

# **Validation process for COLOMBIA**

**The epidemiology research group, EAFIT**

06-Apr-2022

# Table of Contents

<a href="#">Chapter 1. Extension number1</a>	1
<a href="#">1.1. Basic information</a>	1
<a href="#">1.2. Estimated parameters with their intervals</a>	1
<a href="#">1.3. Identifiability analisys</a>	2
<a href="#">1.4. Uncertainty analisys</a>	5
<a href="#">Chapter 2. Extension number2</a>	6
<a href="#">2.1. Basic information</a>	6
<a href="#">2.2. Estimated parameters with their intervals</a>	6
<a href="#">2.3. Identifiability analisys</a>	7
<a href="#">2.4. Uncertainty analisys</a>	10
<a href="#">Chapter 3. Extension number3</a>	11
<a href="#">3.1. Basic information</a>	11
<a href="#">3.2. Estimated parameters with their intervals</a>	11
<a href="#">3.3. Identifiability analisys</a>	12
<a href="#">3.4. Uncertainty analisys</a>	15
<a href="#">Chapter 4. Extension number4</a>	16
<a href="#">4.1. Basic information</a>	16
<a href="#">4.2. Estimated parameters with their intervals</a>	16
<a href="#">4.3. Identifiability analisys</a>	17
<a href="#">4.4. Uncertainty analisys</a>	20
<a href="#">Chapter 5. Extension number5</a>	21
<a href="#">5.1. Basic information</a>	21
<a href="#">5.2. Estimated parameters with their intervals</a>	21
<a href="#">5.3. Identifiability analisys</a>	22
<a href="#">5.4. Uncertainty analisys</a>	25
<a href="#">Chapter 6. Extension number6</a>	26
<a href="#">6.1. Basic information</a>	26
<a href="#">6.2. Estimated parameters with their intervals</a>	26
<a href="#">6.3. Identifiability analisys</a>	27
<a href="#">6.4. Uncertainty analisys</a>	30
<a href="#">Chapter 7. Extension number7</a>	31
<a href="#">7.1. Basic information</a>	31
<a href="#">7.2. Estimated parameters with their intervals</a>	31
<a href="#">7.3. Identifiability analisys</a>	32
<a href="#">7.4. Uncertainty analisys</a>	35
<a href="#">Chapter 8. Extension number8</a>	36
<a href="#">8.1. Basic information</a>	36
<a href="#">8.2. Estimated parameters with their intervals</a>	36
<a href="#">8.3. Identifiability analisys</a>	37
<a href="#">8.4. Uncertainty analisys</a>	40
<a href="#">Chapter 9. Extension number9</a>	41
<a href="#">9.1. Basic information</a>	41
<a href="#">9.2. Estimated parameters with their intervals</a>	41

9.3. Identifiability analysis	42
9.4. Uncertainty analysis	45
Chapter 10. Extension number10	46
10.1. Basic information	46
10.2. Estimated parameters with their intervals	46
10.3. Identifiability analysis	47
10.4. Uncertainty analysis	50
Chapter 11. Extension number11	51
11.1. Basic information	51
11.2. Estimated parameters with their intervals	51
11.3. Identifiability analysis	52
11.4. Uncertainty analysis	55
Chapter 12. Extension number12	56
12.1. Basic information	56
12.2. Estimated parameters with their intervals	56
12.3. Identifiability analysis	57
12.4. Uncertainty analysis	60
Chapter 13. Extension number13	61
13.1. Basic information	61
13.2. Estimated parameters with their intervals	61
13.3. Identifiability analysis	62
13.4. Uncertainty analysis	65
Chapter 14. Extension number14	66
14.1. Basic information	66
14.2. Estimated parameters with their intervals	66
14.3. Identifiability analysis	67
14.4. Uncertainty analysis	70
Chapter 15. Extension number15	71
15.1. Basic information	71
15.2. Estimated parameters with their intervals	71
15.3. Identifiability analysis	72
15.4. Uncertainty analysis	75
Chapter 16. Extension number16	76
16.1. Basic information	76
16.2. Estimated parameters with their intervals	76
16.3. Identifiability analysis	77
16.4. Uncertainty analysis	80
Chapter 17. Extension number17	81
17.1. Basic information	81
17.2. Estimated parameters with their intervals	81
17.3. Identifiability analysis	82
17.4. Uncertainty analysis	85
Chapter 18. Extension number18	86
18.1. Basic information	86
18.2. Estimated parameters with their intervals	86
18.3. Identifiability analysis	87

<a href="#">18.4. Uncertainty analysis</a> .....	90
--	----

---

## Chapter 1. Extension number1

### 1.1. Basic information

The extension to be validated consists of the time series from the data1 to the 79. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was 1000.

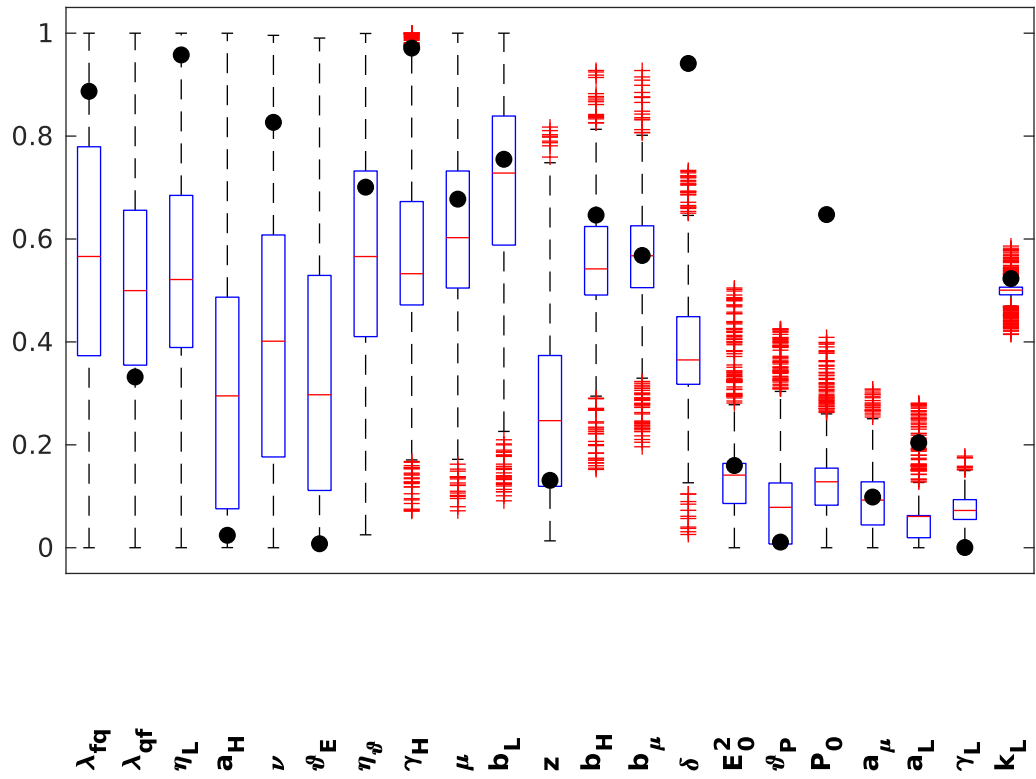
### 1.2. Estimated parameters with their intervals

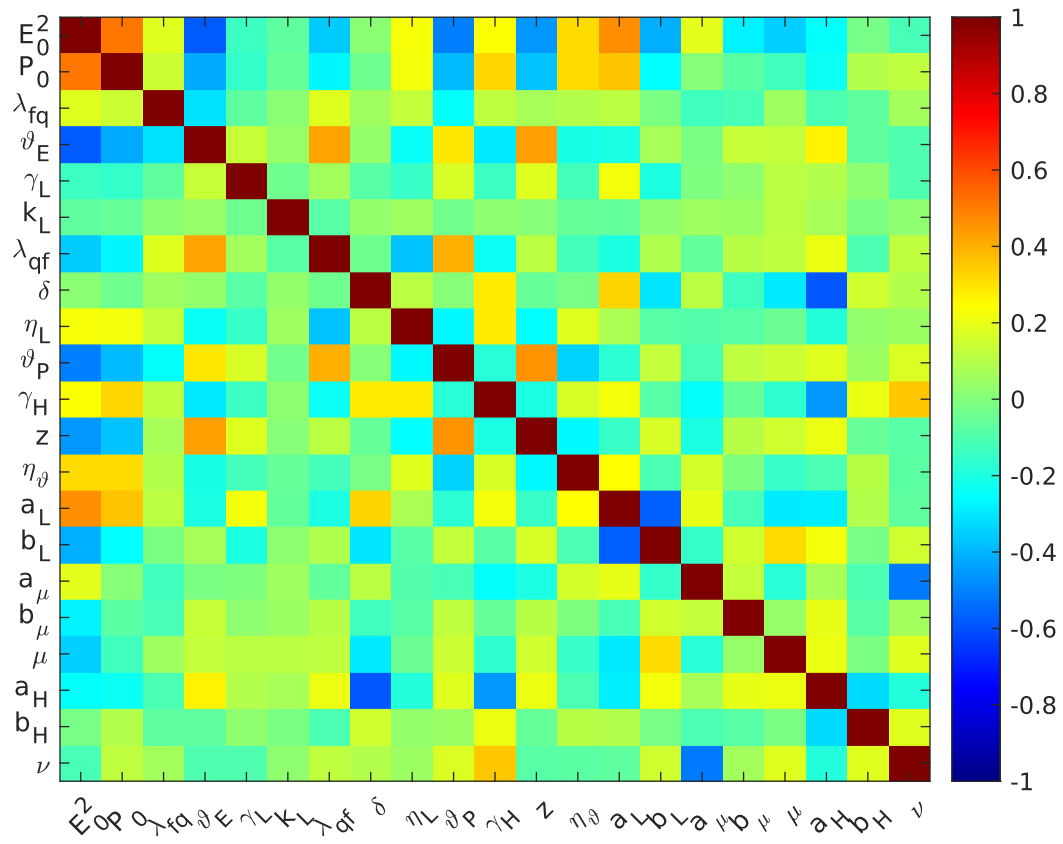
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

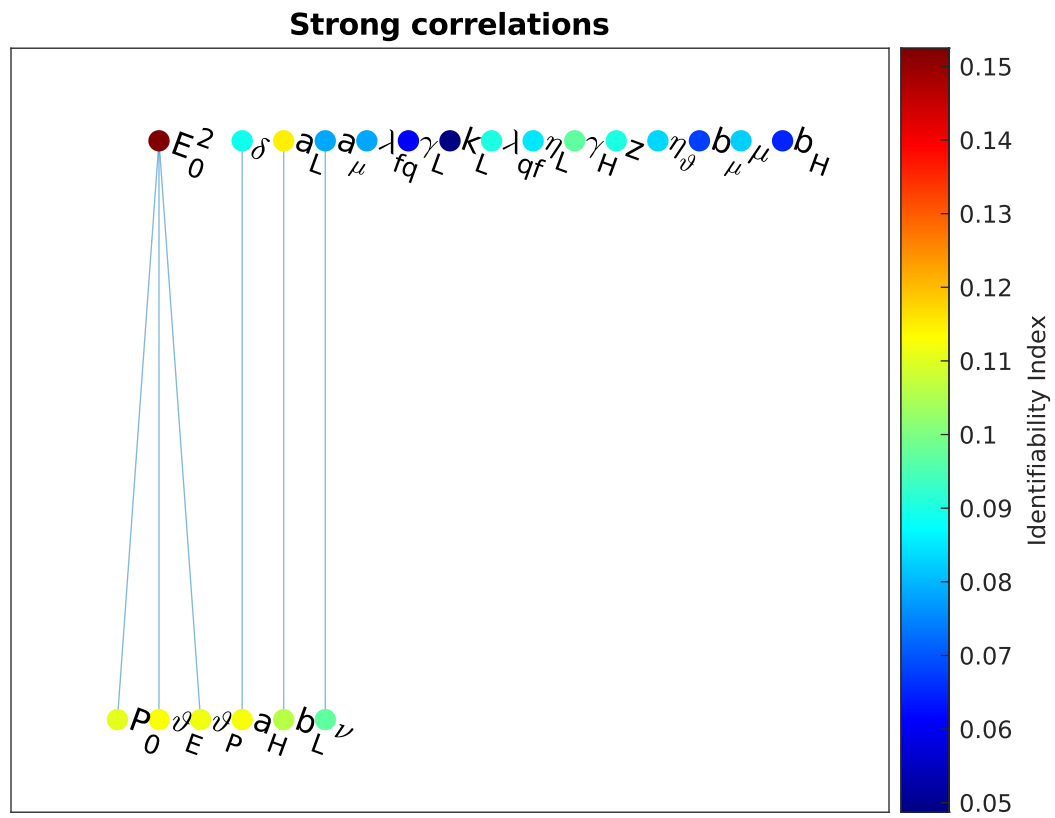
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
$E^2_0$	'268.0319'	'524.9023'	'282.2472'	'319.5178'	'0.1525'
$P_0$	'217.2946'	'340.738'	'51.2699'	'258.9998'	'0.1104'
$\lambda_{fq}$	'0.8867'	'0.9506'	'0.5661'	'0.887'	'0.0784'
$\vartheta_E$	'0.0019'	'0.0146'	'0.2973'	'0.0077'	'0.1129'
$\gamma_L$	'0.0001'	'0.0009'	'0.0724'	'0.0004'	'0.0617'
$k_L$	'1'	'8.7164'	'5.5054'	'5.7076'	'0.0487'
$\lambda_{qf}$	'0.3247'	'0.3416'	'0.4997'	'0.3319'	'0.0901'
$\delta$	'0.1079'	'0.1432'	'0.0547'	'0.1412'	'0.0891'
$\eta_L$	'0.8763'	'0.9585'	'0.5213'	'0.9578'	'0.085'
$\vartheta_P$	'0.0086'	'0.0163'	'0.0785'	'0.011'	'0.1119'
$\gamma_H$	'0.8296'	'0.9719'	'0.5325'	'0.9711'	'0.097'
$z$	'3.8013'	'4.0997'	'7.4099'	'3.9299'	'0.0902'
$\eta_{\vartheta}$	'0.6872'	'0.7907'	'0.5659'	'0.7008'	'0.0834'
$a_L$	'1.532'	'14.3'	'1.8511'	'3.8583'	'0.1149'
$b_L$	'2.3405'	'13.7511'	'11.1939'	'11.5695'	'0.106'
$a_{\mu}$	'2.3334'	'2.51'	'2.2959'	'2.3792'	'0.0784'
$b_{\mu}$	'8.1125'	'10.2169'	'8.9439'	'8.9519'	'0.068'
$\mu$	'0.5451'	'0.7496'	'0.6026'	'0.6775'	'0.0825'
$a_H$	'1.0624'	'1.3649'	'5.1318'	'1.3392'	'0.1125'
$b_H$	'6.1973'	'14.1417'	'8.5871'	'10.0516'	'0.0652'
$\nu$	'298.0771'	'460.4566'	'200.6999'	'413.3672'	'0.097'

### 1.3. Identifiability analysis

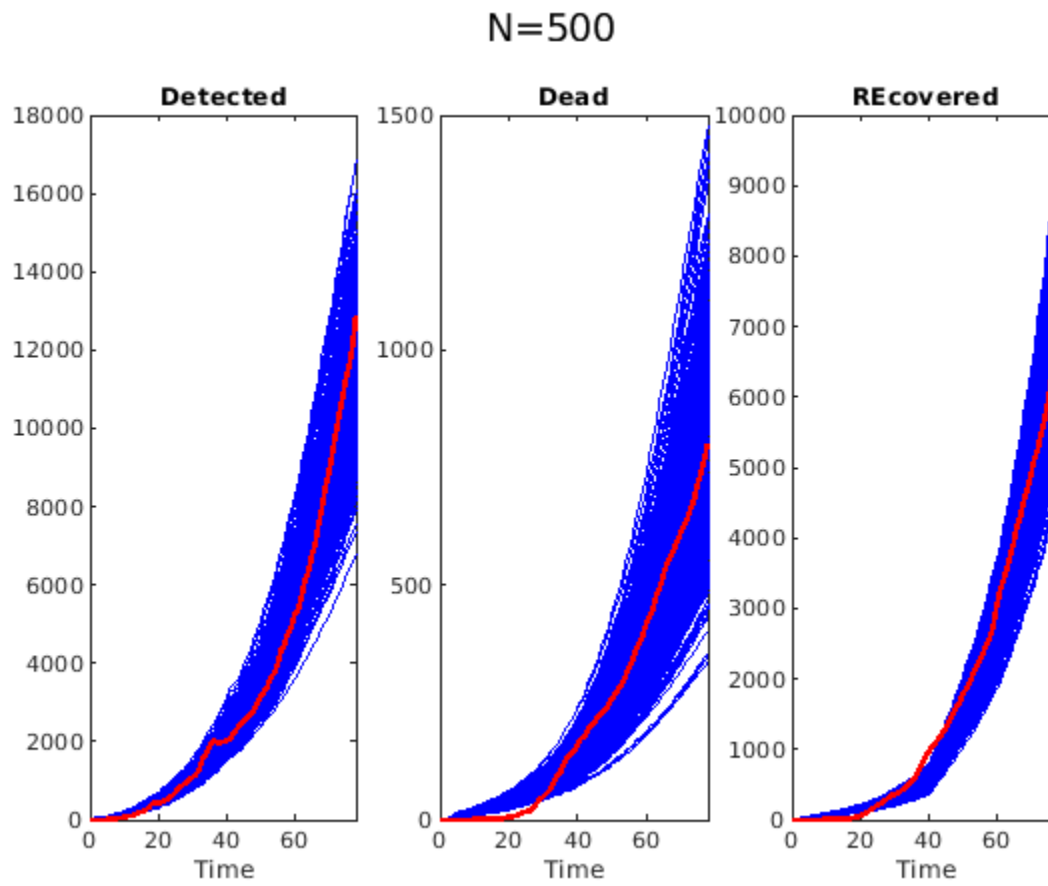








## 1.4. Uncertainty analysis



---

## Chapter 2. Extension number2

### 2.1. Basic information

The extension to be validated consists of the time series from the data79 to the 117. The status of the validation is: COMPLETED.

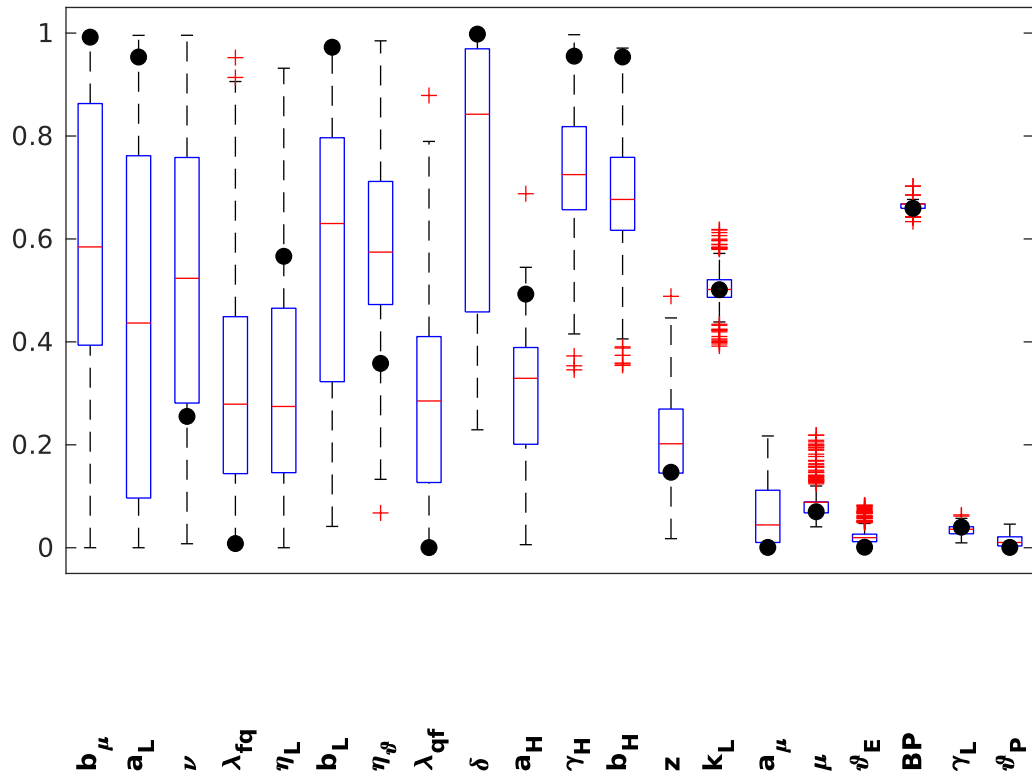
The number of estimations needed to perform the validation was1000.

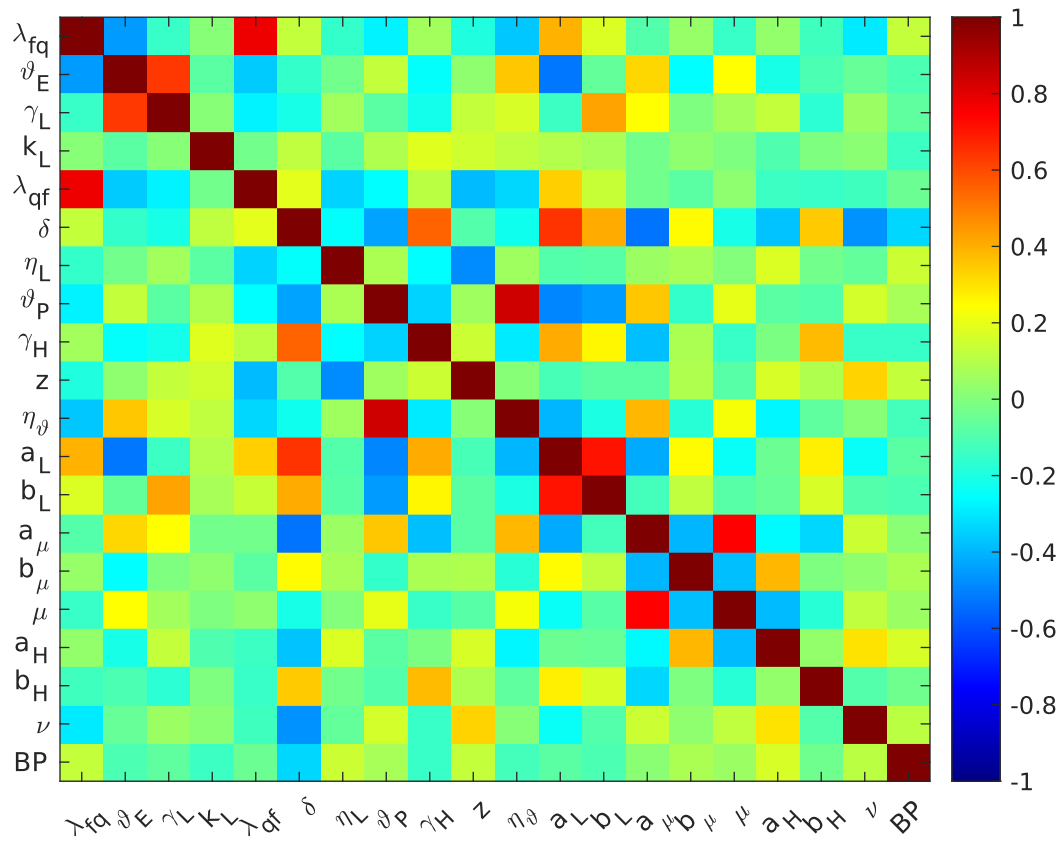
### 2.2. Estimated parameters with their intervals

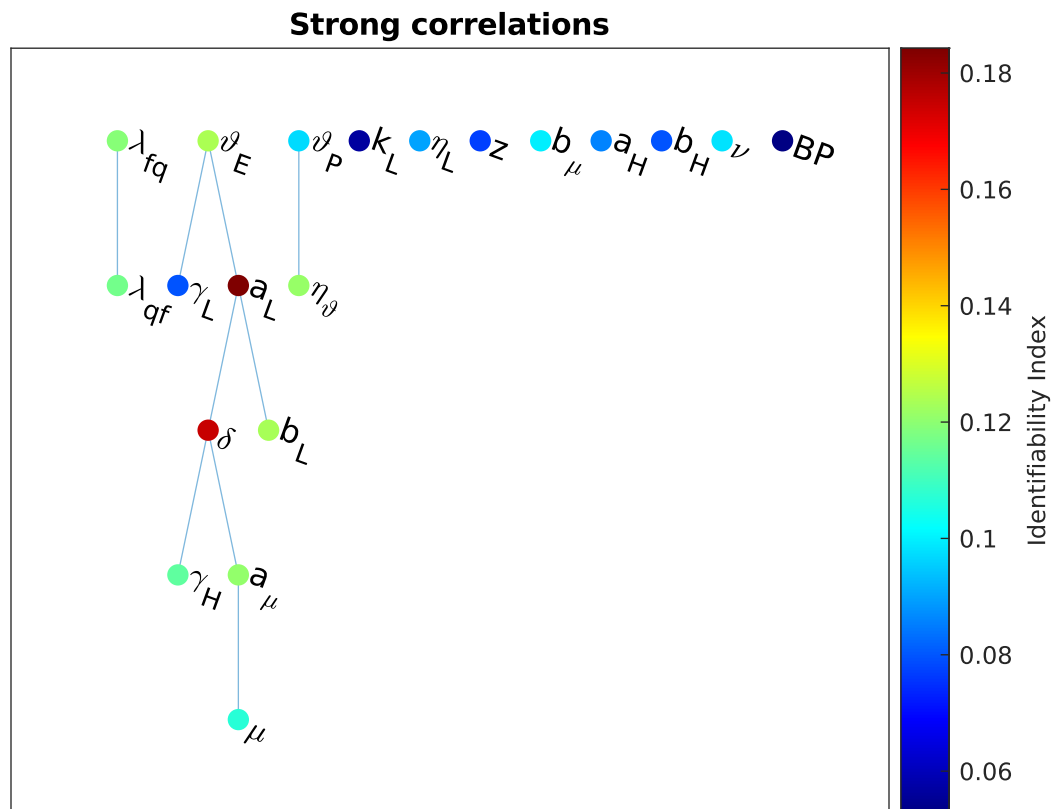
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.2478'	'0.3117'	'0.2797'	'0.0081'	'0.1193'
$\vartheta_E$	'0'	'0.0399'	'0.0196'	'0.001'	'0.1238'
$\gamma_L$	'0.0336'	'0.0383'	'0.0359'	'0.04'	'0.08'
$k_L$	'5.3831'	'5.649'	'5.5161'	'5.5123'	'0.0566'
$\lambda_{qf}$	'0.258'	'0.314'	'0.286'	'0.0003'	'0.117'
$\delta$	'0.1206'	'0.1321'	'0.1264'	'0.1497'	'0.1746'
$\eta_L$	'0.2404'	'0.3087'	'0.2746'	'0.5663'	'0.0901'
$\vartheta_P$	'0.0085'	'0.012'	'0.0102'	'0.0006'	'0.0971'
$\gamma_H$	'0.7024'	'0.7477'	'0.725'	'0.9552'	'0.1143'
$z$	'5.5479'	'6.5765'	'6.0622'	'4.4001'	'0.0774'
$\eta_{\vartheta}$	'0.5482'	'0.6006'	'0.5744'	'0.3582'	'0.1213'
$a_L$	'6.4381'	'7.787'	'7.1126'	'14.3483'	'0.1843'
$b_L$	'9.2776'	'10.3618'	'9.8197'	'14.6151'	'0.1236'
$a_{\mu}$	'1.4871'	'1.757'	'1.622'	'1.0087'	'0.1211'
$b_{\mu}$	'8.6331'	'9.733'	'9.183'	'14.8894'	'0.1001'
$\mu$	'0.0635'	'0.1139'	'0.0887'	'0.0699'	'0.107'
$a_H$	'5.3368'	'5.8934'	'5.6151'	'7.8993'	'0.0861'
$b_H$	'10.174'	'10.7722'	'10.4731'	'14.3499'	'0.0797'
$\nu$	'242.7778'	'280.7573'	'261.7675'	'127.6082'	'0.0985'
BP	'78.2984'	'78.7016'	'78.5'	'77.5'	'0.0529'

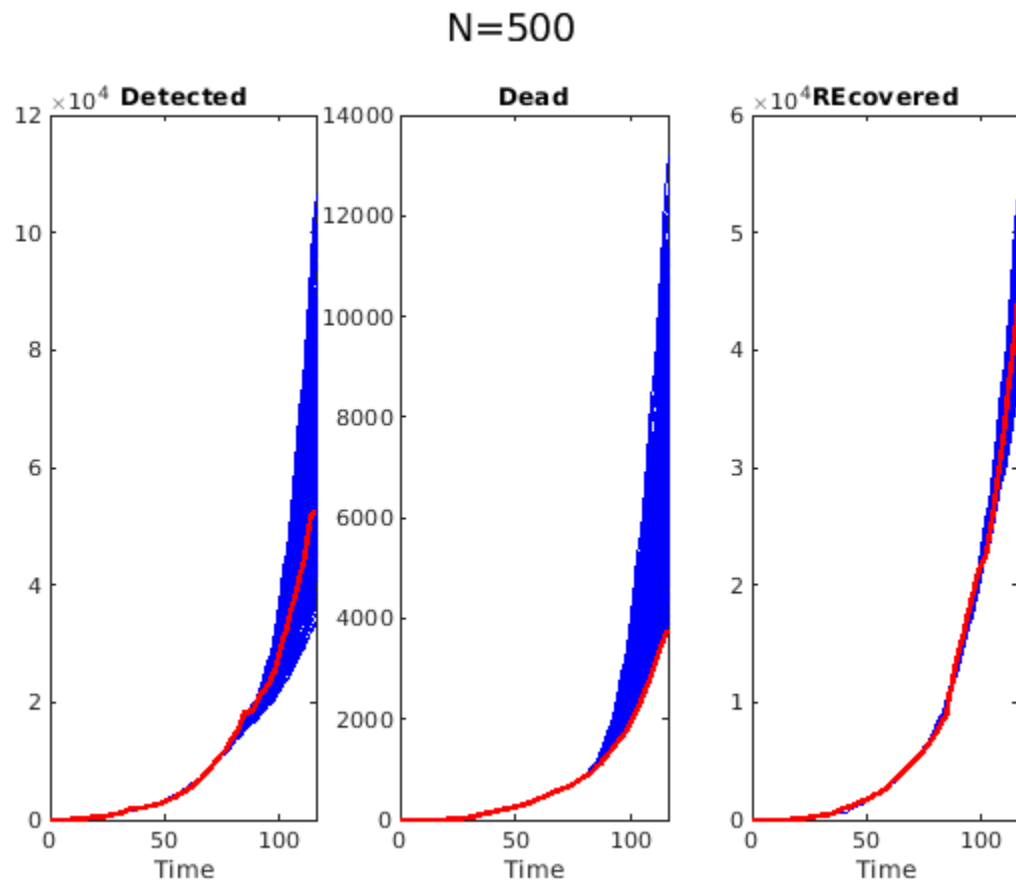
### 2.3. Identifiability analysys







## 2.4. Uncertainty analysys



---

## Chapter 3. Extension number3

### 3.1. Basic information

The extension to be validated consists of the time series from the data117 to the 162. The status of the validation is: COMPLETED.

