3.92183	-3.97908	-4.1707	-4.01167	-4.1141	-4.32722	-4.11445
Acuerdo eff turbina 2	-1.38096	-1.01167	-3.14845	-1.49376	-1.50269	0.635557	1.923222	-2.78791	-1.07083	-1.98023	-2.21584	-1.90717	-1.03893	-0.68871	0.089869	0.022623	1.033247	-3.41819	-0.34071	-2.3323	-1.70121	-1.00362	-0.25574	-1.4392	-1.99309

Tabla 0.29: Caso D: Degradación -5% eficiencia fancore, -5% relación de compresión compresor 1 y -2% eficiencia turbina 2 (I)



caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
2.000445	0.851623	0.886366	1.0307	0.617066	0.710249	0.420982	2.048441	0.226865	0.945814	1.065864	0.016618	1.310409	0.306428	0.534631	0.719454	1.730277	0.876915	0.862236	1.568918	0.778041	0.06035	1.168459	-0.78734	1.009663
-5.44255	-5.23944	-5.28487	-5.30295	-5.20244	-5.13053	-5.20391	-5.37794	-5.1264	-5.22422	-5.24579	-5.08575	-5.2365	-5.14321	-5.24441	-5.19029	-5.40311	-5.18011	-5.19197	-5.37988	-5.22494	-5.10716	-5.30176	-4.94334	-5.26112
-0.08274	-0.03535	-0.03665	-0.04247	-0.02575	-0.03	-0.01762	-0.08522	-0.00984	-0.03921	-0.04428	-0.00059	-0.05462	-0.01284	-0.02201	-0.02997	-0.07152	-0.03644	-0.03603	-0.06483	-0.03273	-0.00238	-0.0485	0.032654	-0.04165
-0.76112	-0.28042	-0.32854	-0.43308	-0.18601	-0.21934	-0.12398	-0.74074	-0.11308	-0.31997	-0.22204	0.03048	-0.42628	-0.04131	-0.18783	-0.20608	-0.63417	-0.18251	-0.2382	-0.54487	-0.34399	0.054466	-0.54913	0.467063	-0.34797
1.185987	0.439439	0.497664	0.644798	0.285086	0.376003	0.175099	1.169789	0.178605	0.516455	0.371867	-0.04047	0.698329	0.076514	0.258804	0.328015	0.970541	0.321328	0.385479	0.840141	0.547066	-0.08898	0.835755	-0.71766	0.543196
0.161593	0.059231	0.069638	0.092259	0.039001	0.045498	0.025871	0.156459	0.023343	0.067599	0.046192	-0.00652	0.089773	0.008258	0.03991	0.043131	0.134437	0.038018	0.049667	0.115632	0.072399	-0.01177	0.116589	-0.09975	0.073869
-3.46491	-4.05153	-4.0834	-4.01251	-4.20599	-4.05972	-4.32135	-3.37191	-4.35806	-3.98943	-3.96107	-4.53101	-3.7719	-4.35317	-4.2906	-4.12159	-3.63467	-4.06568	-4.05077	-3.70371	-4.005	-4.52375	-3.88325	-5.01636	-4.02691
-0.23131	-0.03872	0.008925	-0.03789	0.032417	-0.09338	0.093466	-0.31182	0.055821	-0.08463	-0.05364	0.107606	-0.19573	0.071248	0.111592	-0.02859	-0.1584	-0.07975	-0.05212	-0.12818	-0.05915	0.135772	-0.13454	0.300719	-0.05528
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.253912	-0.13497	-0.34781	-0.35551	-0.31151	0.144475	-0.46763	0.558519	-0.32649	0.022015	0.103947	-0.51433	0.307994	-0.29799	-0.6062	-0.10017	0.038064	0.084383	-0.00397	0.047767	0.005892	-0.52446	-0.11736	-0.85863	-0.1606
-0.00013	0.008226	0.023088	0.027044	0.016876	-0.00936	0.024955	-0.02041	0.017226	0.000976	-0.00808	0.023787	-0.0137	0.012646	0.035672	0.004891	0.007754	-0.00783	-0.00015	0.005471	0.003793	0.023437	0.016781	0.03123	0.012793
0.00261	-0.0003	-0.00204	-0.00109	-0.00028	0.002897	-0.00301	0.002349	-0.00204	0.000451	-0.00187	-0.00042	0.002975	1.98E-05	-0.00657	-0.00181	-0.00183	0.002717	-0.00116	-0.00053	0.000588	-0.00025	0.002241	-0.00299	0.000837
-0.03817	-0.00212	0.019038	0.015388	0.013465	-0.02749	0.029505	-0.06249	0.016244	-0.01472	-0.01963	0.029643	-0.04312	0.010213	0.040384	-0.00565	-0.01524	-0.01987	-0.01204	-0.01818	-0.01495	0.02824	-0.00785	0.059639	0.001672
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-3.4717	-0.30256	1.308281	1.317516	1.110482	-2.46039	2.336527	-5.83593	1.177273	-1.56311	-2.03576	2.7239	-3.75803	1.079226	3.401212	-0.51793	-1.75529	-1.91463	-1.27057	-1.76765	-1.48569	2.864757	-0.6116	5.653573	-0.15605
-3.81294	-1.69739	-0.6346	-0.62428	-0.76025	-3.1356	0.060173	-5.37096	-0.71962	-2.538	-2.84103	0.307188	-3.99567	-0.78197	0.764498	-1.83624	-2.66313	-2.76634	-2.33709	-2.66848	-2.4921	0.41205	-1.90874	2.266164	-1.60413
-2.07349	-0.18132	0.781186	0.786854	0.661766	-1.46985	1.392534	-3.48386	0.701184	-0.93313	-1.2148	1.625776	-2.24381	0.642085	2.031198	-0.30909	-1.04701	-1.14496	-0.75797	-1.05703	-0.88834	1.710145	-0.36657	3.375503	-0.09458

-5.44255	-5.23944	-5.28487	-5.30295	-5.20244	-5.13053	-5.20391	-5.37794	-5.1264	-5.22422	-5.24579	-5.08575	-5.2365	-5.14321	-5.24441	-5.19029	-5.40311	-5.18011	-5.19197	-5.37988	-5.22494	-5.10716	-5.30176	-4.94334	-5.26112
-3.46491	-4.05153	-4.0834	-4.01251	-4.20599	-4.05972	-4.32135	-3.37191	-4.35806	-3.98943	-3.96107	-4.53101	-3.7719	-4.35317	-4.2906	-4.12159	-3.63467	-4.06568	-4.05077	-3.70371	-4.005	-4.52375	-3.88325	-5.01636	-4.02691
-3.81294	-1.69739	-0.6346	-0.62428	-0.76025	-3.1356	0.060173	-5.37096	-0.71962	-2.538	-2.84103	0.307188	-3.99567	-0.78197	0.764498	-1.83624	-2.66313	-2.76634	-2.33709	-2.66848	-2.4921	0.41205	-1.90874	2.266164	-1.60413

