

Validation process forCUCUTA

The epidemiology research group, EAFIT

06-Apr-2022

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Chapter 1. Extension number1

1.1. Basic information

The extension to be validated consists of the time series from the data1 to the 121. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

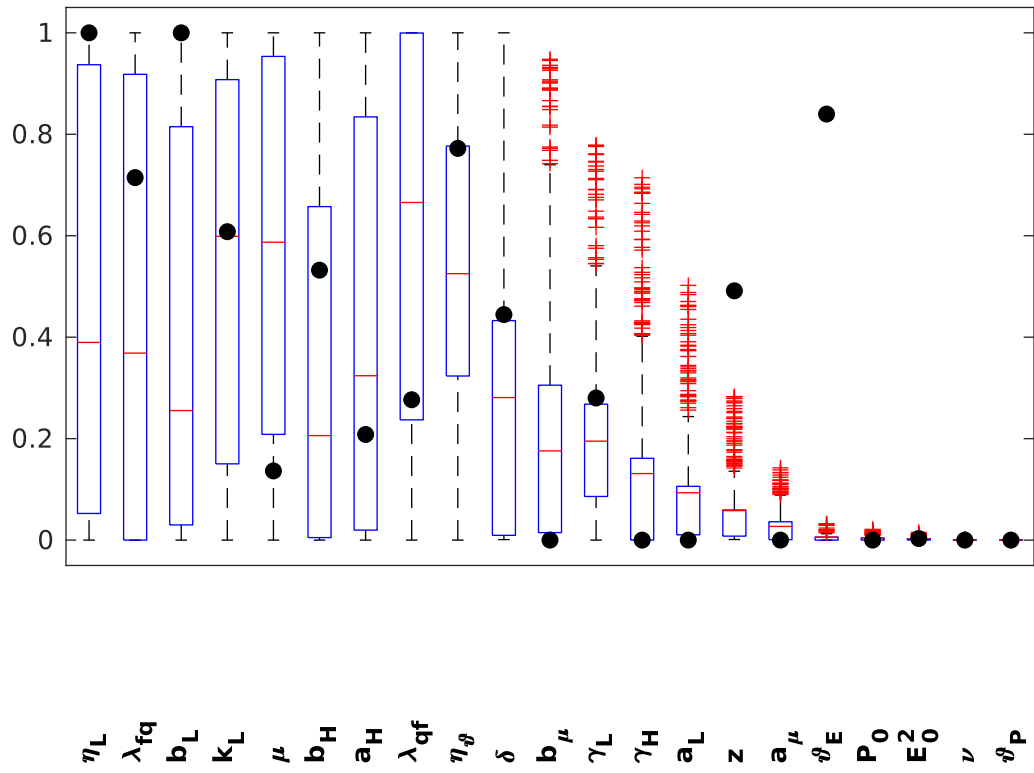
1.2. Estimated parameters with their intervals

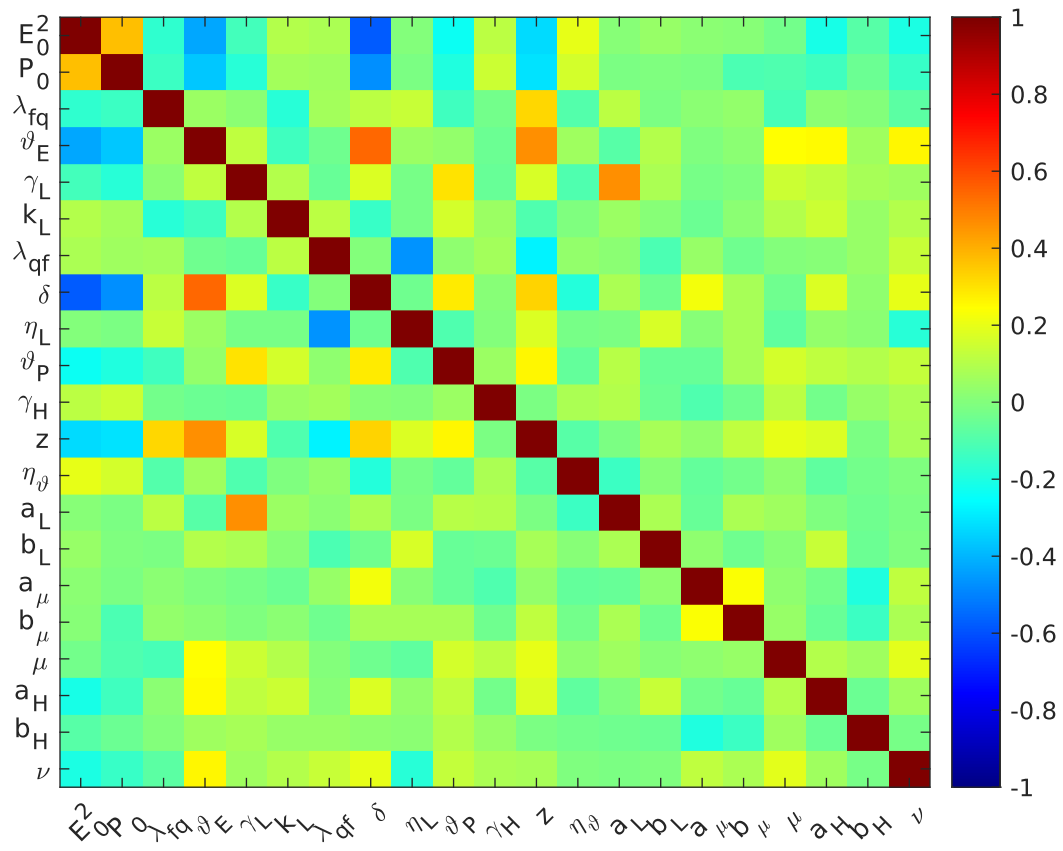
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

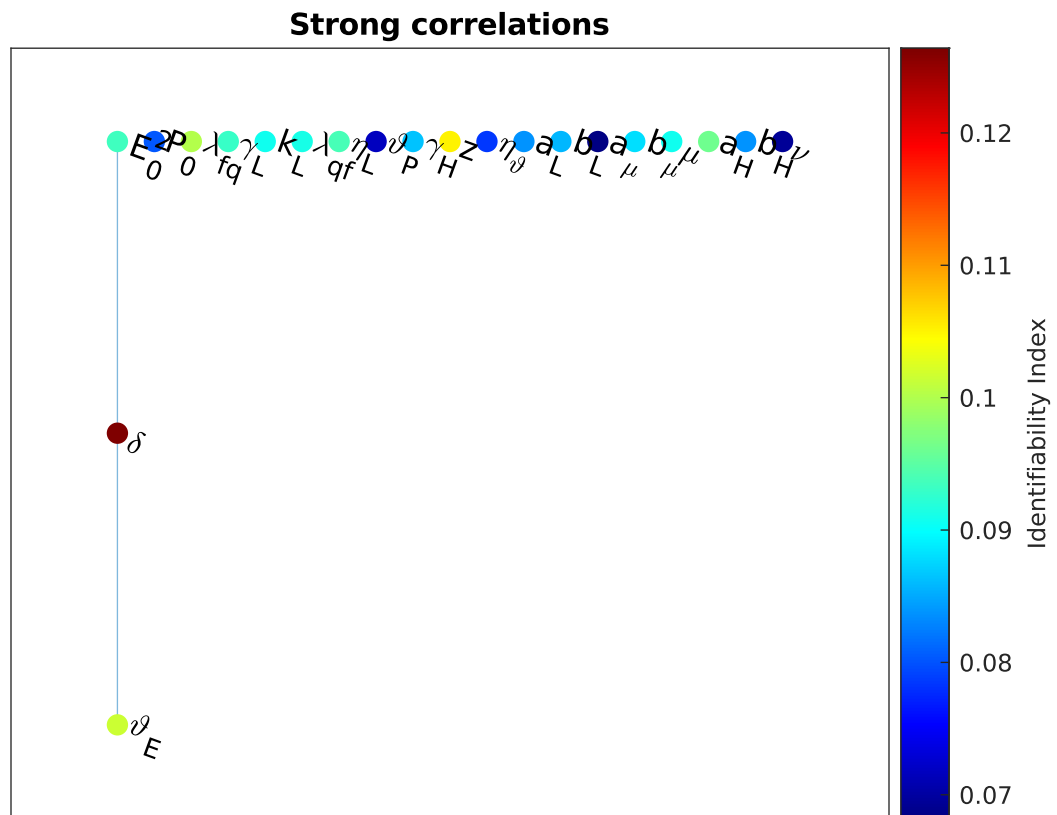
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
E^2_0	'5.9049'	'7.109'	'5.6588'	'6.0905'	'0.0937'
P_0	'0'	'0'	'1.5951'	'0'	'0.0805'
\lambda_{fq}	'0.6939'	'0.7259'	'0.3686'	'0.7146'	'0.1002'
\vartheta_E	'0.8325'	'0.841'	'0.0059'	'0.8398'	'0.1014'
\gamma_L	'0.2585'	'0.2802'	'0.195'	'0.2801'	'0.0932'
k_L	'1.225'	'10'	'6.3906'	'6.4717'	'0.0909'
\lambda_{qf}	'0.2705'	'0.2799'	'0.6655'	'0.2767'	'0.0913'
\delta	'0.0539'	'0.0682'	'0.0421'	'0.0667'	'0.1264'
\eta_L	'0.9525'	'1'	'0.3897'	'1'	'0.094'
\vartheta_P	'0'	'0'	'0'	'0'	'0.0718'
\gamma_H	'0'	'0'	'0.1311'	'0'	'0.0865'
z	'14.1698'	'15.1237'	'1.7421'	'14.7427'	'0.1051'
\eta_{\vartheta}	'0.2998'	'0.9285'	'0.5253'	'0.7722'	'0.0785'
a_L	'1'	'1.0885'	'2.3063'	'1'	'0.0838'
b_L	'13.4785'	'15'	'4.575'	'14.9999'	'0.0858'
a_{\mu}	'1'	'2.2554'	'1.3779'	'1'	'0.0682'
b_{\mu}	'1'	'7.7148'	'3.4616'	'1'	'0.088'
\mu	'0.1346'	'0.4061'	'0.5872'	'0.1364'	'0.0908'
a_H	'2.2339'	'13.0511'	'5.5363'	'3.9149'	'0.0963'
b_H	'1'	'13.88'	'3.8838'	'8.4502'	'0.0838'
\nu	'0'	'0'	'0.1523'	'0'	'0.0694'

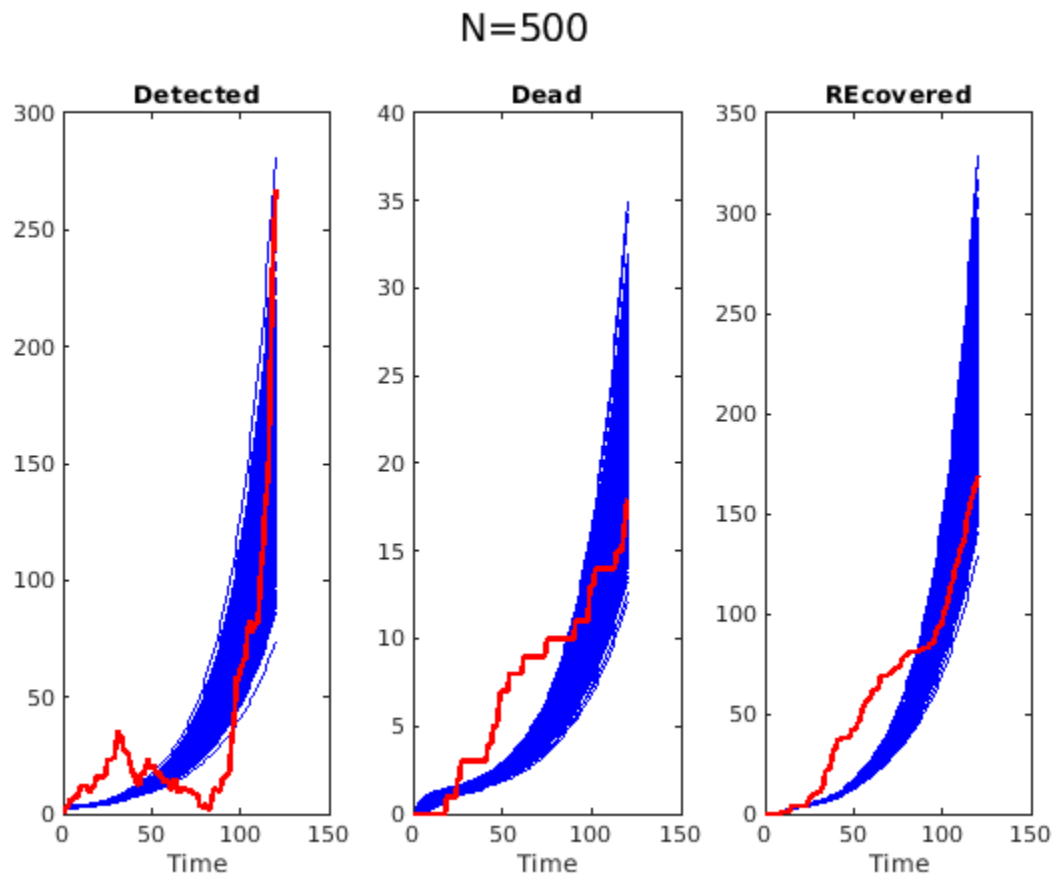
1.3. Identifiability analysis







1.4. Uncertainty analysis



Chapter 2. Extension number2

2.1. Basic information

The extension to be validated consists of the time series from the data121 to the 146. The status of the validation is: COMPLETED.

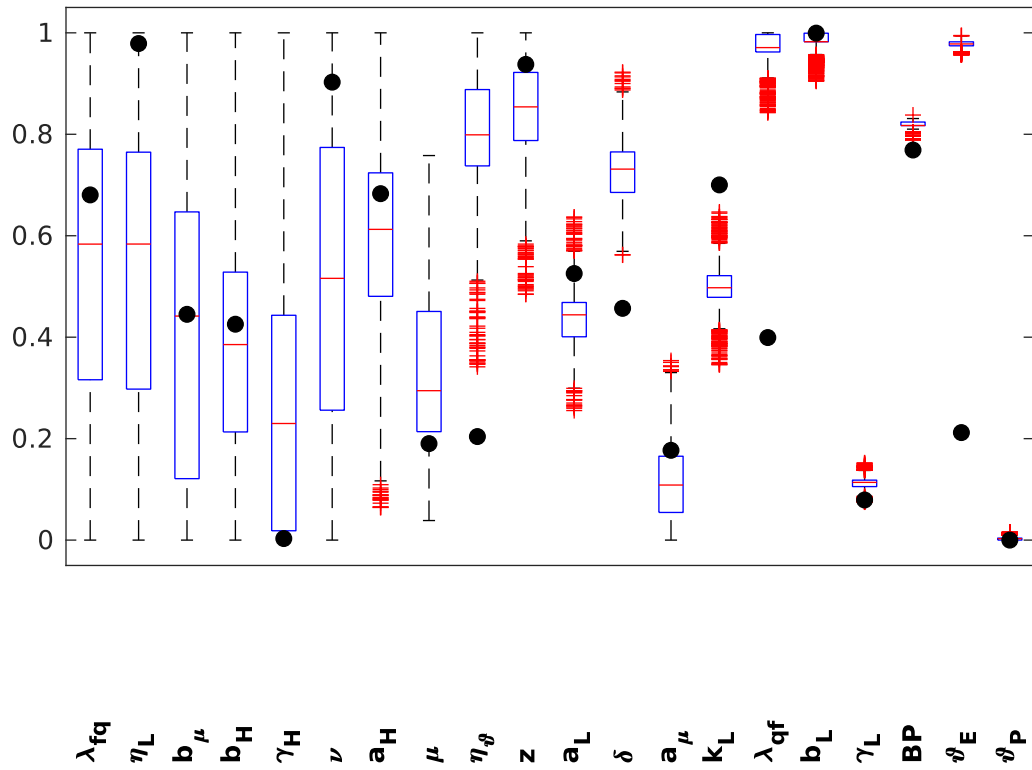
The number of estimations needed to perform the validation was1000.

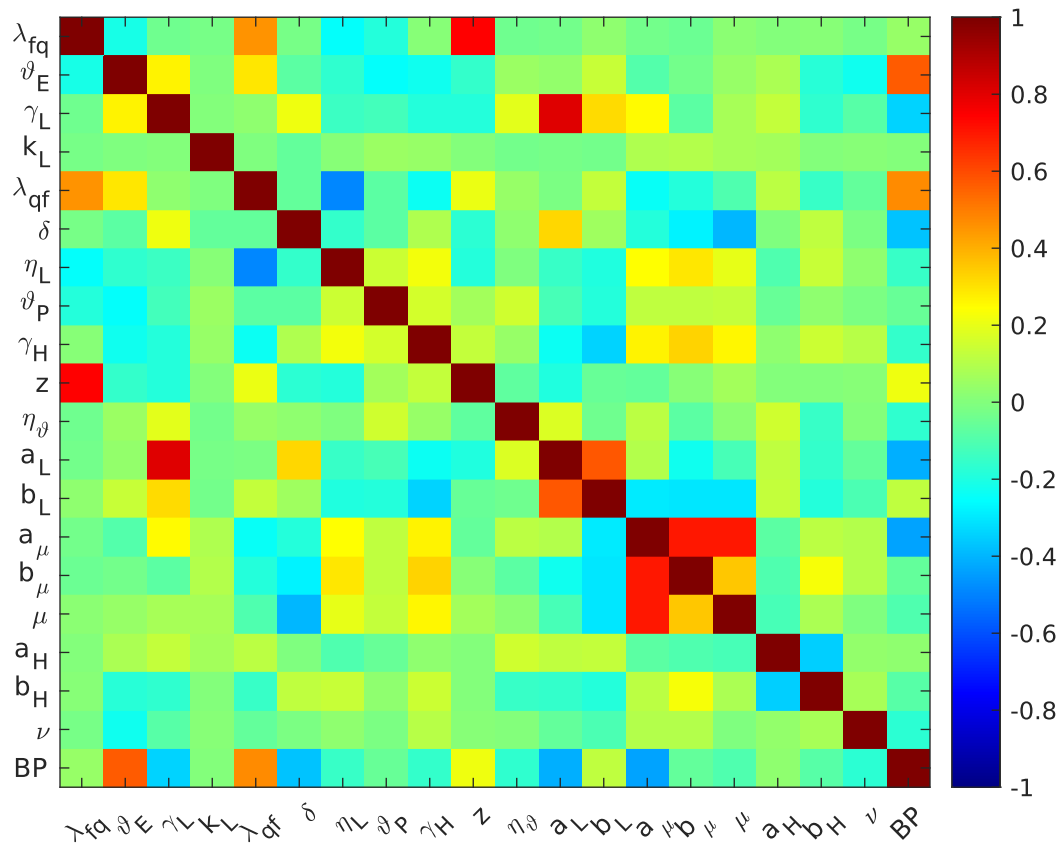
2.2. Estimated parameters with their intervals