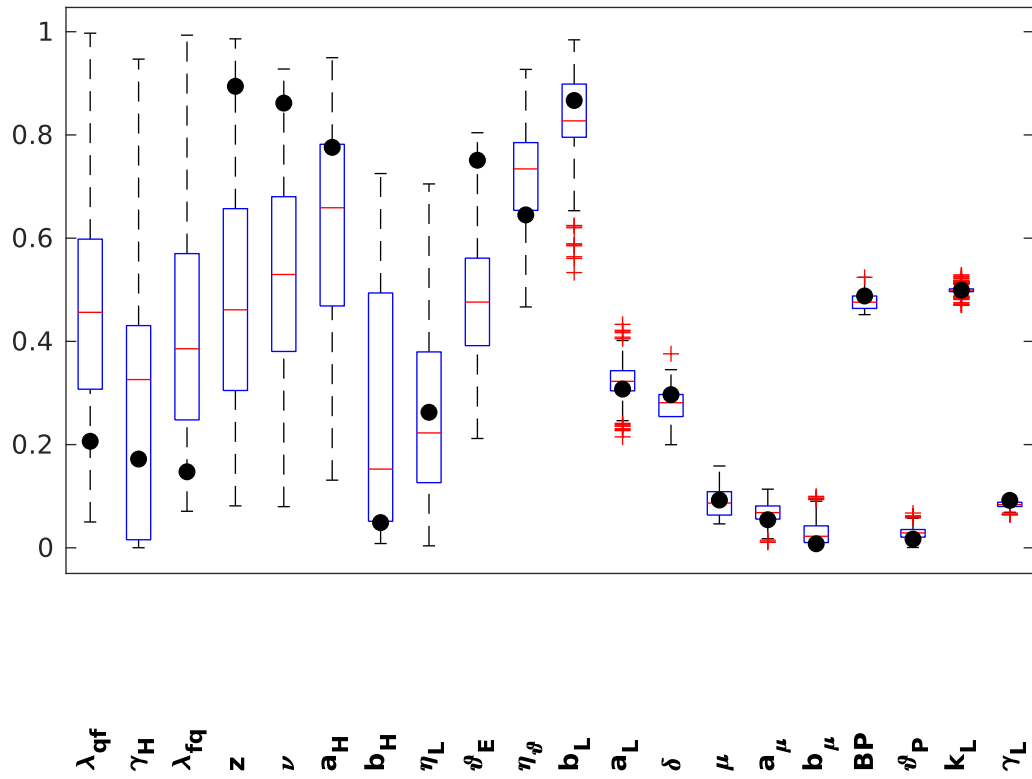
The number of estimations needed to perform the validation was1000.

### 3.2. Estimated parameters with their intervals

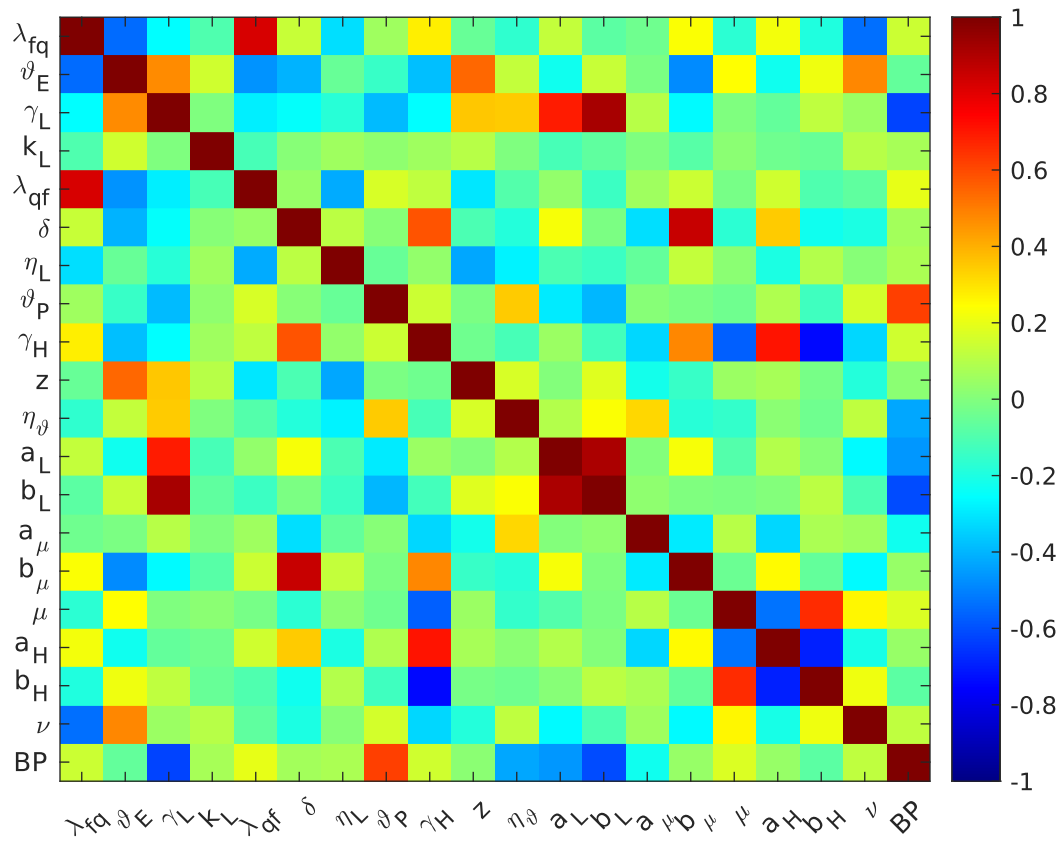
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

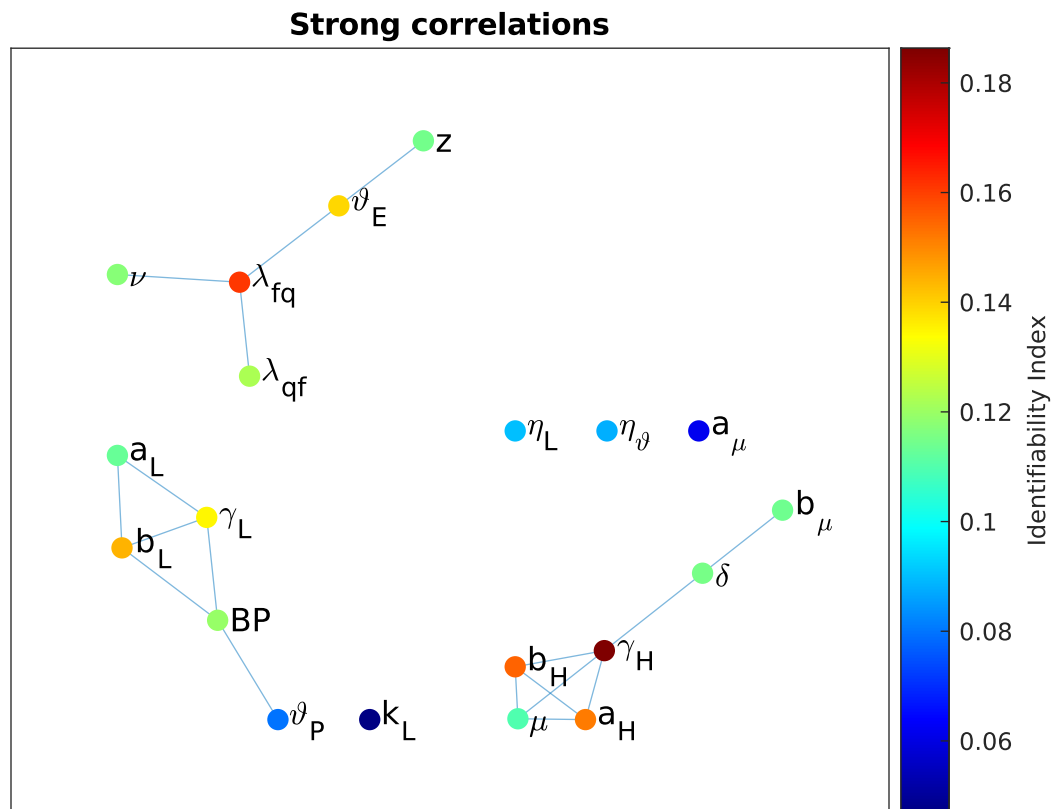
	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.3427'	'0.4287'	'0.3857'	'0.1473'	'0.1611'
$\vartheta_E$	'0.4535'	'0.4987'	'0.4761'	'0.751'	'0.1395'
$\gamma_L$	'0.0818'	'0.0855'	'0.0836'	'0.092'	'0.1346'
$k_L$	'5.4293'	'5.5566'	'5.493'	'5.4937'	'0.047'
$\lambda_{qf}$	'0.4183'	'0.4943'	'0.4563'	'0.2064'	'0.1223'
$\delta$	'0.0404'	'0.044'	'0.0422'	'0.0445'	'0.1152'
$\eta_L$	'0.1917'	'0.2535'	'0.2226'	'0.2626'	'0.0904'
$\vartheta_P$	'0.0256'	'0.0321'	'0.0288'	'0.0169'	'0.0797'
$\gamma_H$	'0.2834'	'0.3687'	'0.326'	'0.172'	'0.1863'
$z$	'12.6439'	'15.0264'	'13.8352'	'26.8264'	'0.1146'
$\eta_{\vartheta}$	'0.7139'	'0.7545'	'0.7342'	'0.6451'	'0.0878'
$a_L$	'5.3353'	'5.6987'	'5.517'	'5.3053'	'0.1133'
$b_L$	'12.1756'	'12.9874'	'12.5815'	'13.135'	'0.1439'
$a_{\mu}$	'1.8959'	'2.0147'	'1.9553'	'1.7612'	'0.0618'
$b_{\mu}$	'1'	'1.6878'	'1.3132'	'1.1099'	'0.1145'
$\mu$	'0.0805'	'0.093'	'0.0867'	'0.0926'	'0.1101'
$a_H$	'9.7246'	'10.7247'	'10.2247'	'11.8633'	'0.1518'
$b_H$	'2.5057'	'3.7645'	'3.1351'	'1.6833'	'0.1553'
$\nu$	'248.0033'	'281.5913'	'264.7973'	'430.8424'	'0.1177'
BP	'118.1589'	'118.8411'	'118.5'	'119.5'	'0.1195'

### 3.3. Identifiability analysys

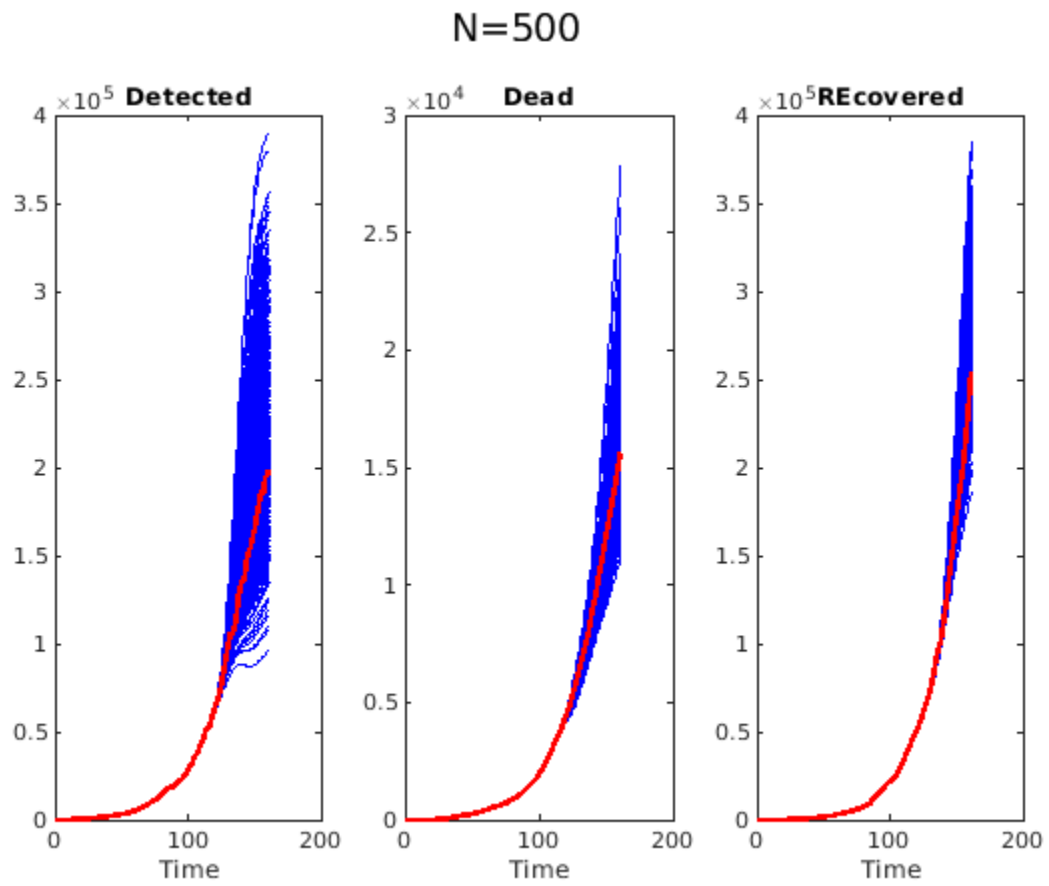








### 3.4. Uncertainty analysis



---

## Chapter 4. Extension number4

### 4.1. Basic information

The extension to be validated consists of the time series from the data162 to the 196. The status of the validation is: COMPLETED.

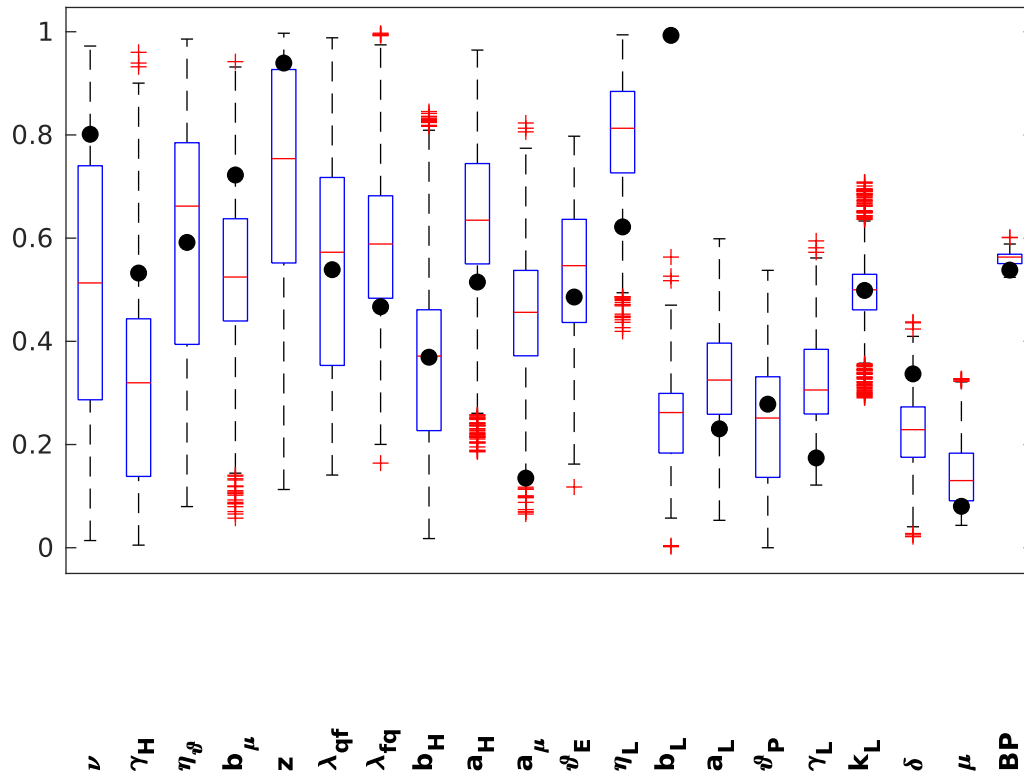
The number of estimations needed to perform the validation was1000.

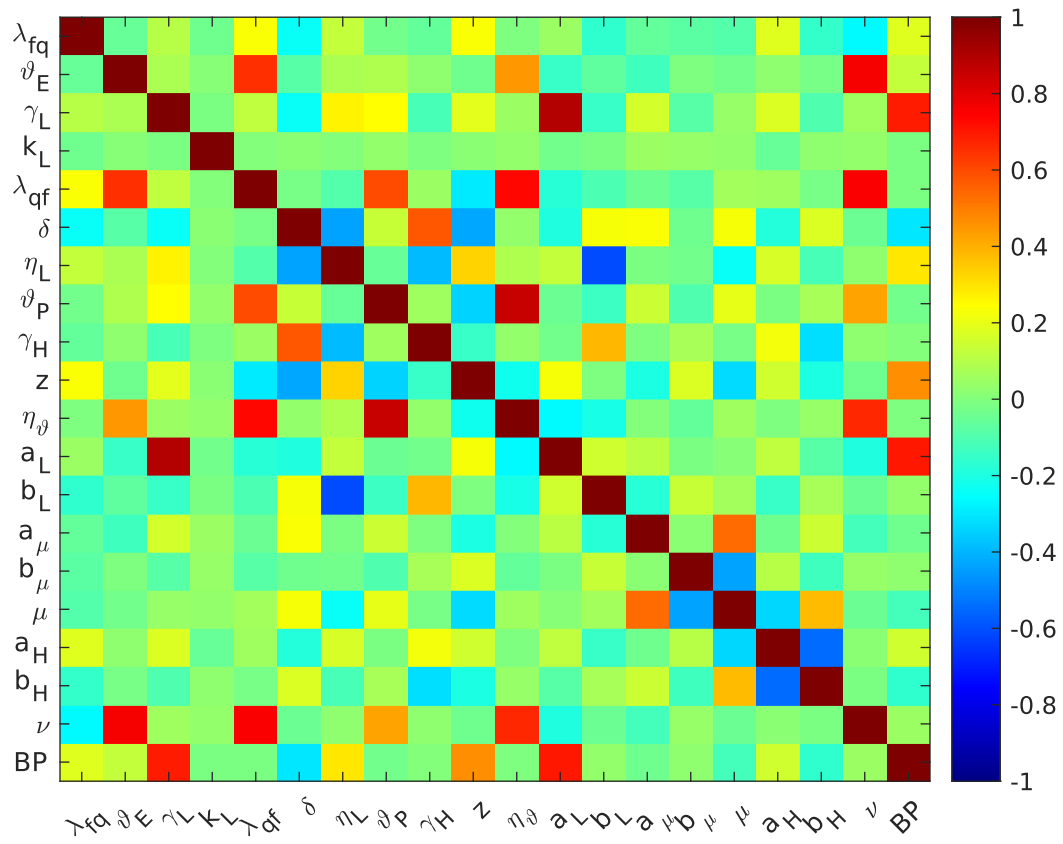
### 4.2. Estimated parameters with their intervals

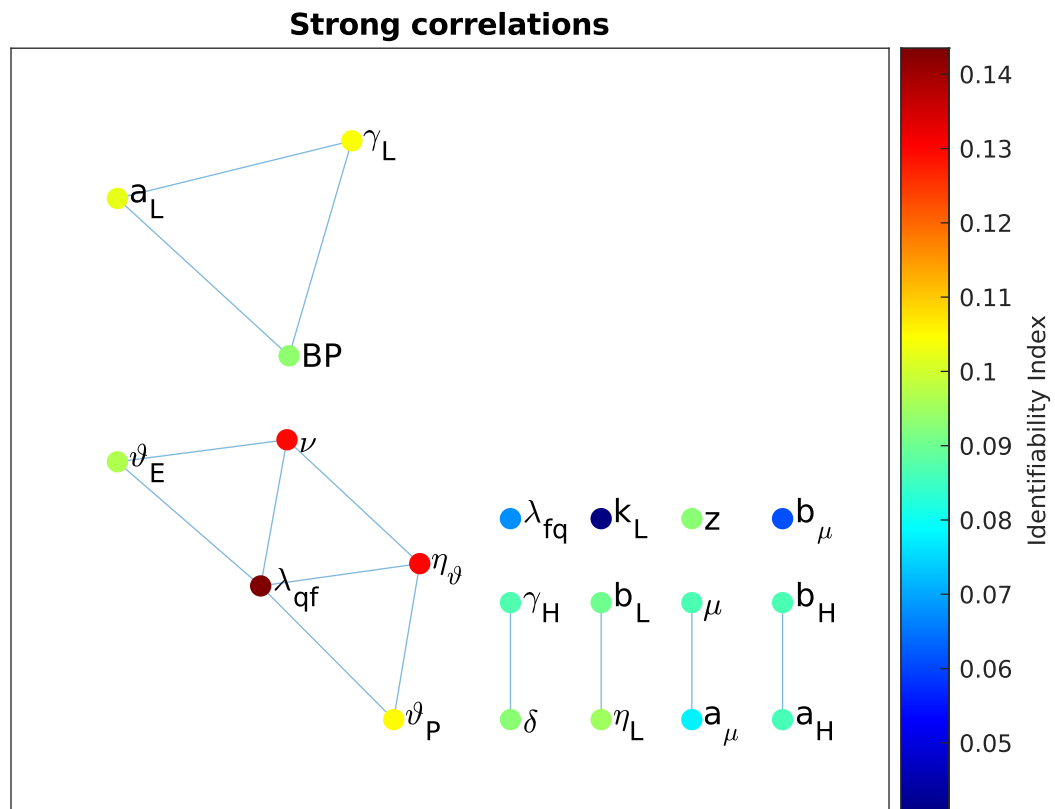
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.5753'	'0.6019'	'0.5886'	'0.4671'	'0.0676'
$\vartheta_E$	'0.5358'	'0.5572'	'0.5465'	'0.4859'	'0.0965'
$\gamma_L$	'0.2984'	'0.3131'	'0.3057'	'0.174'	'0.1045'
$k_L$	'5.4124'	'5.5857'	'5.499'	'5.4878'	'0.0407'
$\lambda_{qf}$	'0.5555'	'0.5899'	'0.5727'	'0.5389'	'0.1435'
$\delta$	'0.0332'	'0.0355'	'0.0343'	'0.0505'	'0.093'
$\eta_L$	'0.7985'	'0.8272'	'0.8128'	'0.6217'	'0.0952'
$\vartheta_P$	'0.241'	'0.2616'	'0.2513'	'0.2782'	'0.1053'
$\gamma_H$	'0.3021'	'0.3373'	'0.3197'	'0.5323'	'0.087'
$z$	'22.0967'	'23.1478'	'22.6223'	'28.1794'	'0.0932'
$\eta_{\vartheta}$	'0.6422'	'0.6819'	'0.6621'	'0.5917'	'0.13'
$a_L$	'5.4404'	'5.6581'	'5.5493'	'4.2267'	'0.1023'
$b_L$	'4.4353'	'4.9007'	'4.668'	'14.9015'	'0.0901'
$a_{\mu}$	'7.2101'	'7.5643'	'7.3872'	'2.8891'	'0.0779'
$b_{\mu}$	'8.1256'	'8.5639'	'8.3447'	'11.1132'	'0.0613'
$\mu$	'0.1218'	'0.1386'	'0.1302'	'0.0803'	'0.0865'
$a_H$	'9.6721'	'10.0969'	'9.8845'	'8.2078'	'0.0864'
$b_H$	'5.9961'	'6.4026'	'6.1994'	'6.1689'	'0.0866'
$\nu$	'245.6345'	'267.5507'	'256.5926'	'400.6552'	'0.1296'
BP	'161.4198'	'161.5802'	'161.5'	'159.5102'	'0.0936'

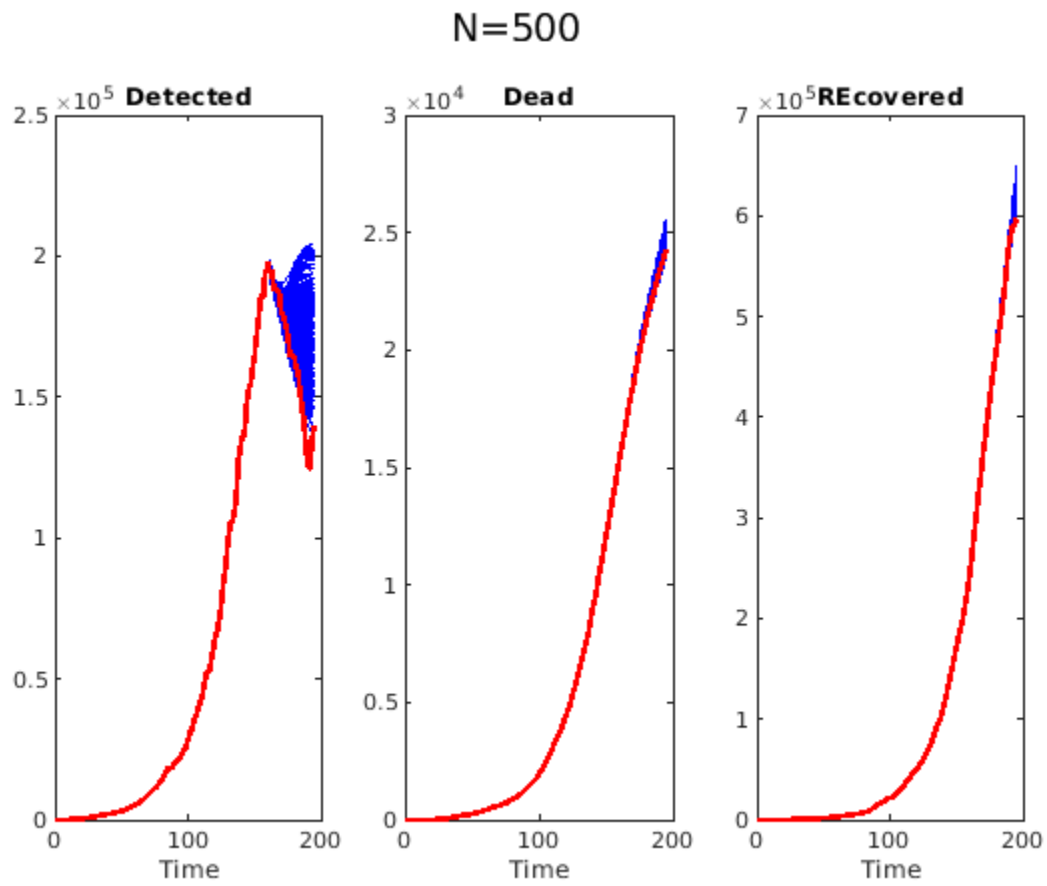
### 4.3. Identifiability analysys







#### 4.4. Uncertainty analysis





---

## Chapter 5. Extension number5

### 5.1. Basic information

The extension to be validated consists of the time series from the data196 to the 221. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was2000.