Tabla 0.30: Caso D: Degradación -5% eficiencia fancore, -5% relación de compresión compresor 1 y -2% eficiencia turbina 2 (II)

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25
pr_fancore	0.502877	1.613615	-0.07789	0.821402	2.154184	0.627484	-1.24271	-0.18576	0.525585	-0.55771	1.235825	0.412863	-0.42952	1.251767	-0.35193	1.750919	0.754118	1.007147	1.324616	1.646792	-1.38303	0.96149	0.06079	1.46801	1.261461
eff_fancore	-4.04755	-4.17861	-3.9969	-4.15152	-4.26176	-4.08789	-3.90837	-4.02238	-4.10944	-3.90697	-4.18156	-4.09241	-3.92202	-4.16303	-3.95943	-4.22661	-4.08899	-4.15215	-4.16346	-4.19373	-3.81625	-4.10284	-3.99915	-4.16618	-4.1661
mc_fancore	-0.00037	-0.05923	-0.03711	-0.07446	-0.08133	-0.04252	0.011343	-0.05345	-0.07504	0.008934	-0.07947	0.026246	-0.14217	-0.06776	-0.08178	-0.05589	-0.06917	-0.04857	-0.05567	0.068715	-0.04884	0.002342	-0.04121	-0.08638	-0.08638
pr_fanduct	-0.17833	-0.94136	0.118797	-0.75472	-1.31693	-0.37003	0.051428	-0.40237	-0.62303	0.359714	-0.836	-0.45256	0.298973	-1.10125	-0.17034	-0.99739	-0.26649	-0.65363	-0.82737	-0.91928	0.562312	-0.42104	0.022998	-0.79569	-0.60321
eff_fanduct	0.404345	1.163309	-0.29759	0.524445	1.577139	0.322746	-0.37821	-0.07434	0.276422	-0.40035	0.749432	0.354888	-0.21278	0.459926	-0.40186	1.110799	0.212475	0.561221	1.008538	1.150958	-0.60984	0.483081	0.033124	1.055979	0.53672
mc_fanduct	0.020777	0.164725	-0.00163	0.156707	0.234197	0.070816	0.008665	0.1151	0.142058	-0.05552	0.164208	0.090096	-0.0468	0.25739	0.084523	0.18301	0.051798	0.128206	0.146287	0.159636	-0.10399	0.074393	-0.00839	0.133635	0.117422
pr_compresor1	-2.81728	-2.45532	-1.80379	-1.77851	-2.18863	-2.13631	-3.29092	-1.59369	-1.61406	-2.32776	-1.87376	-2.16784	-2.74695	-0.27797	-1.4038	-2.11468	-1.99705	-1.93576	-2.51384	-2.3449	-3.35069	-2.20432	-2.48603	-2.50748	-1.81238
eff_compresor1	-0.04628	-0.0988	0.179918	0.275863	-0.10083	0.209874	1.905232	0.190485	0.281704	0.088796	0.209329	0.21088	0.079588	1.262689	0.103339	0.125502	0.213012	0.231248	-0.04326	-0.02385	0.363098	0.166708	0.183125	-0.11169	0.226075
mc_compresor1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_compresor2	0.146881	2.655261	-0.21565	0.04904	1.077596	0.086814	7.350111	-0.2143	-0.07259	-0.13787	0.132707	0.117358	0.016255	-1.4081	-0.44828	0.343336	0.016019	0.099485	2.806788	0.529518	-0.18413	0.118972	0.074484	0.494221	0.049714
eff_compresor2	-0.25637	-2.18206	0.516789	0.00568	-1.09747	-0.25392	-5.91613	0.615393	0.327145	0.358437	-0.30326	-0.30026	-0.06666	4.836299	1.029774	-0.6819	-0.06281	-0.22417	-2.30149	-0.71847	0.20288	-0.40021	-0.25288	-0.65133	-0.11667
mc_compresor2	0.062299	0.539655	-0.05162	0.030277	0.150691	0.0147	1.713874	-0.0093	0.012027	-0.03474	0.037503	0.028595	0.032598	0.013484	-0.04094	0.065232	-0.00656	0.025357	0.581976	0.083862	0.071917	0.022696	0.032529	0.082219	0.008235
pr_turbina1	0.011188	0.001565	-0.00255	0.0067	0.001609	-0.00473	0.016716	0.011624	0.000543	0.005169	-0.0014	0.000971	0.006549	0.061994	0.01639	-0.0058	-0.00603	0.001168	0.002348	0.000165	0.027081	-0.00312	0.002357	0.00199	-0.00264
eff_turbina1	-0.0261	-0.00606	-0.01164	-0.00899	-0.00072	0.00828	-0.02155	-0.03655	-0.01389	-0.00025	0.000974	0.005422	-0.00771	-0.33086	-0.07803	0.007019	0.004894	-0.00227	-0.0037	-0.003	-0.06432	0.0065809	0.000146	-0.01467	-0.00196
mc_turbina1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pr_turbina2	3.247591	3.282898	-4.15851	-3.56888	1.692844	-0.63467	6.693606	-7.67577	-5.2134	-1.08182	-1.79691	-0.7524	3.109652	-28.6282	-11.4389	0.38785	-1.40665	-1.80826	3.547592	1.995166	4.08285	0.568481	2.476189	2.498109	-2.09763
eff_turbina2	-3.96575	-3.40558	-5.1589	-5.00637	-3.69792	-4.02047	-2.77399	-6.34987	-5.61282	-4.11392	-4.40951	-4.04546	-3.44092	-7.90975	-6.67408	-3.84733	-4.25266	-4.40319	-3.55634	-3.74253	-4.4621	-3.75032	-3.43711	-3.85113	-4.50436
mc_turbina2	0.374614	1.099412	-1.95689	-1.67664	0.566728	-0.10764	2.233331	-4.26211	-2.64096	-0.2762	-0.72029	-0.14616	1.001765	-21.5311	-7.15817	0.227687	-0.4844	-0.71151	1.184595	0.533299	-0.17553	0.359899	0.946399	0.454419	-0.87668