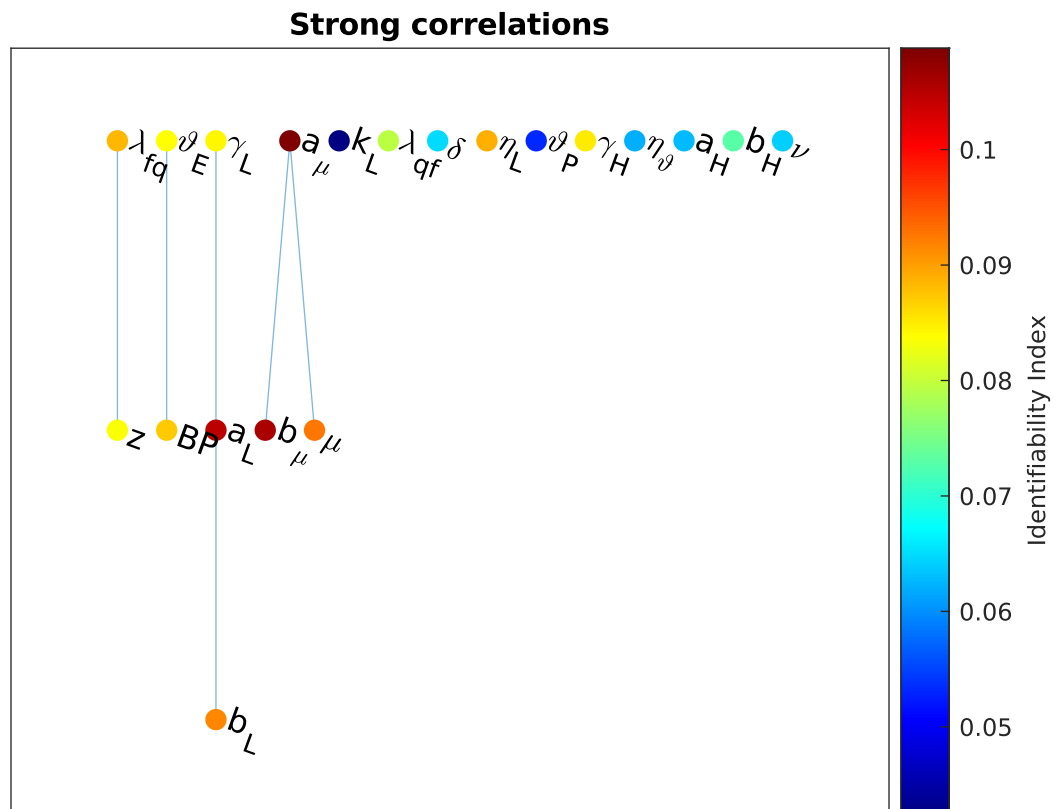
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.5598'	'0.6072'	'0.5835'	'0.6805'	'0.0885'
ϑ_E	'0.9698'	'0.9863'	'0.9781'	'0.2119'	'0.0839'
γ_L	'0.1119'	'0.1156'	'0.1138'	'0.0791'	'0.0844'
k_L	'5.3876'	'5.5671'	'5.4774'	'7.302'	'0.0426'
λ_{qf}	'0.9583'	'0.9835'	'0.9709'	'0.3993'	'0.0793'
δ	'0.1087'	'0.1107'	'0.1097'	'0.0685'	'0.0651'
η_L	'0.56'	'0.6072'	'0.5836'	'0.9789'	'0.0891'
ϑ_P	'0.0006'	'0.0051'	'0.0028'	'0'	'0.0534'
γ_H	'0.2097'	'0.2501'	'0.2299'	'0.003'	'0.0852'
z	'25.1806'	'26.0563'	'25.6185'	'28.1334'	'0.0836'
η_{ϑ}	'0.7809'	'0.817'	'0.7989'	'0.2041'	'0.0622'
a_L	'7.1195'	'7.3152'	'7.2173'	'8.3569'	'0.1048'
b_L	'14.6088'	'14.8994'	'14.7541'	'14.9917'	'0.0917'
a_{μ}	'2.431'	'2.6093'	'2.5201'	'3.4779'	'0.1088'
b_{μ}	'6.8597'	'7.5064'	'7.183'	'7.2309'	'0.1057'
μ	'0.2788'	'0.3103'	'0.2946'	'0.1902'	'0.0925'
a_H	'9.3381'	'9.8117'	'9.5749'	'10.5611'	'0.0628'
b_H	'6.1321'	'6.6604'	'6.3963'	'6.958'	'0.073'
ν	'245.9946'	'270.0064'	'258.0005'	'451.3908'	'0.0641'
BP	'119.3712'	'119.6288'	'119.5'	'112.5'	'0.0873'

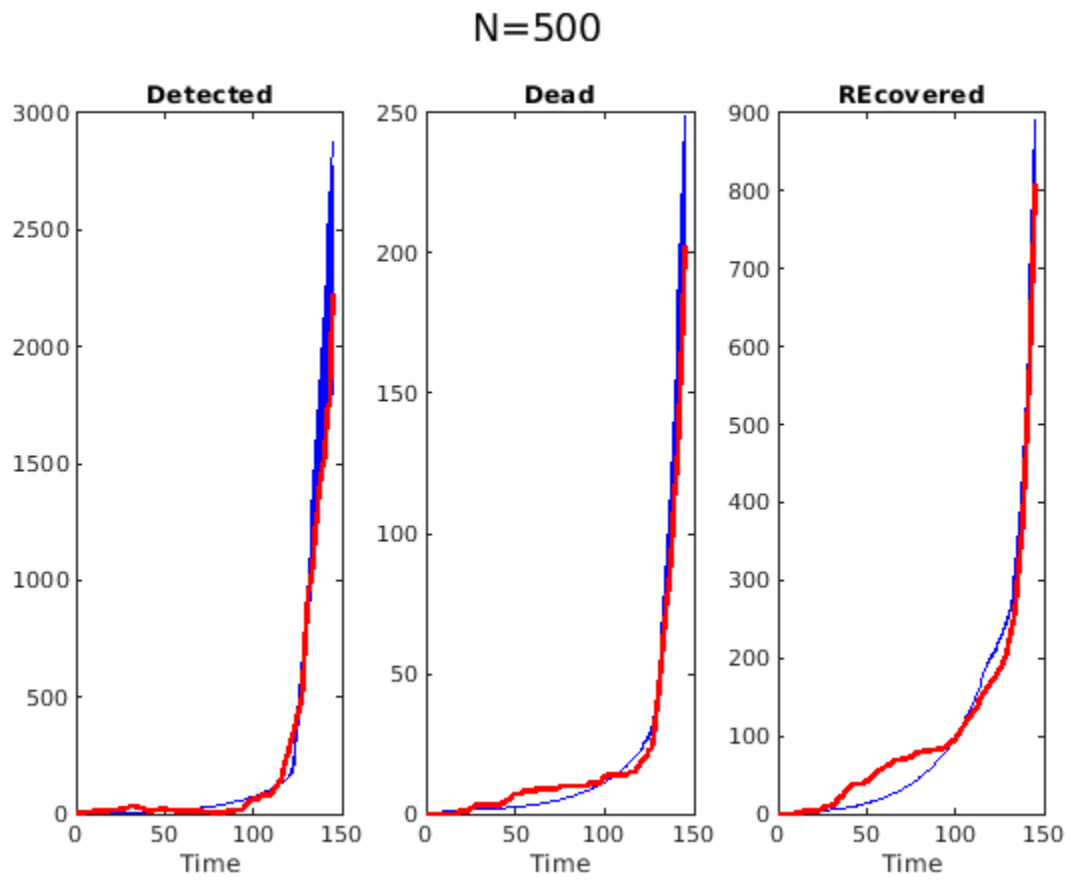
2.3. Identifiability analysis







2.4. Uncertainty analysis



Chapter 3. Extension number3

3.1. Basic information

The extension to be validated consists of the time series from the data146 to the 169. The status of the validation is: COMPLETED.

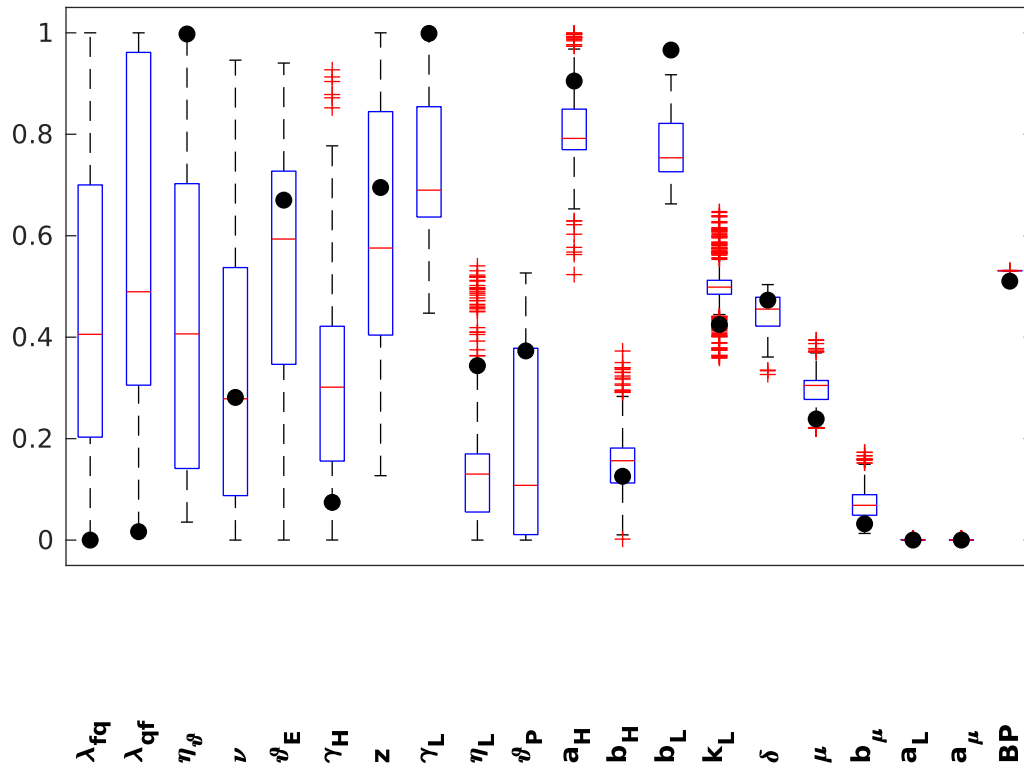
The number of estimations needed to perform the validation was1000.

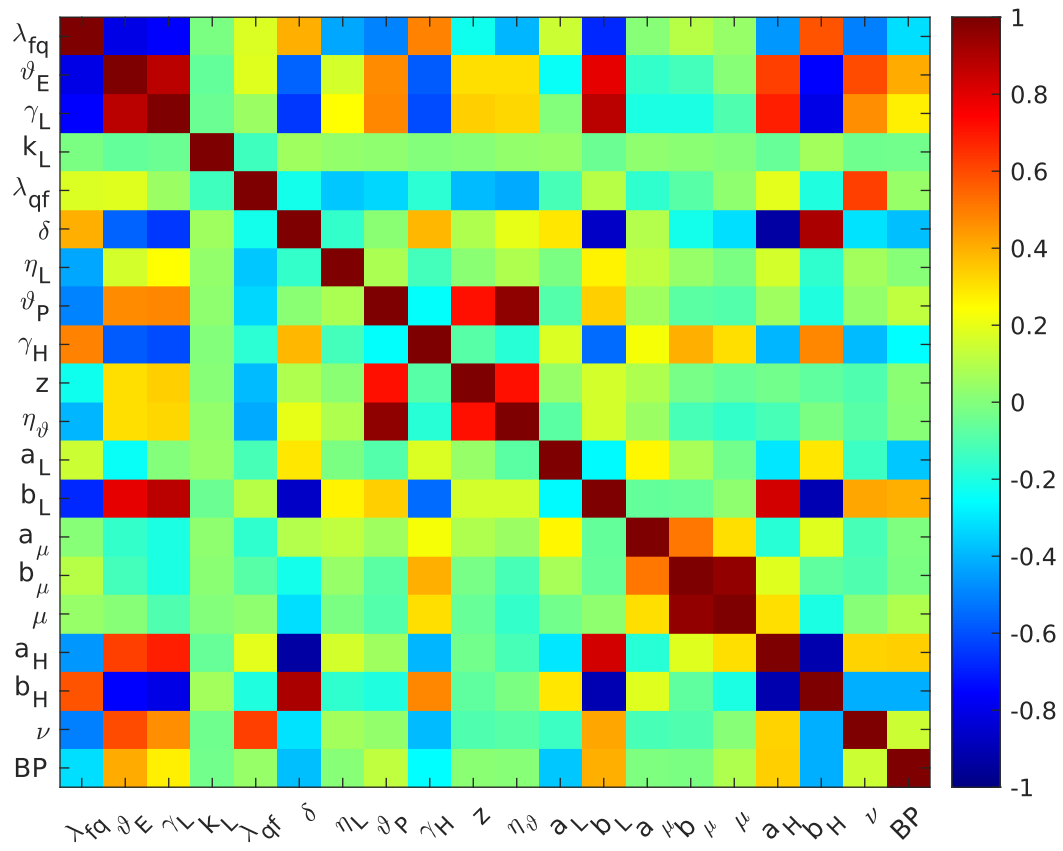
3.2. Estimated parameters with their intervals

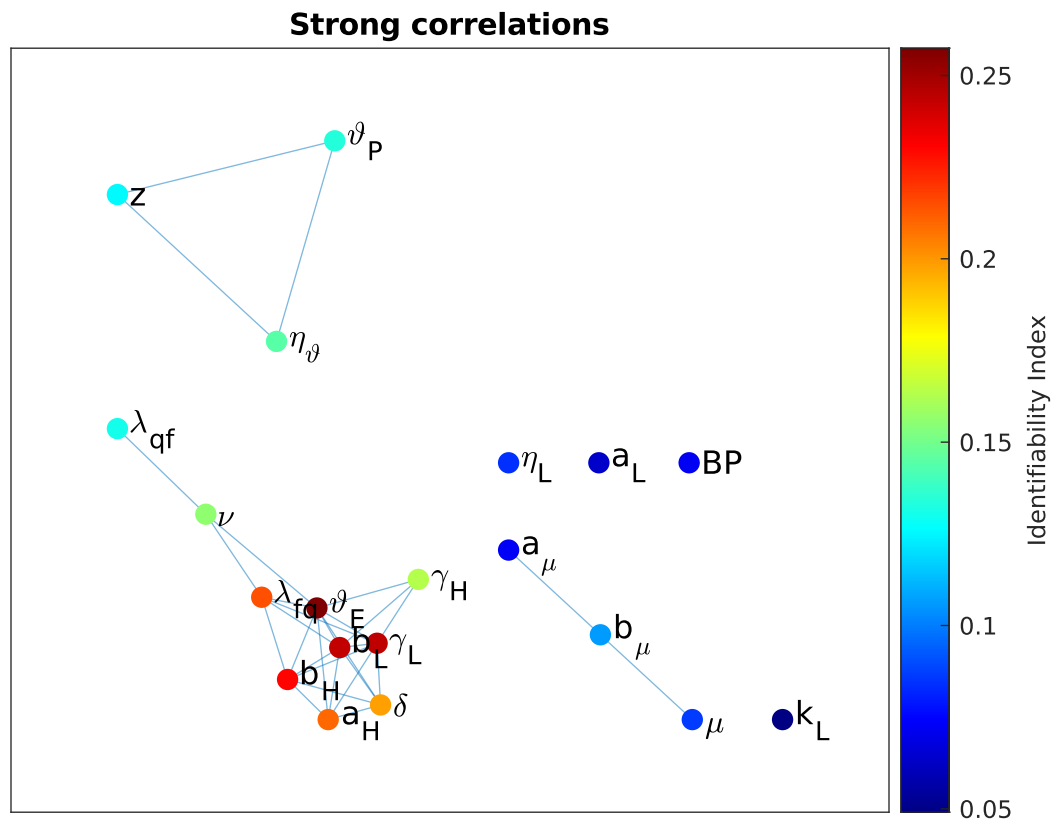
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.366'	'0.4453'	'0.4056'	'0'	'0.2147'
ϑ_E	'0.5614'	'0.6256'	'0.5935'	'0.6702'	'0.2574'
γ_L	'0.6583'	'0.7212'	'0.6898'	'0.9988'	'0.2438'
k_L	'5.355'	'5.6219'	'5.4884'	'4.8252'	'0.0491'
λ_{qf}	'0.446'	'0.5331'	'0.4896'	'0.0166'	'0.1308'
δ	'0.0648'	'0.0718'	'0.0683'	'0.071'	'0.1985'
η_L	'0.1028'	'0.1577'	'0.1303'	'0.3439'	'0.0844'
ϑ_P	'0.0852'	'0.1306'	'0.1079'	'0.3729'	'0.134'
γ_H	'0.2774'	'0.3281'	'0.3027'	'0.0744'	'0.1631'
z	'16.2835'	'18.2623'	'17.2729'	'20.8524'	'0.1263'
η_{ϑ}	'0.3671'	'0.4459'	'0.4065'	'0.9977'	'0.1444'
a_L	'1'	'1.0526'	'1.0112'	'1.0013'	'0.0638'
b_L	'11.0812'	'12.0154'	'11.5483'	'14.5252'	'0.2432'
a_{μ}	'1'	'1.0168'	'1.0079'	'1.0005'	'0.0733'
b_{μ}	'1.7581'	'2.1651'	'1.9616'	'1.449'	'0.1064'
μ	'0.294'	'0.3159'	'0.3049'	'0.2388'	'0.0866'
a_H	'11.6019'	'12.5626'	'12.0822'	'13.6701'	'0.2101'
b_H	'2.7056'	'3.6774'	'3.1915'	'2.7608'	'0.2299'
ν	'122.9884'	'155.5892'	'139.2888'	'140.6474'	'0.1559'
BP	'146.4298'	'146.5702'	'146.5'	'145.5'	'0.0719'

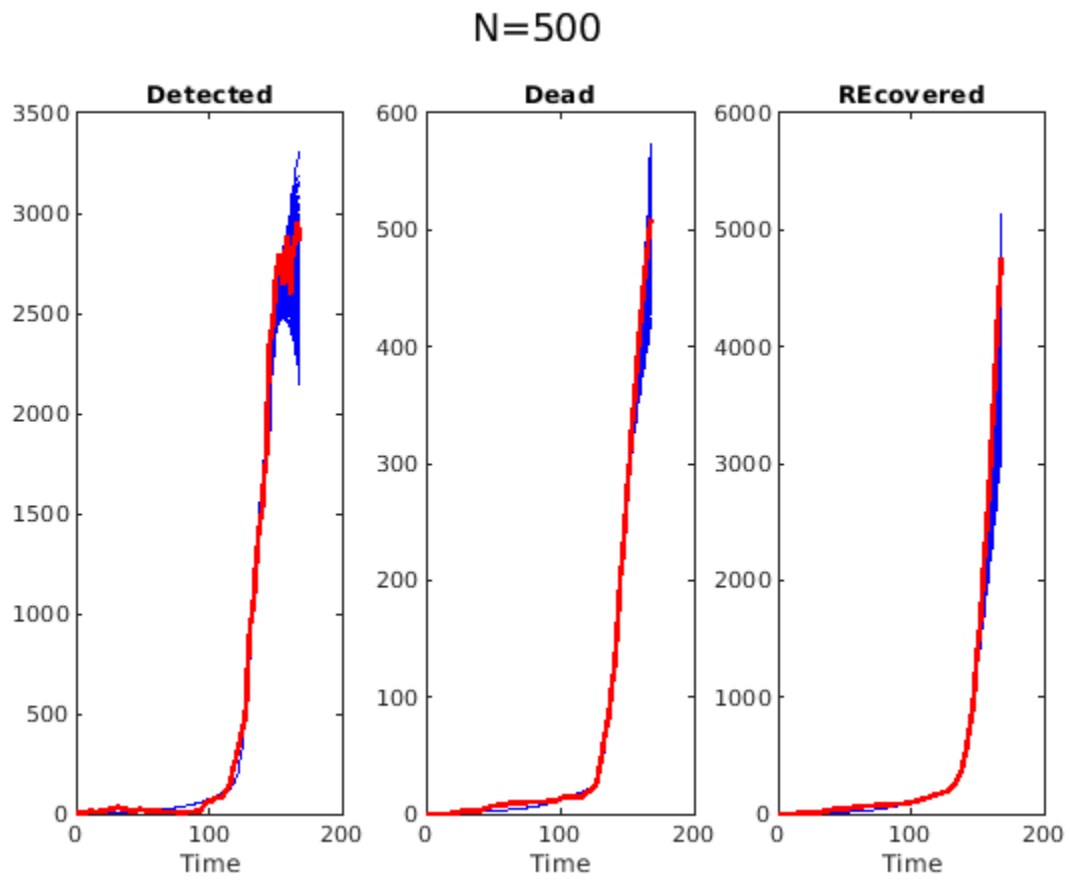
3.3. Identifiability analysis







3.4. Uncertainty analysys



Chapter 4. Extension number4

4.1. Basic information

The extension to be validated consists of the time series from the data169 to the 206. The status of the validation is: COMPLETED.