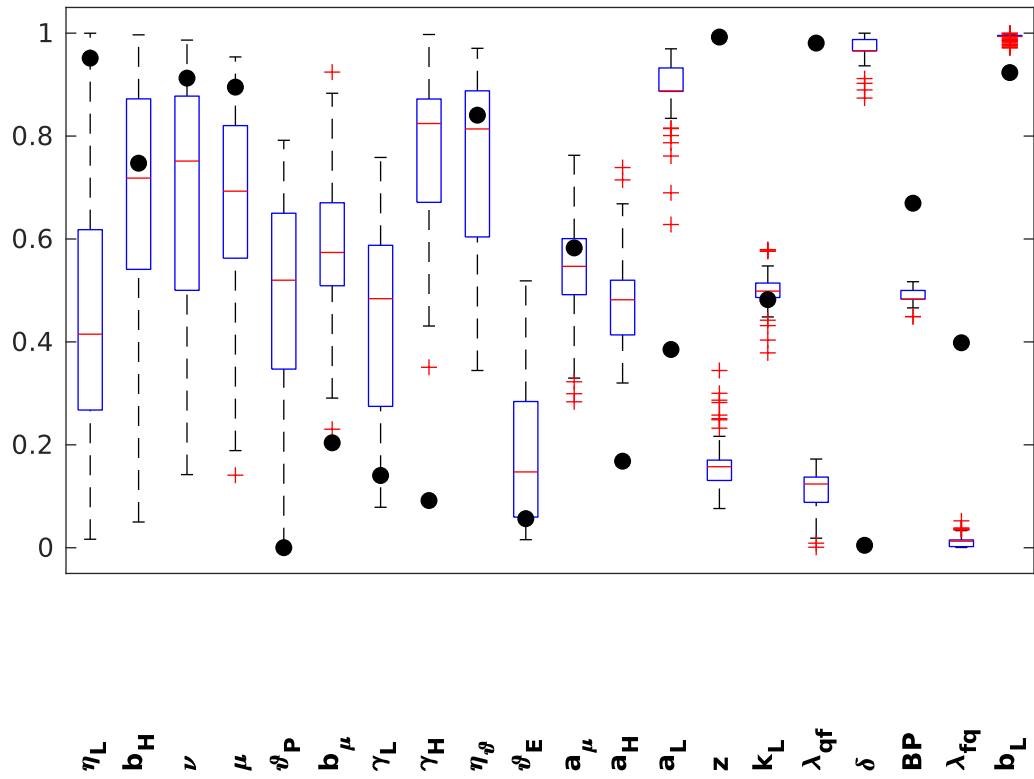
### 5.2. Estimated parameters with their intervals

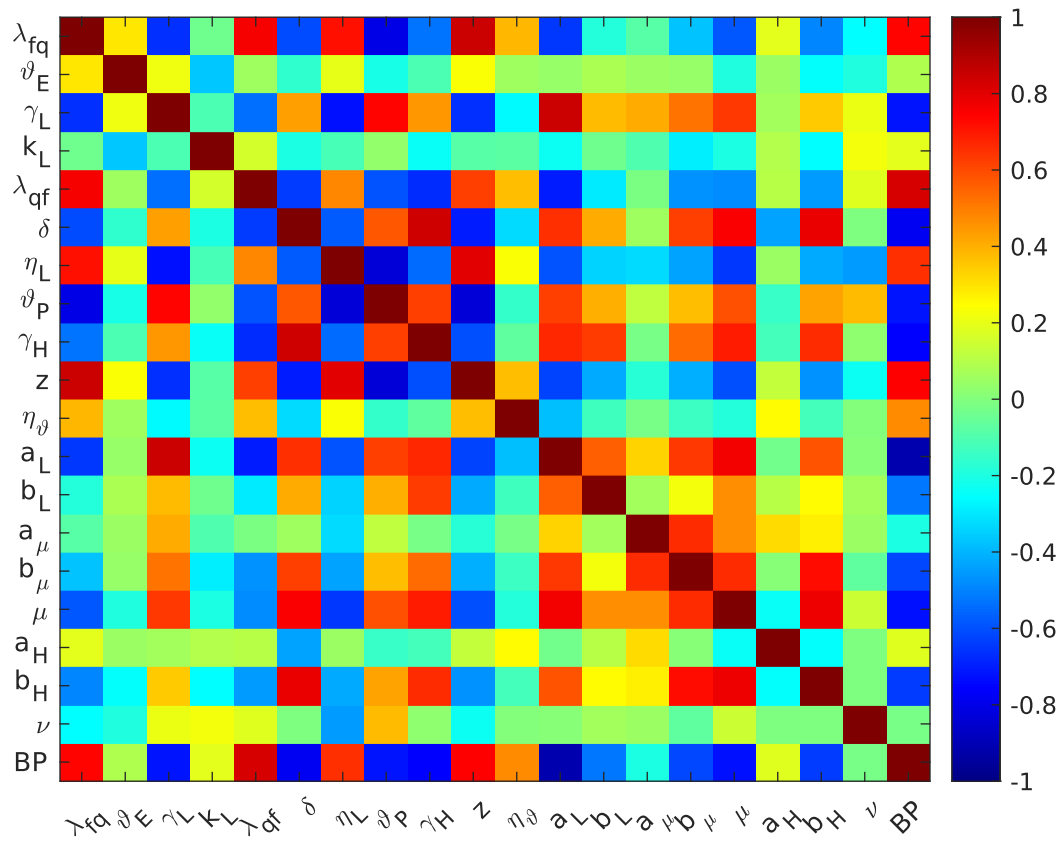
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

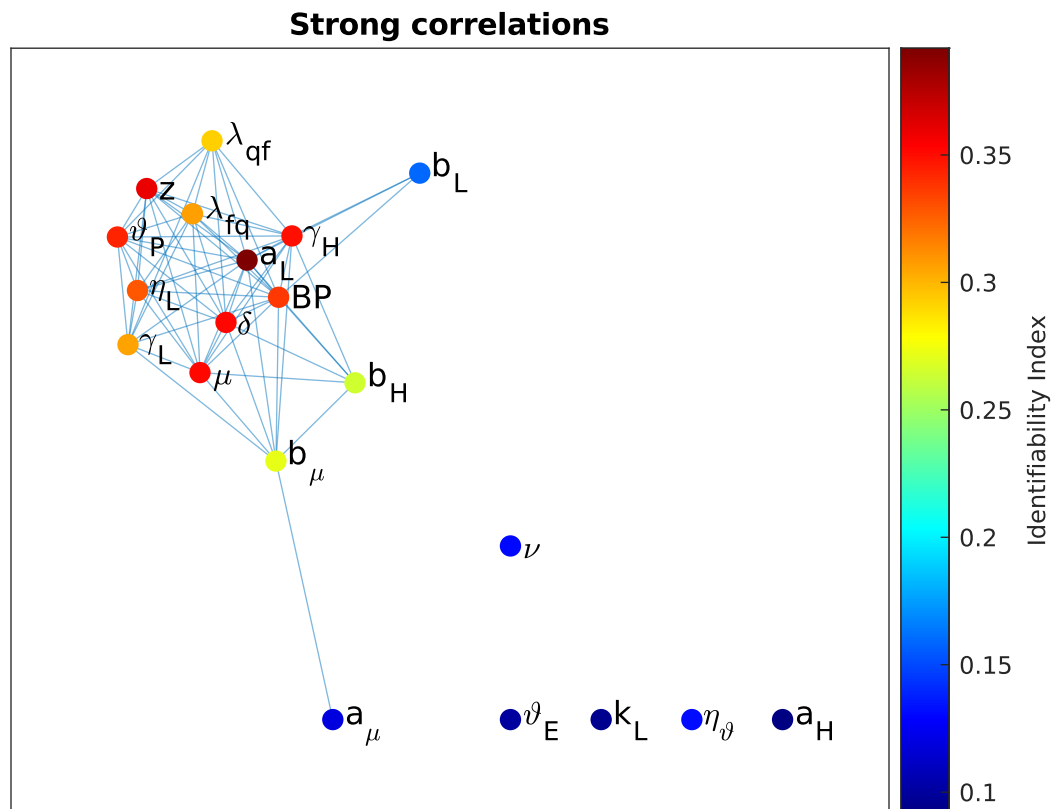
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.2879'	'0.5362'	'0.0127'	'0.3983'	'0.3069'
$\vartheta_E$	'0.0267'	'0.0797'	'0.1473'	'0.0565'	'0.1015'
$\gamma_L$	'0.0186'	'0.1797'	'0.484'	'0.1404'	'0.3054'
$k_L$	'1'	'9.64'	'5.4885'	'5.3393'	'0.0963'
$\lambda_{qf}$	'0.6343'	'0.9854'	'0.1238'	'0.9807'	'0.2933'
$\delta$	'0'	'0.0016'	'0.1448'	'0.0007'	'0.3519'
$\eta_L$	'0.1533'	'1'	'0.415'	'0.9515'	'0.3276'
$\vartheta_P$	'0'	'0.0003'	'0.5199'	'0.0001'	'0.3429'
$\gamma_H$	'0'	'0.1981'	'0.8244'	'0.0917'	'0.3493'
$z$	'10.1078'	'30'	'4.7235'	'29.7721'	'0.3602'
$\eta_{\vartheta}$	'0.5117'	'1'	'0.8138'	'0.8406'	'0.1328'
$a_L$	'5.7716'	'13.2454'	'13.4283'	'6.3937'	'0.3919'
$b_L$	'6.8902'	'14.8404'	'14.9121'	'13.9271'	'0.1593'
$a_{\mu}$	'1'	'15'	'8.656'	'9.1571'	'0.1197'
$b_{\mu}$	'1'	'15'	'9.0335'	'3.8547'	'0.2717'
$\mu$	'0'	'1'	'0.6929'	'0.8951'	'0.352'
$a_H$	'1'	'13.768'	'7.746'	'3.3547'	'0.0921'
$b_H$	'1'	'15'	'11.0566'	'11.4617'	'0.2644'
$\nu$	'261.6337'	'481.3121'	'375.7085'	'456.2912'	'0.1311'
BP	'198.5582'	'205.1662'	'190.5'	'201.5'	'0.338'

### 5.3. Identifiability analysis

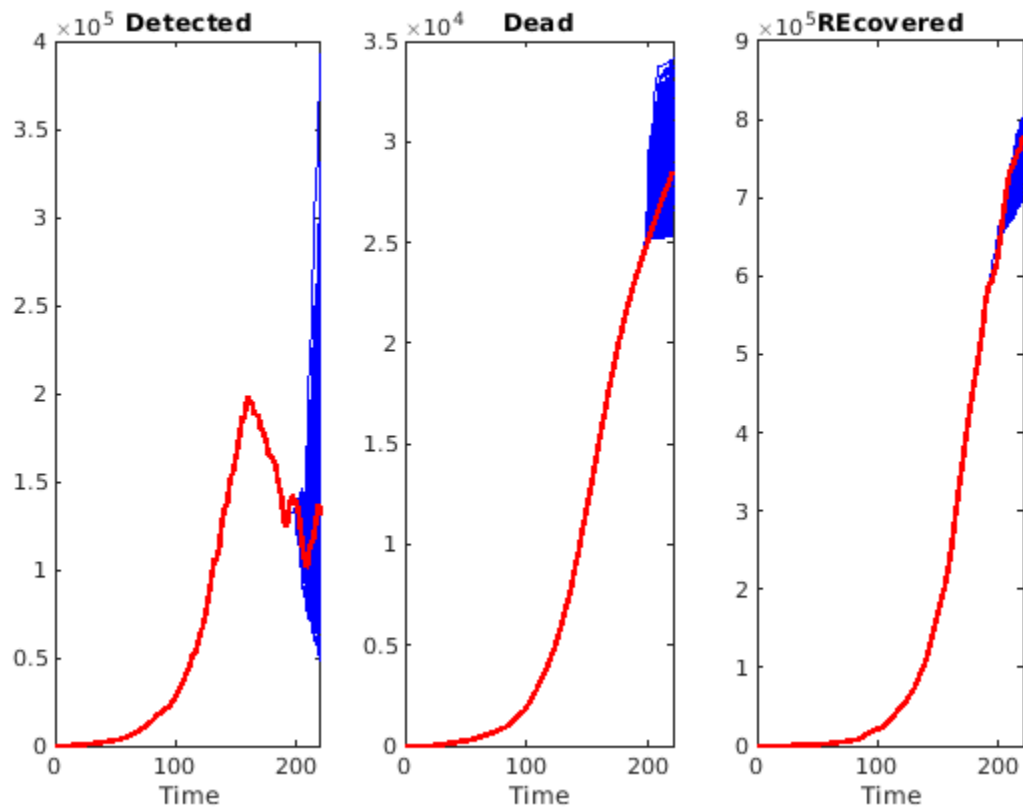






## 5.4. Uncertainty analysys

N=500



---

## Chapter 6. Extension number6

### 6.1. Basic information

The extension to be validated consists of the time series from the data221 to the 251. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

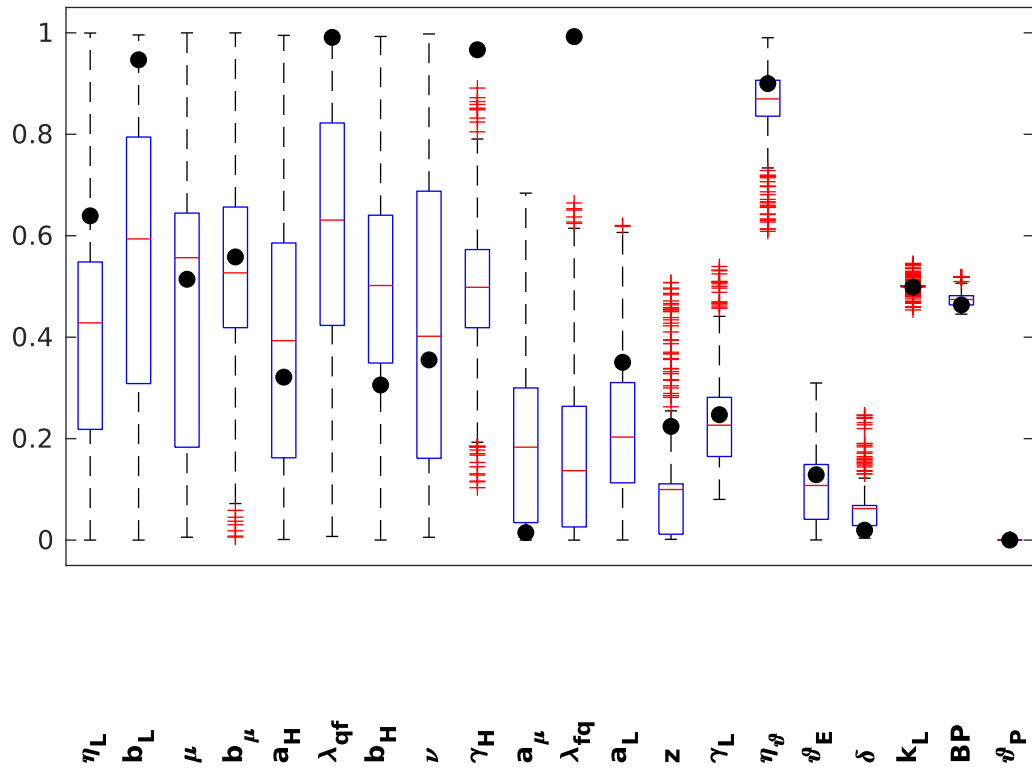
### 6.2. Estimated parameters with their intervals

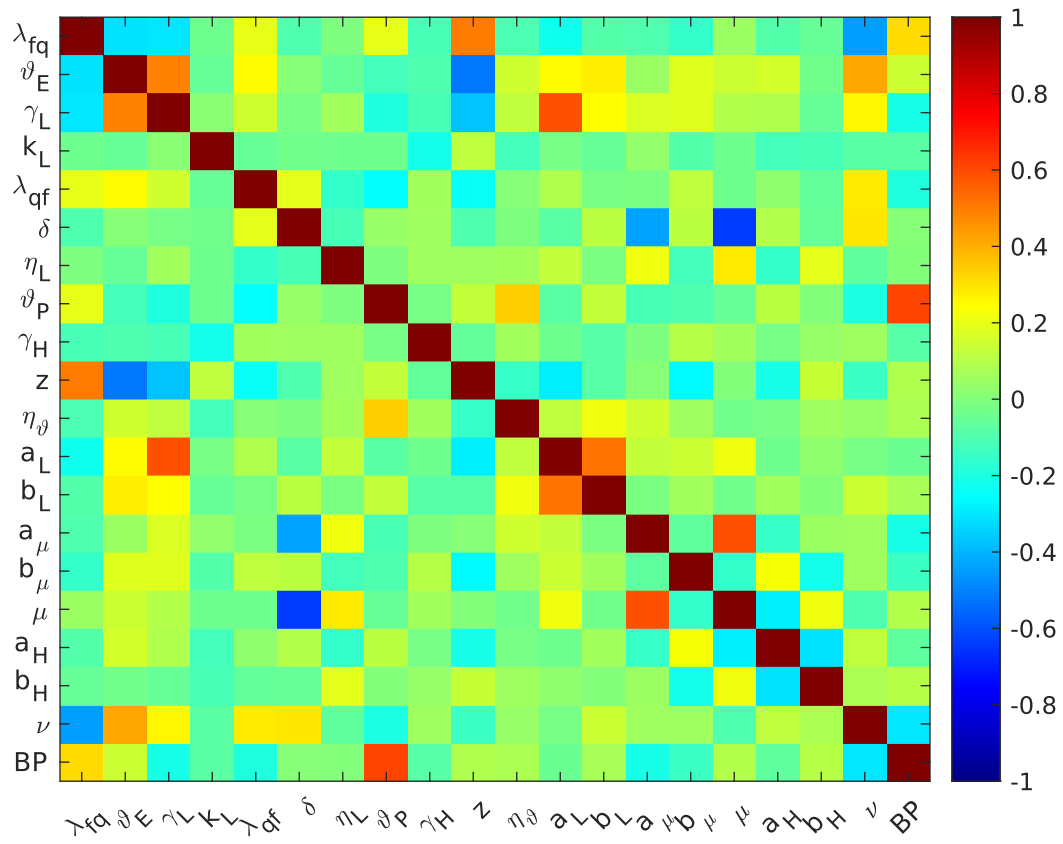
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

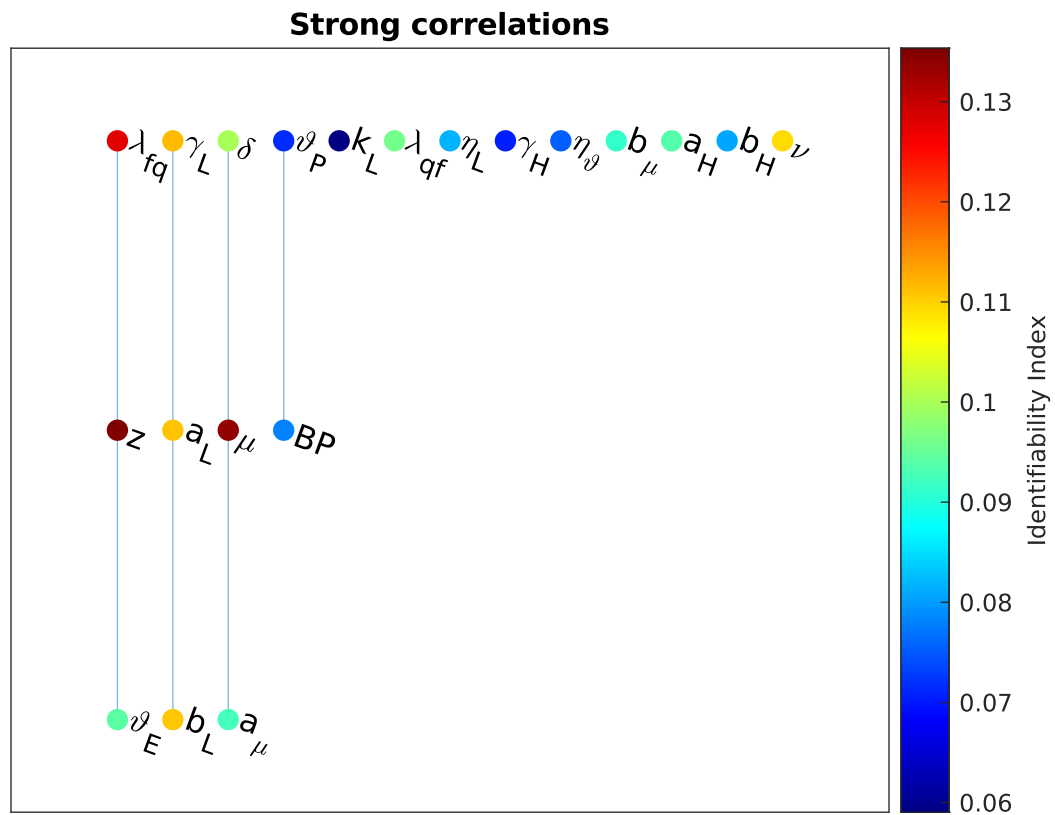
	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.532'	'1'	'0.1375'	'0.9926'	'0.1278'
$\vartheta_E$	'0.0952'	'0.1731'	'0.1077'	'0.1288'	'0.0944'
$\gamma_L$	'0.1242'	'0.2542'	'0.2266'	'0.2472'	'0.1118'
$k_L$	'1.171'	'9.55'	'5.5004'	'5.4886'	'0.059'
$\lambda_{qf}$	'0.9176'	'1'	'0.6309'	'0.991'	'0.096'
$\delta$	'0'	'0.0066'	'0.0093'	'0.0029'	'0.1'
$\eta_L$	'0.0236'	'1'	'0.4282'	'0.6392'	'0.0818'
$\vartheta_P$	'0'	'0'	'0.0003'	'0'	'0.0718'
$\gamma_H$	'0.025'	'1'	'0.4983'	'0.9666'	'0.0708'
$z$	'5.218'	'16.3266'	'3.0012'	'6.7228'	'0.1353'
$\eta_{\vartheta}$	'0.5412'	'0.9771'	'0.8695'	'0.9'	'0.0756'
$a_L$	'1'	'15'	'3.8428'	'5.9062'	'0.111'
$b_L$	'3.3546'	'15'	'9.3117'	'14.2559'	'0.1108'
$a_{\mu}$	'1'	'14.44'	'3.571'	'1.2075'	'0.0925'
$b_{\mu}$	'1'	'15'	'8.3754'	'8.815'	'0.0913'
$\mu$	'0.02'	'0.9608'	'0.5567'	'0.5142'	'0.1337'
$a_H$	'1.623'	'15'	'6.5035'	'5.4971'	'0.0938'
$b_H$	'1'	'15'	'8.0263'	'5.2805'	'0.0809'
$\nu$	'167.2943'	'230.4248'	'200.9354'	'177.6173'	'0.1094'
BP	'221.4417'	'227.6205'	'222.1314'	'221.4999'	'0.0783'

### 6.3. Identifiability analysys

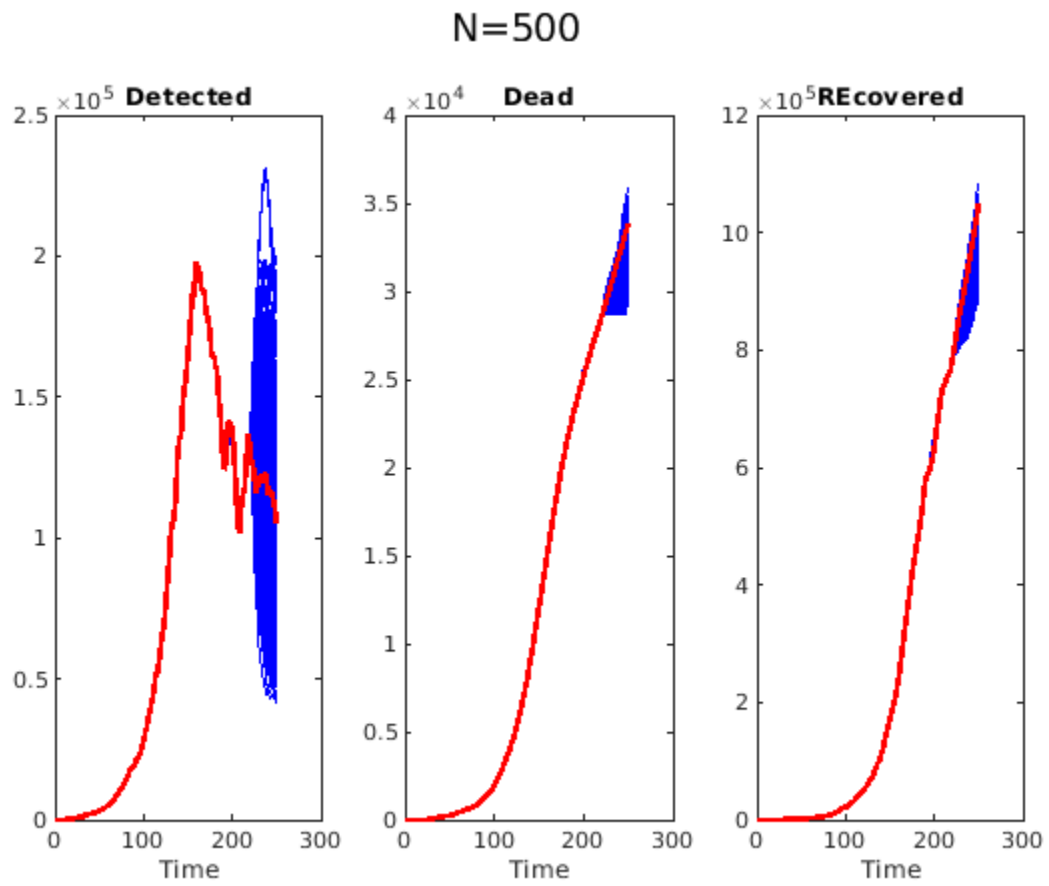








## 6.4. Uncertainty analysis



---

## Chapter 7. Extension number7

### 7.1. Basic information

The extension to be validated consists of the time series from the data251 to the 285. The status of the validation is: COMPLETED.

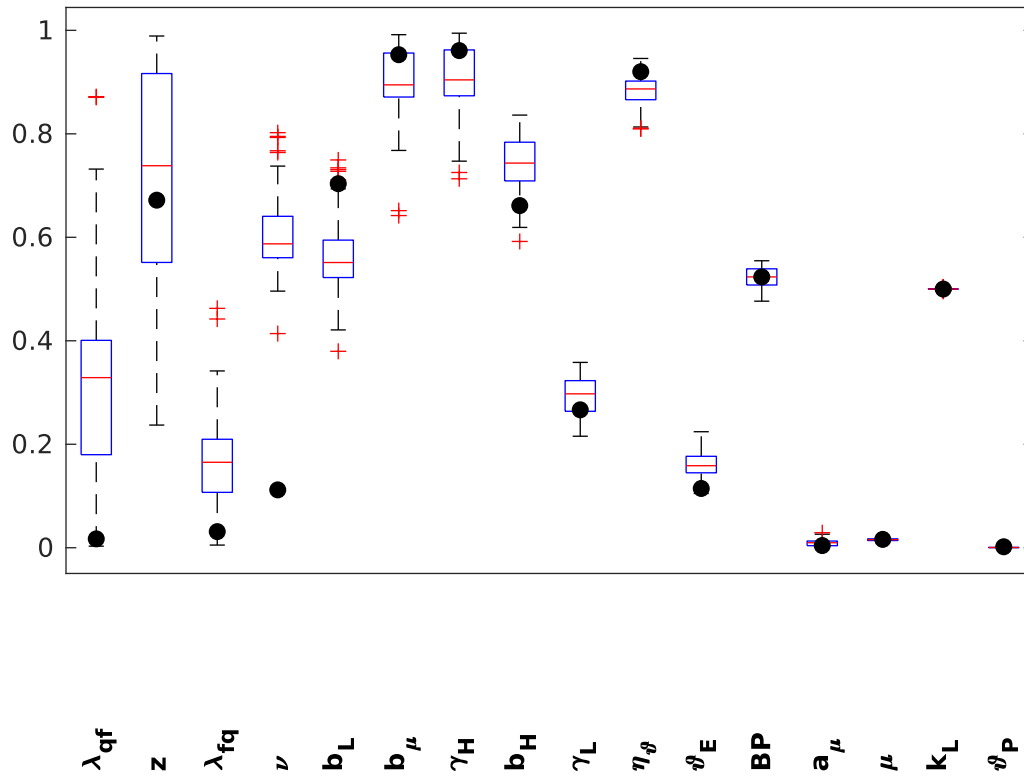
The number of estimations needed to perform the validation was17000.