Acierto eff fancore	-4.04755	-4.17861	-3.9969	-4.15152	-4.26176	-4.08789	-3.90837	-4.02238	-4.10944	-3.90697	-4.18156	-4.09241	-3.92202	-4.16303	-3.95943	-4.22661	-4.08899	-4.15215	-4.16346	-4.19373	-3.81625	-4.10284	-3.99915	-4.16618	-4.1661
Acierto pr compresor 1	-2.81728	-2.45532	-1.80379	-1.77851	-2.18863	-2.13631	-3.29092	-1.59369	-1.61406	-2.32776	-1.87376	-2.16784	-2.74695	-0.27797	-1.4038	-2.11468	-1.99705	-1.93576	-2.51384	-2.3449	-3.35069	-2.20432	-2.48603	-2.50748	-1.81238
Acierto eff turbina 2	-3.96575	-3.40558	-5.1589	-5.00637	-3.69792	-4.02047	-2.77399	-6.34987	-5.61282	-4.11392	-4.40951	-4.04546	-3.44092	-7.90975	-6.67408	-3.84733	-4.25266	-4.40319	-3.55634	-3.74253	-4.4621	-3.75032	-3.43711	-3.85113	-4.50436

Tabla 0.31: Caso D: Degradación -4% eficiencia fancore, -4% relación de compresión compresor 1 y -4% eficiencia turbina 2 (I)

	caso 26	caso 27	caso 28	caso 29	caso 30	caso 31	caso 32	caso 33	caso 34	caso 35	caso 36	caso 37	caso 38	caso 39	caso 40	caso 41	caso 42	caso 43	caso 44	caso 45	caso 46	caso 47	caso 48	caso 49	caso 50
	1.762256	0.427269	0.018374	1.019967	0.480553	1.487296	0.17095	-1.88046	1.868472	1.011241	1.761169	1.655211	0.877064	-0.70205	1.793743	1.519225	2.070153	0.195563	1.687589	-0.469	2.50568	1.645263	0.426891	2.602158	1.981241
	-4.20539	-4.07868	-4.00167	-4.12641	-4.06103	-4.22299	-3.98918	-3.73652	-4.22512	-4.09175	-4.24675	-4.19733	-4.10872	-3.91984	-4.22091	-4.2328	-4.30249	-4.00799	-4.25266	-3.92657	-4.34909	-4.16794	-4.04409	-4.30961	-4.26676
	-0.06557	-0.03753	-0.00789	-0.05742	-0.02663	-0.11786	-0.0011	0.08528	-0.06695	-0.02654	-0.1186	-0.06109	-0.03716	0.04602	-0.08448	-0.10241	-0.13144	-0.02384	-0.10478	0.020161	-0.11748	-0.0472	-0.02345	-0.10179	-0.09998
	-0.91982	-0.3521	-0.13361	-0.51868	-0.18614	-1.08488	0.156423	1.06397	-1.04089	-0.51153	-1.10186	-0.89435	-0.4553	0.437576	-1.09772	-0.9319	-1.31356	-0.00716	-1.1603	0.483969	-1.72887	-0.70415	-0.43886	-1.511135	-1.12957
	1.146189	0.250609	0.126556	0.530438	0.213383	0.797515	-0.00702	-1.12155	1.293227	0.690654	0.940083	1.114318	0.536854	-0.34398	1.148126	0.799048	1.184359	-0.02507	1.069543	-0.39744	1.854329	1.003104	0.461837	1.804508	1.212533
	0.160813	0.073497	0.025694	0.09572	0.032523	0.223538	-0.03797	-0.19326	0.182859	0.084564	0.219552	0.155431	0.080523	-0.08885	0.191272	0.185506	0.26072	0.003908	0.227861	-0.09266	0.323566	0.113712	0.081354	0.269984	0.210774
	-2.26338	-2.07637	-2.84477	-2.11242	-2.27662	-1.50423	-2.53396	-3.2141	-2.23194	-2.54397	-1.59751	-2.33634	-2.26906	-3.21285	-2.1199	-1.64709	-1.64655	-2.20582	-1.71027	-2.61108	-1.9248	-2.46473	-2.78612	-2.03606	-2.02116
	0.018207	0.17735	0.21207	0.195264	0.203452	0.327892	0.137606	0.213369	0.003154	-0.0167	0.279203	-0.08711	0.166081	0.297166	0.094363	0.282468	0.380437	0.155791	0.272385	0.198237	-0.00384	-0.11919	0.349401	-0.10384	0.147487
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.457084	0.04476	4.000467	0.130357	0.087927	0.058394	0.030256	-0.25717	0.613168	0.276013	0.10765	1.534852	0.152587	-0.154	0.365837	0.10626	0.325653	-0.02071	0.179658	-0.0466	0.626782	-0.422128	4.38539	1.212597	0.388442
	-0.67551	-0.10248	-3.1173	-0.37898	-0.32024	0.08741	-0.11005	0.983046	-0.78537	-0.47112	-0.11887	-1.40459	-0.47279	0.176207	-0.7085	-0.16912	-0.57817	0.036801	-0.32942	0.044586	-0.84164	-0.54836	-3.46923	-1.15654	-0.71833
	0.070745	0.008256	0.985299	0.025424	0.015987	0.048979	0.019964	0.035545	0.086886	0.067419	0.046707	0.325099	0.04122	0.066469	0.06734	0.038448	0.070466	-0.01405	0.062909	-0.00037	0.04072	0.070658	0.982192	0.173041	0.068173
	0.007991	-0.00142	0.008278	-0.0007	0.000577	-0.00327	0.002658	0.012234	0.02332	-0.00061	-0.00759	0.000208	-0.00072	0.017404	-0.00062	-0.00523	-0.00879	0.003477	-0.00862	0.002826	0.002154	0.006757	0.005455	0.001413	-0.00408
	-0.00406	0.002687	-0.01127	0.003998	0.007921	-0.01202	-0.00325	-0.04667	-0.0001	-0.00679	-0.00337	-0.00284	0.004738	-0.06253	0.007916	-0.00175	0.003768	0.003214	0.000969	0.000705	0.005637	-0.0188	-0.00793	0.003637	0.008157
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1.622345	-1.58697	4.727683	-0.20513	0.872707	-4.15633	2.696249	4.311101	1.77304	2.490019	-3.00203	2.506252	1.352372	3.831173	0.304679	-2.61476	-2.34844	-0.76928	-2.14901	2.736371	-0.3497	2.411534	4.778282	1.302804	-0.25648
	-3.73973	-4.30257	-3.12521	-3.93203	-3.639	-5.25704	-3.48644	-4.03585	-3.74343	-3.73384	-4.84787	-3.54157	-3.61963	-4.56162	-3.8663	-4.69863	-4.59855	-4.04208	-4.56004	-3.33061	-4.07516	-3.9303	-3.12877	-3.76931	-3.99306
	0.493886	-0.55978	1.582547	0.053064	0.534779	-2.06039	0.901198	0.352015	0.513576	0.590258	-1.40847	0.83827	0.610423	-0.31958	0.195693	-1.17537	-1.01525	-0.14624	-0.94358	1.100126	-0.12344	0.339635	1.59789	0.435238	-0.0237