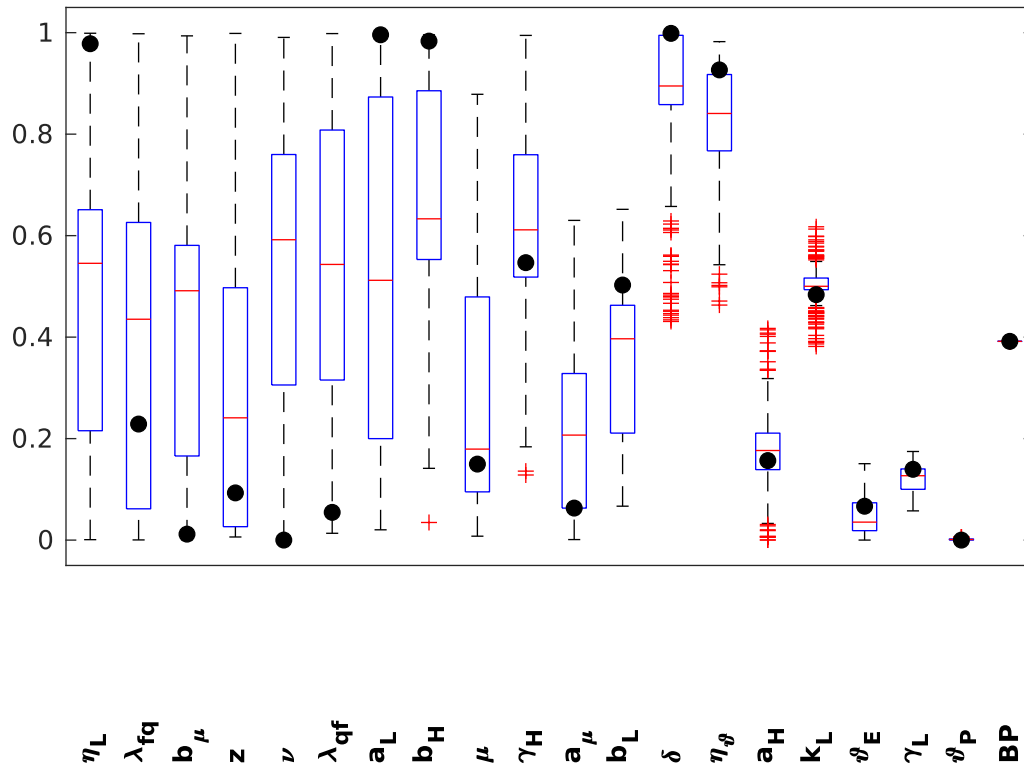
The number of estimations needed to perform the validation was1000.

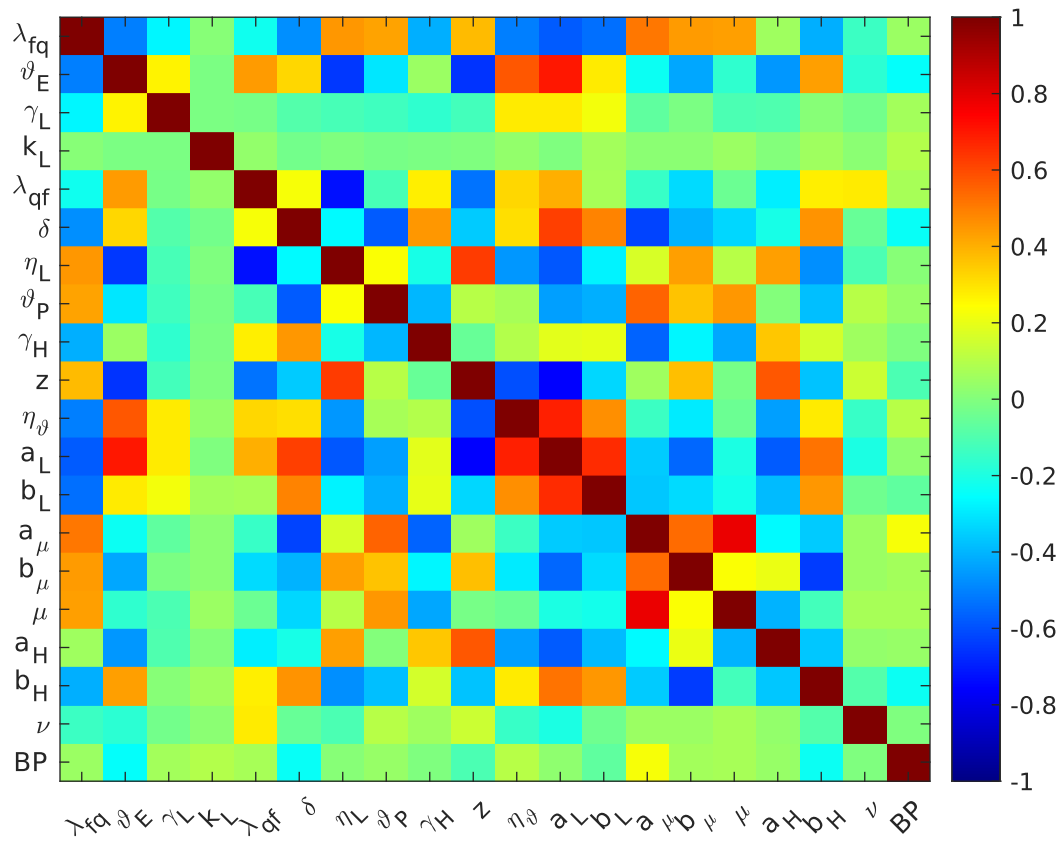
4.2. Estimated parameters with their intervals

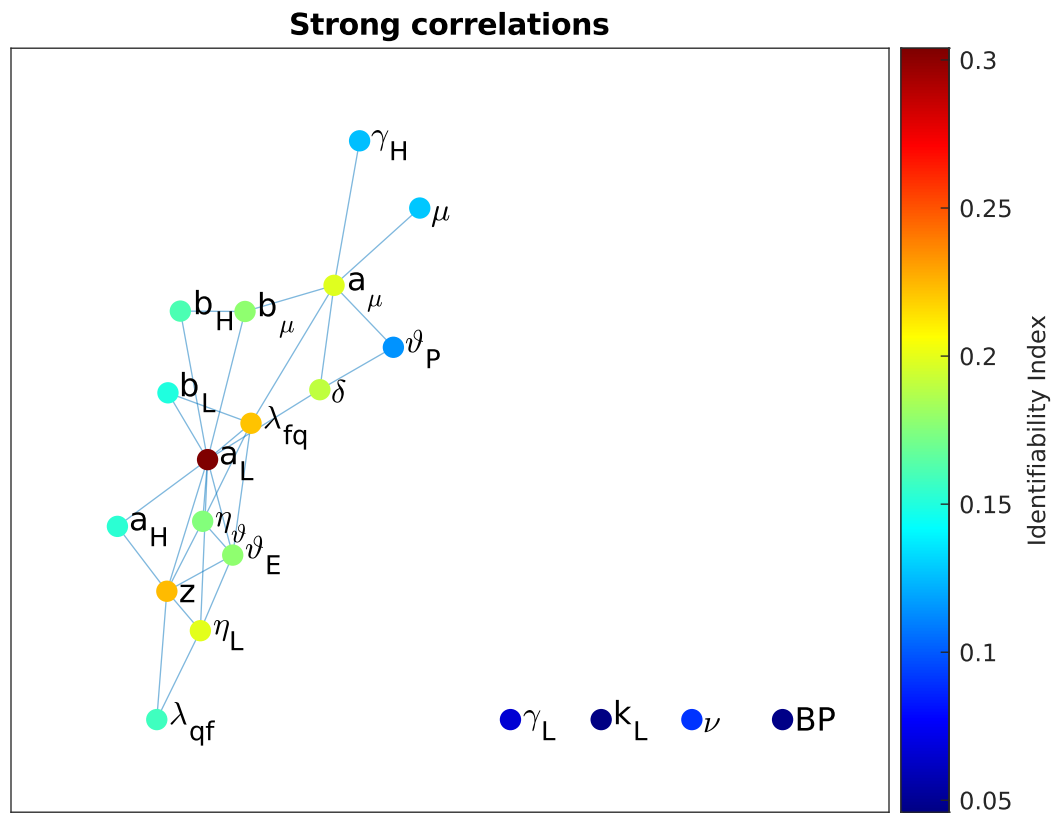
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.3859'	'0.4847'	'0.4353'	'0.2287'	'0.2219'
ϑ_E	'0.0308'	'0.04'	'0.0354'	'0.0667'	'0.1782'
γ_L	'0.1145'	'0.1393'	'0.1269'	'0.1395'	'0.0669'
k_L	'5.3729'	'5.6305'	'5.5017'	'5.3533'	'0.046'
λ_{qf}	'0.4956'	'0.5909'	'0.5433'	'0.0547'	'0.158'
δ	'0.1271'	'0.141'	'0.134'	'0.1498'	'0.1901'
η_L	'0.4992'	'0.5917'	'0.5455'	'0.9782'	'0.2001'
ϑ_P	'0.0006'	'0.0017'	'0.0012'	'0'	'0.1146'
γ_H	'0.5761'	'0.6442'	'0.6101'	'0.5468'	'0.1259'
z	'5.8183'	'8.6397'	'7.229'	'2.791'	'0.2242'
η_{ϑ}	'0.8136'	'0.8677'	'0.8407'	'0.9266'	'0.1755'
a_L	'7.4676'	'8.8676'	'8.1676'	'14.9416'	'0.304'
b_L	'6.1884'	'6.934'	'6.5612'	'8.0371'	'0.15'
a_{μ}	'3.5631'	'4.2308'	'3.8969'	'1.8833'	'0.1987'
b_{μ}	'7.299'	'8.4601'	'7.8796'	'1.1643'	'0.1783'
μ	'0.1438'	'0.2171'	'0.1805'	'0.1498'	'0.1277'
a_H	'2.939'	'4.024'	'3.4815'	'3.194'	'0.1536'
b_H	'9.373'	'10.355'	'9.864'	'14.7669'	'0.1612'
ν	'274.0487'	'317.8673'	'295.958'	'0.0244'	'0.0913'
BP	'169.4563'	'169.5437'	'169.5'	'169.4999'	'0.0478'

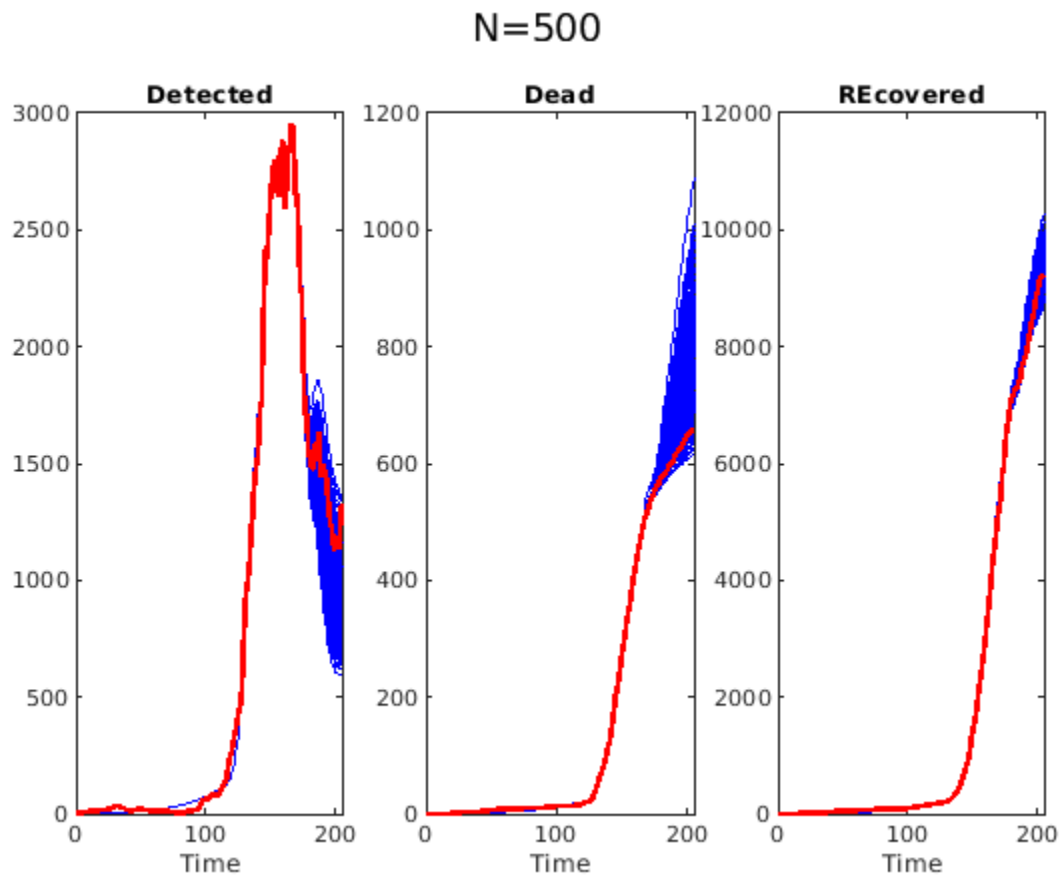
4.3. Identifiability analysis







4.4. Uncertainty analysis



Chapter 5. Extension number5

5.1. Basic information

The extension to be validated consists of the time series from the data206 to the 251. The status of the validation is: COMPLETED.

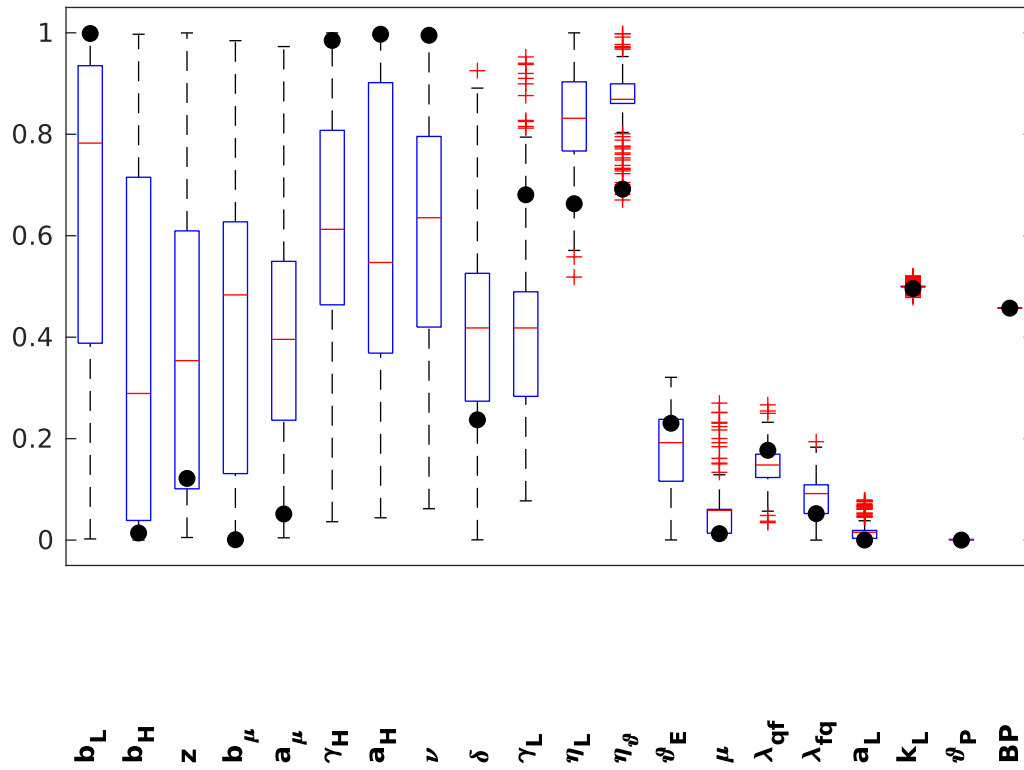
The number of estimations needed to perform the validation was1000.