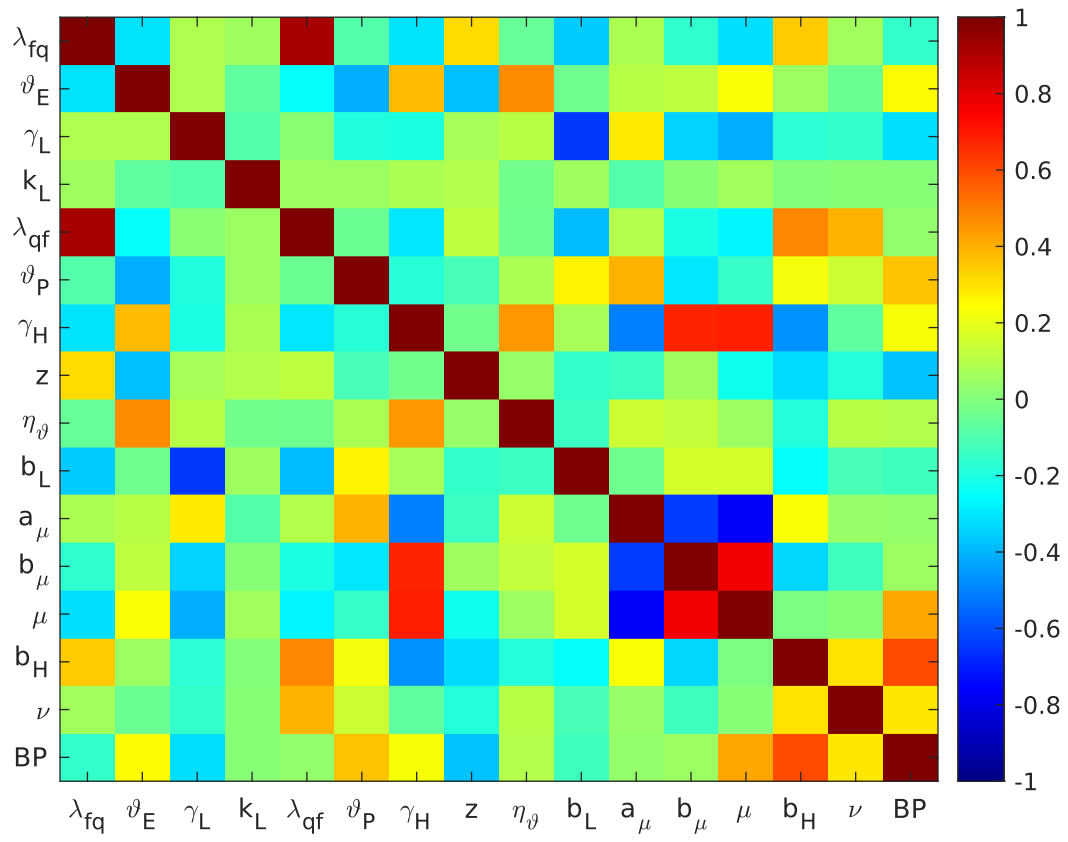
### 7.2. Estimated parameters with their intervals

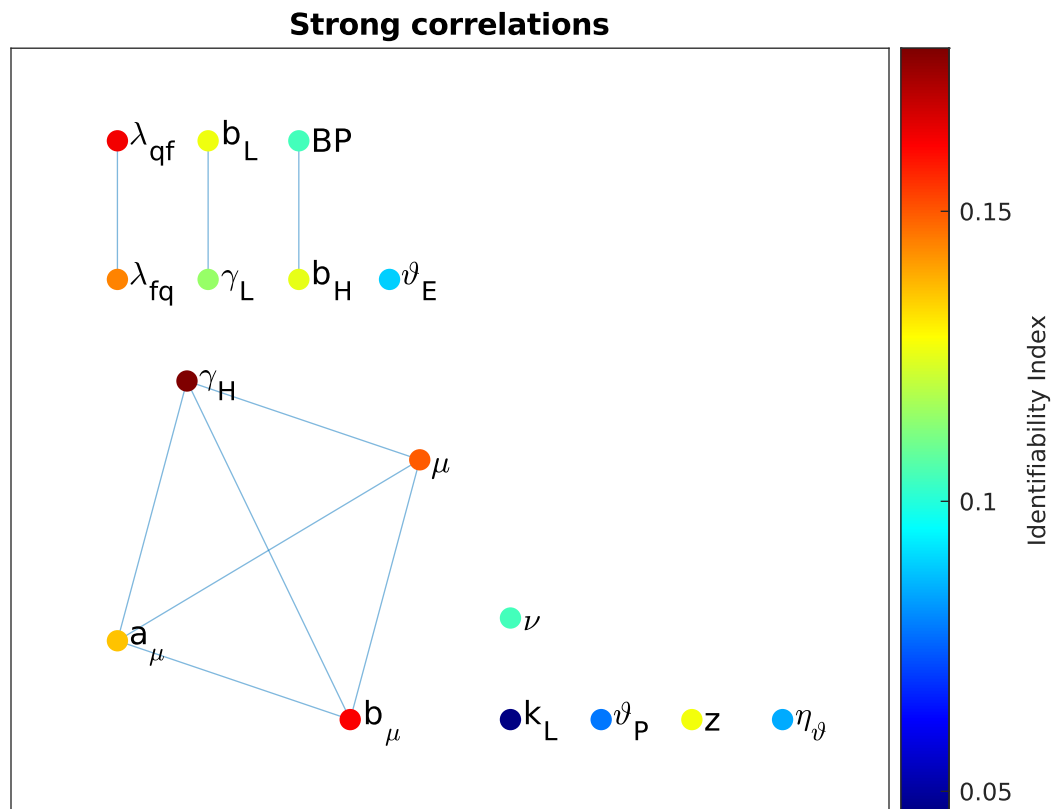
It was necessary to fix 4 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.1239'	'0.2064'	'0.1652'	'0.0311'	'0.1447'
$\vartheta_E$	'0.1503'	'0.1668'	'0.1585'	'0.1145'	'0.0895'
$\gamma_L$	'0.2788'	'0.3161'	'0.2974'	'0.2666'	'0.1152'
$k_L$	'5.4728'	'5.5273'	'5.5001'	'5.4998'	'0.0464'
$\lambda_{qf}$	'0.2691'	'0.3884'	'0.3288'	'0.0171'	'0.163'
$\delta$	'0.1325'	'0.1325'	'0.1325'	'0.1325'	'0'
$\eta_L$	'0.2385'	'0.2385'	'0.2385'	'0.2385'	'0'
$\vartheta_P$	'0.0003'	'0.0006'	'0.0004'	'0.0019'	'0.0782'
$\gamma_H$	'0.8764'	'0.9321'	'0.9043'	'0.9609'	'0.1781'
$z$	'20.5058'	'23.7951'	'22.1504'	'20.1534'	'0.127'
$\eta_{\vartheta}$	'0.8662'	'0.9073'	'0.8868'	'0.9201'	'0.0848'
$a_L$	'4.4256'	'4.4256'	'4.4256'	'4.4256'	'0'
$b_L$	'8.2515'	'9.184'	'8.7178'	'10.8507'	'0.1263'
$a_{\mu}$	'1.1077'	'1.1617'	'1.1347'	'1.0591'	'0.1362'
$b_{\mu}$	'13.2464'	'13.8036'	'13.525'	'14.3409'	'0.1617'
$\mu$	'0.015'	'0.0162'	'0.0156'	'0.0162'	'0.1496'
$a_H$	'13.6775'	'13.6775'	'13.6775'	'13.6775'	'0'
$b_H$	'11.1754'	'11.6411'	'11.4083'	'10.2582'	'0.1256'
$\nu$	'273.1892'	'314.1554'	'293.6723'	'55.914'	'0.1044'
BP	'254.183'	'254.817'	'254.5'	'254.4994'	'0.1044'

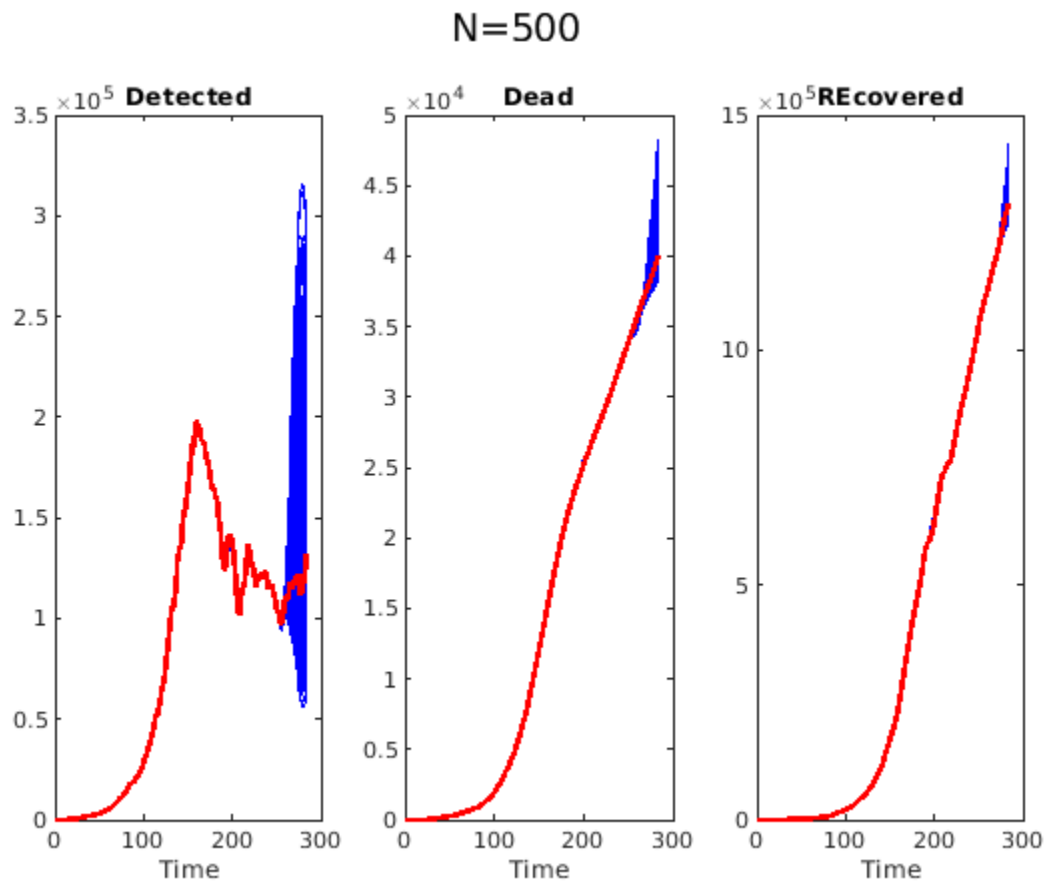
### 7.3. Identifiability analysis







## 7.4. Uncertainty analysis



---

## Chapter 8. Extension number8

### 8.1. Basic information

The extension to be validated consists of the time series from the data285 to the 307. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

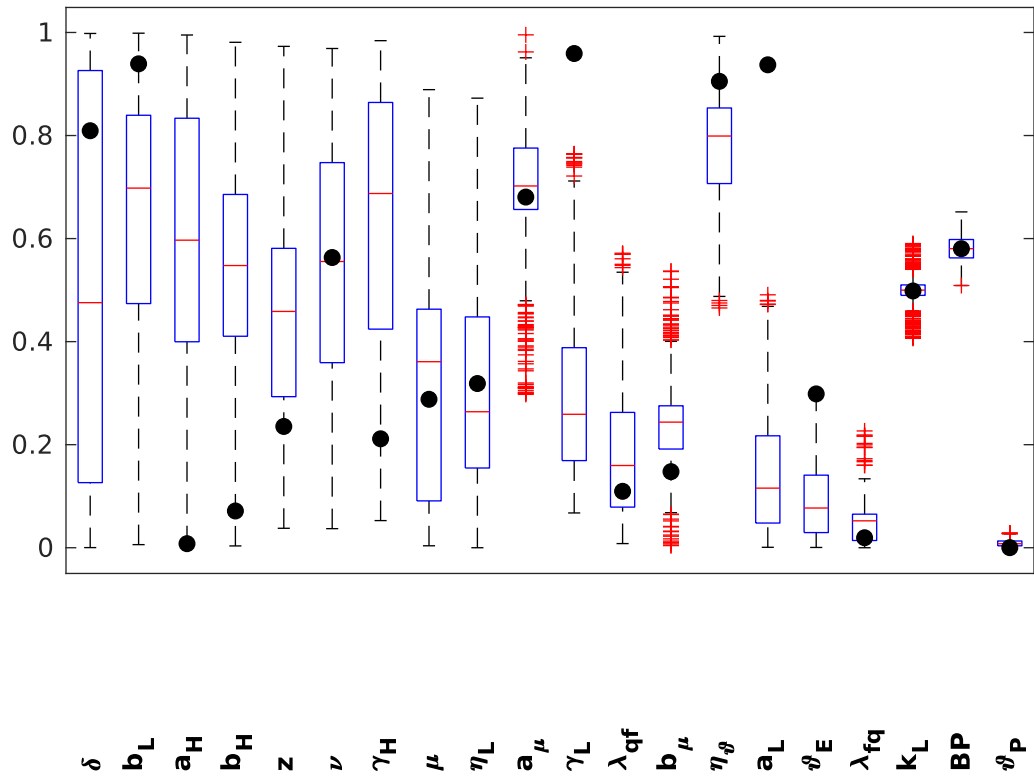
### 8.2. Estimated parameters with their intervals

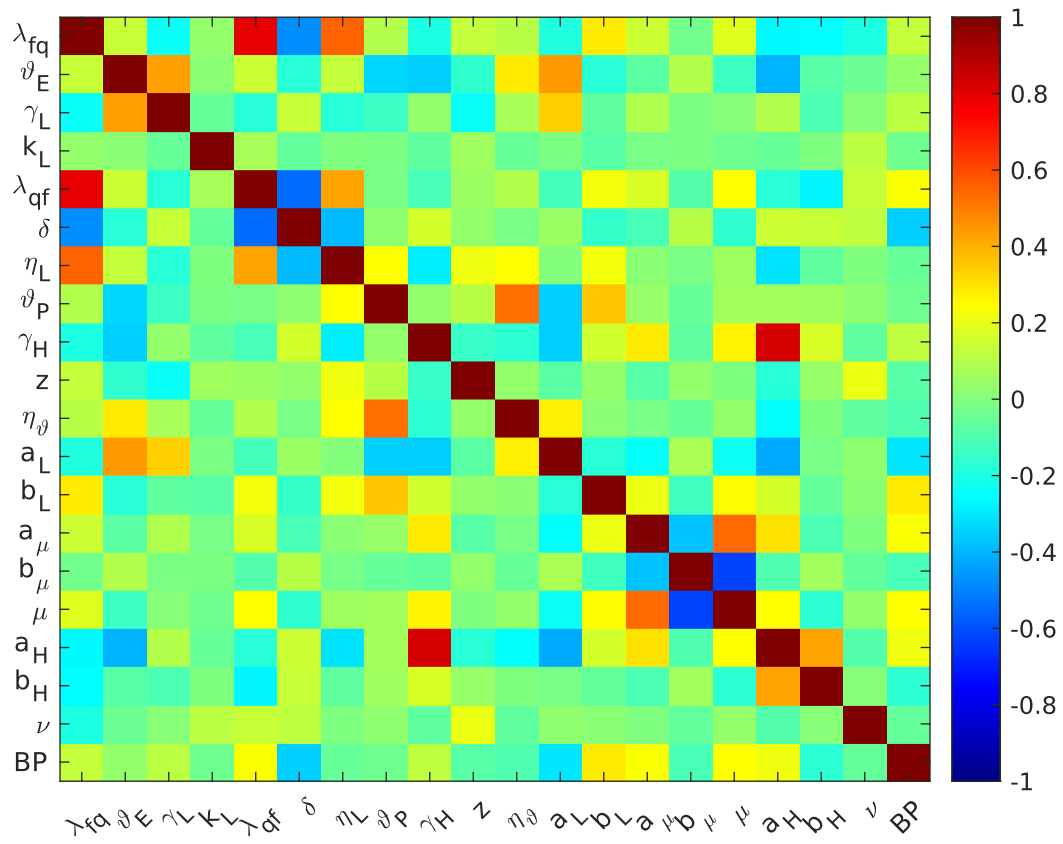
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

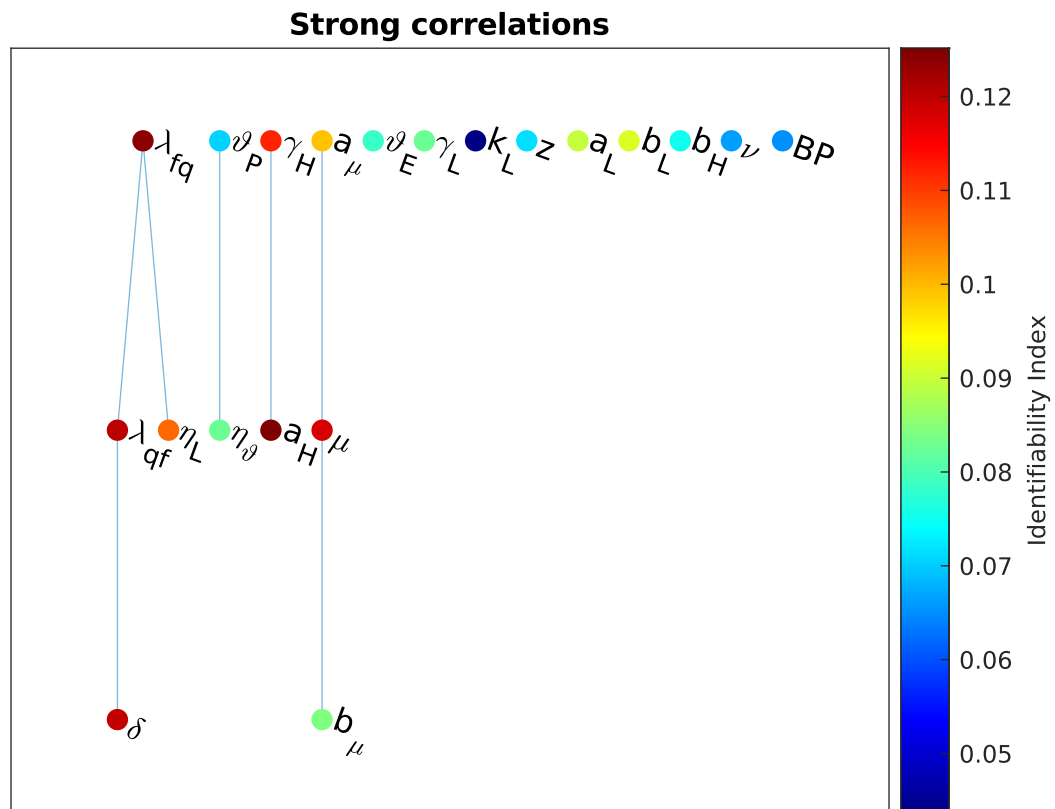
	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.0334'	'0.071'	'0.0522'	'0.0194'	'0.124'
$\vartheta_E$	'0.069'	'0.0852'	'0.0771'	'0.2986'	'0.0787'
$\gamma_L$	'0.2328'	'0.2852'	'0.259'	'0.9592'	'0.0829'
$k_L$	'5.4196'	'5.5794'	'5.4995'	'5.4851'	'0.0438'
$\lambda_{qf}$	'0.1406'	'0.1786'	'0.1596'	'0.1095'	'0.1201'
$\delta$	'0.0653'	'0.0774'	'0.0713'	'0.1214'	'0.1197'
$\eta_L$	'0.2376'	'0.2903'	'0.2639'	'0.3187'	'0.1066'
$\vartheta_P$	'0.0069'	'0.0086'	'0.0077'	'0.0001'	'0.0707'
$\gamma_H$	'0.6611'	'0.7139'	'0.6875'	'0.2114'	'0.112'
$z$	'13.0726'	'14.4438'	'13.7582'	'7.0617'	'0.0715'
$\eta_{\vartheta}$	'0.7843'	'0.8138'	'0.799'	'0.9052'	'0.0827'
$a_L$	'2.3649'	'2.874'	'2.6195'	'14.1215'	'0.0896'
$b_L$	'10.3697'	'11.1728'	'10.7713'	'14.148'	'0.0917'
$a_{\mu}$	'10.502'	'11.1571'	'10.8296'	'10.528'	'0.0992'
$b_{\mu}$	'4.1237'	'4.7025'	'4.4131'	'3.0669'	'0.0843'
$\mu$	'0.3374'	'0.3847'	'0.361'	'0.2881'	'0.1179'
$a_H$	'8.9504'	'9.7632'	'9.3568'	'1.1105'	'0.1251'
$b_H$	'8.3478'	'8.9872'	'8.6675'	'1.9988'	'0.0753'
$\nu$	'265.1315'	'290.3613'	'277.7464'	'281.6283'	'0.0664'
BP	'283.2742'	'283.7257'	'283.5'	'283.5'	'0.0653'



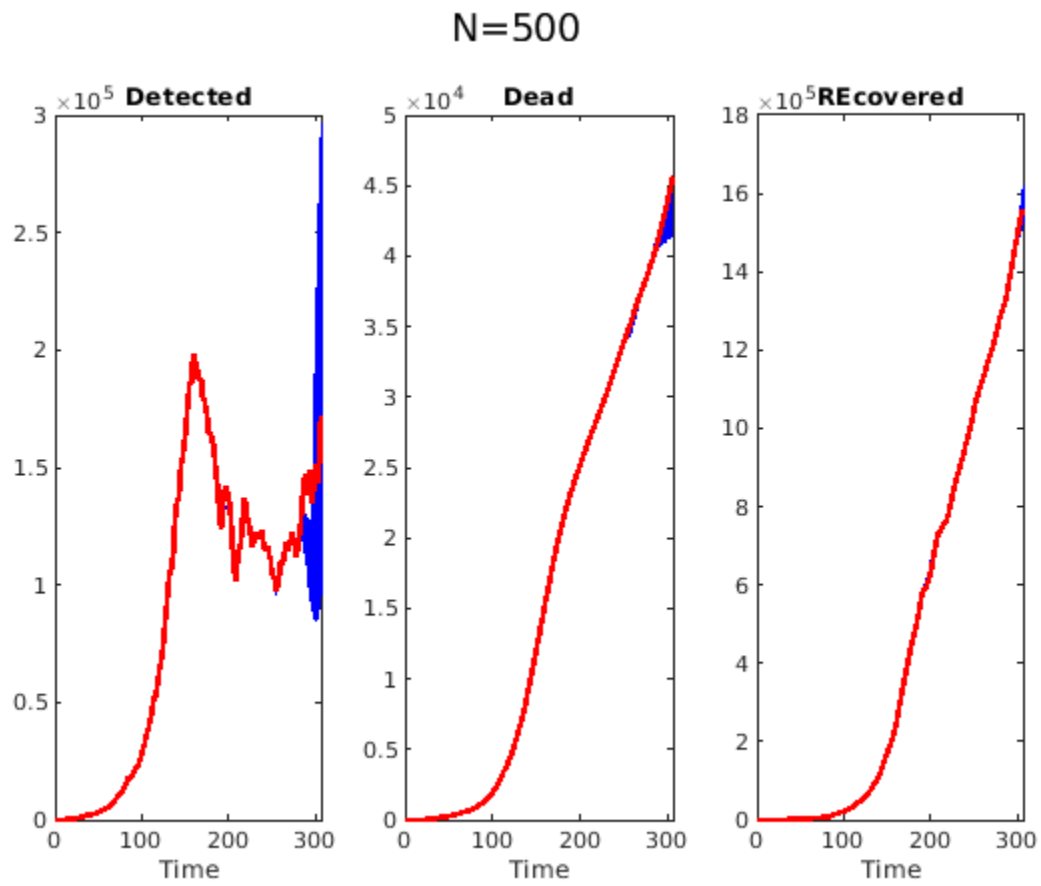
## 8.3. Identifiability analysis







## 8.4. Uncertainty analysis



---

## Chapter 9. Extension number9

### 9.1. Basic information

The extension to be validated consists of the time series from the data334 to the 334. The status of the validation is: COMPLETED.

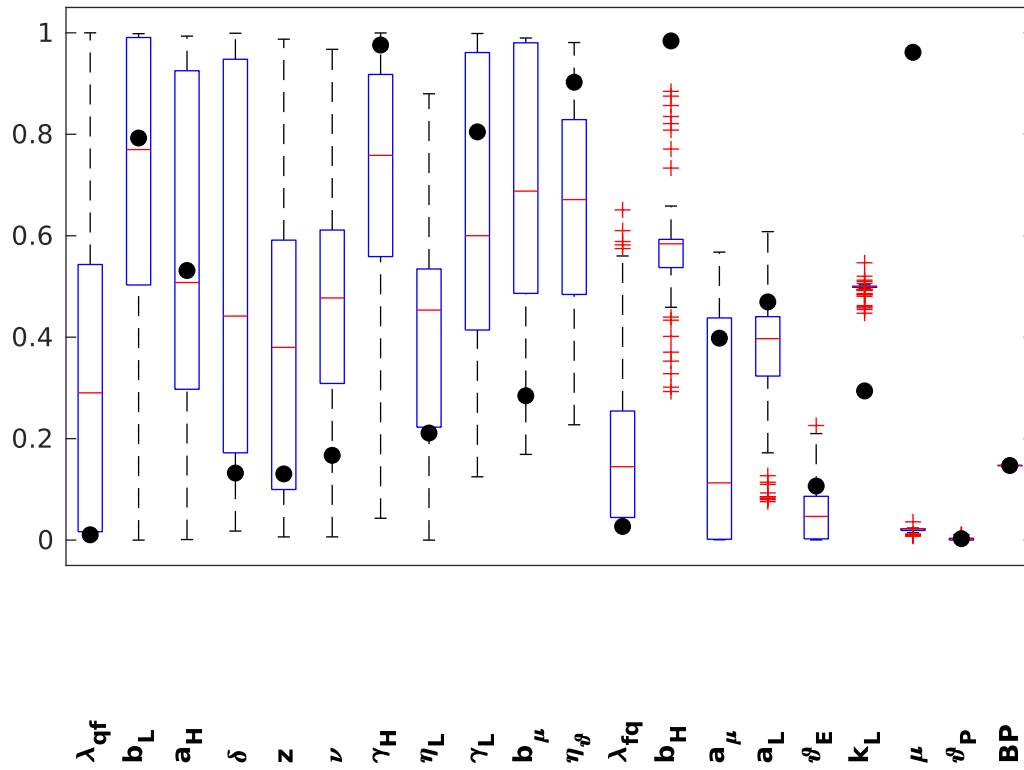
The number of estimations needed to perform the validation was4000.

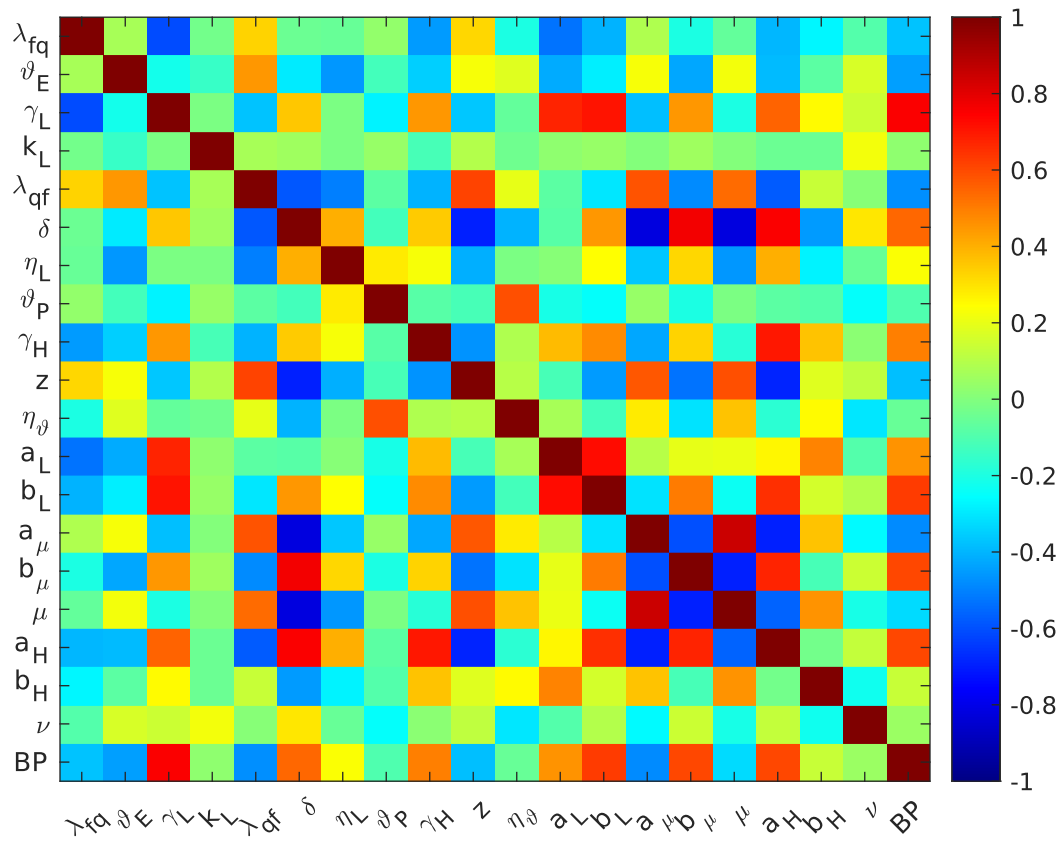
### 9.2. Estimated parameters with their intervals

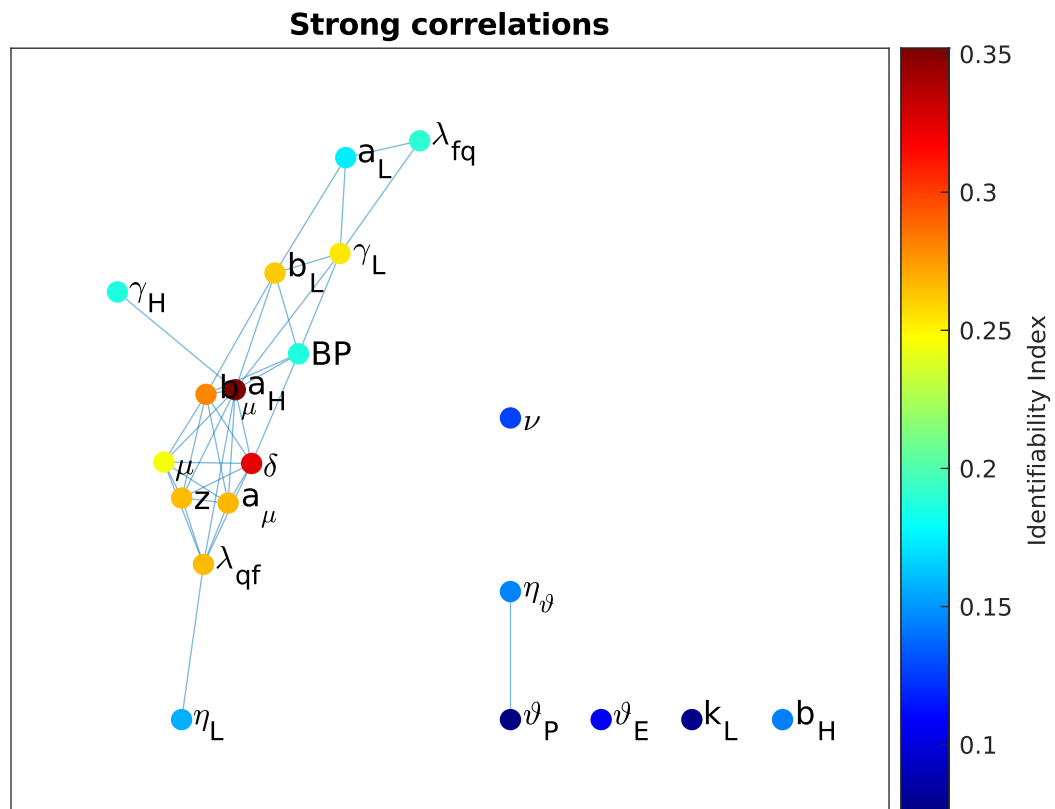
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.0612'	'0.2296'	'0.1454'	'0.0269'	'0.1911'
$\vartheta_E$	'0.0303'	'0.0631'	'0.0467'	'0.1066'	'0.1058'
$\gamma_L$	'0.5185'	'0.6817'	'0.6001'	'0.8047'	'0.2545'
$k_L$	'5.1446'	'5.8534'	'5.499'	'3.6466'	'0.078'
$\lambda_{qf}$	'0.2087'	'0.3719'	'0.2903'	'0.0105'	'0.266'
$\delta$	'0.0501'	'0.0824'	'0.0663'	'0.0198'	'0.3232'
$\eta_L$	'0.3933'	'0.5136'	'0.4535'	'0.2111'	'0.1569'
$\vartheta_P$	'0.0013'	'0.0032'	'0.0022'	'0.0028'	'0.0756'
$\gamma_H$	'0.6874'	'0.8295'	'0.7585'	'0.976'	'0.1877'
$z$	'9.0547'	'13.7392'	'11.3969'	'3.914'	'0.266'
$\eta_{\vartheta}$	'0.6108'	'0.7317'	'0.6713'	'0.9026'	'0.1454'
$a_L$	'5.8756'	'7.2021'	'6.5389'	'7.5735'	'0.1739'
$b_L$	'10.5592'	'12.9957'	'11.7775'	'12.0972'	'0.2622'
$a_{\mu}$	'1.5431'	'3.6177'	'2.5804'	'6.5729'	'0.2673'
$b_{\mu}$	'9.6191'	'11.6432'	'10.6311'	'4.9836'	'0.2799'
$\mu$	'0'	'0.1186'	'0.0227'	'0.9616'	'0.246'
$a_H$	'6.7351'	'9.4834'	'8.1093'	'8.4405'	'0.3521'
$b_H$	'8.268'	'10.0866'	'9.1773'	'14.7768'	'0.1444'
$\nu$	'205.1358'	'272.2426'	'238.6892'	'83.5548'	'0.1282'
BP	'309.3221'	'309.6779'	'309.5'	'309.5'	'0.1876'