-4.20539	-4.07868	-4.00167	-4.12641	-4.06103	-4.22299	-3.98918	-3.73652	-4.22512	-4.09175	-4.24675	-4.19733	-4.10872	-3.91984	-4.22091	-4.2328	-4.30249	-4.00799	-4.25266	-3.92657	-4.34909	-4.16794	-4.04409	-4.30961	-4.26676
-2.26338	-2.07637	-2.84477	-2.11242	-2.27662	-1.50423	-2.53396	-3.2141	-2.23194	-2.54397	-1.59751	-2.33634	-2.26906	-3.21285	-2.1199	-1.64709	-1.64655	-2.20582	-1.71027	-2.61108	-1.9248	-2.46473	-2.78612	-2.03606	-2.02116
-3.73973	-4.30257	-3.12521	-3.93203	-3.639	-5.25704	-3.48644	-4.03585	-3.74343	-3.73384	-4.84787	-3.54157	-3.61963	-4.56162	-3.8663	-4.69863	-4.59855	-4.04208	-4.56004	-3.33061	-4.07516	-3.9303	-3.12877	-3.76931	-3.99306

Tabla 0.32: Caso D: Degradación -4% eficiencia fancode, -4% relación de compresión compresor 1 y -4% eficiencia turbina 2 (II)



## 11.6 Anexo F

En este anexo se muestran los casos con tres fallos simultáneos analizados con el método de optimización.

Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30			
pr_fanore	-0.7495428	-0.7597907	-0.7546324	-0.7546134	-0.7538736	-0.7574519	-0.7549025	-0.7549025	-0.7548754	-0.7549852	-0.7552047	-0.7552047	-0.7552047	-0.7549852	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025	-0.7549025			
eff_fanore	-1.61891049	-1.6279407	-1.6280082	-1.63594855	-1.6331952	-1.6359675	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295			
mc_fanore	0.3006539	0.30248155	0.3033358	0.3044757	0.3045488	0.3023856	0.3039024	0.3064177	0.3061052	0.3039985	0.3064431	0.3033082	0.3064431	0.3033082	0.3064431	0.3033082	0.3064431	0.3033082	0.3064431	0.3033082	0.3064431	0.3033082	0.3064431	0.3033082	0.3064431	0.3033082	0.3064431	0.3033082	0.3064431	0.3033082			
pr_fanuct	-1.9156924	-1.9304953	-1.9156004	-1.9050073	-1.9065074	-1.9157138	-1.9065356	-1.90455769	-1.9087724	-1.9124754	-1.9081388	-1.9105528	-1.9087724	-1.9105528	-1.9087724	-1.9105528	-1.9087724	-1.9105528	-1.9087724	-1.9105528	-1.9087724	-1.9105528	-1.9087724	-1.9105528	-1.9087724	-1.9105528	-1.9087724	-1.9105528	-1.9087724	-1.9105528	-1.9087724		
eff_fanuct	-4.2548091	-4.2428451	-4.2549345	-4.2388387	-4.2466753	-4.251474	-4.2386772	-4.2414604	-4.2458653	-4.2447494	-4.2386582	-4.2440817	-4.2493359	-4.2397889	-4.2449209	-4.240817	-4.2493359	-4.2397889	-4.2449209	-4.240817	-4.2493359	-4.2397889	-4.2449209	-4.240817	-4.2493359	-4.2397889	-4.2449209	-4.240817	-4.2493359	-4.2397889			
mc_fanuct	0.5776135	0.5774873	0.5766823	0.5757802	0.5771661	0.5769864	0.5767531	0.57939185	0.5793034	0.5774023	0.5780352	0.5762177	0.5766159	0.5783228	0.5800435	0.5772145	0.5766588	0.57631	0.5766588	0.57631	0.5766588	0.57631	0.5766588	0.57631	0.5766588	0.57631	0.5766588	0.57631	0.5766588	0.57631	0.5766588		
pr_compressor1	0.9329493	0.9293872	0.9293621	0.9294336	0.9294336	0.9278255	0.9275569	0.9294673	0.9261083	0.9277602	0.9301066	0.927962	0.9301066	0.927962	0.9301066	0.927962	0.9301066	0.927962	0.9301066	0.927962	0.9301066	0.927962	0.9301066	0.927962	0.9301066	0.927962	0.9301066	0.927962	0.9301066	0.927962	0.9301066		
eff_compressor1	-4.6584881	-4.6384442	-4.6391053	-4.6380154	-4.6399498	-4.6203347	-4.6239871	-4.6310815	-4.6129428	-4.6187773	-4.6375932	-4.6103608	-4.6326116	-4.6299041	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718		
mc_compressor1	-0.4626177	-0.4517881	-0.4570795	-0.45155386	-0.4528472	-0.4494735	-0.4547868	-0.4530201	-0.4493154	-0.4486889	-0.449338	-0.4527837	-0.4535643	-0.44780576	-0.4579207	-0.44780576	-0.4579207	-0.44780576	-0.4579207	-0.44780576	-0.4579207	-0.44780576	-0.4579207	-0.44780576	-0.4579207	-0.44780576	-0.4579207	-0.44780576	-0.4579207	-0.44780576	-0.4579207		
pr_compressor2	0.13283124	0.13249582	0.1349822	0.13514841	0.1329748	0.13391631	0.1341062	0.13349198	0.1339676	0.1340456	0.1339078	0.1334324	0.1346768	0.1348809	0.1337943	0.1335679	0.1339679	0.1336266	0.1346552	0.1351294	0.1348105	0.1336071	0.1342327	0.1334882	0.13484918	0.1340841	0.1345056	0.1340841	0.1345056	0.1340841	0.1345056		
eff_compressor2	-4.5481935	-4.5457621	-4.5447008	-4.5495317	-4.5448719	-4.5347258	-4.5511318	-4.54758868	-4.5518014	-4.5509484	-4.5473642	-4.5456569	-4.54685542	-4.5469337	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466	-4.5481466		
mc_compressor2	-0.27120762	-0.2678905	-0.2733271	-0.2634688	-0.26673424	-0.2657874	-0.26866394	-0.2670745	-0.2710767	-0.2628311	-0.2698934	-0.2684717	-0.2712808	-0.2686578	-0.2657903	-0.2686578	-0.2657903	-0.2686578	-0.2657903	-0.2686578	-0.2657903	-0.2686578	-0.2657903	-0.2686578	-0.2657903	-0.2686578	-0.2657903	-0.2686578	-0.2657903	-0.2686578	-0.2657903		
pr_turbina1	-0.0063539	-0.0066693	-0.0068024	-0.0068084	-0.0067957	-0.0068589	-0.0068019	-0.00681347	-0.0068564	-0.0070276	-0.0070181	-0.0070073	-0.0070181	-0.0068564	-0.0070276	-0.0070181	-0.0068564	-0.0070276	-0.0070181	-0.0068564	-0.0070276	-0.0070181	-0.0068564	-0.0070276	-0.0070181	-0.0068564	-0.0070276	-0.0070181	-0.0068564	-0.0070276	-0.0070181	-0.0068564	
eff_turbina1	-0.0771717	-0.0808638	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	-0.0814087	
mc_turbina1	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367	-0.05211367		
pr_turbina2	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	0.0373796	
eff_turbina2	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707	-0.0886707
mc_turbina2	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	-0.03173413	