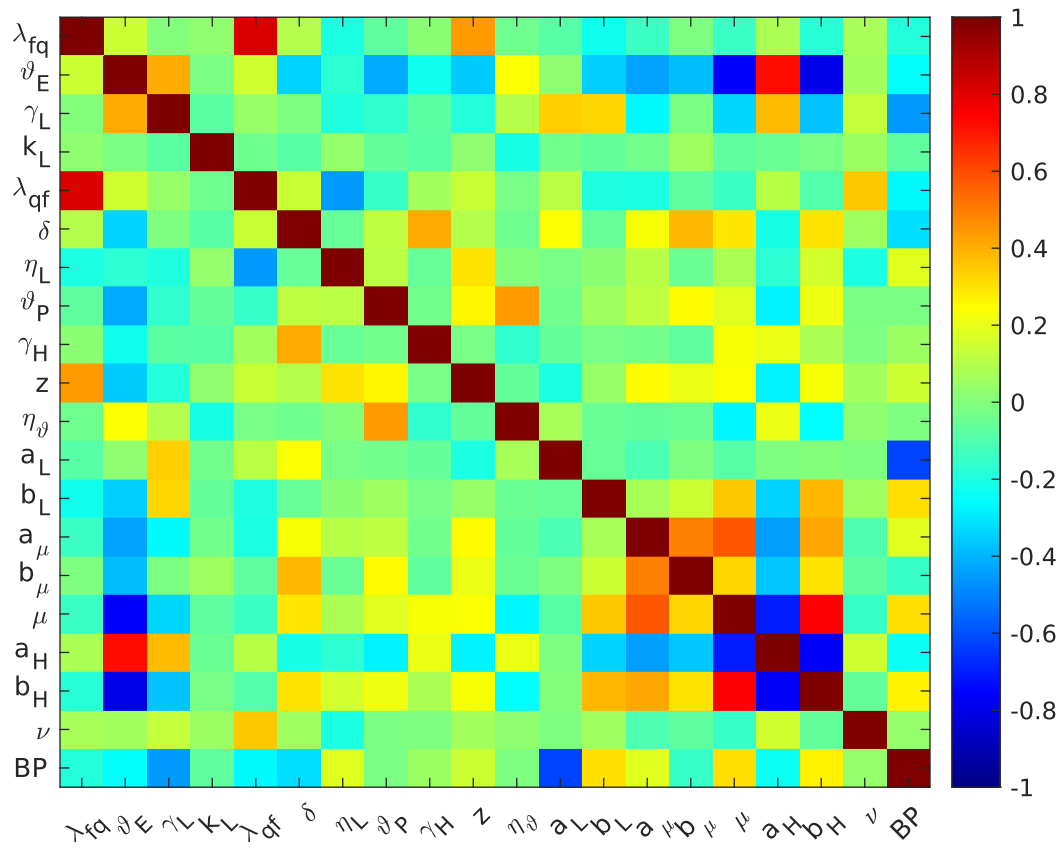
5.2. Estimated parameters with their intervals

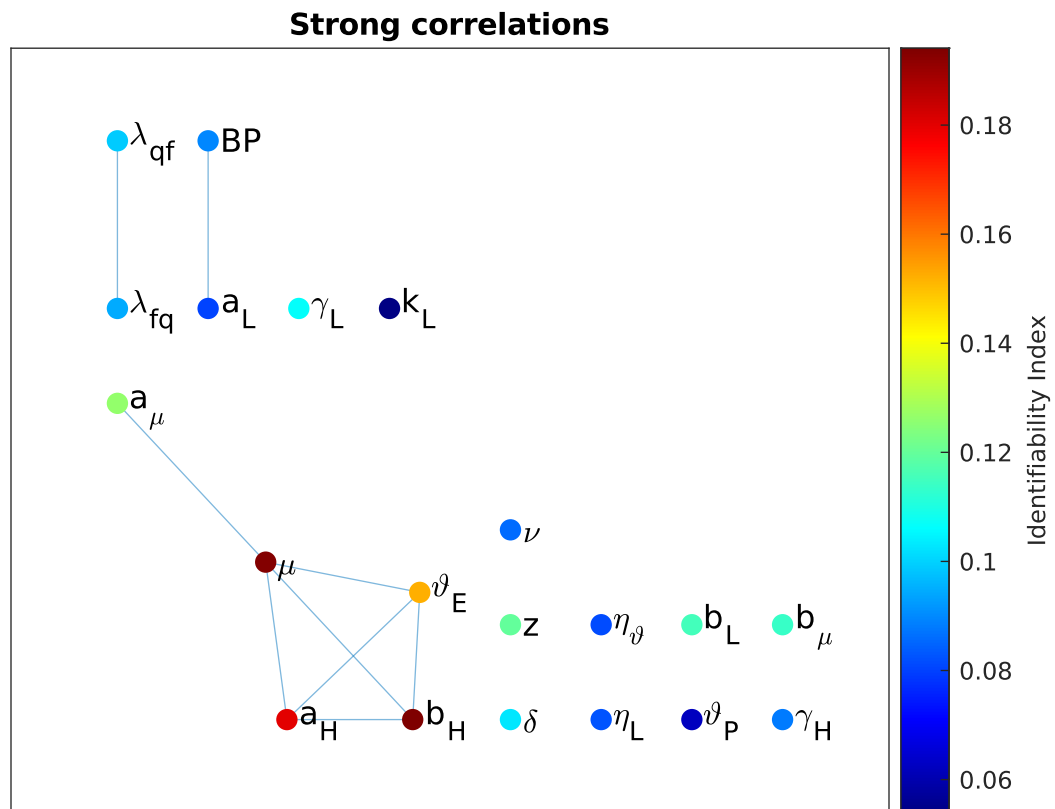
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0714'	'0.1121'	'0.0917'	'0.0521'	'0.0949'
ϑ_E	'0.1798'	'0.2043'	'0.1921'	'0.2303'	'0.1525'
γ_L	'0.3841'	'0.4524'	'0.4183'	'0.6807'	'0.107'
k_L	'5.3573'	'5.6427'	'5.5'	'5.4629'	'0.054'
λ_{qf}	'0.1306'	'0.1657'	'0.1481'	'0.177'	'0.0992'
δ	'0.0576'	'0.068'	'0.0628'	'0.0356'	'0.103'
η_L	'0.8057'	'0.8575'	'0.8316'	'0.6631'	'0.0828'
ϑ_P	'0.0004'	'0.0009'	'0.0006'	'0'	'0.0624'
γ_H	'0.5731'	'0.6522'	'0.6126'	'0.985'	'0.0882'
z	'9.0963'	'12.1309'	'10.6136'	'3.6487'	'0.1198'
η_{ϑ}	'0.841'	'0.8967'	'0.8689'	'0.6917'	'0.0815'
a_L	'1'	'1.4753'	'1.2168'	'1.0018'	'0.0806'
b_L	'11.2279'	'12.6842'	'11.956'	'14.9815'	'0.1155'
a_{μ}	'6.0381'	'7.041'	'6.5395'	'1.7211'	'0.1263'
b_{μ}	'7.1109'	'8.4228'	'7.7668'	'1.0106'	'0.1138'
μ	'0.0167'	'0.1044'	'0.0606'	'0.0127'	'0.1933'
a_H	'8.0105'	'9.3123'	'8.6614'	'14.9609'	'0.18'
b_H	'4.1945'	'5.8988'	'5.0467'	'1.196'	'0.1941'
ν	'297.5808'	'337.8769'	'317.7289'	'497.5706'	'0.086'
BP	'206.3306'	'206.6665'	'206.4985'	'206.4983'	'0.0897'

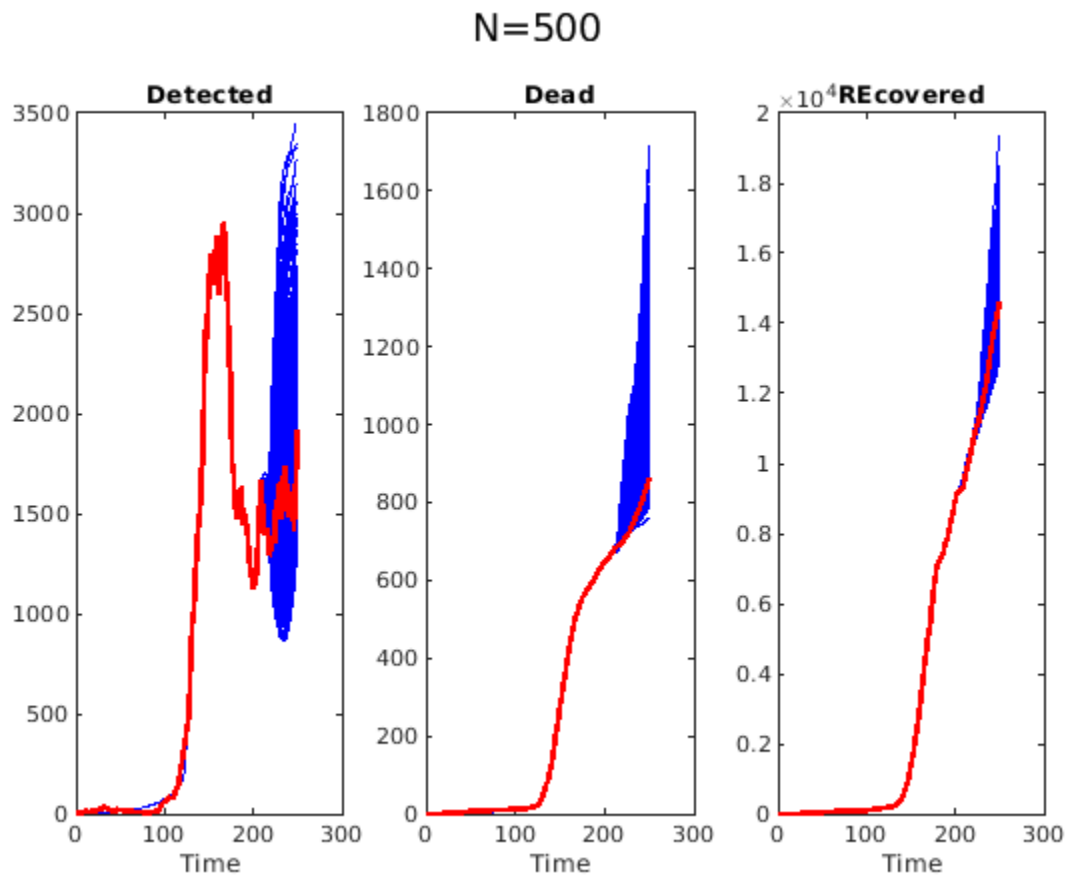
5.3. Identifiability analysis







5.4. Uncertainty analysis



Chapter 6. Extension number6

6.1. Basic information

The extension to be validated consists of the time series from the data251 to the 286. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

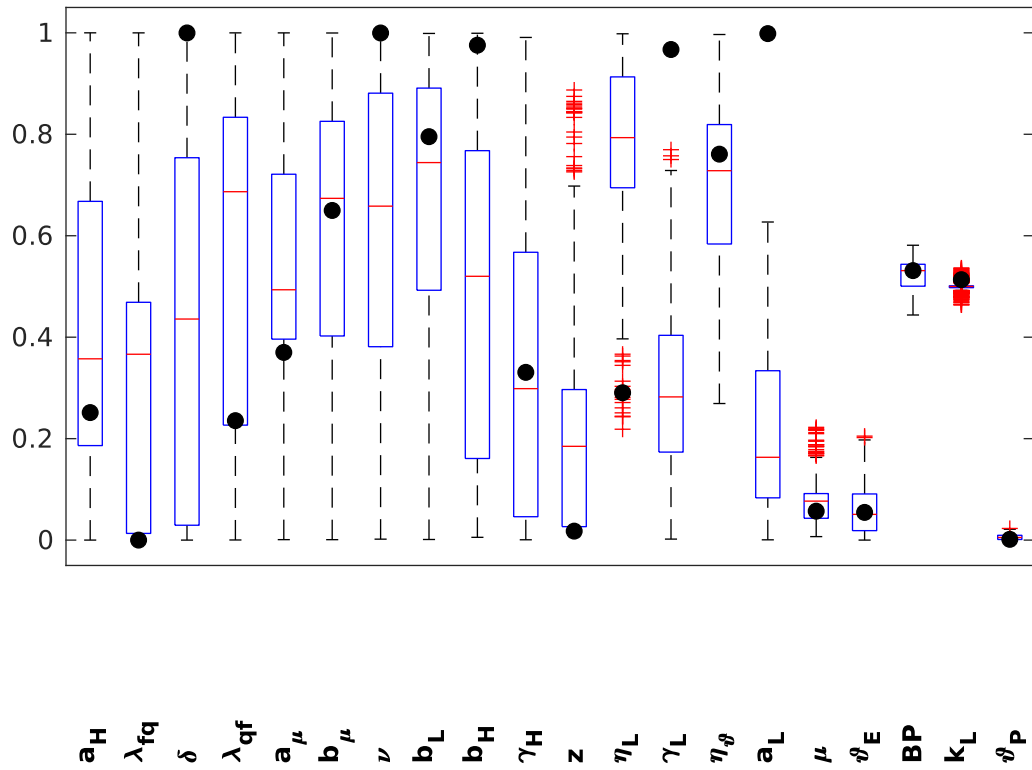
6.2. Estimated parameters with their intervals

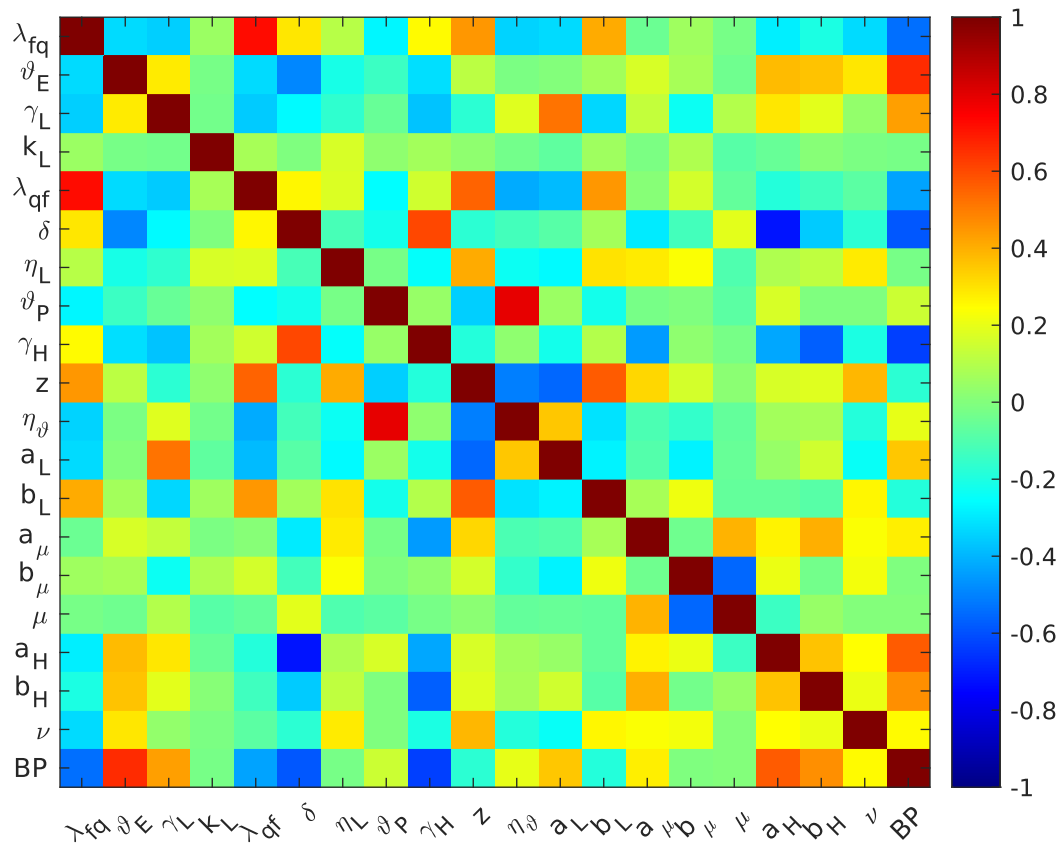
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

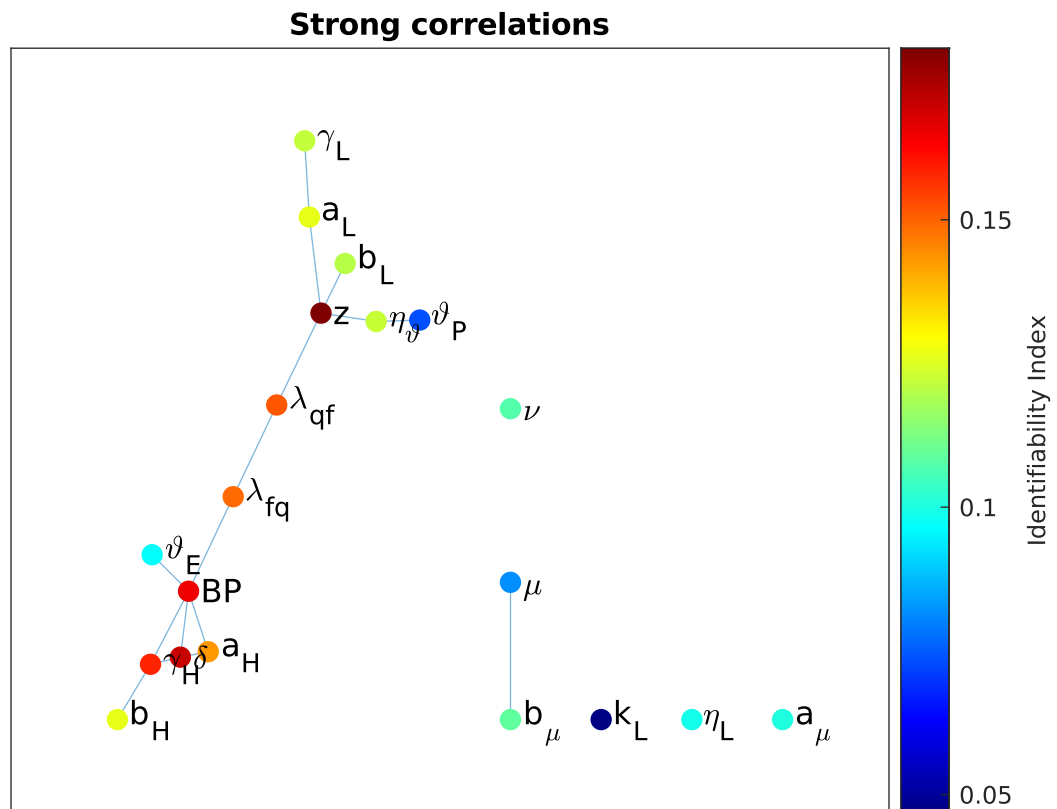
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0'	'0.3664'	'0'	'0.1489'
\vartheta_E	'0.041'	'0.0929'	'0.0507'	'0.0546'	'0.0973'
\gamma_L	'0.2138'	'1'	'0.2823'	'0.9671'	'0.1219'
k_L	'1.4005'	'9.656'	'5.5'	'5.6203'	'0.0469'
\lambda_{qf}	'0.2004'	'0.8893'	'0.6868'	'0.2355'	'0.1514'
\delta	'0.093'	'0.15'	'0.0654'	'0.15'	'0.1701'
\eta_L	'0.2079'	'0.8596'	'0.7934'	'0.2904'	'0.0989'
\vartheta_P	'0.0001'	'0.0026'	'0.0052'	'0.0015'	'0.0736'
\gamma_H	'0.162'	'0.8474'	'0.2986'	'0.3307'	'0.1581'
z	'0.3463'	'0.5335'	'5.5457'	'0.5307'	'0.1798'
\eta_{\vartheta}	'0.7606'	'1'	'0.7282'	'0.7608'	'0.1227'
a_L	'9.4459'	'15'	'3.2855'	'14.9783'	'0.1265'
b_L	'6.3254'	'13.9606'	'11.4189'	'12.1342'	'0.1204'
a_{\mu}	'2.8475'	'14.0381'	'7.9087'	'6.1802'	'0.1006'
b_{\mu}	'2.1527'	'15'	'10.4318'	'10.0976'	'0.1088'
\mu	'0.0024'	'0.0618'	'0.0768'	'0.0571'	'0.0818'
a_H	'1.4398'	'9.1419'	'6.0031'	'4.5193'	'0.1431'
b_H	'7.2217'	'15'	'8.2805'	'14.659'	'0.1264'
\nu	'324.1632'	'500'	'329.1636'	'499.8473'	'0.1075'
BP	'247.6315'	'258.1426'	'248.4972'	'248.5'	'0.1651'

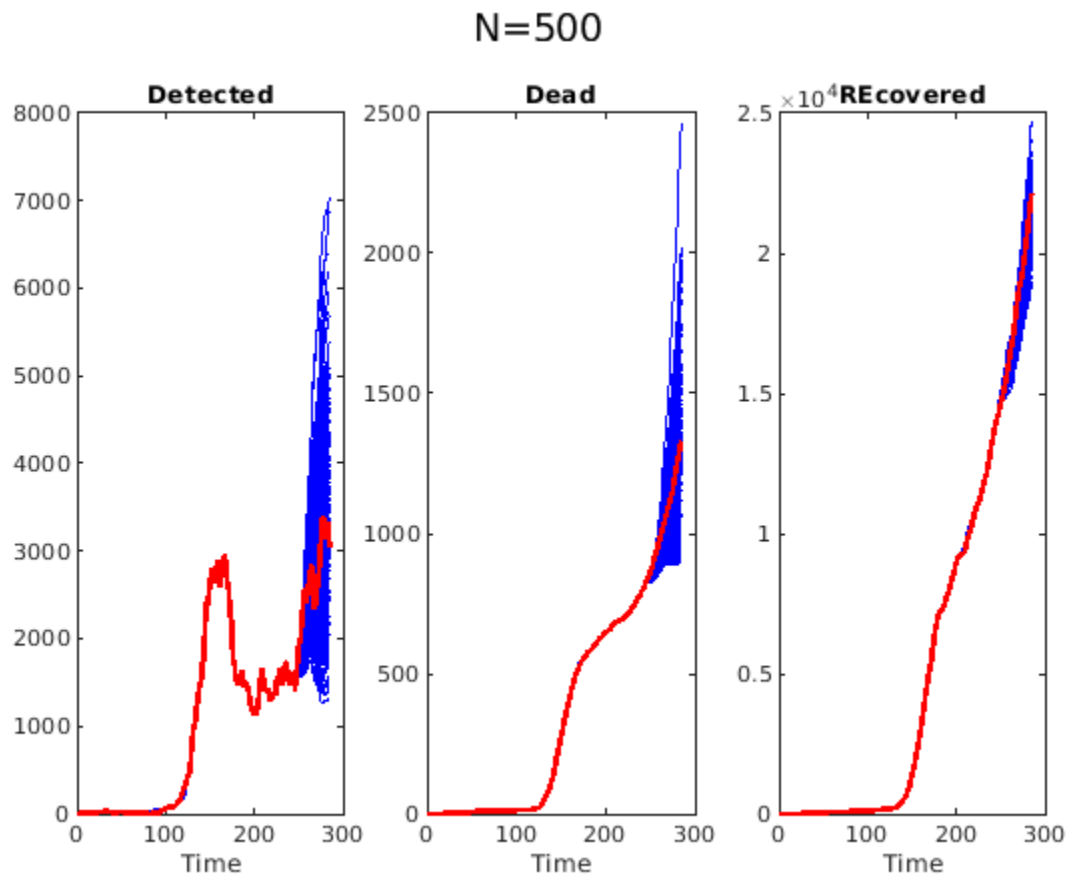
6.3. Identifiability analysis







6.4. Uncertainty analysys



Chapter 7. Extension number7

7.1. Basic information

The extension to be validated consists of the time series from the data286 to the 324. The status of the validation is: COMPLETED.