### 9.3. Identifiability analysis



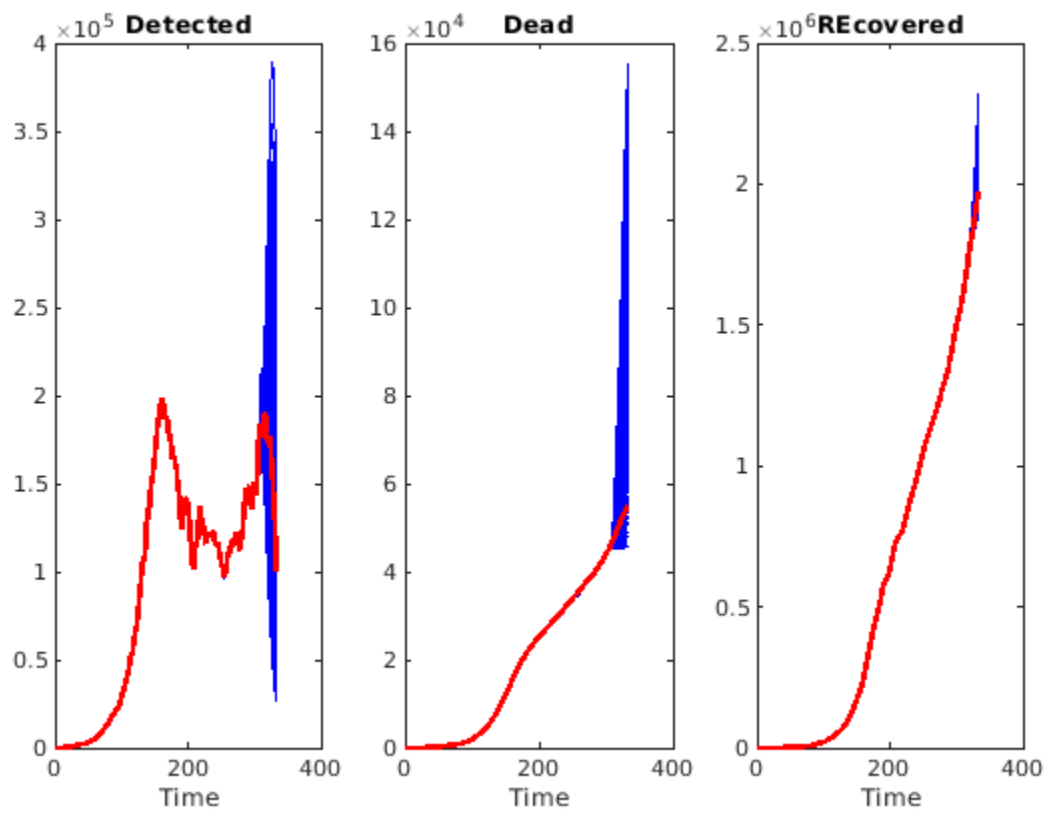






## 9.4. Uncertainty analysis

N=500



---

## Chapter 10. Extension number10

### 10.1. Basic information

The extension to be validated consists of the time series from the data334 to the 393. The status of the validation is: COMPLETED.

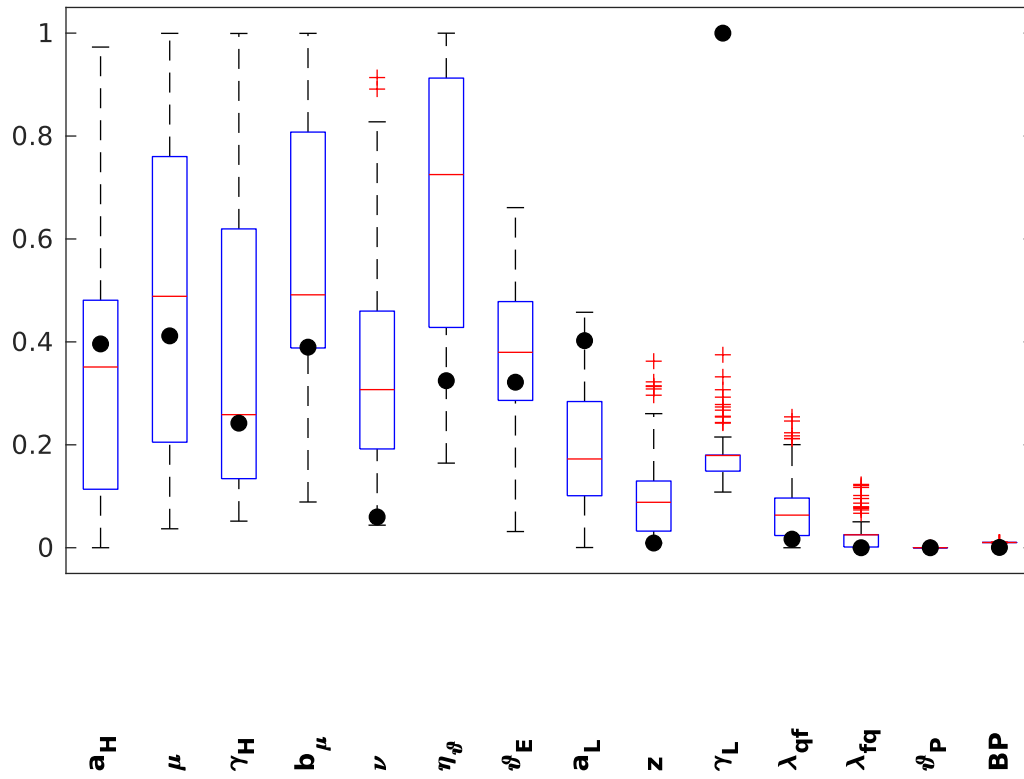
The number of estimations needed to perform the validation was24000.

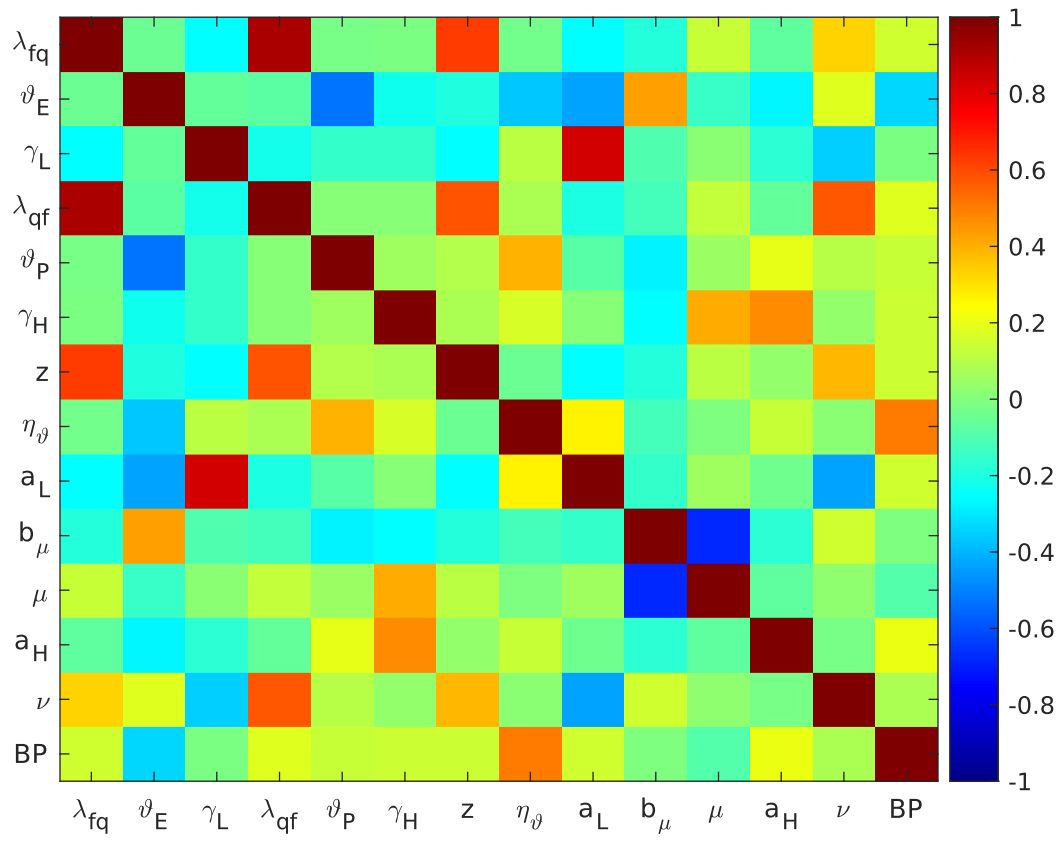
### 10.2. Estimated parameters with their intervals

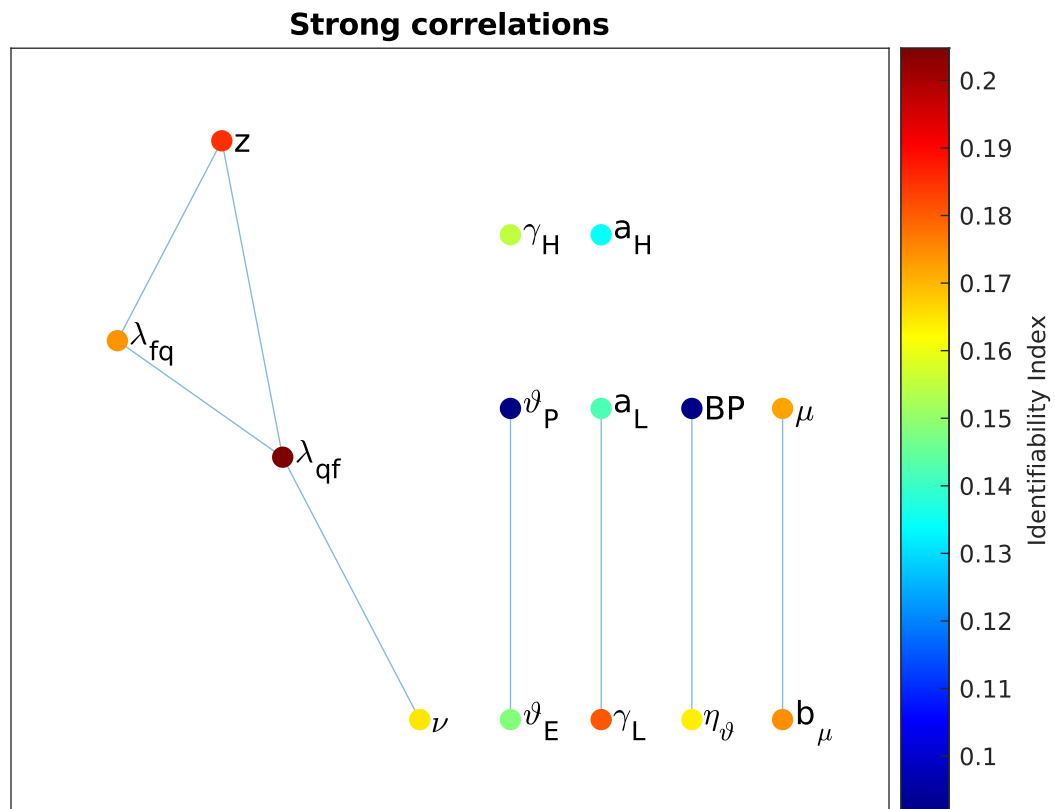
It was necessary to fix 6 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0'	'0.0967'	'0.0253'	'0'	'0.174'
$\vartheta_E$	'0.3433'	'0.4162'	'0.3797'	'0.3217'	'0.1486'
$\gamma_L$	'0.1007'	'0.2595'	'0.1801'	'0.9999'	'0.1808'
$k_L$	'5.5074'	'5.5074'	'5.5074'	'5.5074'	'0'
$\lambda_{qf}$	'0.0055'	'0.1235'	'0.0645'	'0.0167'	'0.2048'
$\delta$	'0.0153'	'0.0153'	'0.0153'	'0.0153'	'0'
$\eta_L$	'0.3077'	'0.3077'	'0.3077'	'0.3077'	'0'
$\vartheta_P$	'0'	'0.001'	'0'	'0'	'0.0917'
$\gamma_H$	'0.1756'	'0.3416'	'0.2586'	'0.2421'	'0.1551'
$z$	'0.9101'	'4.5122'	'2.7112'	'0.2745'	'0.185'
$\eta_{\vartheta}$	'0.6551'	'0.7952'	'0.7251'	'0.3246'	'0.1639'
$a_L$	'2.9636'	'3.8662'	'3.4149'	'6.6336'	'0.1424'
$b_L$	'5.4054'	'5.4054'	'5.4054'	'5.4054'	'0'
$a_{\mu}$	'8.1442'	'8.1442'	'8.1442'	'8.1442'	'0'
$b_{\mu}$	'6.8913'	'8.8695'	'7.8804'	'6.4564'	'0.1745'
$\mu$	'0.4047'	'0.5724'	'0.4886'	'0.4117'	'0.1722'
$a_H$	'5.0236'	'6.8479'	'5.9358'	'6.5448'	'0.1349'
$b_H$	'7.4352'	'7.4352'	'7.4352'	'7.4352'	'0'
$\nu$	'125.8251'	'188.6366'	'157.2309'	'29.8966'	'0.1647'
BP	'334.4645'	'334.5355'	'334.5'	'334.0285'	'0.0925'

### 10.3. Identifiability analysis

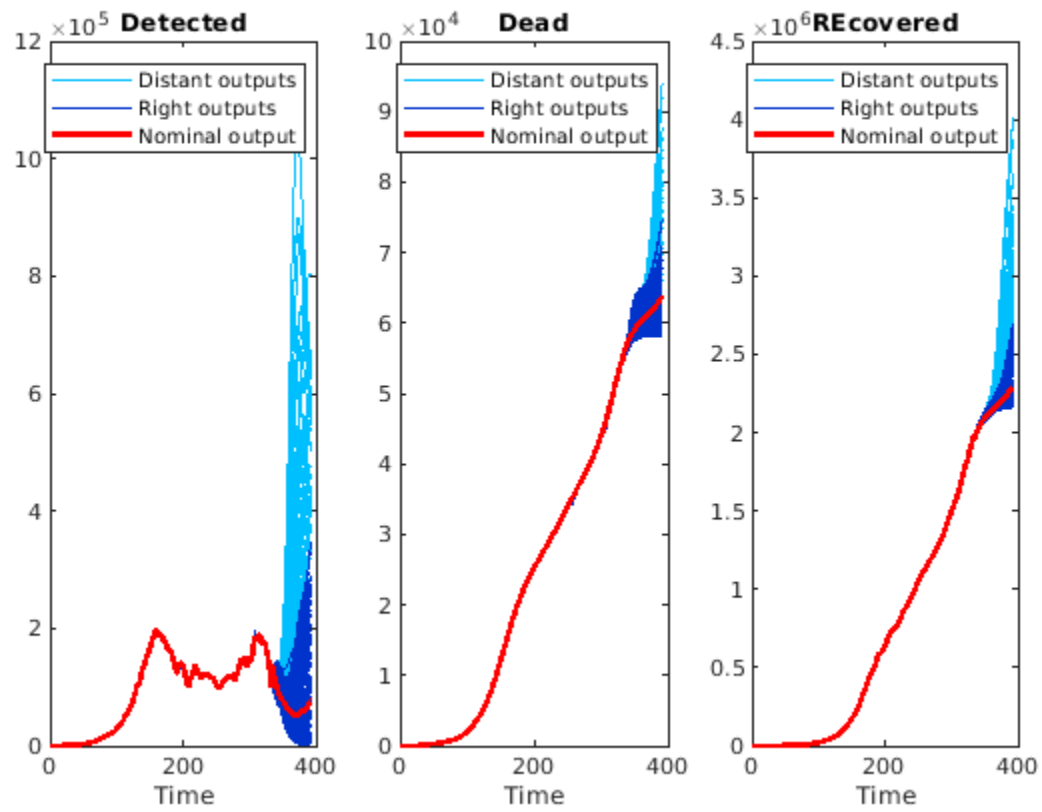






## 10.4. Uncertainty analysys

N=500



---

## Chapter 11. Extension number11

### 11.1. Basic information

The extension to be validated consists of the time series from the data393 to the 414. The status of the validation is: COMPLETED.

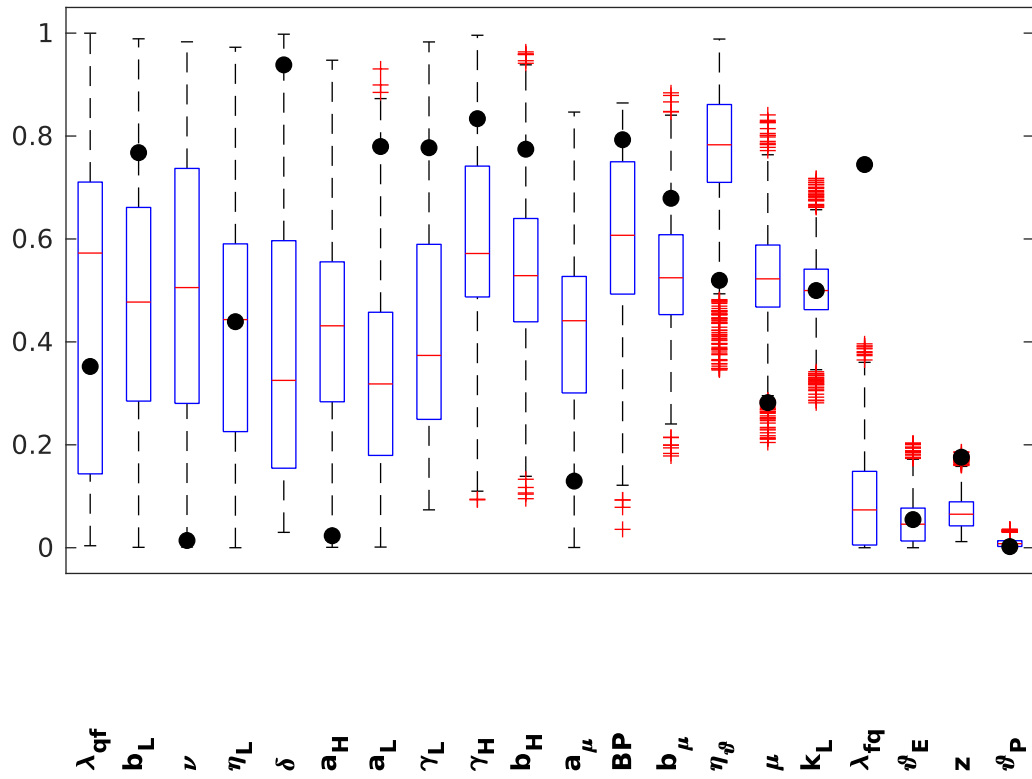
The number of estimations needed to perform the validation was1000.

### 11.2. Estimated parameters with their intervals

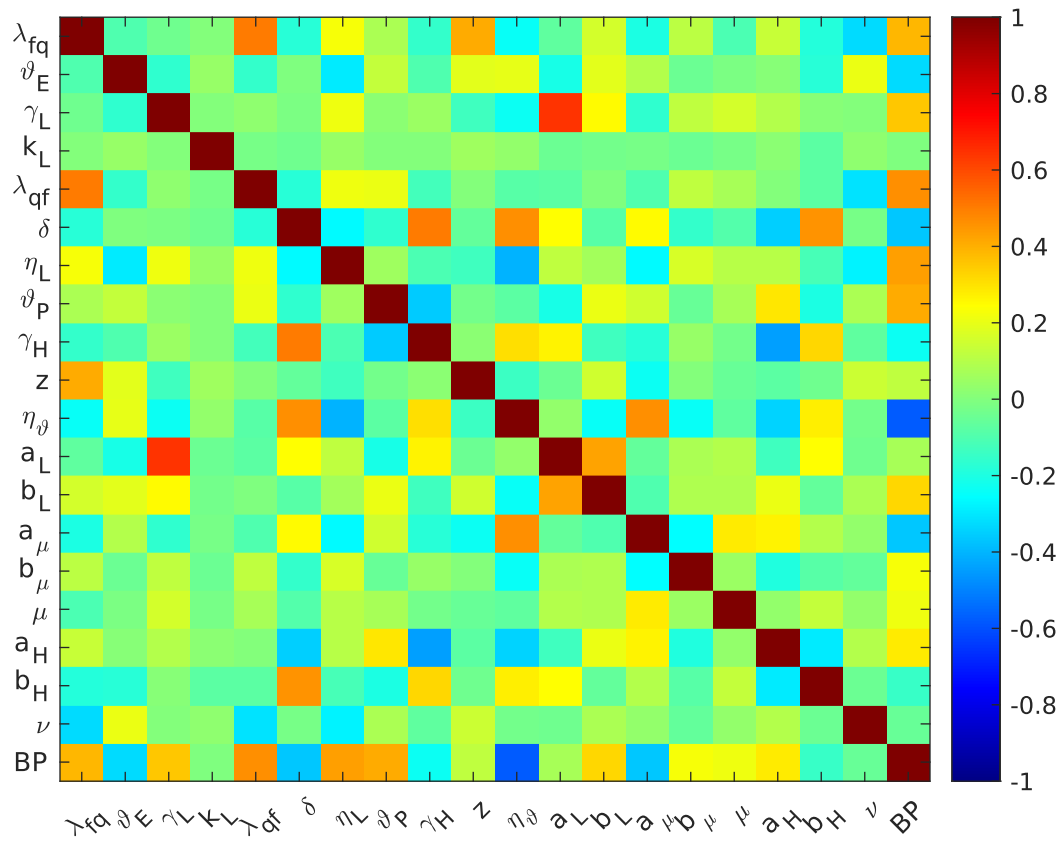
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

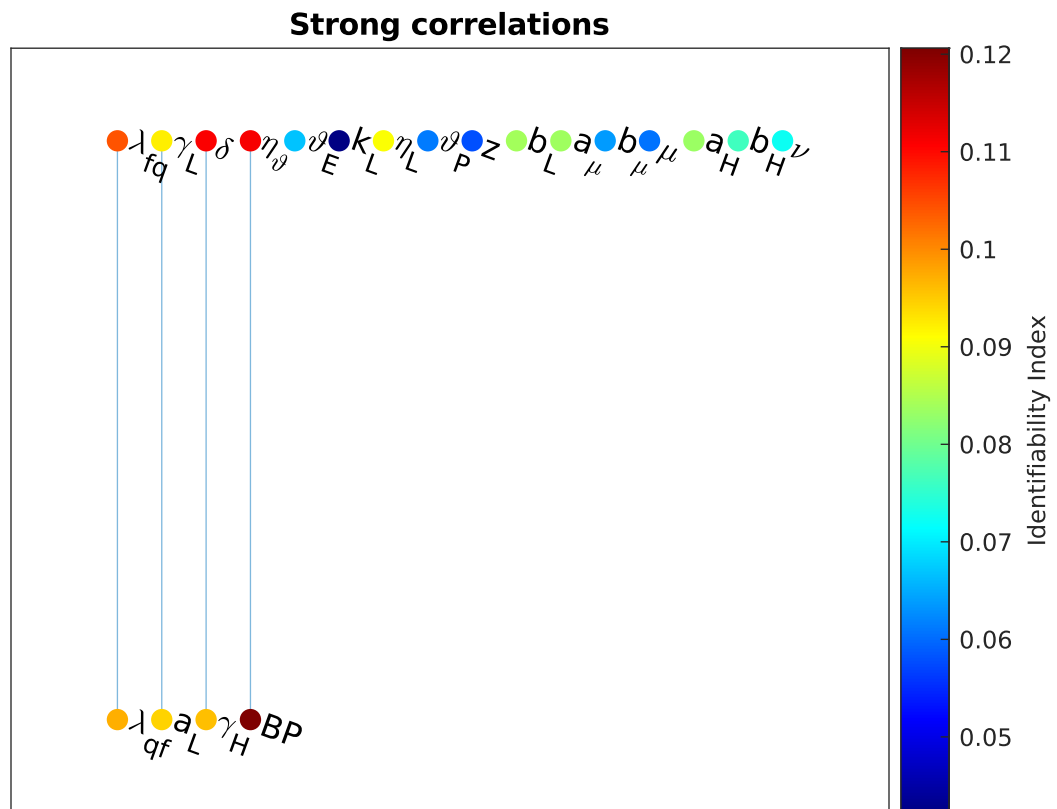
	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0518'	'0.0952'	'0.0735'	'0.7446'	'0.1042'
\vartheta_E	'0.0371'	'0.0544'	'0.0457'	'0.0547'	'0.0668'
\gamma_L	'0.3527'	'0.3946'	'0.3737'	'0.7773'	'0.0924'
k_L	'5.4023'	'5.5936'	'5.4979'	'5.4979'	'0.0423'
\lambda_{qf}	'0.5468'	'0.5984'	'0.5726'	'0.3522'	'0.0973'
\delta	'0.045'	'0.0526'	'0.0488'	'0.1407'	'0.1111'
\eta_L	'0.4225'	'0.4642'	'0.4433'	'0.4393'	'0.0909'
\vartheta_P	'0.0064'	'0.0094'	'0.0079'	'0.0022'	'0.0613'
\gamma_H	'0.5559'	'0.5876'	'0.5718'	'0.8338'	'0.0961'
z	'1.7179'	'2.1901'	'1.954'	'5.2776'	'0.058'
\eta_{\vartheta}	'0.7646'	'0.8014'	'0.783'	'0.5196'	'0.1113'
a_L	'5.2038'	'5.7082'	'5.456'	'11.9143'	'0.0944'
b_L	'7.36'	'8.0069'	'7.6834'	'11.7481'	'0.0841'
a_{\mu}	'6.9769'	'7.3738'	'7.1753'	'2.8126'	'0.0836'
b_{\mu}	'8.1729'	'8.5156'	'8.3443'	'10.5061'	'0.064'
\mu	'0.5082'	'0.5367'	'0.5225'	'0.2819'	'0.0607'
a_H	'6.806'	'7.2693'	'7.0377'	'1.3268'	'0.0835'
b_H	'8.206'	'8.5983'	'8.4021'	'11.8417'	'0.0765'
\nu	'241.0218'	'264.5297'	'252.7758'	'7.0407'	'0.0725'
BP	'375.3671'	'377.6329'	'376.5'	'389.4999'	'0.1206'

### 11.3. Identifiability analysis

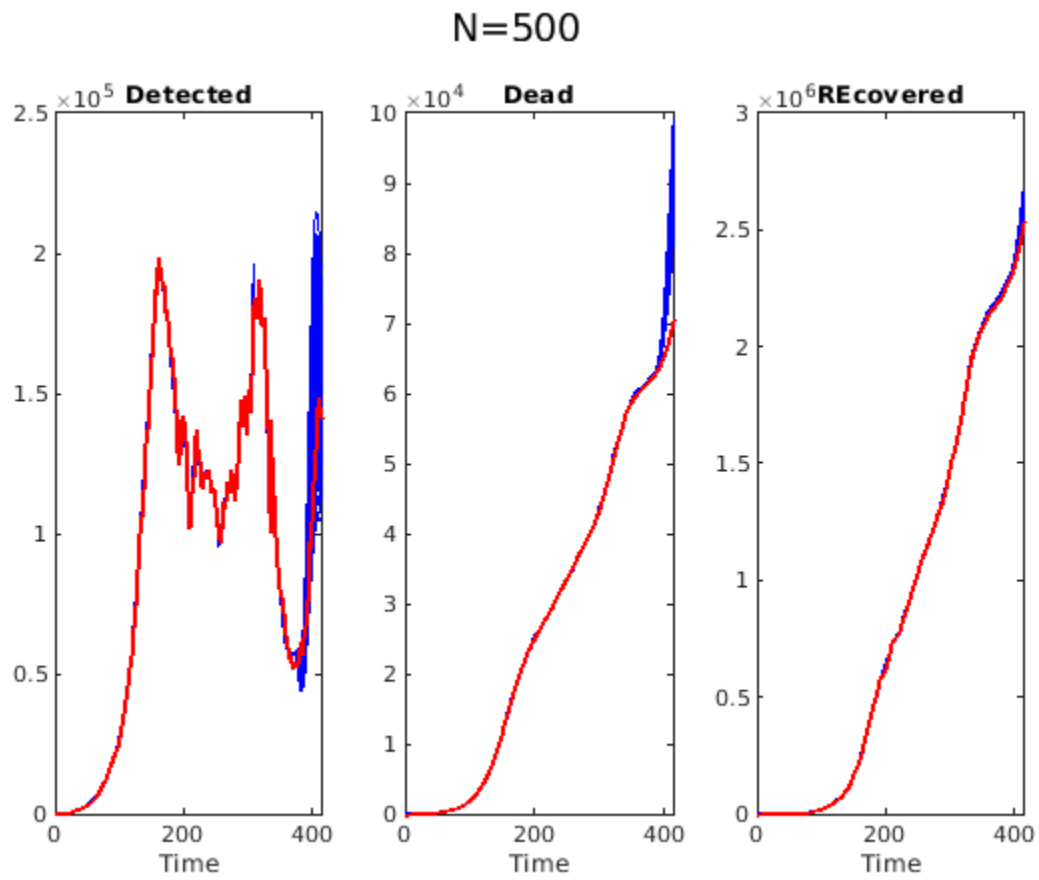








## 11.4. Uncertainty analysys



---

## Chapter 12. Extension number12

### 12.1. Basic information

The extension to be validated consists of the time series from the data414 to the 465. The status of the validation is: COMPLETED.