Aeroteff_fanore	-1.61891049	-1.6279407	-1.6280082	-1.63594855	-1.6331952	-1.6359675	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	-1.6311295	-1.63284955	
Aeroteff_fanuct	-4.2548091	-4.2428451	-4.2549345	-4.2388387	-4.2466753	-4.251474	-4.2386772	-4.2414604	-4.2458653	-4.2447494	-4.2386582	-4.2440817	-4.2493359	-4.2397889	-4.2449209	-4.240817	-4.2493359	-4.2397889	-4.2449209	-4.240817	-4.2493359	-4.2397889	-4.2449209	-4.240817	-4.2493359	-4.2397889	-4.2449209	-4.240817	-4.2493359	-4.2397889	-4.2449209	
Aeroteff_compressor1	-4.6584881	-4.6384442	-4.6391053	-4.6380154	-4.6399498	-4.6203347	-4.6239871	-4.6310815	-4.6129428	-4.6187773	-4.6375932	-4.6103608	-4.6326116	-4.6299041	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116	-4.6339718	-4.6326116

Tabla 0.1: Caso B: Degradación -2% eficiencia fancore, -5% eficiencia fanduct y -5% eficiencia compresor 1

	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30		
Degradación	-1.939715	-1.980368	-1.937174	-1.978180	-1.926536	-1.978468	-1.899706	-1.929845	-2.001644	-1.946573	-1.938781	-1.937703	-1.946067	-1.944678	-1.935979	-1.983964	-1.892870	-1.955146	-1.938097	-1.968698	-1.915984	-1.957866	-1.855863	-1.919072	-1.911989	-1.926708	-1.942079	-1.945468	-1.880852	-1.860471		
pr_fanore	-4.784025	-4.185402	-4.160455	-4.225983	-4.217892	-4.261849	-4.221920	-4.297873	-4.188598	-4.223694	-4.339462	-4.216217	-4.189587	-4.224223	-4.204637	-4.217768	-4.237976	-4.154382	-4.337759	-4.295432	-4.331888	-4.251109	-4.267889	-4.155163	-4.276587	-4.270668	-4.289189	-4.202307	-4.198832	-4.264866		
eff_fanore	0.489493	0.616408	0.675474	0.684910	0.621791	0.691377	0.664588	0.720737	0.617232	0.592618	0.621376	0.590865	0.634458	0.577349	0.657851	0.746276	0.643814	0.628179	0.614986	0.566246	0.604067	0.782135	0.628647	0.703028	0.383858	0.633976	0.654525	0.633981	0.562257	0.663394		
mc_fanore	-0.746273	-0.780521	-0.695983	-0.756217	-0.780103	-0.758138	-0.691328	-0.736637	-0.789746	-0.791316	-0.796638	-0.775198	-0.799873	-0.746403	-0.697828	-0.821434	-0.796157	-0.781949	-0.781949	-0.813709	-0.782135	0.628647	0.676538	-0.704831	-0.712129	-0.779218	-0.779218	-0.692913	-0.814518	0.614518		
pr_fanulact	-1.667365	-1.596762	-1.619847	-1.638545	-1.541848	-1.681901	-1.673855	-1.680212	-1.640365	-1.714254	-1.676245	-1.693483	-1.646438	-1.693483	-1.693483	-1.694778	-1.577409	-1.664157	-1.664157	-1.696037	-1.620605	-1.683451	-1.591394	-1.742445	-1.573165	-1.573165	-1.726348	-1.626623	-1.593878	-1.577967		
eff_fanulact	0.197432	0.285134	0.251297	0.348372	0.197053	0.187015	0.201745	0.276402	0.259797	0.276254	0.311567	0.293207	0.148739	0.226483	0.265266	0.244954	0.266398	0.266398	0.266398	0.236532	0.153382	0.254508	0.186977	0.278742	0.278742	0.188022	0.230794	0.157840	0.301164	-1.146546		
mc_fanulact	1.068297	0.926788	1.048169	1.048169	0.989095	0.989095	0.916547	1.008583	0.989182	0.977013	0.944124	0.986973	1.008034	0.982058	0.984865	0.935862	0.961824	0.935862	0.935862	0.952844	1.052448	0.952844	1.092081	0.914042	0.977192	0.932093	1.009467	0.922673	0.961923	0.951923		
pr_compressor	-1.697946	-1.744932	-1.793915	-1.802926	-1.760470	-1.831920	-1.760970	-1.751373	-1.663297	-1.791814	-1.840787	-1.789496	-1.804245	-1.748376	-1.762321	-1.790366	-1.840011	-1.712748	-1.712748	-1.713049	-1.701584	-1.695508	-1.729347	-1.812386	-1.699495	-1.831889	-1.739416	-1.815822	-1.814271	-1.624631	-1.735497	
eff_compressor	-0.339637	-0.387829	-0.287988	-0.276104	-0.329748	-0.311827	-0.368894	-0.437056	-0.378636	-0.320746	-0.357127	-0.384725	-0.363673	-0.267706	-0.458127	-0.368811	-0.368811	-0.368811	-0.368811	-0.371295	-0.371295	-0.371295	-0.371295	-0.371295	-0.371295	-0.371295	-0.371295	-0.371295	-0.371295	-0.371295	-0.371295	
mc_compressor	0.020286	-0.067198	-0.052273	-0.046114	0.039427	0.073487	-0.094584	-0.090582	-0.046118	-0.058726	-0.085388	-0.077847	-0.083049	-0.082017	-0.061931	-0.079208	-0.053527	-0.084467	-0.062938	0.016684	0.016684	0.016684	0.016684	0.016684	0.016684	0.016684	0.016684	0.016684	0.016684	0.016684	0.016684	
pr_turbina1	-0.055281	-0.080718	-0.020836	-0.009045	-0.057223	-0.044984	-0.064987	-0.082789	0.051109	-0.008936	-0.038774	0.012202	0.081940	-0.073155	-0.088197	-0.066054	-0.042778	-0.189259	-0.128028	-0.128028	-0.128028	-0.128028	-0.128028	-0.128028	-0.128028	-0.128028	-0.128028	-0.128028	-0.128028	-0.128028	-0.128028	-0.128028
eff_turbina1	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	-0.020286	
mc_turbina1	0.050303	-0.046258	0.033674	0.084005	-0.058787	0.035883	0.041505	0.026124	-0.004002	0.024087	0.041585	-0.012681	0.022988	-0.048548	-0.029781	0.048548	0.048548	0.048548	0.048548	0.048548	0.048548	0.048548	0.048548	0.048548	0.048548	0.048548	0.048548	0.048548	0.048548	0.048548	0.048548	
pr_turbina2	-0.042407	-0.030052	-0.073358	0.034928	0.036877	0.063879	0.027463	-0.052653	0.023659	-0.027469	-0.028519	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	-0.027469	
eff_turbina2	0.037673	-0.042407	0.008874	0.088888	0.018858	-0.037811	0.057152	0.043081	-0.043014	-0.028282	0.076049	0.096553	0.101249	-0.018405	-0.007891	0.061928	0.018830	-0.007644	-0.007644	-0.007644	-0.007644	-0.007644	-0.007644	-0.007644	-0.007644	-0.007644	-0.007644	-0.007644	-0.007644	-0.007644	-0.007644	-0.007644
mc_turbina2	-0.051867	-0.039320	0.045329	-0.052745	-0.041103	0.028332	-0.064348	0.023705	0.084079	0.028317	-0.024536	-0.018339	0.076148	-0.053756	-0.027699	-0.019204	0.122681	0.041984	0.081673	-0.017486	-0.017486	-0.017486	-0.017486	-0.017486	-0.017486	-0.017486	-0.017486	-0.017486	-0.017486	-0.017486	-0.017486	-0.017486