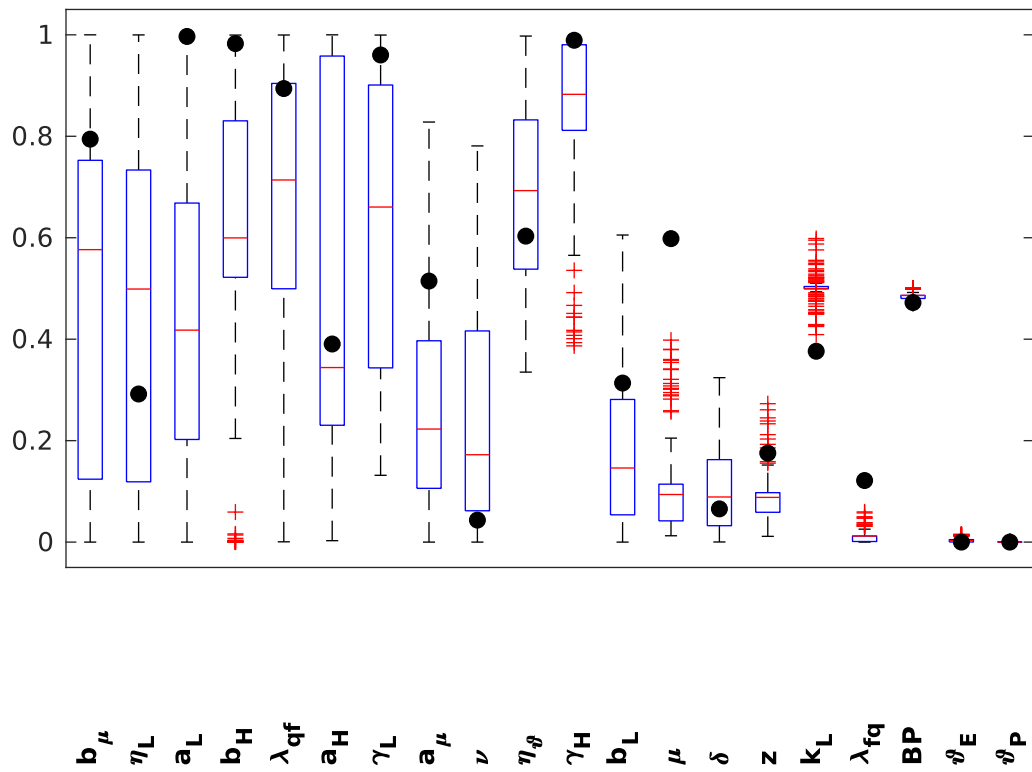
The number of estimations needed to perform the validation was1000.

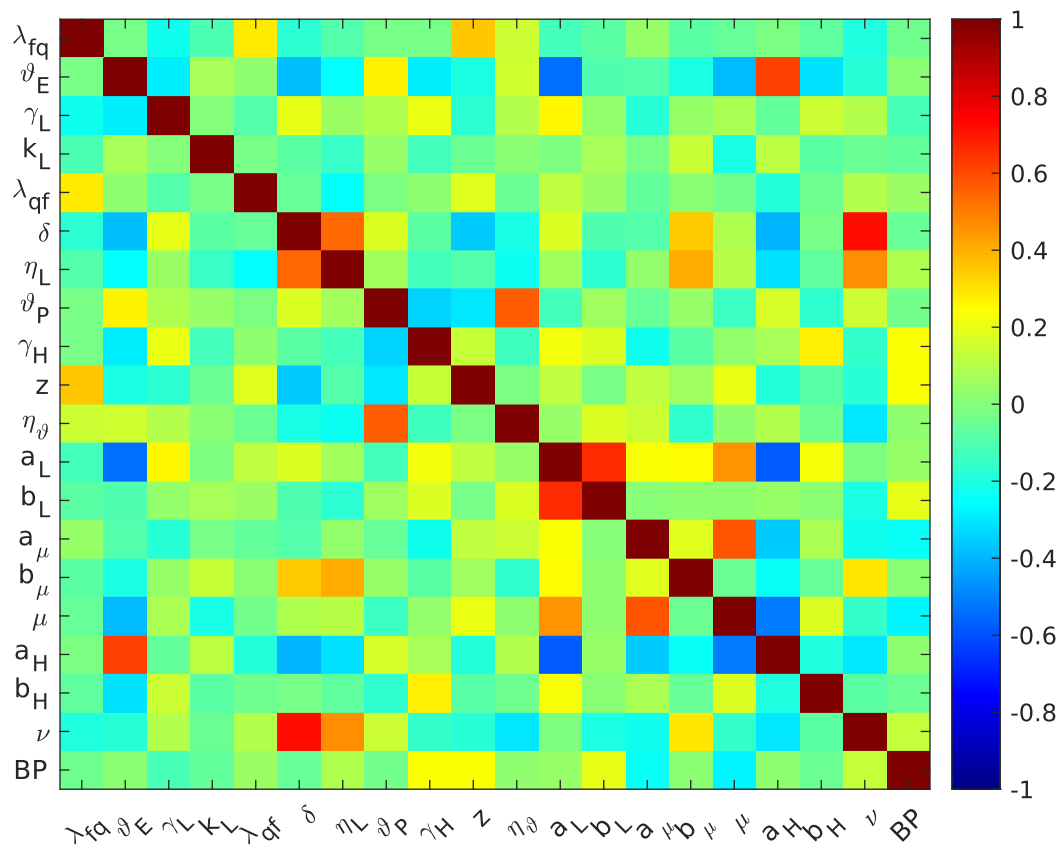
7.2. Estimated parameters with their intervals

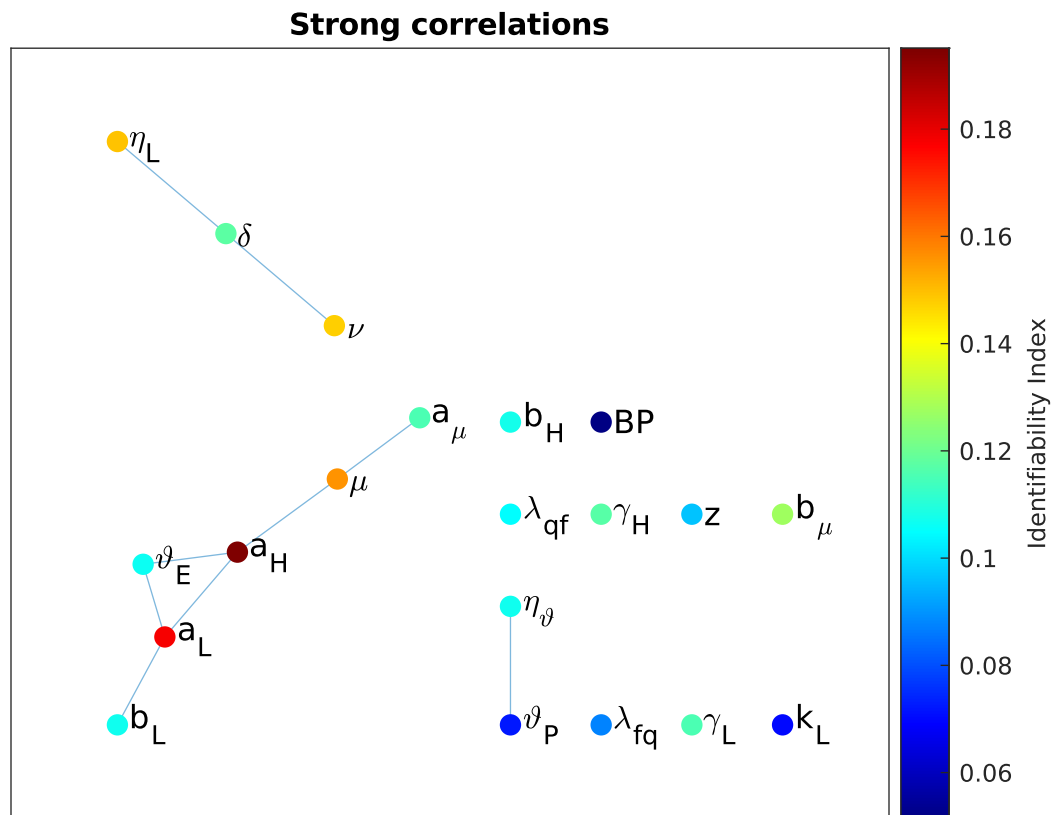
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0729'	'0.012'	'0.1214'	'0.0878'
ϑ_E	'0.0009'	'0.0047'	'0.0028'	'0'	'0.1067'
γ_L	'0.6003'	'0.7208'	'0.6605'	'0.9603'	'0.1155'
k_L	'5.2446'	'5.755'	'5.4998'	'4.3859'	'0.0706'
λ_{qf}	'0.6539'	'0.7739'	'0.7139'	'0.8941'	'0.1053'
δ	'0.0111'	'0.0156'	'0.0133'	'0.0098'	'0.1178'
η_L	'0.4312'	'0.5665'	'0.4989'	'0.292'	'0.1493'
ϑ_P	'0'	'0.0003'	'0.0001'	'0'	'0.0726'
γ_H	'0.8269'	'0.9385'	'0.8827'	'0.9893'	'0.1174'
z	'1.6368'	'3.6514'	'2.6441'	'5.2619'	'0.0967'
η_{ϑ}	'0.6558'	'0.73'	'0.6929'	'0.6032'	'0.1073'
a_L	'5.9856'	'7.7147'	'6.8502'	'14.9549'	'0.1778'
b_L	'2.4588'	'3.6316'	'3.0452'	'5.3895'	'0.1072'
a_{μ}	'3.542'	'4.6978'	'4.1199'	'8.2046'	'0.1157'
b_{μ}	'8.1058'	'10.0377'	'9.0717'	'12.121'	'0.1274'
μ	'0.0324'	'0.1553'	'0.0938'	'0.5982'	'0.1563'
a_H	'4.7382'	'6.8959'	'5.8171'	'6.467'	'0.1951'
b_H	'8.6079'	'10.1831'	'9.3955'	'14.7583'	'0.1079'
ν	'55.426'	'116.7975'	'86.1117'	'21.6961'	'0.148'
BP	'286.3076'	'286.6924'	'286.5'	'285.4713'	'0.0515'

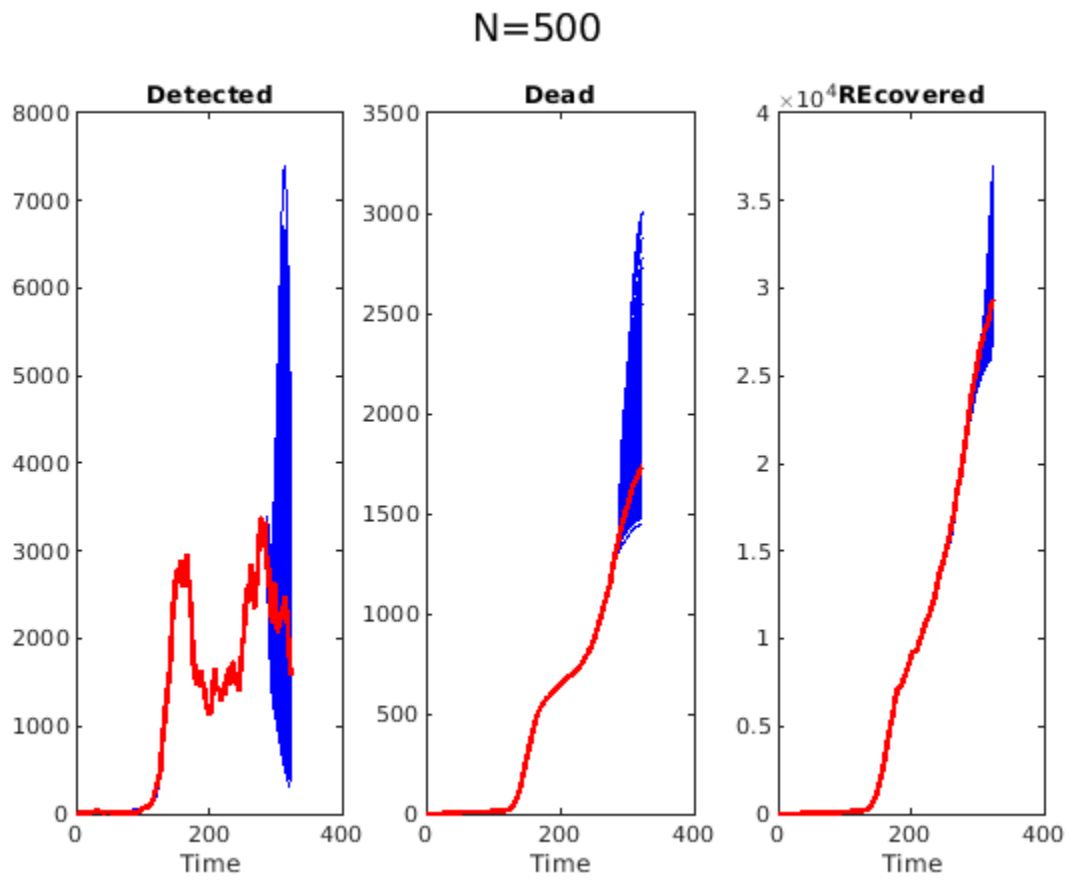
7.3. Identifiability analysis







7.4. Uncertainty analysis



Chapter 8. Extension number8

8.1. Basic information

The extension to be validated consists of the time series from the data324 to the 362. The status of the validation is: COMPLETED.

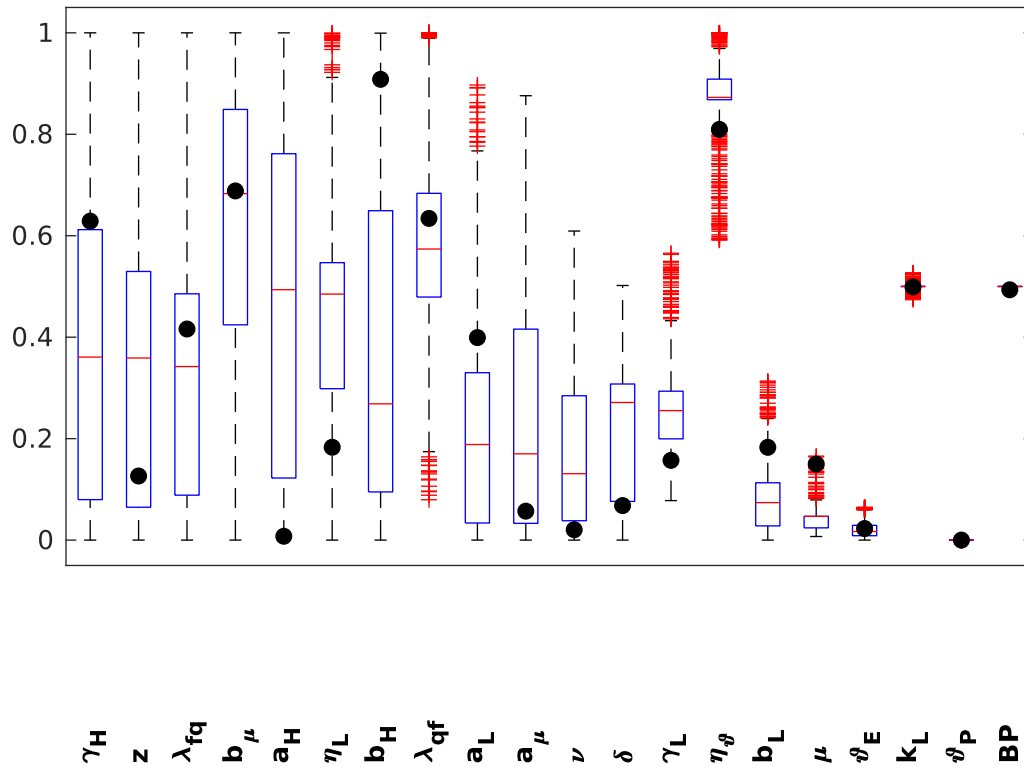
The number of estimations needed to perform the validation was1000.