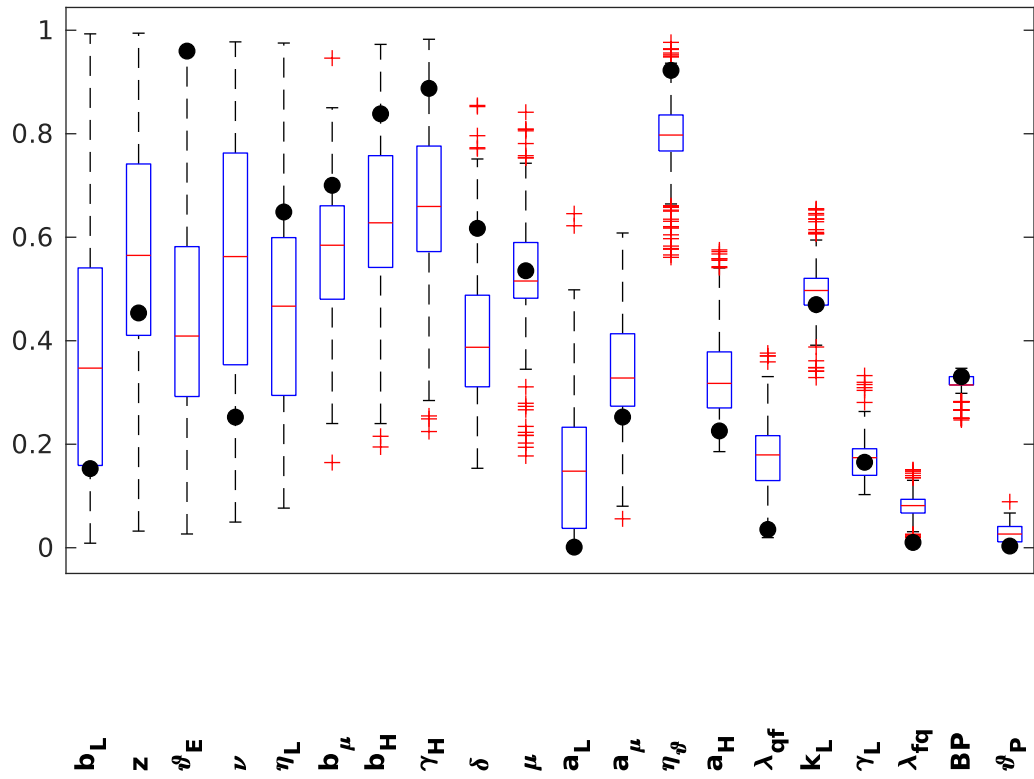
The number of estimations needed to perform the validation was1000.

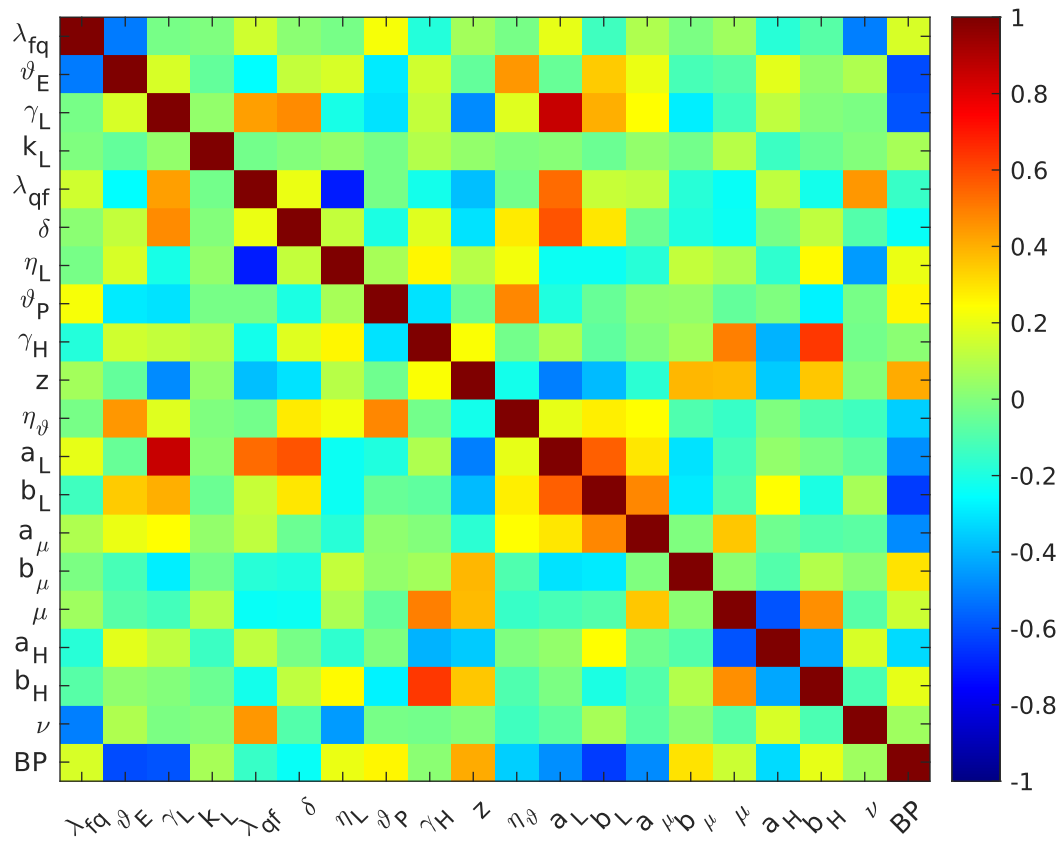
### 12.2. Estimated parameters with their intervals

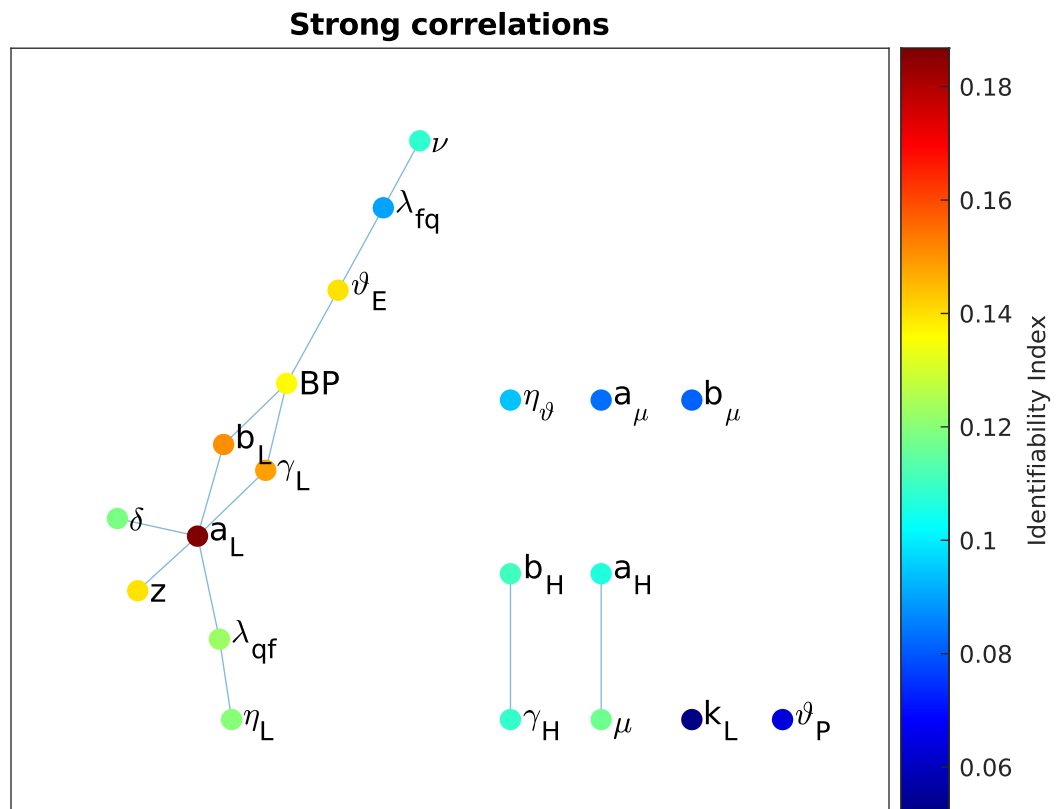
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0747'	'0.0881'	'0.0814'	'0.0102'	'0.09'
\vartheta_E	'0.3692'	'0.4489'	'0.4091'	'0.9597'	'0.1396'
\gamma_L	'0.1388'	'0.2094'	'0.1741'	'0.1652'	'0.1488'
k_L	'5.3215'	'5.626'	'5.4738'	'5.2284'	'0.0521'
\lambda_{qf}	'0.1639'	'0.1952'	'0.1796'	'0.0353'	'0.1226'
\delta	'0.0534'	'0.0636'	'0.0585'	'0.0926'	'0.1184'
\eta_L	'0.4324'	'0.5012'	'0.4668'	'0.6488'	'0.1201'
\vartheta_P	'0.0236'	'0.0294'	'0.0265'	'0.0033'	'0.0641'
\gamma_H	'0.6331'	'0.6857'	'0.6594'	'0.8877'	'0.1089'
z	'15.7119'	'18.1831'	'16.9475'	'13.6103'	'0.1395'
\eta_{\vartheta}	'0.7712'	'0.823'	'0.7971'	'0.9224'	'0.0944'
a_L	'2.6145'	'3.5364'	'3.0754'	'1.0162'	'0.1868'
b_L	'5.3113'	'6.4071'	'5.8592'	'3.1404'	'0.1509'
a_{\mu}	'5.3334'	'5.8496'	'5.5915'	'4.5355'	'0.0832'
b_{\mu}	'8.847'	'9.5135'	'9.1803'	'10.8048'	'0.082'
\mu	'0.4839'	'0.5469'	'0.5154'	'0.5352'	'0.1171'
a_H	'5.1202'	'5.786'	'5.4531'	'4.1606'	'0.1064'
b_H	'9.409'	'10.162'	'9.7855'	'12.7391'	'0.1107'
\nu	'260.8797'	'301.7616'	'281.3207'	'126.1989'	'0.1088'
BP	'412.291'	'412.709'	'412.5'	'413.5'	'0.1367'

### 12.3. Identifiability analysis

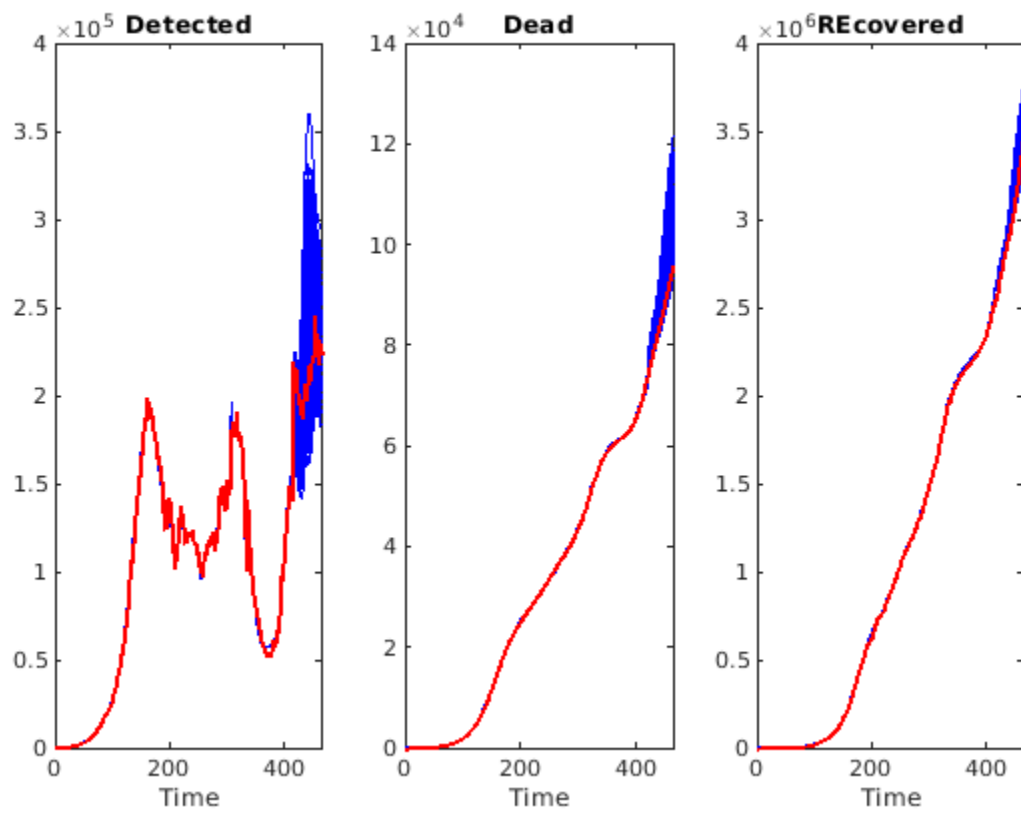






## 12.4. Uncertainty analysys

N=500





---

## Chapter 13. Extension number13

### 13.1. Basic information

The extension to be validated consists of the time series from the data465 to the 493. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

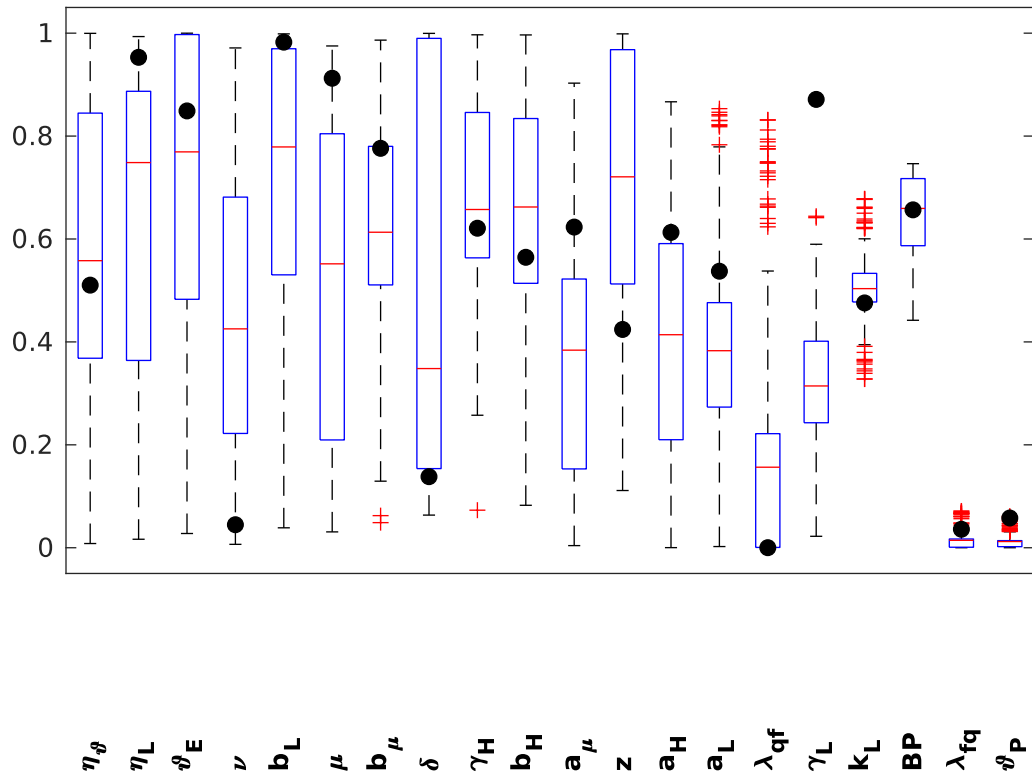
### 13.2. Estimated parameters with their intervals

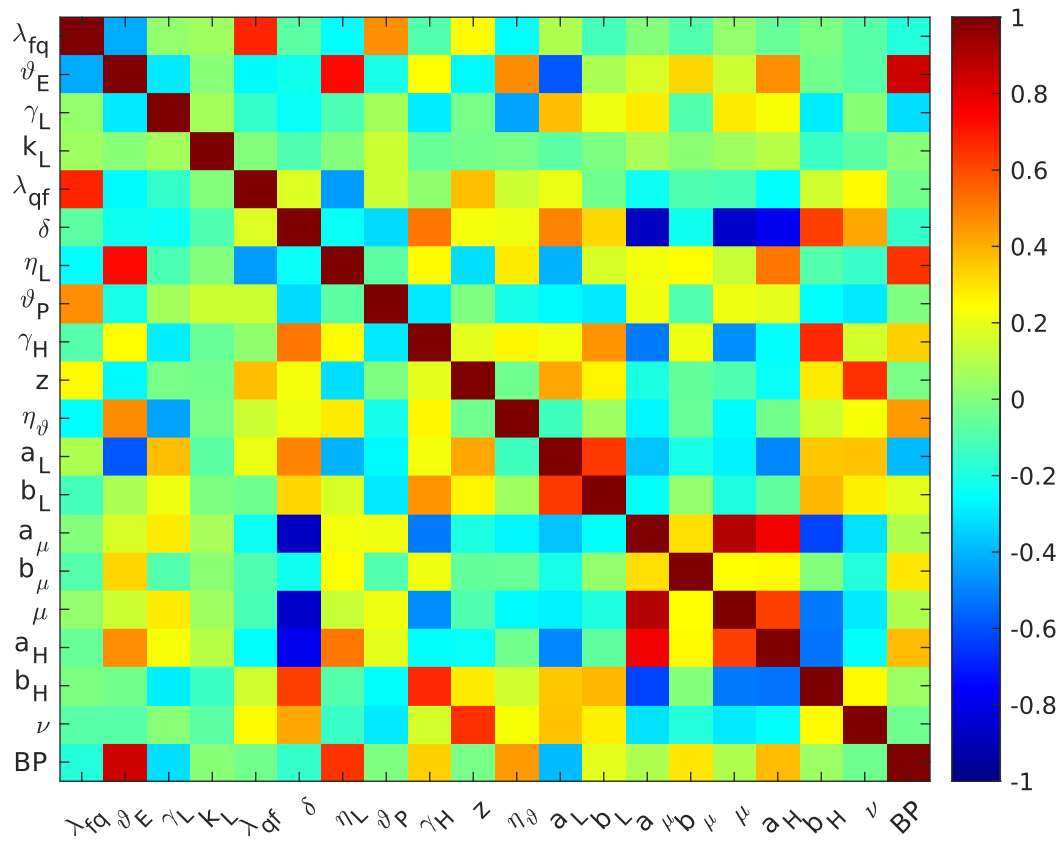
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

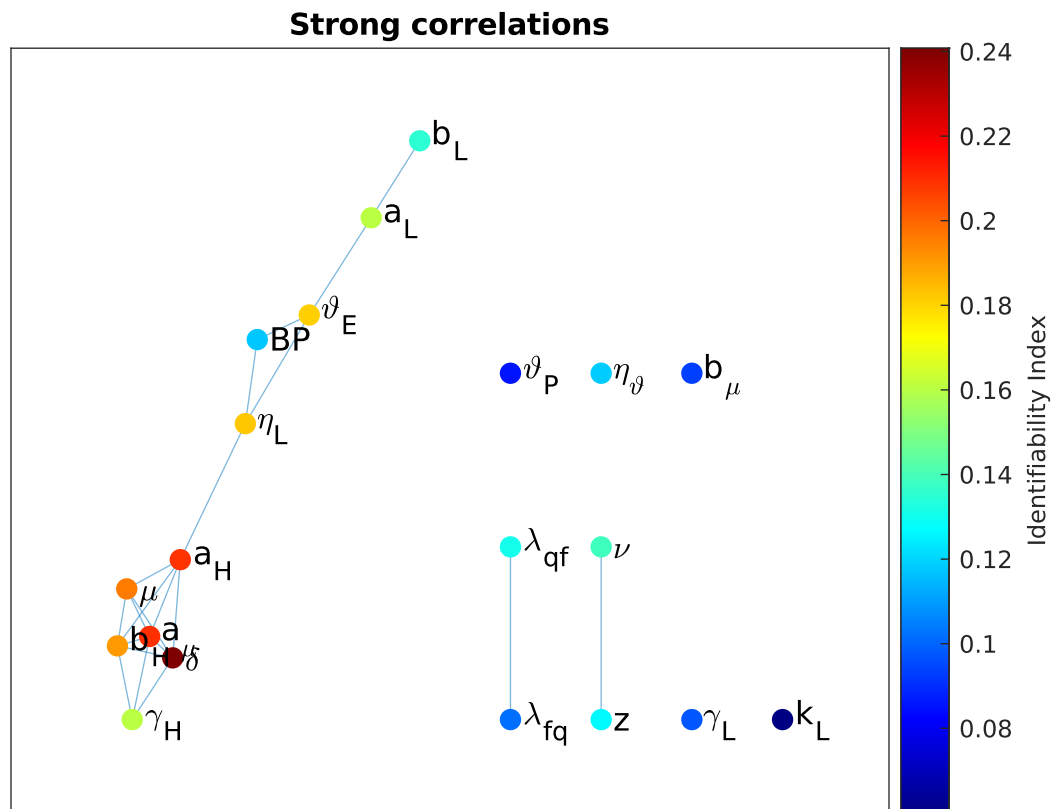
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.0292'	'0.0455'	'0.0144'	'0.0359'	'0.102'
$\vartheta_E$	'0.7905'	'0.878'	'0.7693'	'0.8489'	'0.1808'
$\gamma_L$	'0.2782'	'0.8822'	'0.3144'	'0.8713'	'0.0982'
$k_L$	'1.3476'	'9.2305'	'5.5319'	'5.2819'	'0.0602'
$\lambda_{qf}$	'0'	'0.0002'	'0.1565'	'0.0001'	'0.1308'
$\delta$	'0.0032'	'0.0428'	'0.0522'	'0.0207'	'0.2408'
$\eta_L$	'0.3307'	'0.9606'	'0.7485'	'0.9531'	'0.1829'
$\vartheta_P$	'0.0402'	'0.1772'	'0.012'	'0.0578'	'0.086'
$\gamma_H$	'0.0423'	'0.95'	'0.6573'	'0.6209'	'0.1608'
$z$	'10.2944'	'14.5001'	'21.6243'	'12.7262'	'0.1271'
$\eta_{\vartheta}$	'0.2941'	'0.8174'	'0.5579'	'0.5103'	'0.1181'
$a_L$	'8.2619'	'11.5215'	'6.3606'	'8.5234'	'0.1607'
$b_L$	'10.5118'	'15'	'11.9045'	'14.7553'	'0.1353'
$a_{\mu}$	'1.35'	'15'	'6.3756'	'9.7245'	'0.2091'
$b_{\mu}$	'1'	'15'	'9.5841'	'11.8668'	'0.0934'
$\mu$	'0.1176'	'1'	'0.5517'	'0.9124'	'0.1963'
$a_H$	'1.9096'	'14.3'	'6.7956'	'9.5799'	'0.2087'
$b_H$	'1.623'	'15'	'10.2707'	'8.9021'	'0.1904'
$\nu$	'18.9778'	'46.1704'	'212.6773'	'22.3622'	'0.1385'
BP	'459.1078'	'462.2796'	'459.5'	'459.3092'	'0.1177'

### 13.3. Identifiability analysis

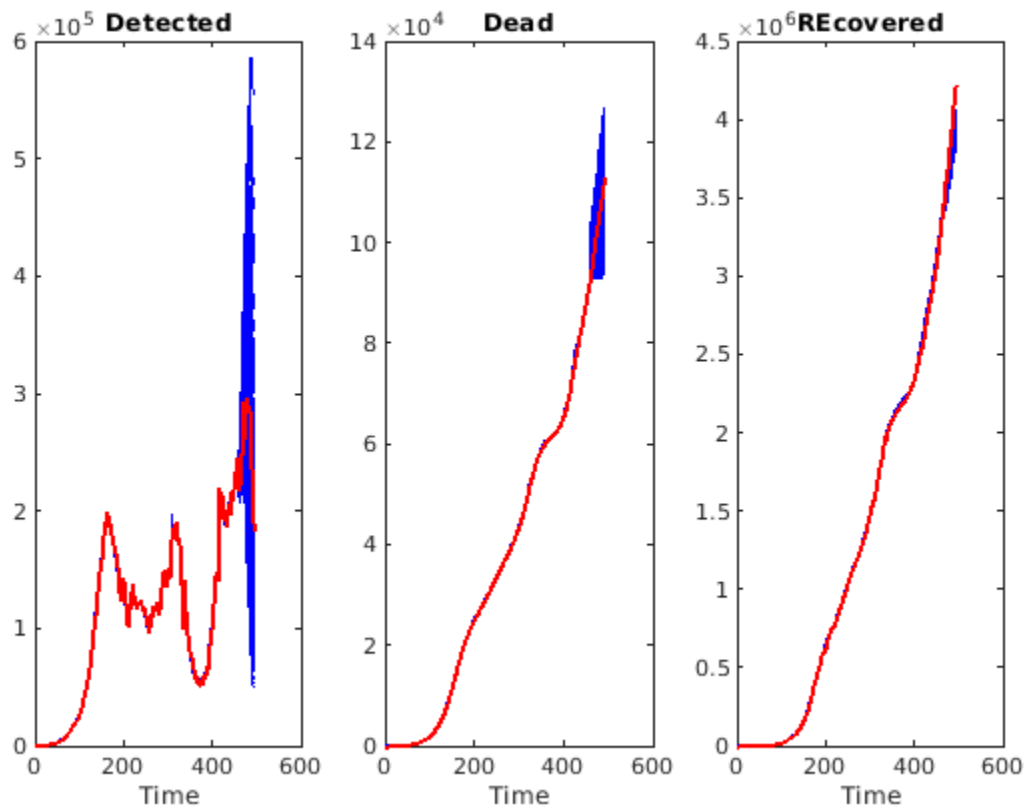






### 13.4. Uncertainty analysis

N=500



---

## Chapter 14. Extension number14

### 14.1. Basic information

The extension to be validated consists of the time series from the data493 to the 501. The status of the validation is: COMPLETED.

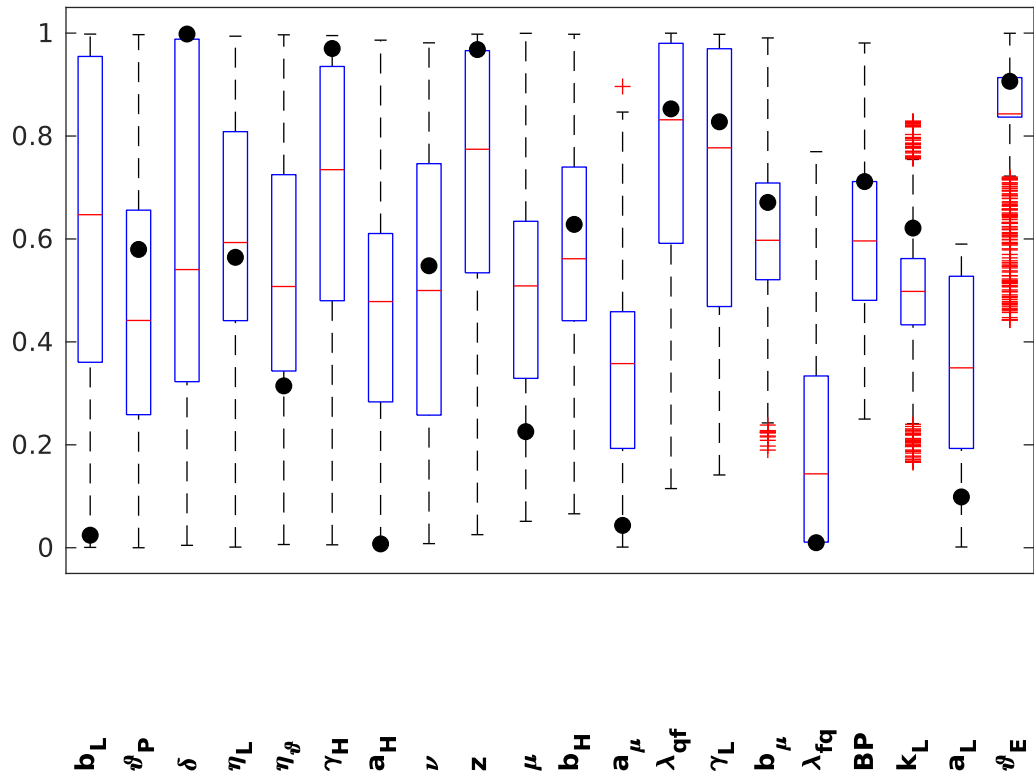
The number of estimations needed to perform the validation was1000.