Tabla 0.2: Caso B: Degradación -5% eficiencia fancore, -2% eficiencia fanore, -5% eficiencia fanulact y -5% eficiencia compressor



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30	
pr_fanore	0.0734072	-0.1598306	0.0463614	-0.1234047	-0.0458677	-0.0628702	0.0591032	-0.0534647	0.0632927	0.0783983	-0.0442527	0.0291079	-0.0791228	-0.0393092	-0.1796386	0.0477669	-0.0689446	-0.0791037	-0.0291574	-0.0043486	0.0395906	-0.1731653	-0.0169454	0.1685792	-0.0931532	0.1267148	0.1942759	0.05407613	0.06592854	0.00288892	
eff_fanore	-3.9221388	-3.9236095	-4.0211197	-3.86108369	-4.06985465	-3.9674954	-3.9148854	-4.05515102	-3.9278807	-4.13154008	-4.034233	-3.93594123	-3.83086222	-4.05115096	-3.88917636	-4.02112691	-3.99156956	-3.9448928	-4.06747841	-4.0259724	-4.15085534	-4.0654829	-4.0027325	-3.9624961	-3.95527201	-4.01640193	-4.0536758	-3.7557038	-3.9607289	-4.04715789	
mc_fanore	-0.0689236	0.0038303	-0.0277469	0.0670495	0.0243322	-0.0475446	0.1633477	-0.05063412	-0.0674416	0.212427	-0.02523343	0.0178303	0.08306984	-0.08371296	0.07083123	-0.04657113	-0.02889713	0.0751369	-0.08386251	0.0530768	-0.2552333	-0.1916983	0.0347931	0.06662332	-0.05217913	0.1412105	-0.12821166	-0.0005587	0.04000838	-0.10956436	
pr_fanduct	-1.9193947	-1.91485075	-1.80874039	-2.06823064	-1.80889195	-1.86150156	-2.0799774	-1.67170575	-1.91270576	-3.87070946	-2.20017301	-1.8383209	-1.7620783	-1.9013769	-1.59475233	-1.844704	-1.7854038	-1.9624852	-1.5946958	-1.87497151	-1.9103906	-1.90097317	-1.6946766	-1.9436446	-1.8111883	-1.98204071	-1.8237266	-2.01630983	-1.91213862	-1.78233977	
eff_fanduct	-4.053147	-4.1316572	-4.2440253	-4.2696738	-4.1653274	-4.19289121	-4.19749518	-4.290543	-4.1875974	-4.2804862	-4.3194621	-4.0473933	-4.148668	-4.3305317	-4.3441189	-4.2747922	-4.19719717	-4.31617382	-4.0937063	-4.27891457	-4.3463889	-4.1942025	-4.3078266	-4.2720252	-4.2907911	-4.329357	-4.2898008	-4.31665583	-4.1776467		
mc_fanduct	0.4379959	0.567555	0.5282429	0.50216796	0.634761	0.61391176	0.57162362	0.55625041	0.62981564	0.47860157	0.65212852	0.53334466	0.76809043	0.39221295	0.49849438	0.5557021	0.65795701	0.67590124	0.61978517	0.3333028	0.5811259	0.73116591	0.54175592	0.63511126	0.61575143	0.36930161	0.5393894	0.55233868	0.62387613	0.5695225	0.4689764
pr_compressor1	0.09666395	0.05334418	0.0507543	0.0063219	0.06474208	0.05301629	0.0660335	-0.03244541	-0.05162608	0.1924254	-0.0061272	0.04154046	0.0927251	-0.1393429	-0.0883408	-0.1013099	-0.1401564	-0.02444879	0.12622087	-0.0462152	0.10892662	-0.02928986	-0.05109313	0.07734104	-0.06826888	0.09100868	-0.1395569	-0.1164138	-0.1395569	-0.1164138	
eff_compressor1	-3.9760993	-3.9577054	-4.1346358	-3.7862579	-3.9834673	-3.9966475	-3.9251096	-3.8467604	-4.1253878	-3.9679345	-4.0498256	-3.93046201	-4.1792037	-3.9532578	-4.0094347	-3.8947205	-3.8959262	-3.9283168	-4.1953338	-4.0594673	-4.0585779	-4.1331369	-3.949868	-4.1330187	-3.9565355	-3.9086587	-4.0475348	-4.0070557	-3.9541207		
mc_compressor1	-0.0110732	-0.0253595	0.0150746	-0.1345863	-0.07050215	-0.0785398	-0.0437979	-0.21801281	-0.0753189	-0.0937027	-0.07887784	-0.0458669	-0.1732279	-0.0638823	-0.0836584	0.0591588	-0.0528972	0.0636317	-0.1775408	0.0679797	-0.199197	-0.1298489	-0.1022217	-0.0745774	0.0594061	-0.06195459	0.0639849	-0.0437698	-0.0437698	-0.11212883	