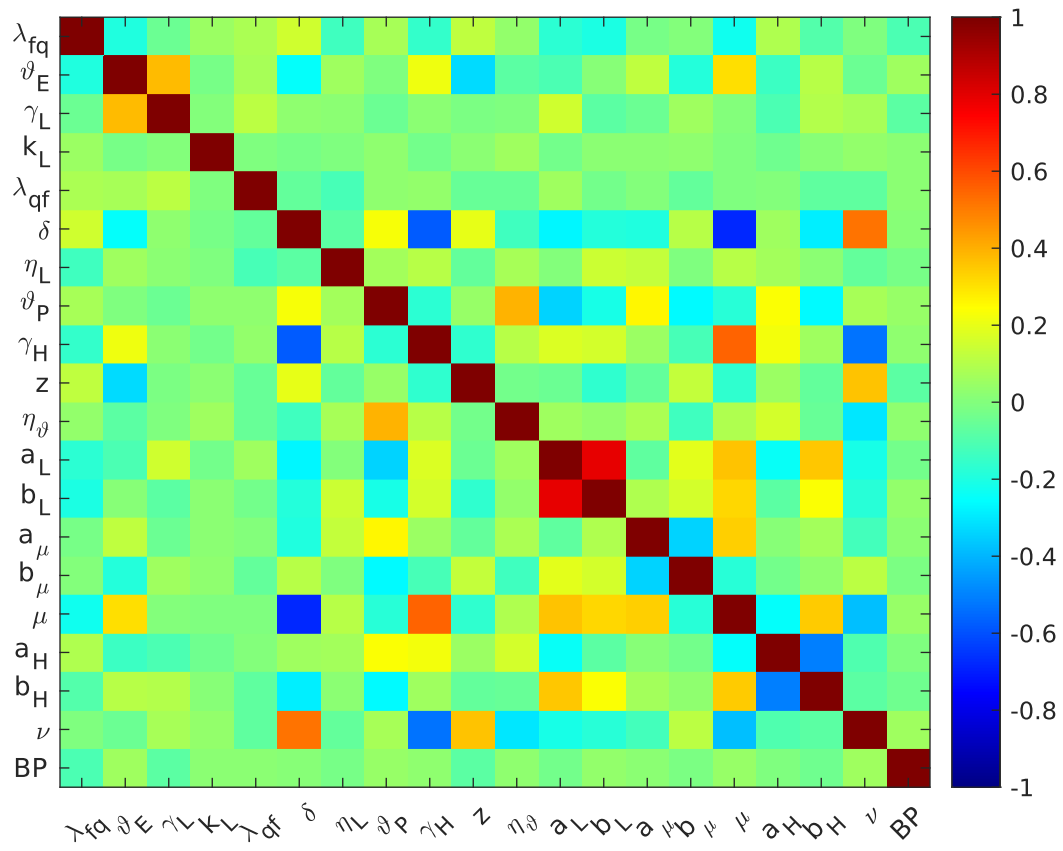
8.2. Estimated parameters with their intervals

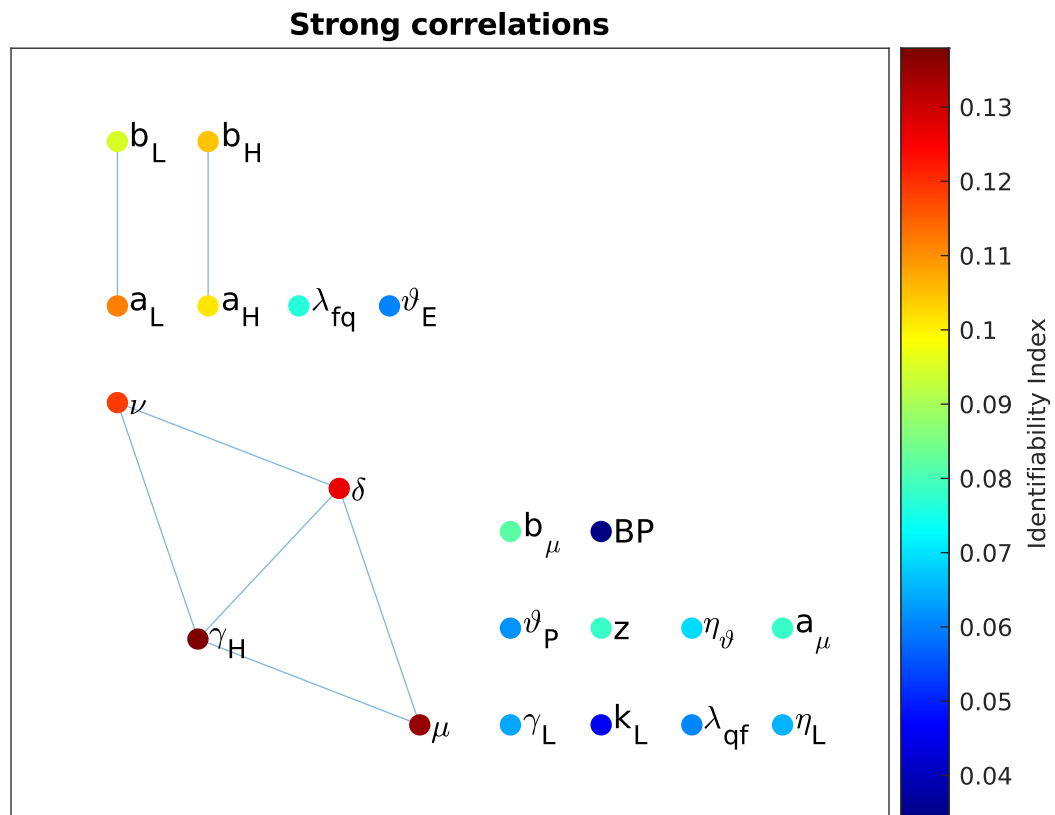
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.3151'	'0.3692'	'0.3422'	'0.4161'	'0.0764'
ϑ_E	'0.0148'	'0.0192'	'0.017'	'0.0228'	'0.0605'
γ_L	'0.2332'	'0.2773'	'0.2553'	'0.1572'	'0.0639'
k_L	'5.36'	'5.64'	'5.5'	'5.4927'	'0.0458'
λ_{qf}	'0.5491'	'0.5984'	'0.5738'	'0.6342'	'0.061'
δ	'0.0386'	'0.0428'	'0.0407'	'0.0102'	'0.1266'
η_L	'0.4605'	'0.5094'	'0.4849'	'0.183'	'0.0653'
ϑ_P	'0'	'0.0001'	'0'	'0'	'0.0618'
γ_H	'0.3286'	'0.3929'	'0.3607'	'0.6288'	'0.1379'
z	'9.9468'	'11.5914'	'10.7691'	'3.7906'	'0.0787'
η_{ϑ}	'0.8517'	'0.8933'	'0.8725'	'0.8097'	'0.0695'
a_L	'3.2368'	'4.0411'	'3.639'	'6.5895'	'0.112'
b_L	'1.7797'	'2.2903'	'2.035'	'3.5607'	'0.0946'
a_{μ}	'2.9912'	'3.7808'	'3.386'	'1.7987'	'0.0785'
b_{μ}	'10.1361'	'10.9889'	'10.5625'	'10.6366'	'0.0821'
μ	'0.0182'	'0.0755'	'0.0469'	'0.1499'	'0.1351'
a_H	'7.4347'	'8.3865'	'7.9106'	'1.1062'	'0.1012'
b_H	'4.2963'	'5.2248'	'4.7605'	'13.7166'	'0.1048'
ν	'51.7572'	'79.4204'	'65.5888'	'10.2167'	'0.1187'
BP	'323.9882'	'324.0118'	'324'	'323.5'	'0.0343'

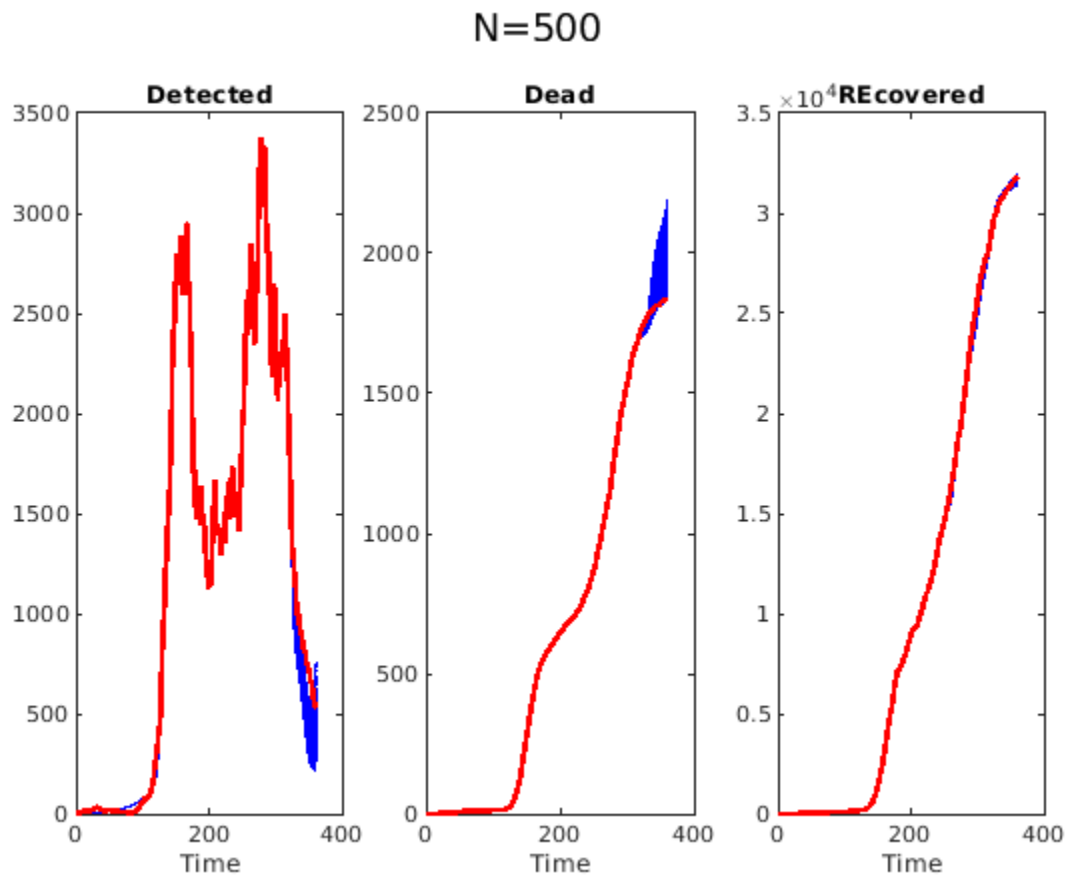
8.3. Identifiability analysis







8.4. Uncertainty analysis



Chapter 9. Extension number9

9.1. Basic information

The extension to be validated consists of the time series from the data362 to the 404. The status of the validation is: COMPLETED.

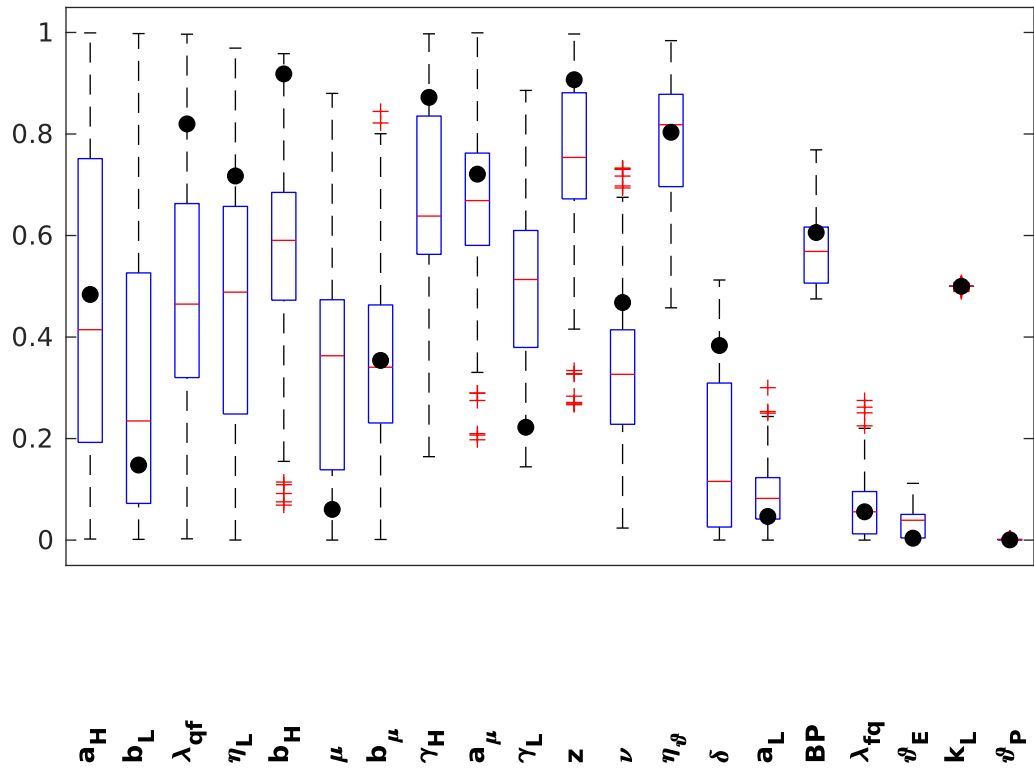
The number of estimations needed to perform the validation was1000.

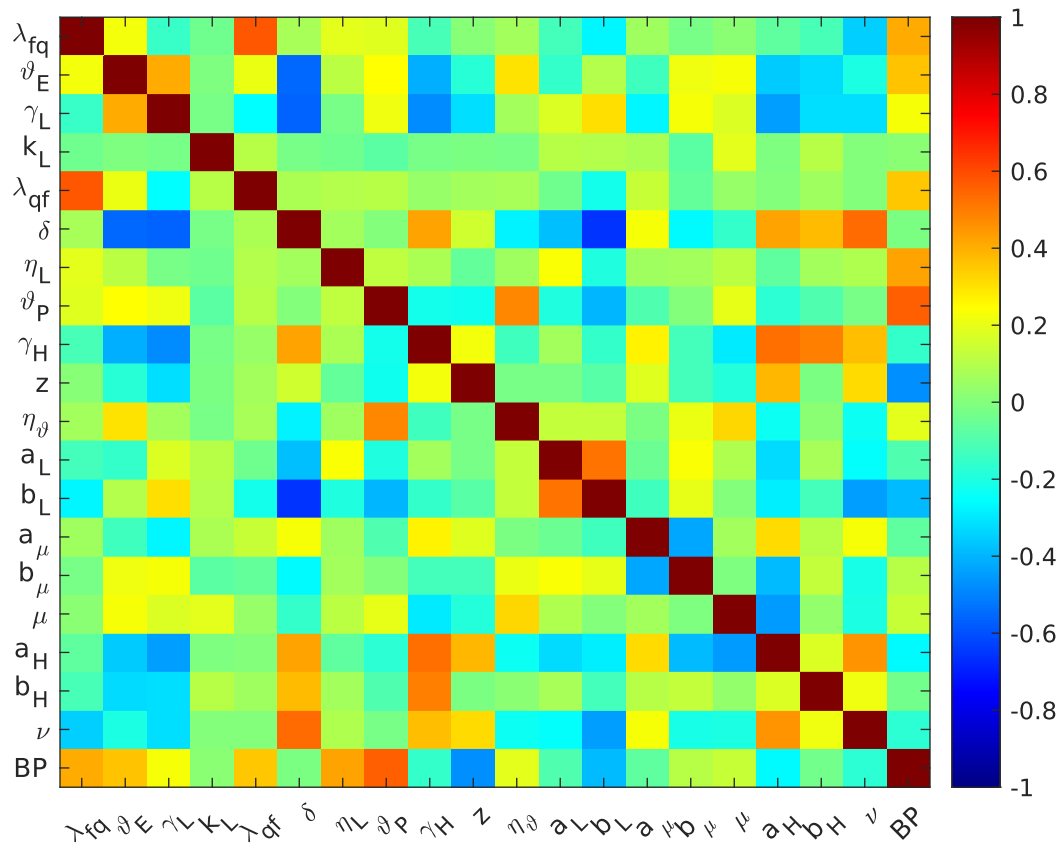
9.2. Estimated parameters with their intervals

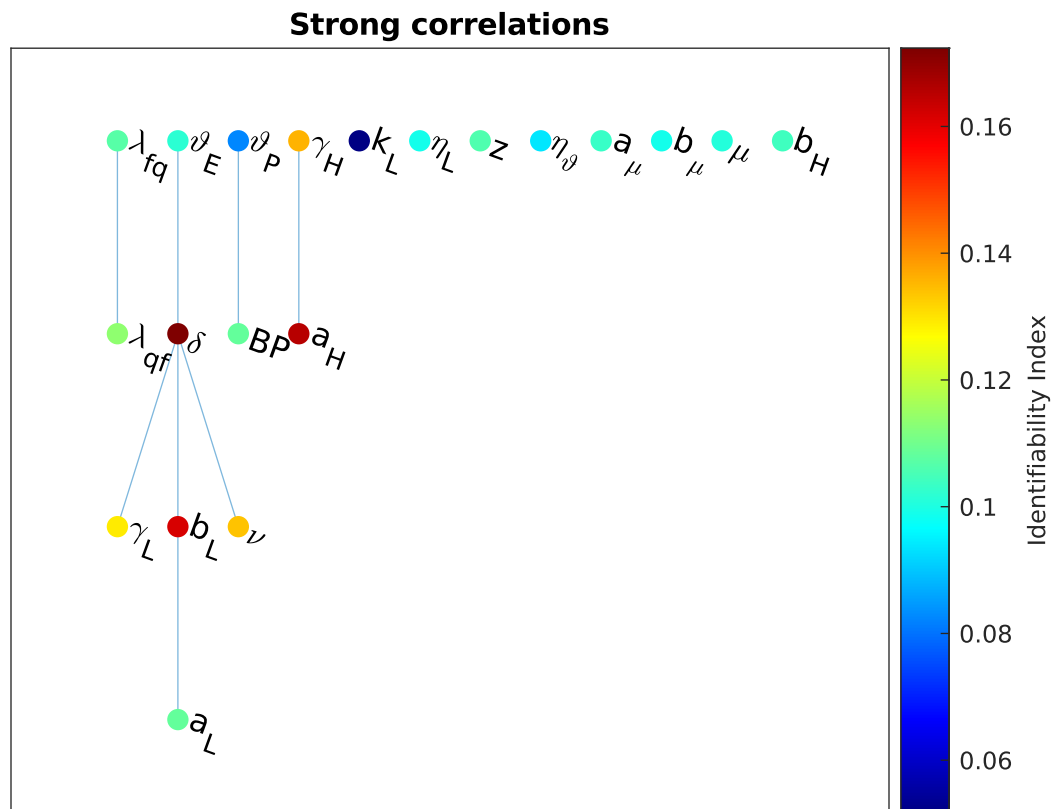
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0243'	'0.0872'	'0.0557'	'0.0557'	'0.107'
ϑ_E	'0.0338'	'0.0444'	'0.0391'	'0.0037'	'0.1019'
γ_L	'0.4836'	'0.5431'	'0.5134'	'0.2223'	'0.1292'
k_L	'5.374'	'5.6261'	'5.5'	'5.4999'	'0.0518'
λ_{qf}	'0.4199'	'0.5098'	'0.4649'	'0.8199'	'0.1138'
δ	'0.0126'	'0.0221'	'0.0173'	'0.0575'	'0.1723'
η_L	'0.4411'	'0.5358'	'0.4884'	'0.7173'	'0.0993'
ϑ_P	'0.0005'	'0.0012'	'0.0009'	'0.0004'	'0.0828'
γ_H	'0.5975'	'0.6791'	'0.6383'	'0.8722'	'0.1358'
z	'21.3251'	'23.9058'	'22.6155'	'27.2068'	'0.1061'
η_{ϑ}	'0.7866'	'0.85'	'0.8183'	'0.8034'	'0.0938'
a_L	'1.7187'	'2.5816'	'2.1501'	'1.6518'	'0.1087'
b_L	'3.5397'	'5.0325'	'4.2861'	'3.0703'	'0.1616'
a_{μ}	'9.772'	'10.955'	'10.3635'	'11.0926'	'0.1036'
b_{μ}	'5.2711'	'6.2642'	'5.7676'	'5.9555'	'0.0989'
μ	'0.3234'	'0.4029'	'0.3631'	'0.0605'	'0.1012'
a_H	'5.9445'	'7.6613'	'6.8029'	'7.7744'	'0.1653'
b_H	'8.656'	'9.8764'	'9.2662'	'13.857'	'0.1043'
ν	'143.725'	'182.7897'	'163.2573'	'234.0009'	'0.1339'
BP	'368.2687'	'370.718'	'369.4934'	'372.4754'	'0.1083'