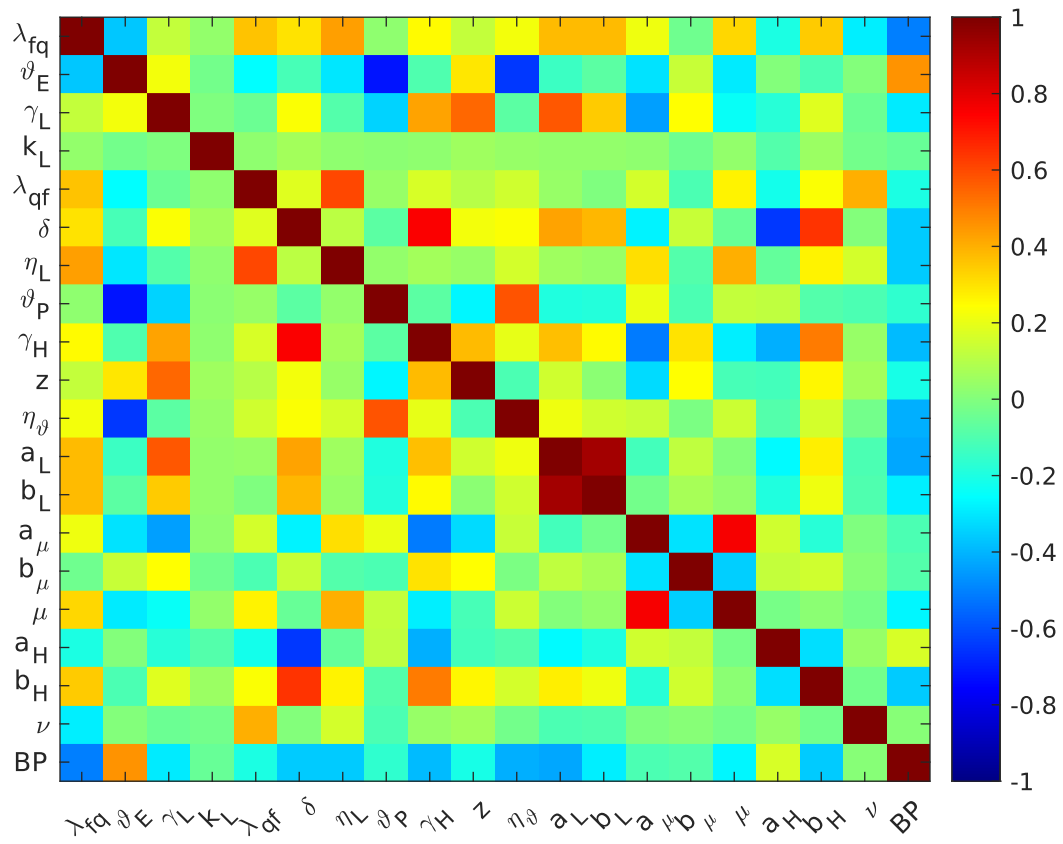
### 14.2. Estimated parameters with their intervals

It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

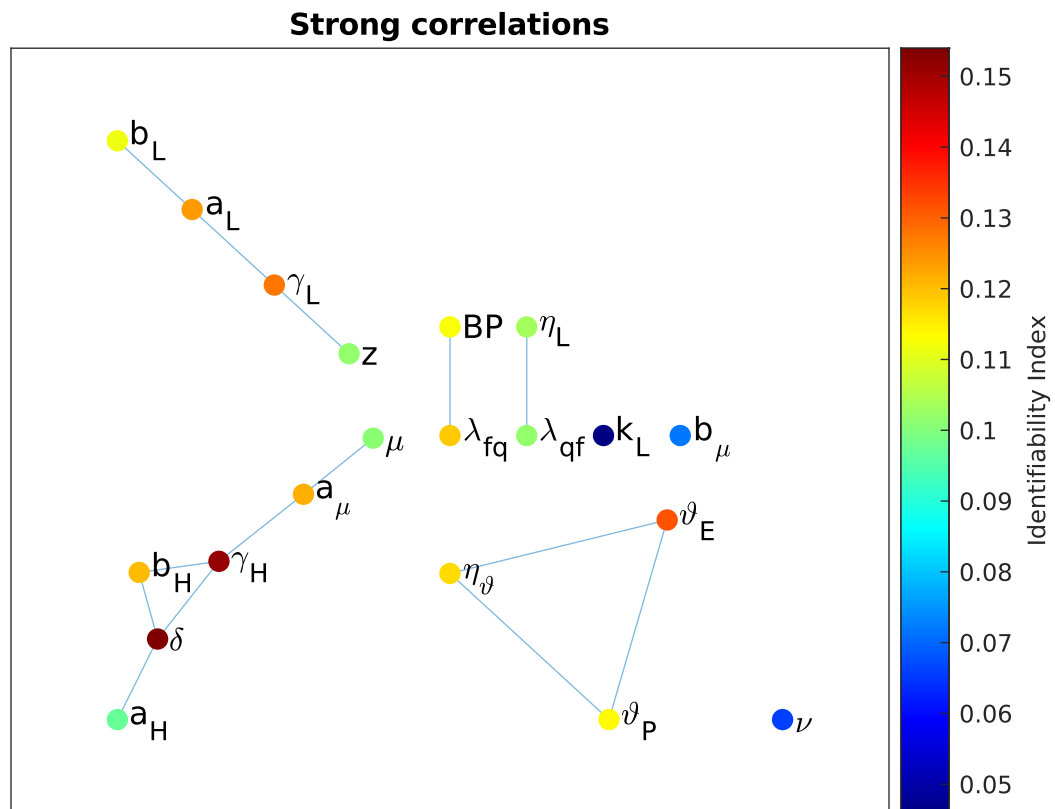
	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.1254'	'0.1641'	'0.1448'	'0.0098'	'0.1186'
$\vartheta_E$	'0.8183'	'0.8678'	'0.8431'	'0.9064'	'0.1316'
$\gamma_L$	'0.7573'	'0.7969'	'0.7771'	'0.8276'	'0.1278'
$k_L$	'5.3748'	'5.5907'	'5.4828'	'6.5905'	'0.046'
$\lambda_{qf}$	'0.8118'	'0.8509'	'0.8313'	'0.8528'	'0.1019'
$\delta$	'0.0772'	'0.085'	'0.0811'	'0.1497'	'0.154'
$\eta_L$	'0.5722'	'0.6139'	'0.593'	'0.5643'	'0.1035'
$\vartheta_P$	'0.4212'	'0.4621'	'0.4416'	'0.5796'	'0.1137'
$\gamma_H$	'0.7145'	'0.7549'	'0.7347'	'0.9701'	'0.1514'
$z$	'22.6726'	'23.787'	'23.2298'	'29.0404'	'0.1019'
$\eta_{\vartheta}$	'0.4877'	'0.5275'	'0.5076'	'0.3145'	'0.117'
$a_L$	'5.7003'	'6.0872'	'5.8937'	'2.3821'	'0.124'
$b_L$	'9.677'	'10.4429'	'10.06'	'1.341'	'0.1115'
$a_{\mu}$	'5.8059'	'6.2167'	'6.0113'	'1.6081'	'0.1218'
$b_{\mu}$	'9.1764'	'9.5493'	'9.3629'	'10.3942'	'0.0718'
$\mu$	'0.4923'	'0.5253'	'0.5088'	'0.2256'	'0.101'
$a_H$	'7.4575'	'7.9361'	'7.6968'	'1.1043'	'0.0973'
$b_H$	'8.6374'	'9.0857'	'8.8615'	'9.7964'	'0.1206'
$\nu$	'238.8817'	'260.9487'	'249.9152'	'273.959'	'0.0659'
BP	'480.2002'	'480.7998'	'480.5'	'483.4999'	'0.1128'

### 14.3. Identifiability analysis



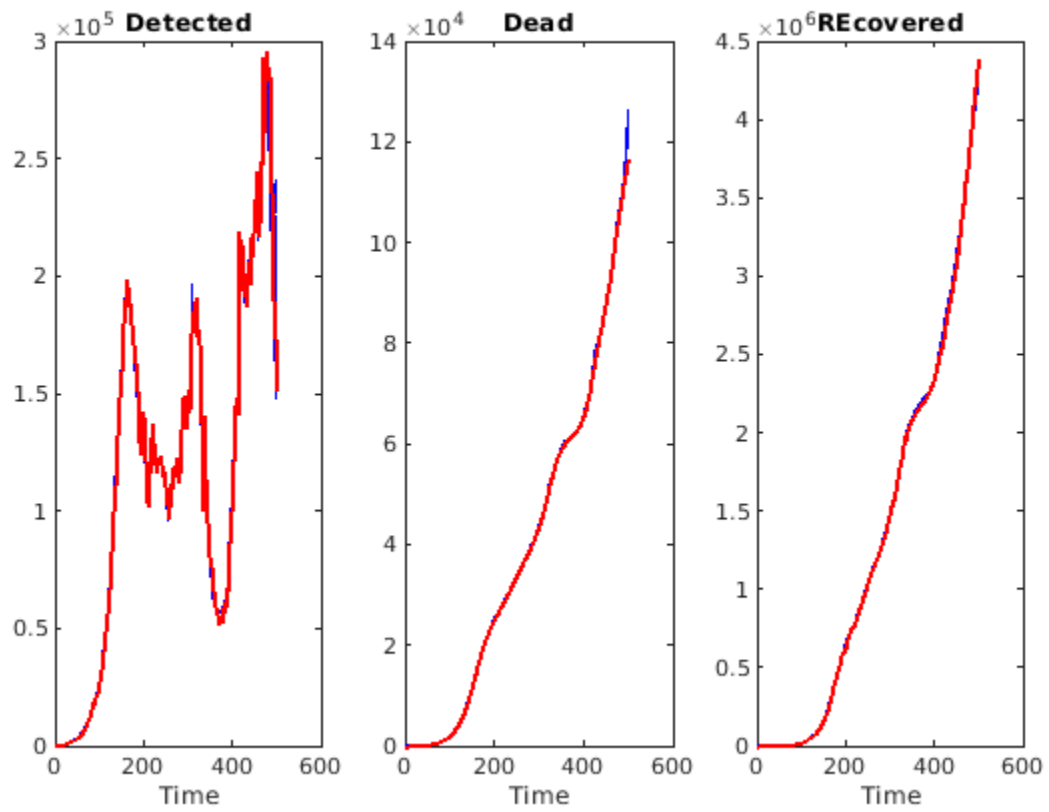






## 14.4. Uncertainty analysis

N=500



---

## Chapter 15. Extension number15

### 15.1. Basic information

The extension to be validated consists of the time series from the data501 to the 508. The status of the validation is: COMPLETED.

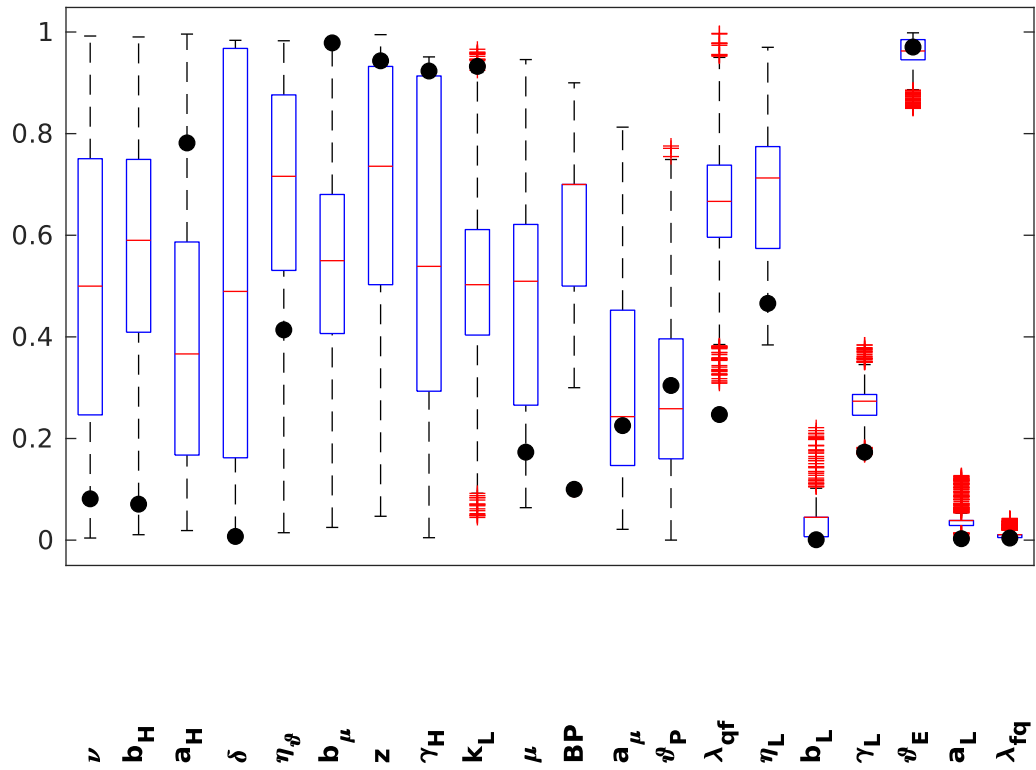
The number of estimations needed to perform the validation was1000.

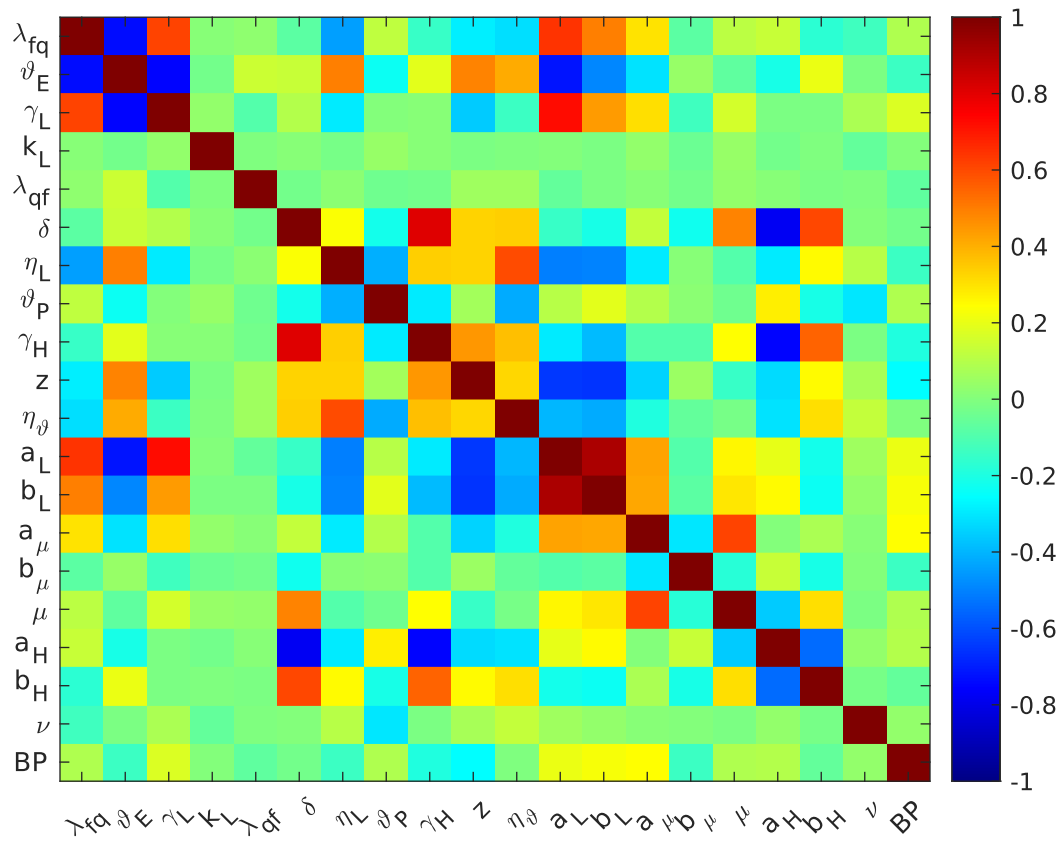
### 15.2. Estimated parameters with their intervals

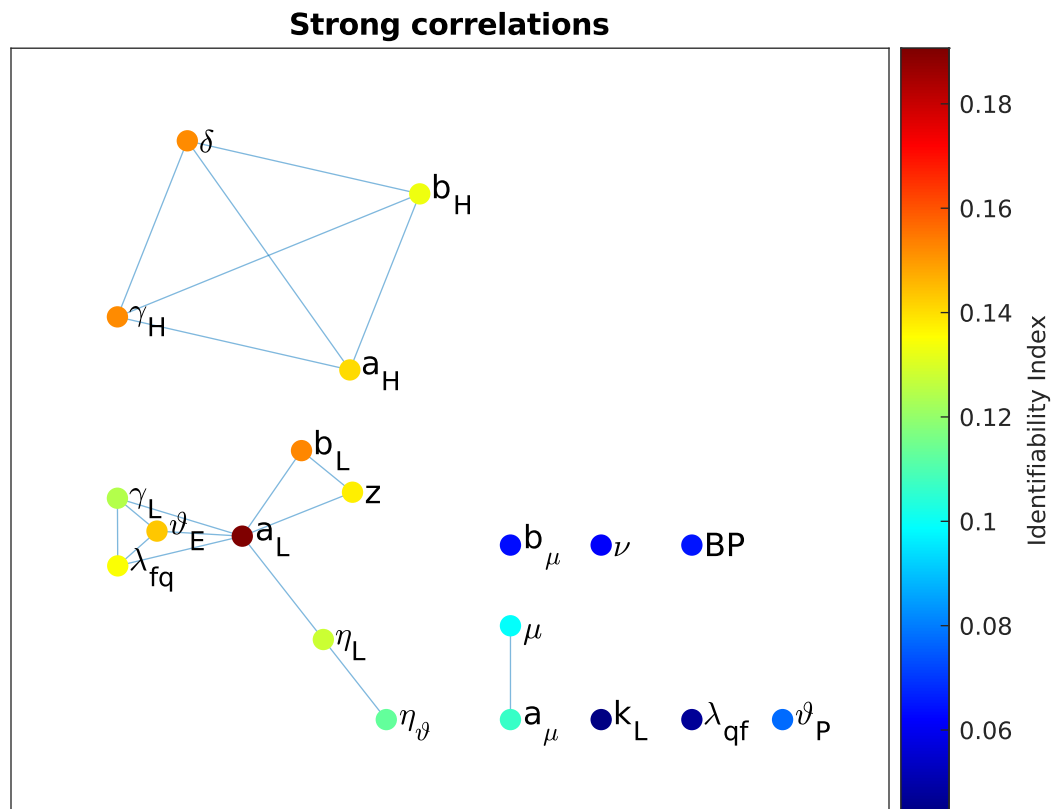
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0.0224'	'0.0108'	'0.0041'	'0.1351'
\vartheta_E	'0.9537'	'0.9716'	'0.9627'	'0.9704'	'0.1437'
\gamma_L	'0.2666'	'0.2802'	'0.2734'	'0.1731'	'0.1245'
k_L	'5.3965'	'5.6521'	'5.5243'	'9.391'	'0.0443'
\lambda_{qf}	'0.6537'	'0.6796'	'0.6667'	'0.2472'	'0.0472'
\delta	'0.0691'	'0.0777'	'0.0734'	'0.0011'	'0.1521'
\eta_L	'0.7022'	'0.7233'	'0.7127'	'0.4659'	'0.1278'
\vartheta_P	'0.2452'	'0.272'	'0.2586'	'0.3043'	'0.0778'
\gamma_H	'0.5151'	'0.5624'	'0.5388'	'0.9232'	'0.1519'
z	'21.4809'	'22.6672'	'22.0741'	'28.3002'	'0.1375'
\eta_{\vartheta}	'0.7003'	'0.7317'	'0.716'	'0.4138'	'0.1132'
a_L	'1.4259'	'1.6561'	'1.541'	'1.0395'	'0.1907'
b_L	'1.2862'	'1.9713'	'1.6288'	'1.0109'	'0.1527'
a_{\mu}	'4.1719'	'4.6331'	'4.4025'	'4.1557'	'0.1066'
b_{\mu}	'8.4838'	'8.9153'	'8.6995'	'14.7001'	'0.0642'
\mu	'0.492'	'0.5269'	'0.5095'	'0.1731'	'0.0992'
a_H	'5.8732'	'6.3873'	'6.1302'	'11.9437'	'0.1405'
b_H	'9.0134'	'9.5079'	'9.2606'	'1.9909'	'0.1333'
\nu	'238.7095'	'261.1684'	'249.939'	'40.6425'	'0.0615'
BP	'496.4421'	'496.5577'	'496.4999'	'493.5'	'0.0651'

### 15.3. Identifiability analysis

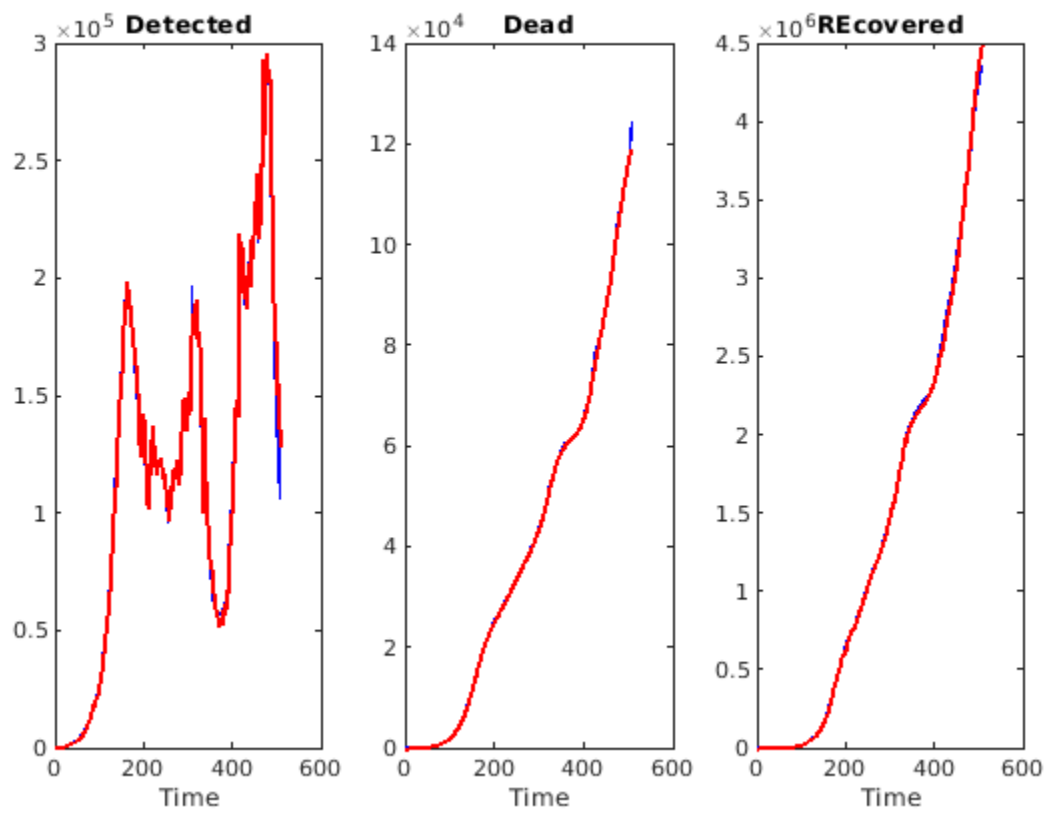






## 15.4. Uncertainty analysis

N=500



---

## Chapter 16. Extension number16

### 16.1. Basic information

The extension to be validated consists of the time series from the data508 to the 522. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

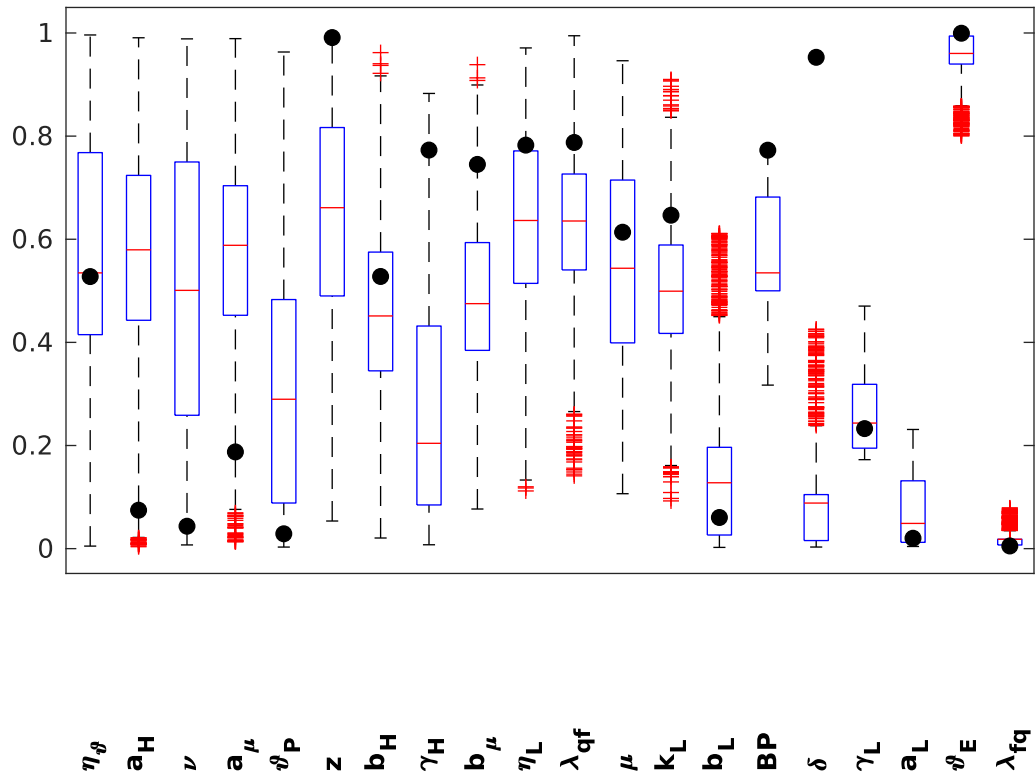
### 16.2. Estimated parameters with their intervals

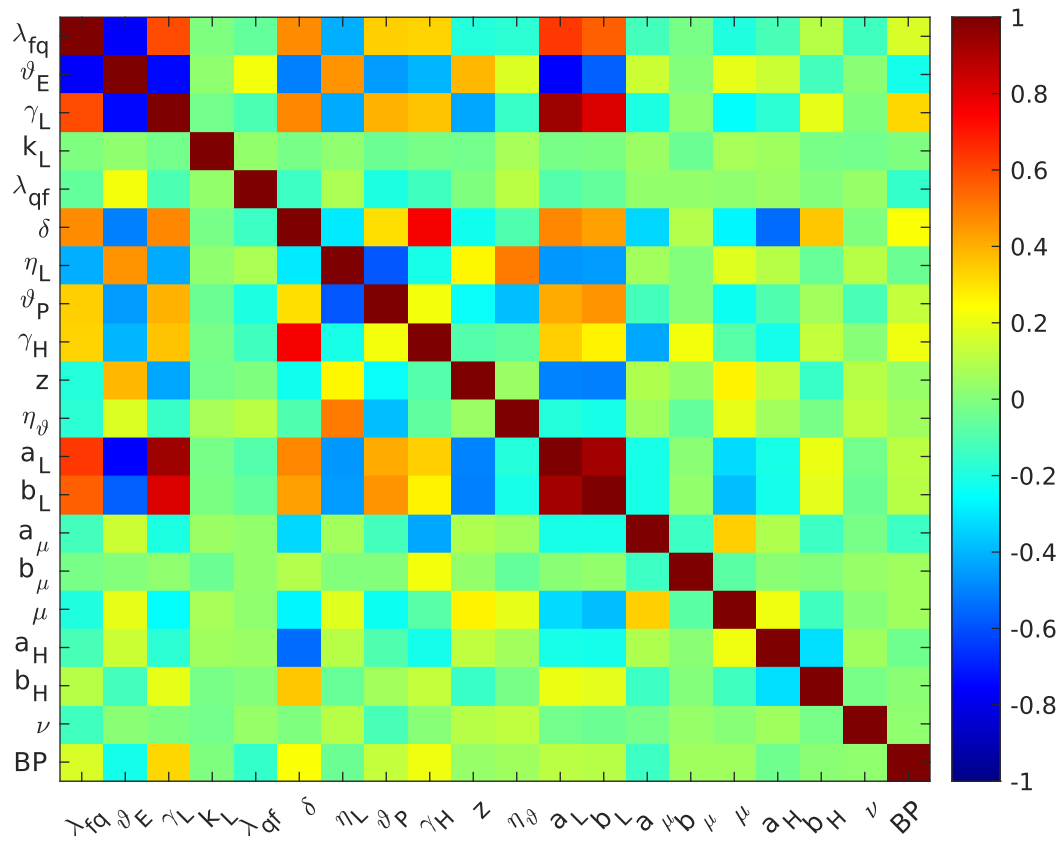
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