pr_compressor2	0.0046595	0.0092908	-0.0173481	0.9818885	-0.0494077	-0.0884513	0.1248543	0.1455525	0.05059485	-0.06518033	-0.1049122	0.1949213	0.06567106	0.12511422	-0.0278651	0.0734973	0.0166828	-0.13400492	-0.2149297	0.1250763	0.0249122	-0.01125246	0.1647745	0.1333476	0.1900773	0.0767048	0.1234017	0.1720831	-0.11497592		
eff_compressor2	0.02789291	0.02315941	0.21214463	-0.0483132	-0.1165546	-0.1707341	-0.1036471	-0.0732701	0.14804483	-0.0198316	-0.0715308	-0.0946359	-0.0134108	0.2310436	0.0239447	0.0533943	-0.063617	0.0018025	0.0599763	0.0699219	-0.0318425	-0.0590468	-0.062094	-0.0947811	0.09982683	-0.0008585	0.0133183	0.02212794	0.0063156	-0.0249918	
mc_compressor2	-0.0727992	0.1973082	-0.1145378	-0.1488372	-0.0754974	0.0644357	-0.1329078	-0.07702856	-0.0507208	-0.0759533	-0.1079167	-0.0938942	-0.0407323	-0.1554493	-0.0794345	-0.024697	-0.0098875	-0.18318135	-0.0441073	-0.1508206	-0.0908574	-0.0079476	0.07252918	-0.02066316	0.05919313	0.13846218	-0.4428387	-0.0400679	0.0043956	-0.1326197	
pr_turbina1	-0.2297915	-0.1046518	-0.0272987	0.00497106	-0.03849561	0.0091321	-0.011108	0.0329444	-0.0897516	0.1366236	-0.0897516	0.046652	0.0330306	0.08200742	-0.2571147	0.0149799	-0.2529829	-0.0498245	-0.1573777	-0.1774505	-0.0829753	0.028935	0.0959529	-0.1138189	0.1349574	-0.0735829	0.12249724	-0.0735276	0.02020954	0.0016573	
eff_turbina1	-0.0894762	-0.1046518	-0.0272987	0.00497106	-0.03849561	0.0091321	-0.011108	0.0329444	-0.0897516	0.1366236	-0.0897516	0.046652	0.0330306	0.08200742	-0.2571147	0.0149799	-0.2529829	-0.0498245	-0.1573777	-0.1774505	-0.0829753	0.028935	0.0959529	-0.1138189	0.1349574	-0.0735829	0.12249724	-0.0735276	0.02020954	0.0016573	
mc_turbina1	-0.0310173	-0.21331068	-0.16416983	-0.001124	-0.0417559	-0.1847254	0.0204274	0.0602569	-0.0466938	0.0061694	-0.0833242	-0.0888808	0.0661641	-0.0410546	-0.11331259	-0.1683439	-0.0630822	0.0717835	-0.0401968	0.08693017	-0.0895029	-0.0838074	-0.0081975	-0.2549761	0.06925436	-0.2549761	0.06925436	-0.2549761	0.06925436	-0.2549761	
pr_turbina2	0.0303262	0.00306923	0.09202667	-0.14483761	0.00887783	-0.0427104	-0.0359549	-0.0020031	0.2071308	0.0359549	-0.0072213	-0.04371655	0.0689716	-0.0838897	-0.1672888	-0.0666664	0.04007957	-0.1325861	-0.29259154	-0.0770638	-0.2528285	-0.0489297	-0.0654278	0.1736199	-0.0433578	0.1977729	-0.1131947	-0.04891195	0.124803	0.08800428	
eff_turbina2	0.0578964	0.0919848	-0.23207417	-0.076773	0.059485	0.0663767	0.0212183	-0.1474673	-0.0443679	-0.172428	-0.09109748	0.0749273	0.2175471	0.0844484	0.0802179	-0.0646133	-0.1680871	-0.0593164	-0.289753	0.0565568	-0.0449001	-0.1573533	0.0083914	-0.0469883	-0.0532086	0.0826184	-0.1542288	-0.0227305	-0.0967177	0.0948975	
mc_turbina2	0.2002594	-0.0974294	-0.21645713	-0.10864485	-0.0848949	0.0614183	0.0218246	-0.0261539	-0.2582248	-0.0708122	0.07601601	-0.0778633	-0.0291379	0.043123	-0.23831054	0.03159169	0.09597684	0.0404971	0.01882698	-0.1403117	-0.0693785	-0.0595342	-0.0394801	-0.1386646	0.04841704	-0.1507016	-0.0546408	-0.1522793	-0.0494494	-0.0161055	