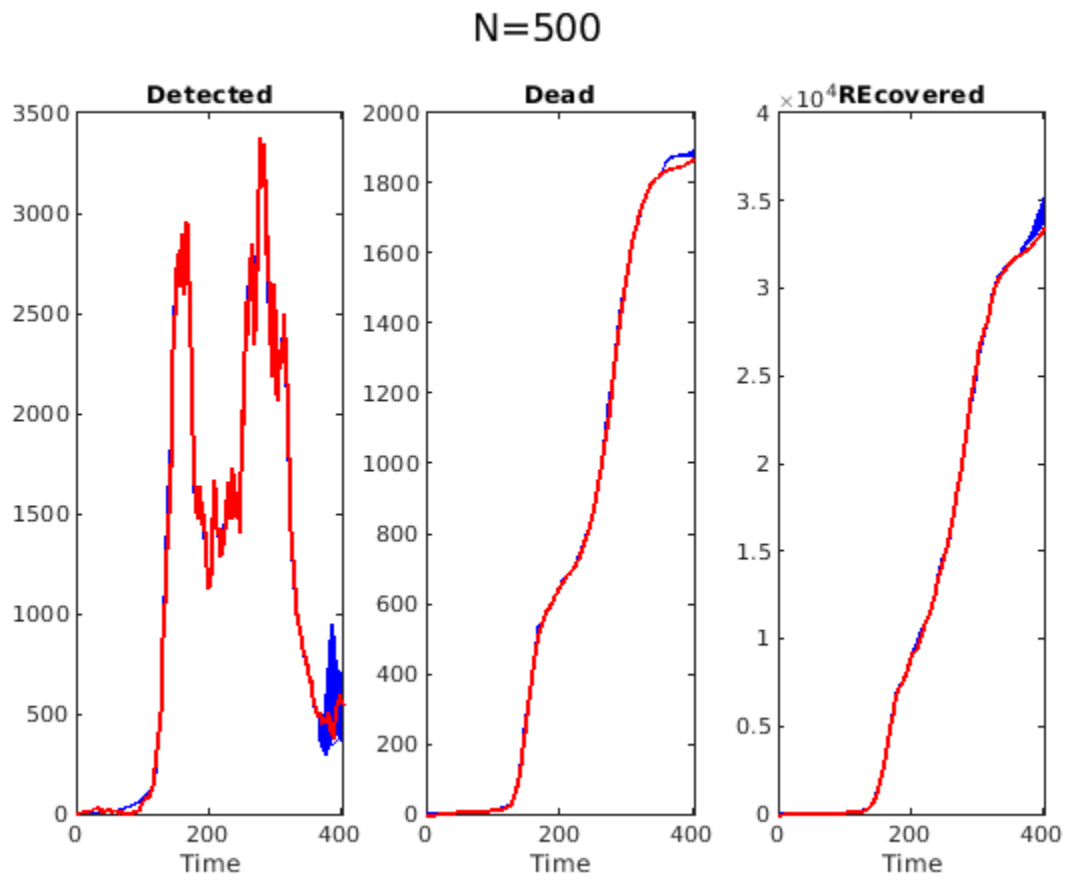
9.3. Identifiability analysis







9.4. Uncertainty analysis



Chapter 10. Extension number10

10.1. Basic information

The extension to be validated consists of the time series from the data404 to the 456. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

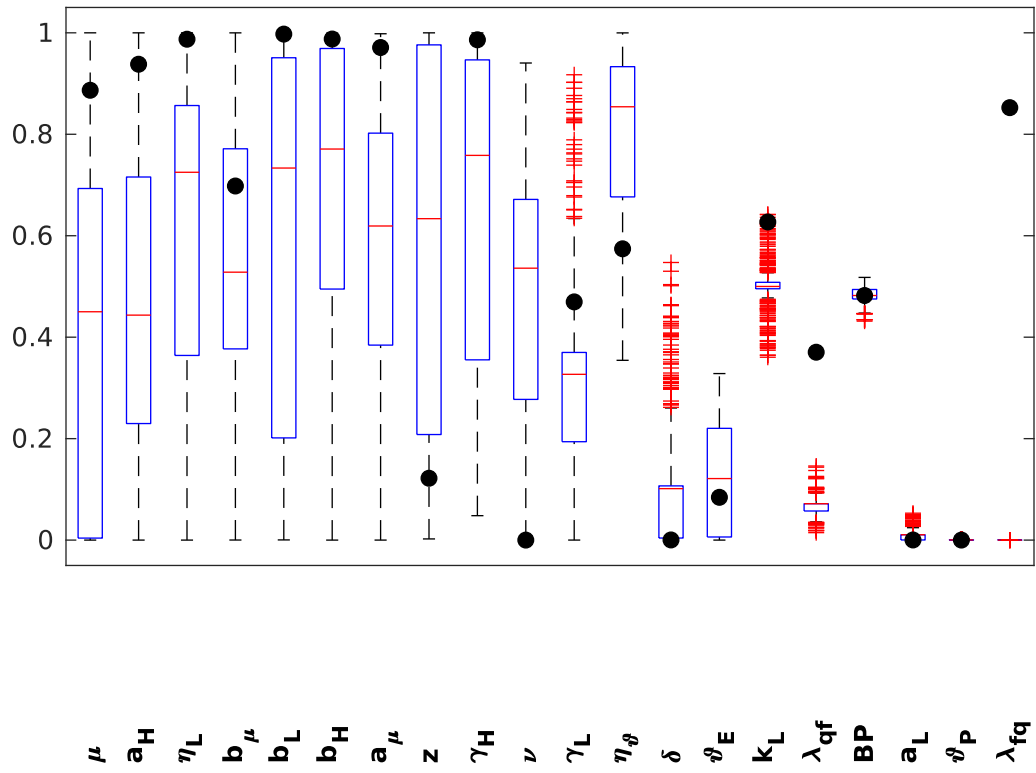
10.2. Estimated parameters with their intervals

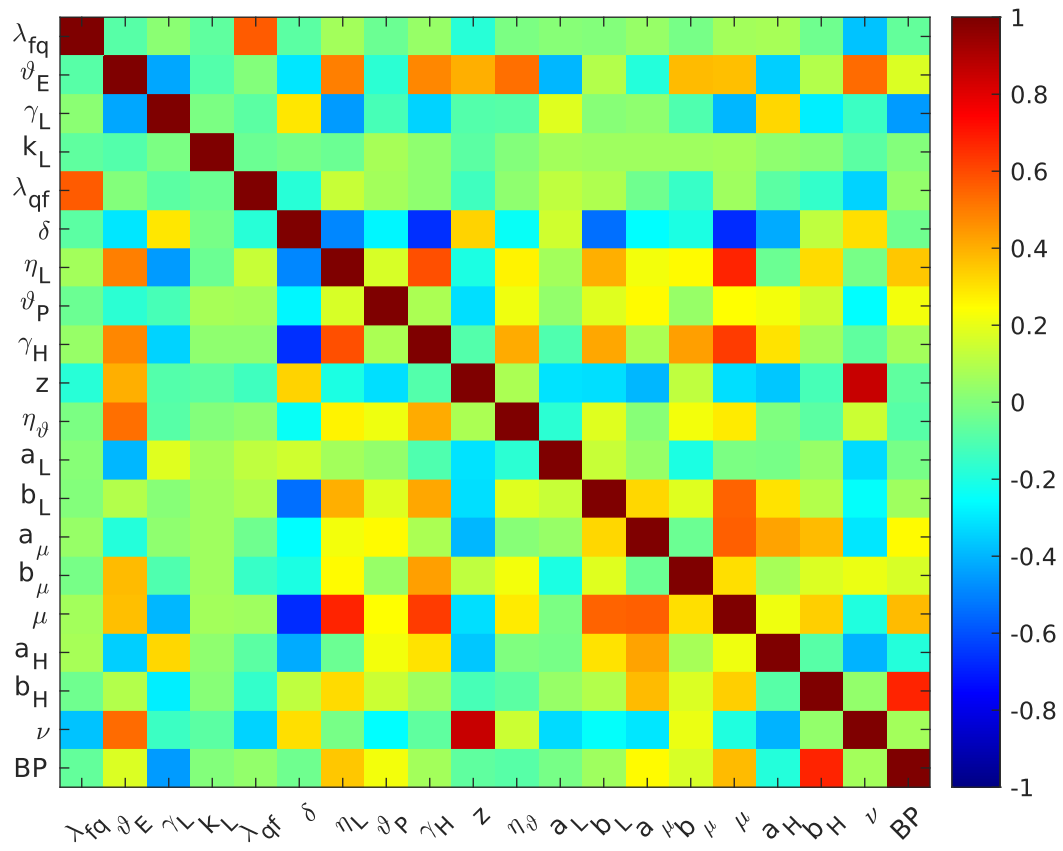
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

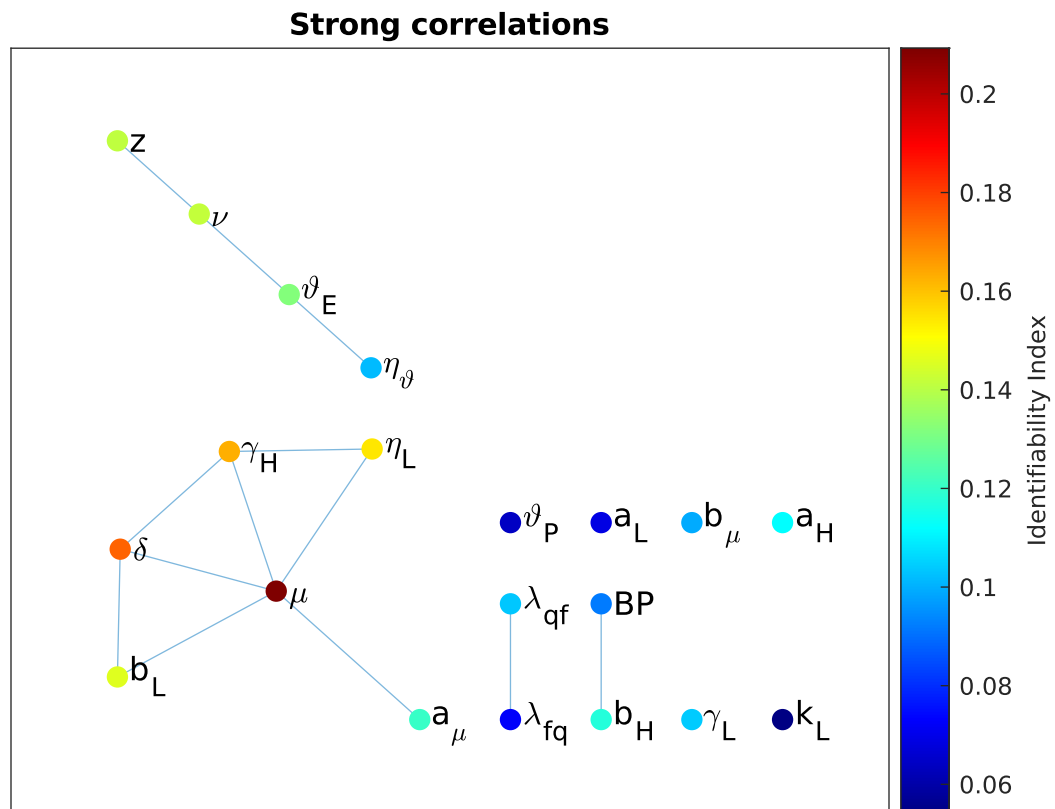
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.7715'	'0.9107'	'0'	'0.8525'	'0.0729'
ϑ_E	'0.0836'	'0.1139'	'0.1213'	'0.0843'	'0.1319'
γ_L	'0.4226'	'0.4771'	'0.3268'	'0.4696'	'0.1041'
k_L	'1.736'	'9.6613'	'5.5'	'6.644'	'0.0543'
λ_{qf}	'0.3574'	'0.4222'	'0.0717'	'0.3704'	'0.1036'
δ	'0'	'0.0001'	'0.0152'	'0'	'0.1743'
η_L	'0.7937'	'1'	'0.7251'	'0.9874'	'0.1547'
ϑ_P	'0'	'0.0001'	'0.0003'	'0.0001'	'0.0644'
γ_H	'0.19'	'1'	'0.7584'	'0.9863'	'0.1632'
z	'3.5046'	'4.3266'	'19.0085'	'3.658'	'0.1414'
η_{ϑ}	'0.5593'	'0.7054'	'0.8542'	'0.5742'	'0.1016'
a_L	'1'	'1.12'	'1.1473'	'1.0036'	'0.0691'
b_L	'12.7645'	'15'	'11.268'	'14.9645'	'0.146'
a_{μ}	'4.1202'	'15'	'9.6687'	'14.5941'	'0.1204'
b_{μ}	'1.28'	'15'	'8.3942'	'10.7722'	'0.0997'
μ	'0.1122'	'0.9422'	'0.4501'	'0.8867'	'0.2093'
a_H	'3.9435'	'15'	'7.2087'	'14.1328'	'0.112'
b_H	'6.0331'	'15'	'11.7925'	'14.8284'	'0.1179'
ν	'0.0009'	'0.0343'	'268.0134'	'0.0152'	'0.1419'
BP	'391.0552'	'406.7744'	'402.5'	'402.4997'	'0.092'

10.3. Identifiability analysis

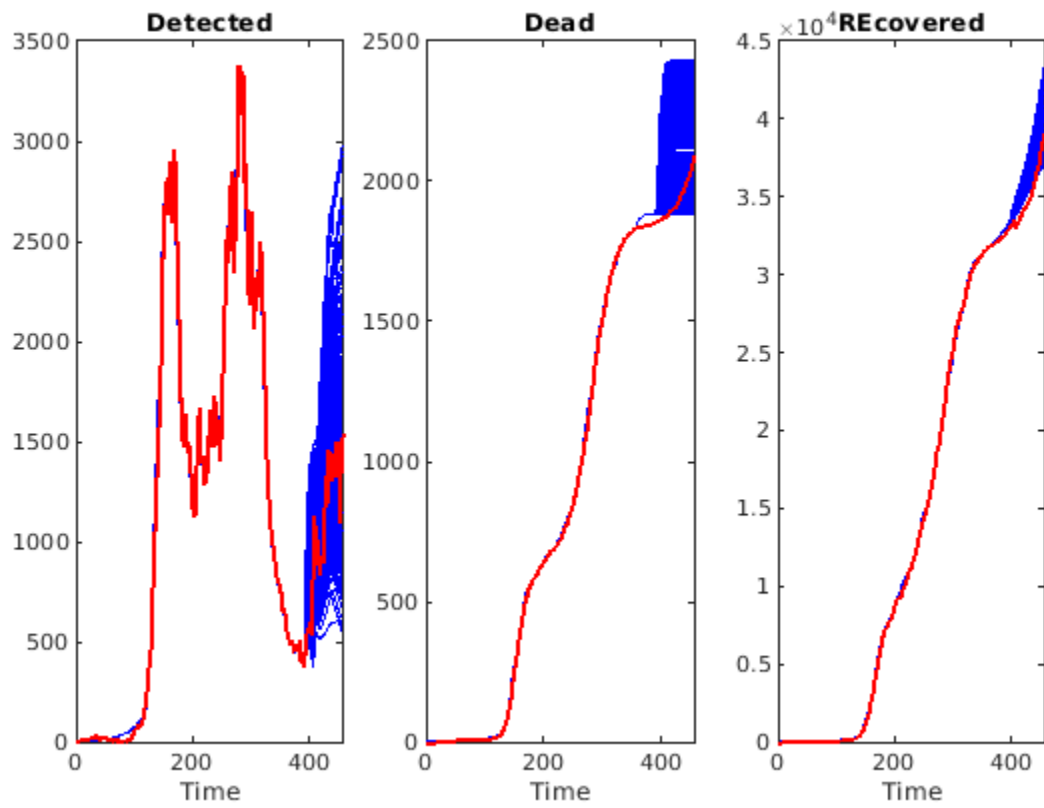






10.4. Uncertainty analysis

N=500



Chapter 11. Extension number11

11.1. Basic information

The extension to be validated consists of the time series from the data456 to the 477. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

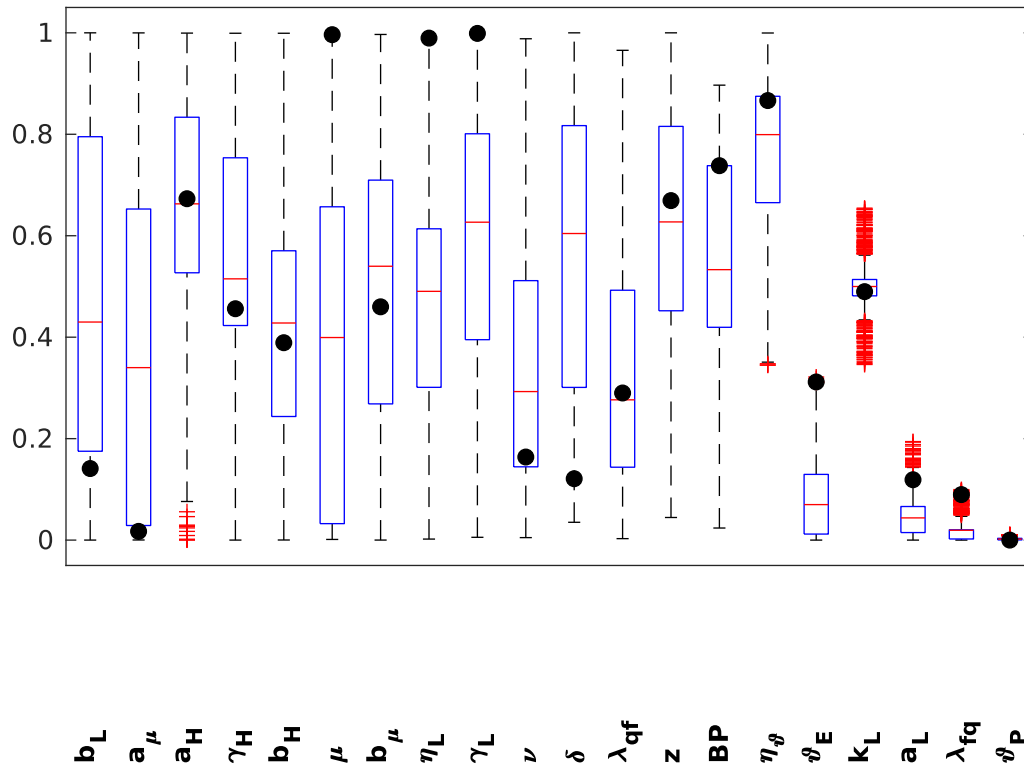
11.2. Estimated parameters with their intervals