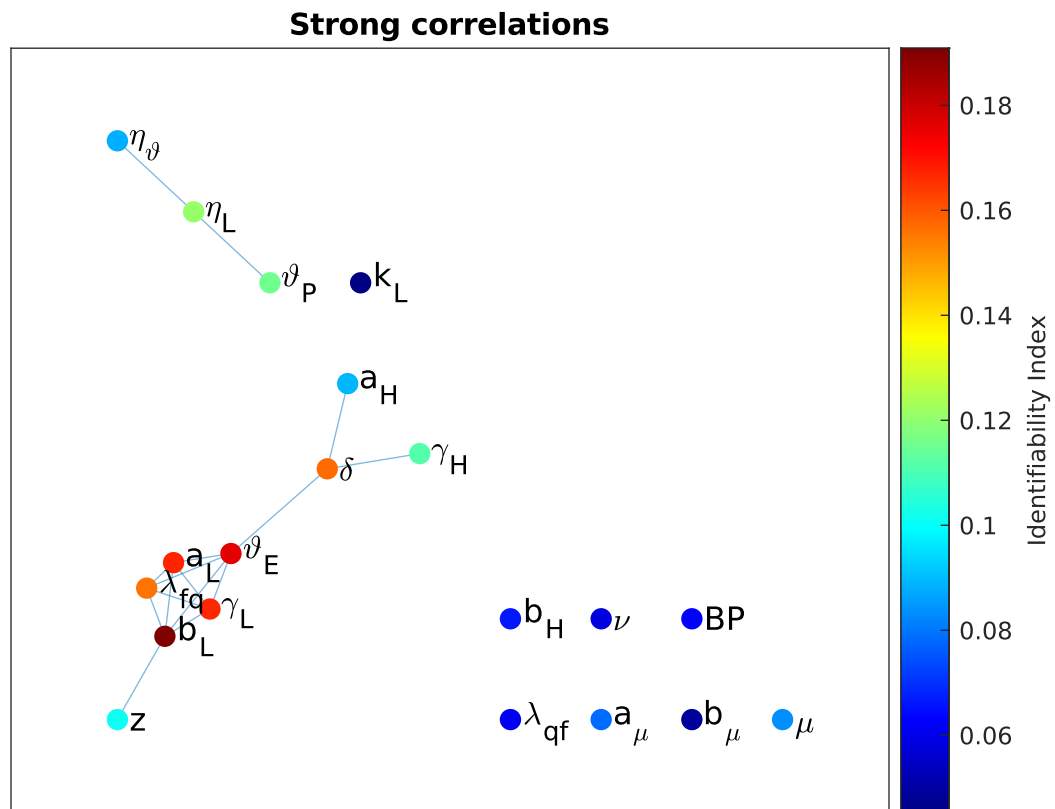
	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.0046'	'0.0317'	'0.0182'	'0.0052'	'0.1558'
$\vartheta_E$	'0.95'	'0.9706'	'0.9603'	'0.9995'	'0.1765'
$\gamma_L$	'0.2344'	'0.2527'	'0.2435'	'0.2328'	'0.1668'
$k_L$	'5.3786'	'5.6085'	'5.4936'	'6.8196'	'0.0453'
$\lambda_{qf}$	'0.6181'	'0.6527'	'0.6354'	'0.7877'	'0.0622'
$\delta$	'0.0104'	'0.0161'	'0.0133'	'0.1429'	'0.1572'
$\eta_L$	'0.6242'	'0.6485'	'0.6364'	'0.7825'	'0.1212'
$\vartheta_P$	'0.2716'	'0.3078'	'0.2897'	'0.0288'	'0.1153'
$\gamma_H$	'0.1864'	'0.2221'	'0.2043'	'0.773'	'0.1115'
$z$	'19.3016'	'20.3696'	'19.8356'	'29.7329'	'0.1015'
$\eta_{\vartheta}$	'0.5183'	'0.5512'	'0.5348'	'0.5276'	'0.0883'
$a_L$	'1.5888'	'1.7808'	'1.6848'	'1.282'	'0.1673'
$b_L$	'2.4693'	'3.1076'	'2.7884'	'1.8456'	'0.1909'
$a_{\mu}$	'8.9955'	'9.4754'	'9.2355'	'3.6261'	'0.0787'
$b_{\mu}$	'7.4785'	'7.8248'	'7.6516'	'11.4321'	'0.0492'
$\mu$	'0.5288'	'0.5587'	'0.5438'	'0.6136'	'0.0836'
$a_H$	'8.8828'	'9.3432'	'9.113'	'2.0436'	'0.0894'
$b_H$	'7.1237'	'7.5115'	'7.3176'	'8.3894'	'0.0668'
$\nu$	'239.3211'	'261.5451'	'250.4331'	'21.7351'	'0.0588'
BP	'506.7619'	'507.0041'	'506.883'	'509.5'	'0.063'



### 16.3. Identifiability analysis

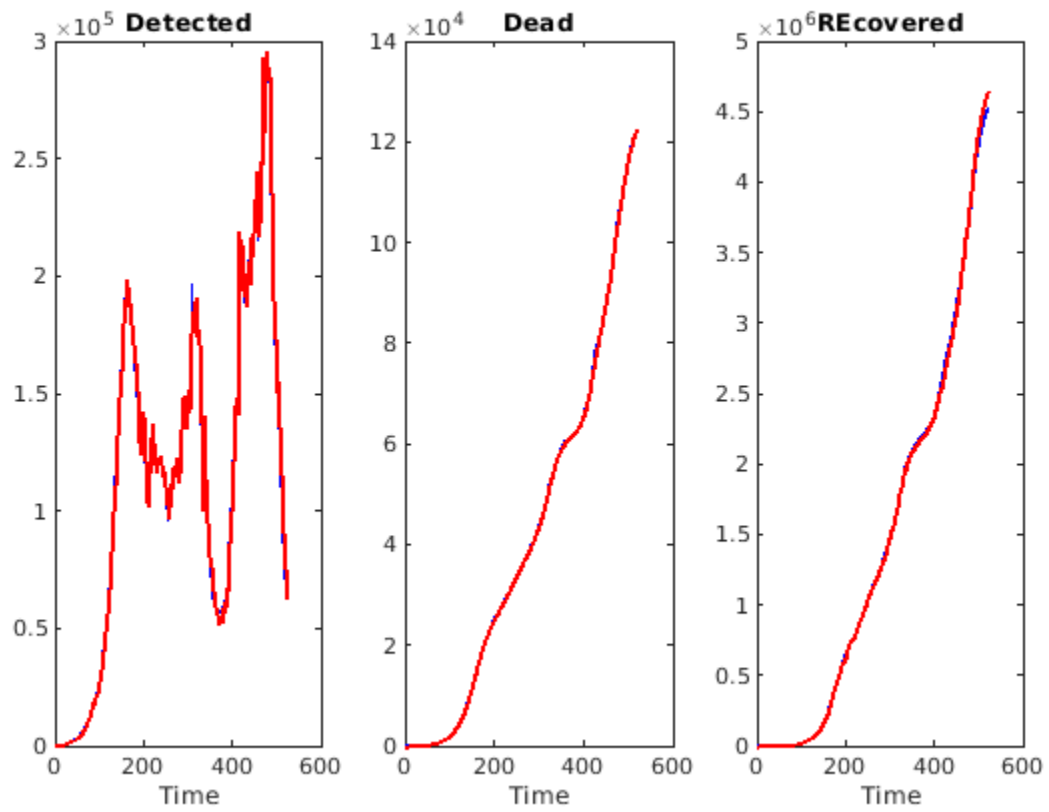






## 16.4. Uncertainty analysys

N=500



---

## Chapter 17. Extension number17

### 17.1. Basic information

The extension to be validated consists of the time series from the data522 to the 607. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

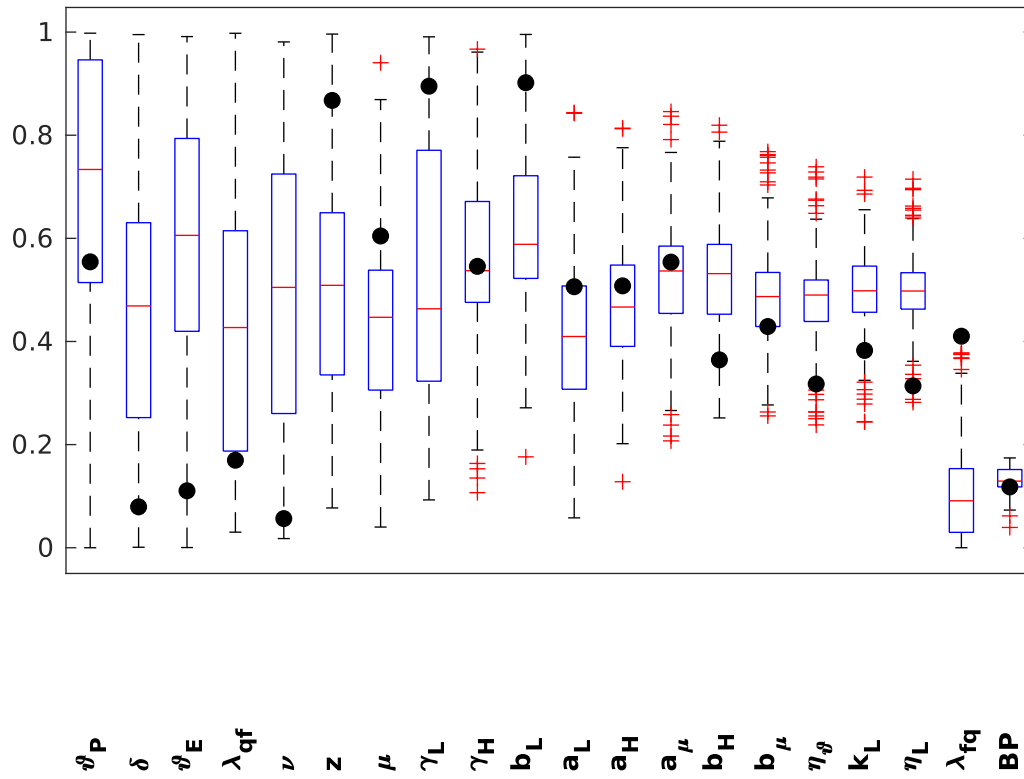
### 17.2. Estimated parameters with their intervals

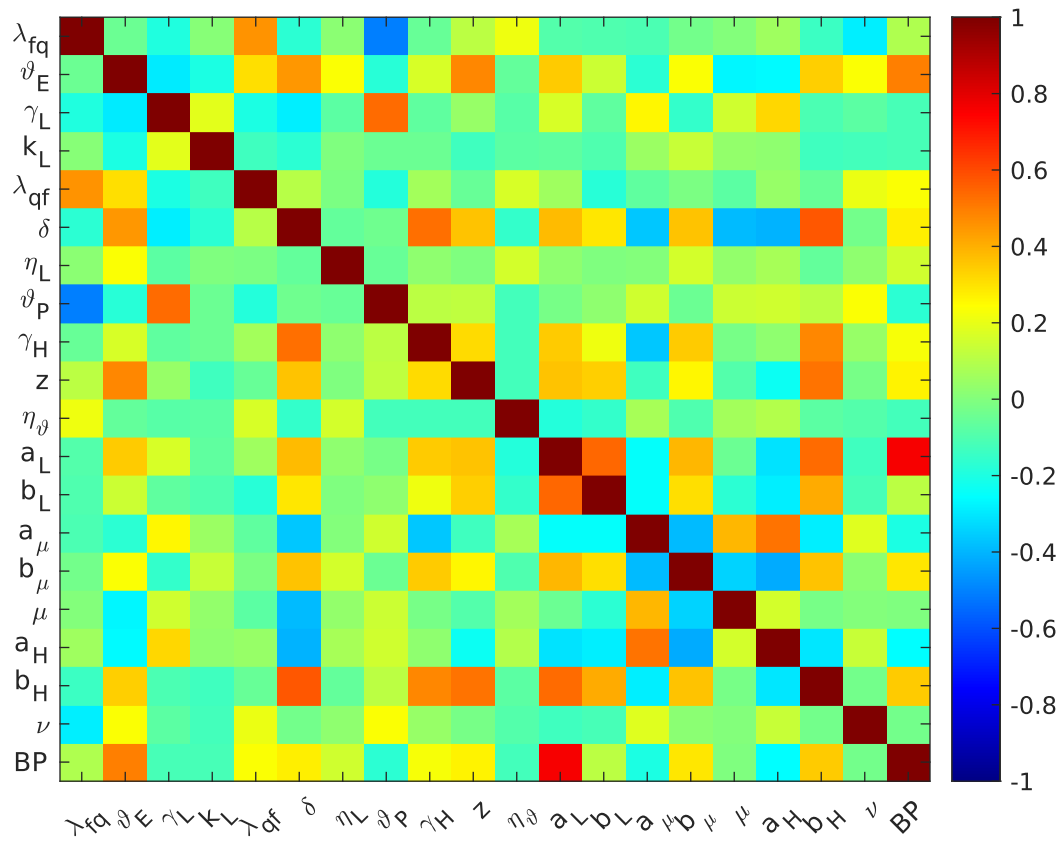
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

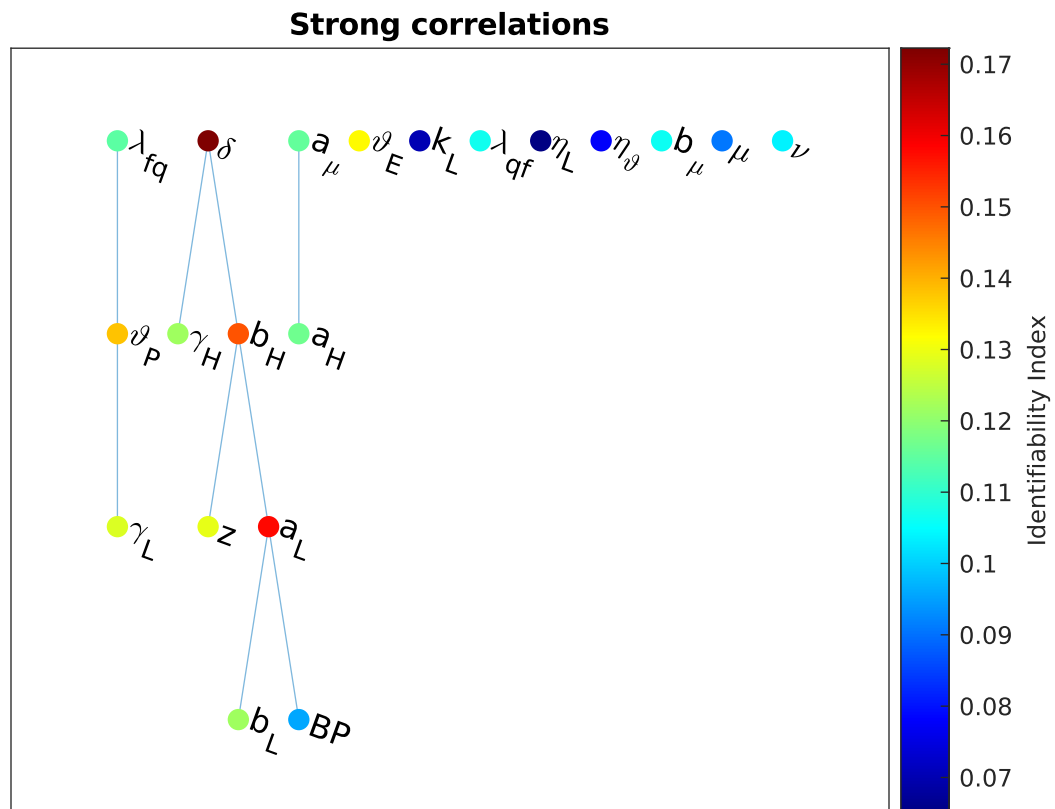
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.3801'	'0.4414'	'0.0912'	'0.4102'	'0.1145'
$\vartheta_E$	'0.0056'	'0.2242'	'0.6058'	'0.1104'	'0.1323'
$\gamma_L$	'0.3102'	'1'	'0.4634'	'0.8951'	'0.1282'
$k_L$	'1'	'8.695'	'5.4847'	'4.4438'	'0.0705'
$\lambda_{qf}$	'0.1586'	'0.1862'	'0.427'	'0.1697'	'0.1066'
$\delta$	'0.0006'	'0.0254'	'0.0703'	'0.0119'	'0.1722'
$\eta_L$	'0'	'0.7062'	'0.4979'	'0.3139'	'0.0651'
$\vartheta_P$	'0.4398'	'0.6081'	'0.7336'	'0.5545'	'0.1382'
$\gamma_H$	'0'	'0.95'	'0.5372'	'0.5457'	'0.1217'
$z$	'20.8672'	'27.9285'	'15.2667'	'26.0241'	'0.1293'
$\eta_{\vartheta}$	'0.0759'	'0.7146'	'0.4901'	'0.3176'	'0.078'
$a_L$	'7.4083'	'11.1639'	'6.7417'	'8.0865'	'0.1579'
$b_L$	'8.4959'	'14.3178'	'9.2369'	'13.6262'	'0.122'
$a_{\mu}$	'1'	'15'	'8.5144'	'8.7551'	'0.1156'
$b_{\mu}$	'1.7'	'14.335'	'7.8194'	'7.0059'	'0.1064'
$\mu$	'0.0225'	'0.8312'	'0.4469'	'0.6046'	'0.091'
$a_H$	'1.7'	'15'	'7.5351'	'8.1104'	'0.1167'
$b_H$	'1'	'15'	'8.4422'	'6.1009'	'0.15'
$\nu$	'25.9653'	'61.9364'	'252.45'	'28.2514'	'0.1038'
BP	'518.4974'	'522.2664'	'519.5'	'518.5'	'0.0959'

### 17.3. Identifiability analysis



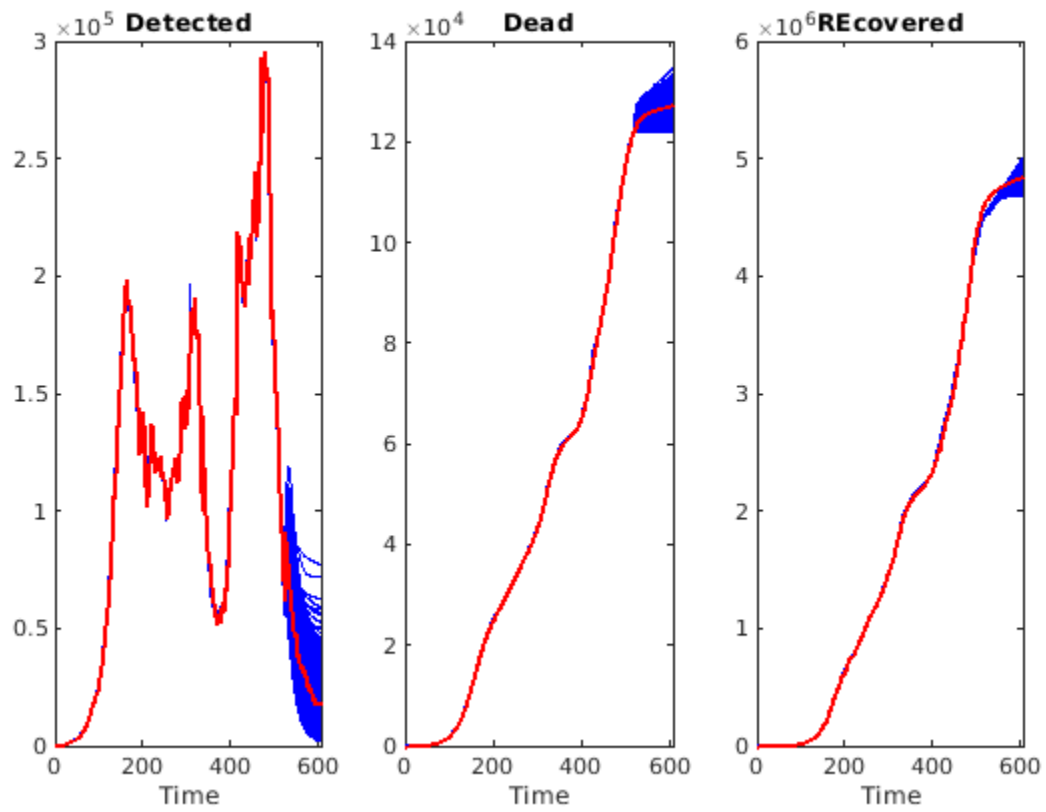






## 17.4. Uncertainty analysis

N=500



---

## Chapter 18. Extension number18

### 18.1. Basic information

The extension to be validated consists of the time series from the data607 to the 728. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was3000.

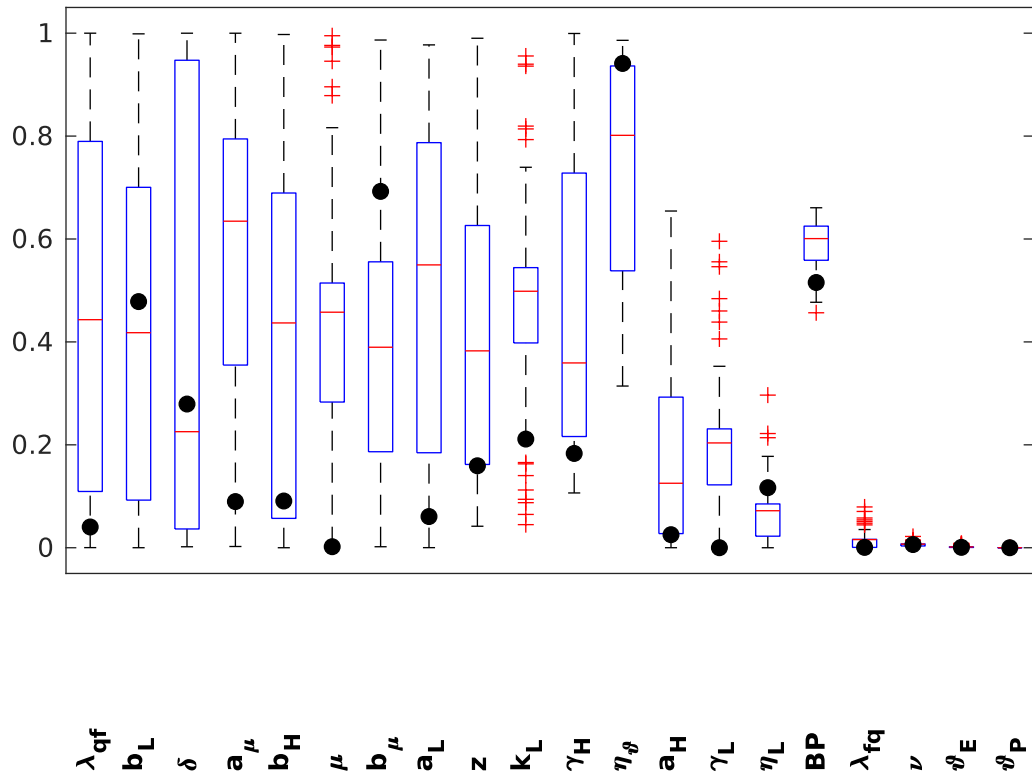
### 18.2. Estimated parameters with their intervals

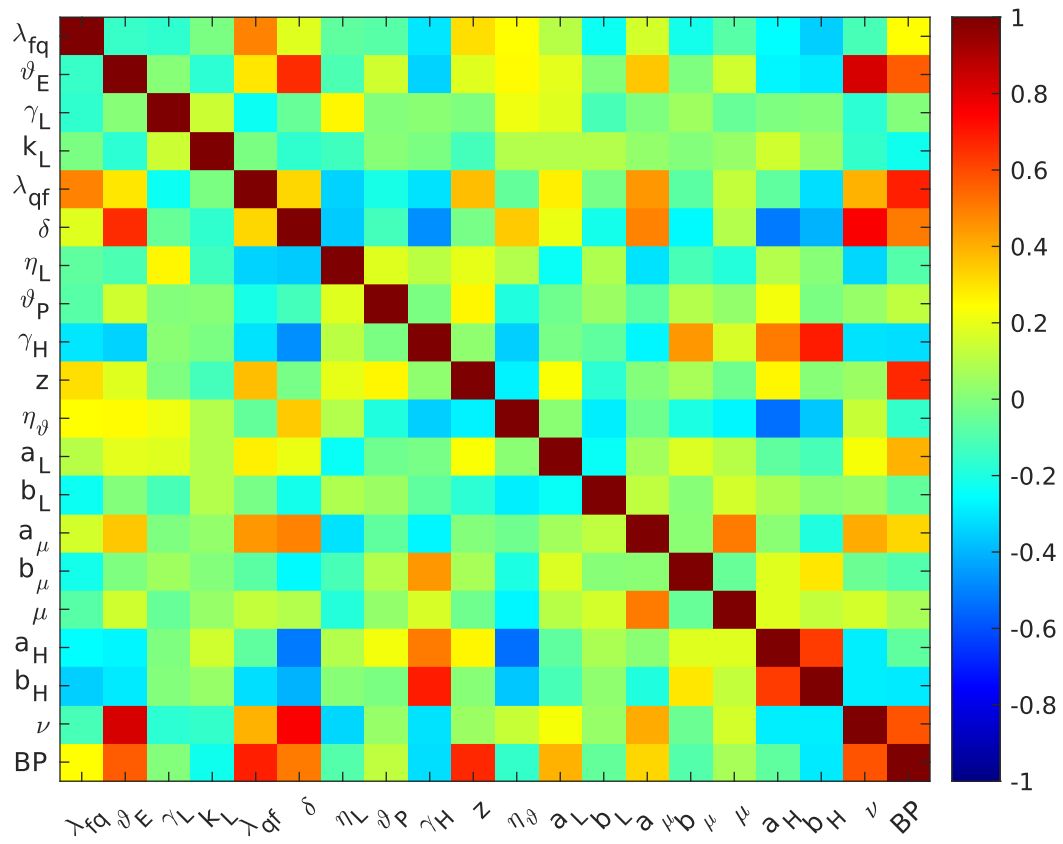
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

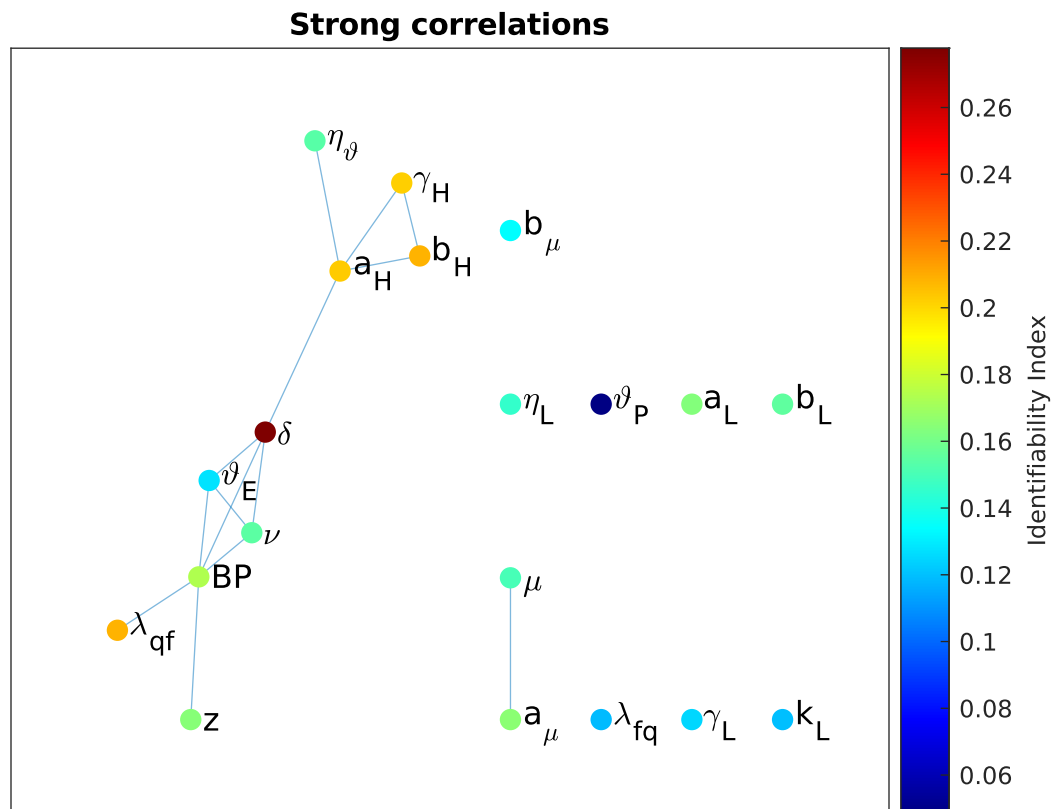
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
$\lambda_{fq}$	'0.0007'	'0.0054'	'0.0163'	'0.0007'	'0.1194'
$\vartheta_E$	'0'	'0.0017'	'0.0016'	'0.0008'	'0.1278'
$\gamma_L$	'0'	'0.0001'	'0.204'	'0'	'0.1257'
$k_L$	'1.45'	'10'	'5.4862'	'2.9006'	'0.1203'
$\lambda_{qf}$	'0.0398'	'0.0647'	'0.4432'	'0.0403'	'0.2086'
$\delta$	'0.039'	'0.0541'	'0.0338'	'0.0419'	'0.2778'
$\eta_L$	'0.0892'	'0.1591'	'0.0722'	'0.1167'	'0.1456'
$\vartheta_P$	'0'	'0'	'0'	'0'	'0.0489'
$\gamma_H$	'0.1806'	'0.2637'	'0.3592'	'0.1833'	'0.2026'
$z$	'4.7045'	'5.6686'	'11.4782'	'4.7785'	'0.1648'
$\eta_{\vartheta}$	'0.649'	'0.9484'	'0.8015'	'0.9412'	'0.1535'
$a_L$	'1'	'12.97'	'8.6954'	'1.8487'	'0.1641'
$b_L$	'1'	'15'	'6.8508'	'7.697'	'0.1553'
$a_{\mu}$	'1.28'	'15'	'9.8846'	'2.2559'	'0.1658'
$b_{\mu}$	'1'	'15'	'6.4551'	'10.6956'	'0.1339'
$\mu$	'0.0003'	'0.0045'	'0.4577'	'0.002'	'0.1505'
$a_H$	'1.1451'	'1.9364'	'2.842'	'1.3549'	'0.2033'
$b_H$	'1.7508'	'5.9762'	'7.1163'	'2.2712'	'0.2081'
$\nu$	'3.0089'	'6.7387'	'3.6792'	'3.1016'	'0.1549'
BP	'622.5945'	'627.5'	'639'	'623.028'	'0.1736'

### 18.3. Identifiability analysis







## 18.4. Uncertainty analysis

N=500