Tabla 0.4: Caso B: Degradación -4% eficiencia fancore, -4% eficiencia fanduct y -4% eficiencia compresor 1



Degradación	caso 1	caso 2	caso 3	caso 4	caso 5	caso 6	caso 7	caso 8	caso 9	caso 10	caso 11	caso 12	caso 13	caso 14	caso 15	caso 16	caso 17	caso 18	caso 19	caso 20	caso 21	caso 22	caso 23	caso 24	caso 25	caso 26	caso 27	caso 28	caso 29	caso 30		
pr_fanorc	-0.19826572	-0.19811417	-0.19916885	-0.19901735	-0.19394651	-0.18973704	-0.18872904	-0.18773453	-0.20053986	-0.19684007	-0.20083339	-0.19515328	-0.19702147	-0.19802285	-0.1977665	-0.196331	-0.19400107	-0.19357821	-0.19768041	-0.19046272	-0.19917035	-0.18815705	-0.19324688	-0.19596154	-0.19542081	-0.19446584	-0.19898932	-0.19723824	-0.19630236	-0.18846171		
eff_fanorc	-1.96176085	-1.96103902	-1.95555149	-1.9594094	-1.95026673	-1.96008948	-1.95314831	-1.95408031	-1.96383917	-1.95202538	-1.9702399	-1.96038944	-1.95724987	-1.95764446	-1.95005988	-1.9678453	-1.96661387	-1.96494923	-1.95736069	-1.96541633	-1.96501339	-1.95424217	-1.96026245	-1.95484319	-1.9477964	-1.96700569	-1.96690406	-1.95457397	-1.957474	-1.95708949		
mc_fanorc	0.07543229	0.07540873	0.0728658	0.06980035	0.07407968	0.0702634	0.07099403	0.07369846	0.07111536	0.07370461	0.07396044	0.0717438	0.07605909	0.0735515	0.07573941	0.07292545	0.07357866	0.07361749	0.07444441	0.07548152	0.07494933	0.0711148	0.07433313	0.07231971	0.0745746	0.075321	0.07371157	0.07594014	0.0742068	0.06926874		
pr_fanduct	0.04487379	0.04480739	0.04395478	0.04166024	0.04515302	0.04313937	0.04313937	0.04322045	0.04268434	0.04433779	0.04348275	3.16e-45	0.04698445	0.04394628	0.0404637	0.04089866	0.04249989	0.04281497	0.04048669	0.04048669	0.04048669	0.04048669	0.04048669	0.04048669	0.04048669	0.04048669	0.04048669	0.04048669	0.04048669	0.04048669	0.04048669	
eff_fanduct	0.0470985	0.04548277	0.04098046	0.0490025	0.04718215	0.04324357	0.04627868	0.04039912	0.04413	0.0437788	0.04083953	0.04338666	0.04536727	0.04446653	0.04292989	0.04411653	0.04284168	0.04119495	0.0455986	0.04021497	0.04362844	0.04008771	0.04115748	0.04292989	0.04181491	0.0407784	0.04086671	0.04086515	0.04092102	0.04086515		
mc_fanduct	-0.0452136	-0.04512086	-0.04723576	-0.04597372	-0.0451676	-0.04342328	-0.04478587	-0.04563138	-0.04983349	-0.04559605	-0.0468899	-0.04592005	-0.0448876	-0.0468415	-0.04594948	-0.04509445	-0.04726383	-0.04652653	-0.04531702	-0.04531702	-0.04531702	-0.04531702	-0.04531702	-0.04531702	-0.04531702	-0.04531702	-0.04531702	-0.04531702	-0.04531702	-0.04531702	-0.04531702	
pr_compressor	-3.19570547	-3.1923519	-3.18955012	-3.19291084	-3.1832444	-3.18920667	-3.18365211	-3.1831319	-3.19737214	-3.1844057	-3.19453679	-3.19207143	-3.19176009	-3.1927452	-3.1890031	-3.1953095	-3.1932848	-3.19427633	-3.19356053	-3.1965464	-3.19330778	-3.18710048	-3.1841358	-3.18754887	-3.1945299	-3.19133036	-3.19089903	-3.19457471	-3.19553008	-3.18919796		
eff_compressor	0.32026527	0.48704997	0.48839926	0.4468823	0.4754952	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823	0.4468823
mc_compressor	-0.39083382	-0.39262122	-0.3946702	-0.3936491	-0.3929135	-0.3900022	-0.3955517	-0.3934386	-0.3900125	-0.39635311	-0.3864239	-0.3864161	-0.3920262	-0.3894238	-0.3905585	-0.3866557	-0.3909093	-0.3943488	-0.3907595	-0.3867413	-0.39262571	-0.3906305	-0.3907058	-0.39263945	-0.39393976	-0.3895218	-0.3868094	-0.39537064	-0.39153671	-0.39284493		
pr_compressor2	-0.0128502	-0.01242591	-0.0110165	-0.00762437	-0.01134707	-0.01133338	-0.00920206	-0.0125331	-0.0111081	-0.01246743	-0.01346791	-0.00813481	-0.0115947	-0.01251426	-0.01045799	-0.00821523	-0.01140559	-0.007938	-0.01151601	-0.024844	-0.01119207	-0.0195409	-0.01170416	-0.011705	-0.0112905	-0.01105654	-0.0105516	-0.0109306	-0.01055665	-0.0072802		
eff_compressor2	-0.01615131	0.0005512	-0.0018925	-0.00053621	0.00119452	0.00372984	0.0000551	-0.0026421	0.0014024	0.0028387	-0.00078382	-0.0049638	-0.0016346	-0.00318108	-0.0002705	-0.0008027	-0.0045732	-0.0016953	0.00083562	0.00059665	0.00075963	-0.000493	-0.0001631	-0.0042569	-0.0072227	-0.00357484	-0.0051239	0.0008744	-0.0008781			
mc_compressor2	-0.0507152	-0.04683271	-0.0428497	-0.04946585	-0.04157269	-0.0461298	-0.0447425	-0.0483096	-0.04514832	-0.0454247	-0.04848794	-0.04917263	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	-0.04848794	
pr_turbina1	-0.01044922	-0.01070001	-0.01083001	-0.01093901	-0.01085149	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157	-0.01094157
mc_turbina1	-0.01616905	-0.01757474	-0.0183901	-0.01929407	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081	-0.01932081
pr_turbina2	-0.0722489	-0.0444654	-0.01184598	-0.01291615	-0.01184981	-0.01103931	-0.01116704	-0.0120894	-0.01205116	-0.01402641	-0.01316238	-0.0120711	-0.01462466	-0.0135574	-0.01443495	-0.0217167	-0.01462662	-0.01462662	-0.0176384	-0.0129654	-0.0147398	-0.0144019	-0.01598314	-0.0105219	-0.0159804	-0.0160159	-0.0160159	-0.0160159	-0.0160159	-0.0160159	-0.0160159	-0.0160159
eff_turbina2	-4.9061786	-4.90202091	-4.9078708	-4.9013512	-4.90984024	-4.90655119	-4.9078995	-4.9063272	-4.9063882	-4.9067806	-4.9088029	-4.905737	-4.9046209	-4.9044598	-4.9075306	-4.9013583	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174	
mc_turbina2	0.05389946	0.0559	0.057082	0.05945009	0.05634596	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807	0.05868807

Aireto eff fanorc	-1.96176085	-1.96103902	-1.95555149	-1.9594094	-1.95026673	-1.96008948	-1.95314831	-1.95408031	-1.96383917	-1.95202538	-1.9702399	-1.96038944	-1.95724987	-1.95764446	-1.95005988	-1.9678453	-1.96661387	-1.96494923	-1.95736069	-1.96541633	-1.96501339	-1.95424217	-1.96026245	-1.95484319	-1.9477964	-1.96700569	-1.96690406	-1.95457397	-1.957474	-1.95708949	
Aireto pr compresor 1	-3.19570547	-3.1923519	-3.18955012	-3.19291084	-3.1832444	-3.18920667	-3.18365211	-3.1831319	-3.19737214	-3.1844057	-3.19453679	-3.19207143	-3.19176009	-3.1927452	-3.1890031	-3.1953095	-3.1932848	-3.19427633	-3.19356053	-3.1965464	-3.19330778	-3.18710048	-3.1841358	-3.18754887	-3.1945299	-3.19133036	-3.19089903	-3.19457471	-3.19553008	-3.18919796	
Aireto eff turbina 2	-4.9061786	-4.90202091	-4.9078708	-4.9013512	-4.90984024	-4.90655119	-4.9078995	-4.9063272	-4.9063882	-4.9067806	-4.9088029	-4.905737	-4.9046209	-4.9044598	-4.9075306	-4.9013583	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174	-4.90619137	-4.90880174

Tabla 0.5: Caso D: Degradación -2% eficiencia fanorc, -5% relación de compresión compresor 1 y -5% eficiencia turbina 2