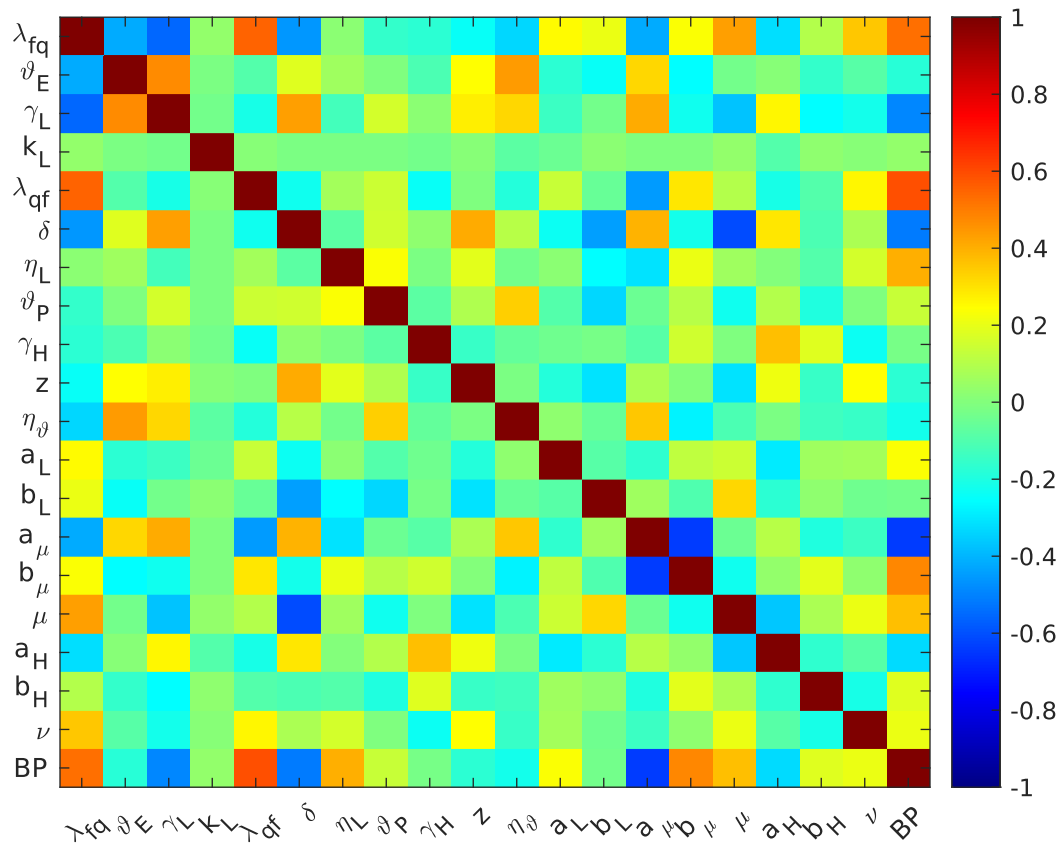
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

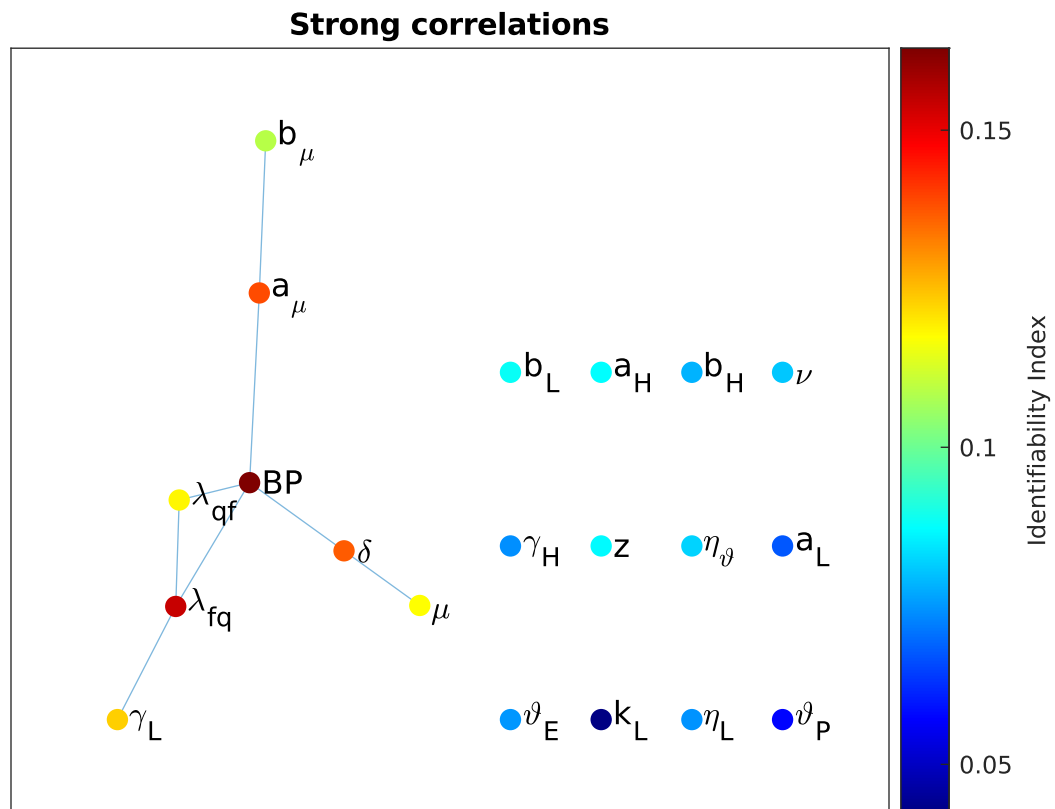
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0454'	'0.0901'	'0.0194'	'0.0897'	'0.154'
ϑ_E	'0.2235'	'0.3245'	'0.07'	'0.3117'	'0.0751'
γ_L	'0.2818'	'1'	'0.6267'	'0.9988'	'0.1234'
k_L	'1.18'	'9.559'	'5.4992'	'5.408'	'0.0425'
λ_{qf}	'0.2786'	'0.4236'	'0.2765'	'0.29'	'0.1183'
δ	'0.0016'	'0.0408'	'0.0907'	'0.0182'	'0.1368'
η_L	'0.5009'	'1'	'0.4904'	'0.9896'	'0.0748'
ϑ_P	'0'	'0'	'0.0021'	'0'	'0.0578'
γ_H	'0'	'1'	'0.515'	'0.4561'	'0.074'
z	'15.4377'	'28.835'	'18.8168'	'20.0772'	'0.0868'
η_{ϑ}	'0.4037'	'0.9751'	'0.7993'	'0.8665'	'0.0821'
a_L	'1.0543'	'3.5797'	'1.6128'	'2.666'	'0.0675'
b_L	'2.1258'	'14.454'	'7.0182'	'2.9749'	'0.0884'
a_{μ}	'1'	'13.096'	'5.7598'	'1.241'	'0.1385'
b_{μ}	'1.35'	'15'	'8.5579'	'7.4384'	'0.1088'
μ	'0.1'	'1'	'0.3993'	'0.9963'	'0.1177'
a_H	'1.28'	'15'	'10.2798'	'10.4214'	'0.0874'
b_H	'1'	'15'	'6.9916'	'6.4476'	'0.0784'
ν	'69.3634'	'91.3552'	'146.4001'	'81.8736'	'0.0806'
BP	'449.8389'	'456.1708'	'437.5869'	'450.4998'	'0.1629'

11.3. Identifiability analysis

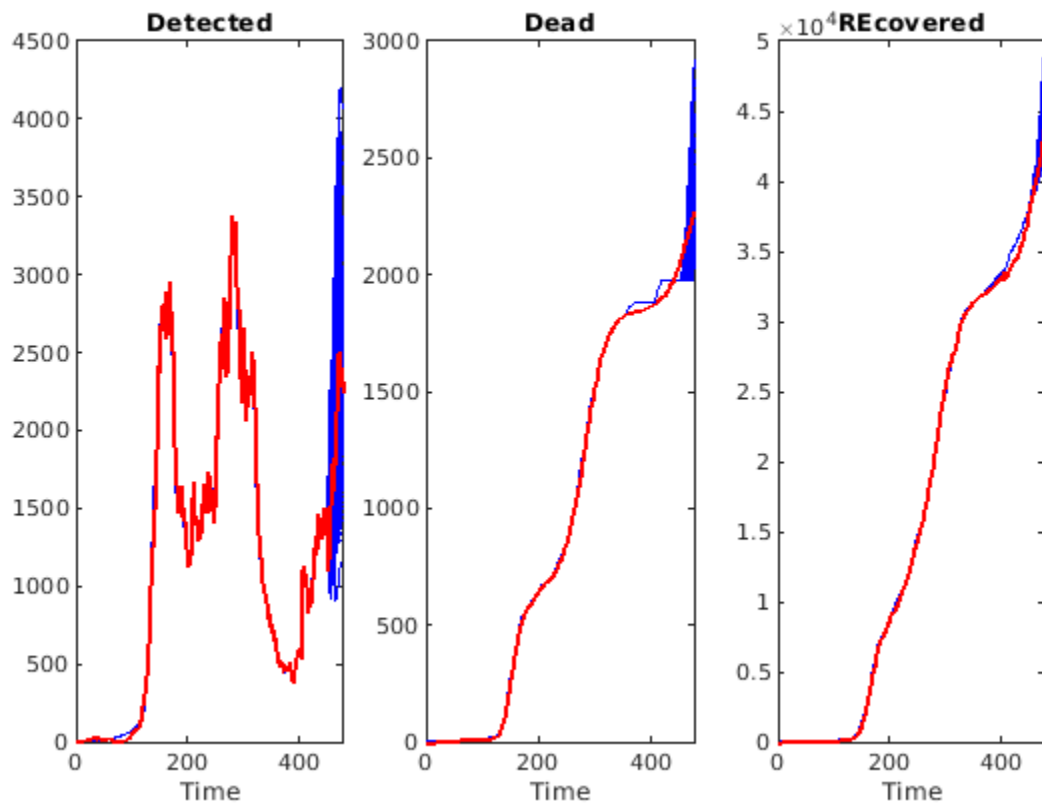






11.4. Uncertainty analysys

N=500



Chapter 12. Extension number12

12.1. Basic information

The extension to be validated consists of the time series from the data477 to the 513. The status of the validation is: COMPLETED.

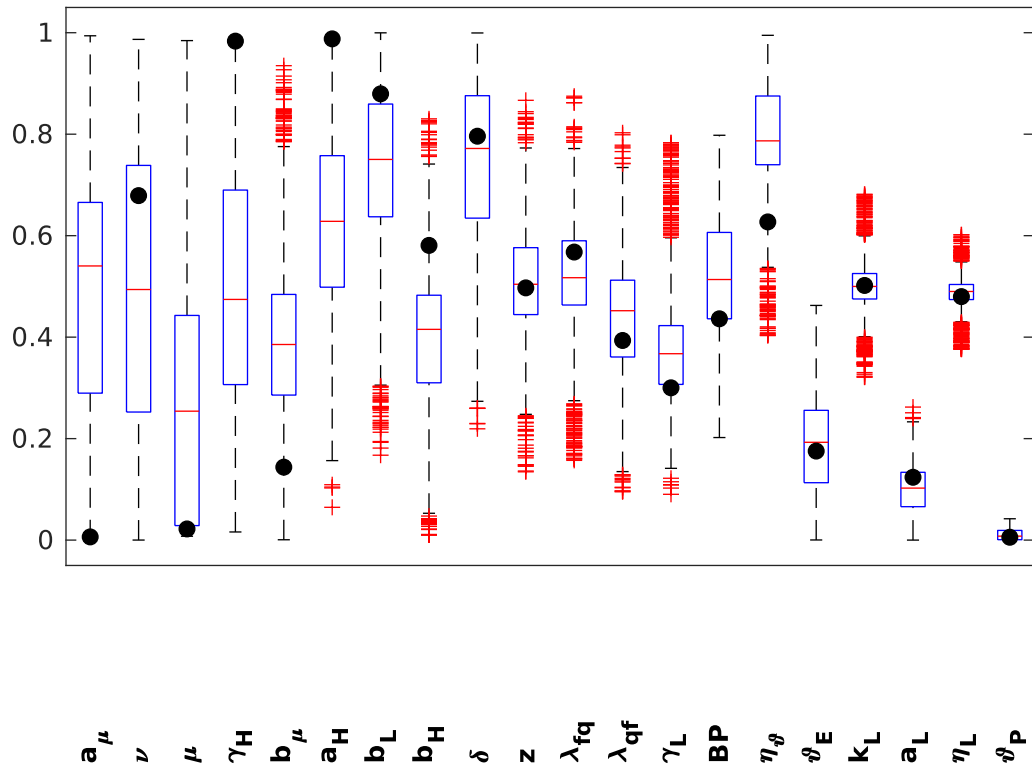
The number of estimations needed to perform the validation was1000.

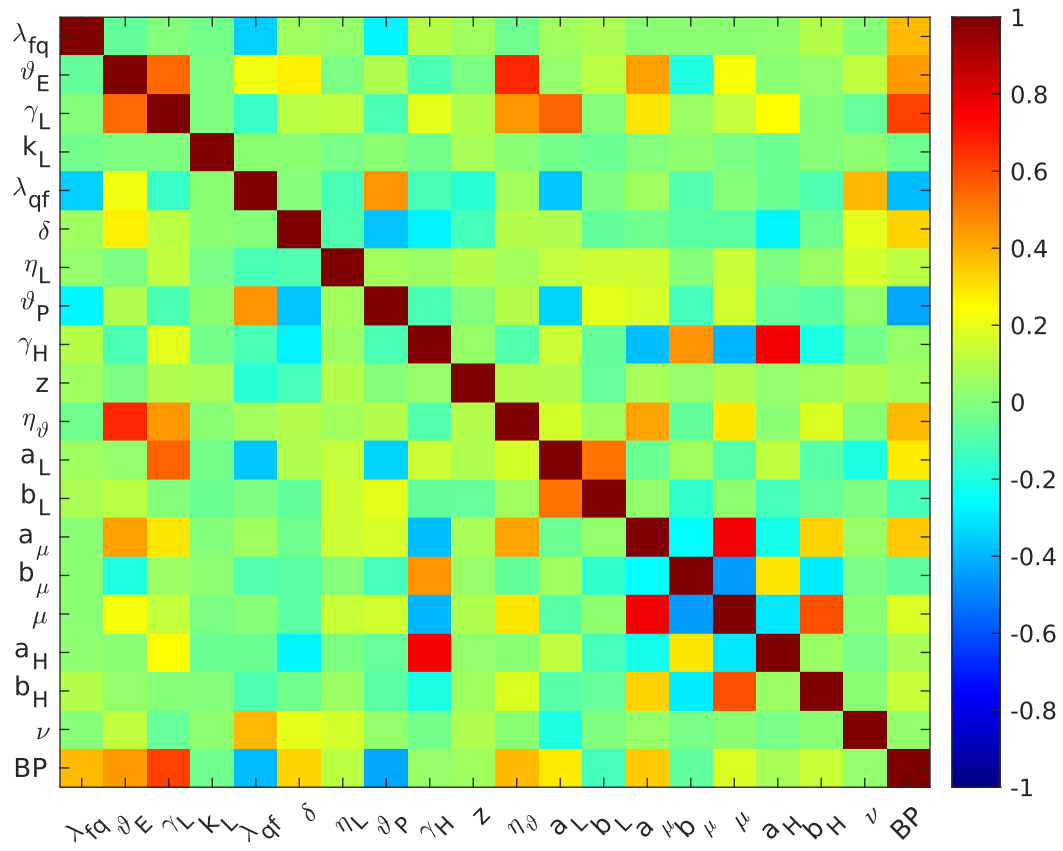
12.2. Estimated parameters with their intervals

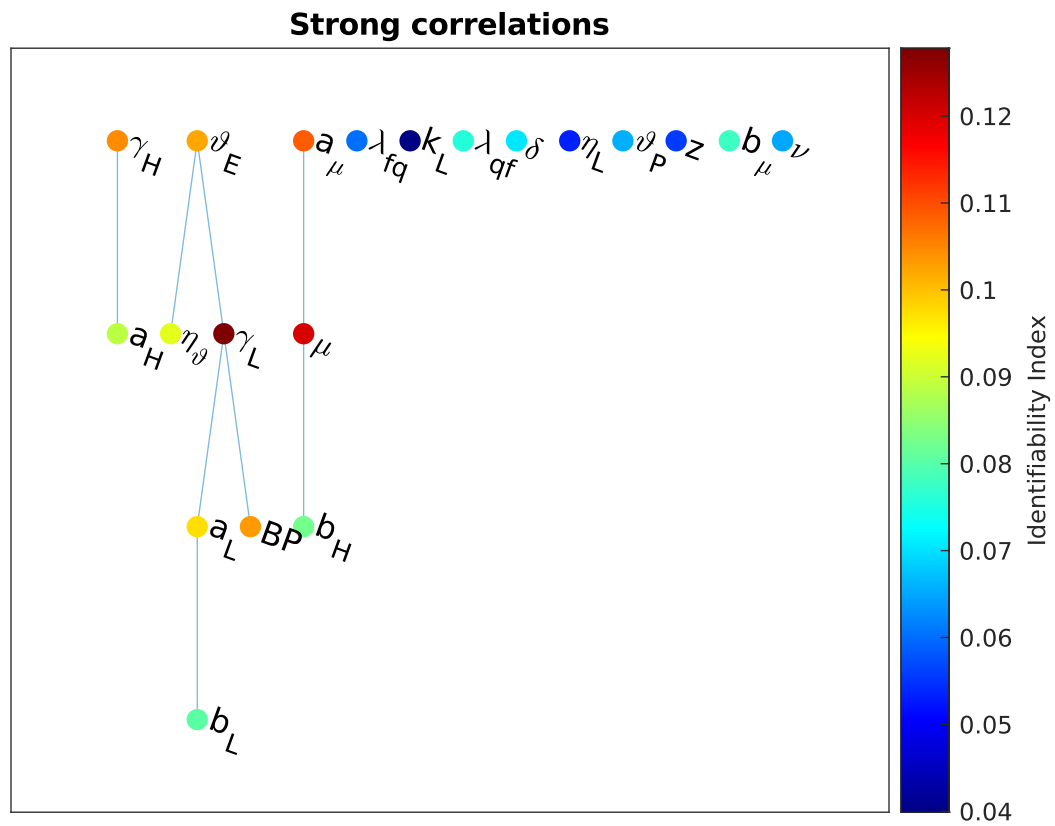
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.5035'	'0.5308'	'0.5171'	'0.5677'	'0.0602'
\vartheta_E	'0.1856'	'0.1999'	'0.1928'	'0.1754'	'0.1021'
\gamma_L	'0.3487'	'0.386'	'0.3673'	'0.3001'	'0.1278'
k_L	'5.4164'	'5.5824'	'5.4994'	'5.517'	'0.0399'
\lambda_{qf}	'0.4397'	'0.4645'	'0.4521'	'0.3934'	'0.0759'
\delta	'0.1138'	'0.1178'	'0.1158'	'0.1194'	'0.0706'
\eta_L	'0.4811'	'0.4989'	'0.49'	'0.4799'	'0.0535'
\vartheta_P	'0.0064'	'0.0092'	'0.0078'	'0.0056'	'0.0657'
\gamma_H	'0.4519'	'0.4968'	'0.4743'	'0.9834'	'0.1046'
z	'14.7202'	'15.5315'	'15.1258'	'14.9133'	'0.0557'
\eta_{\vartheta}	'0.773'	'0.8007'	'0.7869'	'0.6271'	'0.0923'
a_L	'2.3658'	'2.5033'	'2.4345'	'2.7334'	'0.0974'
b_L	'11.2198'	'11.7873'	'11.5035'	'13.3131'	'0.0807'
a_{\mu}	'8.2789'	'8.85'	'8.5644'	'1.0881'	'0.1087'
b_{\mu}	'6.1345'	'6.6597'	'6.3971'	'3.0127'	'0.0778'
\mu	'0.2335'	'0.2747'	'0.2541'	'0.022'	'0.1201'
a_H	'9.5548'	'10.0362'	'9.7955'	'14.8302'	'0.0887'
b_H	'6.5969'	'7.0326'	'6.8147'	'9.1316'	'0.0828'
\nu	'236.032'	'257.8391'	'246.9356'	'339.4694'	'0.0652'
BP	'479.6653'	'480.6105'	'480.1379'	'476.5'	'0.1033'

12.3. Identifiability analysis

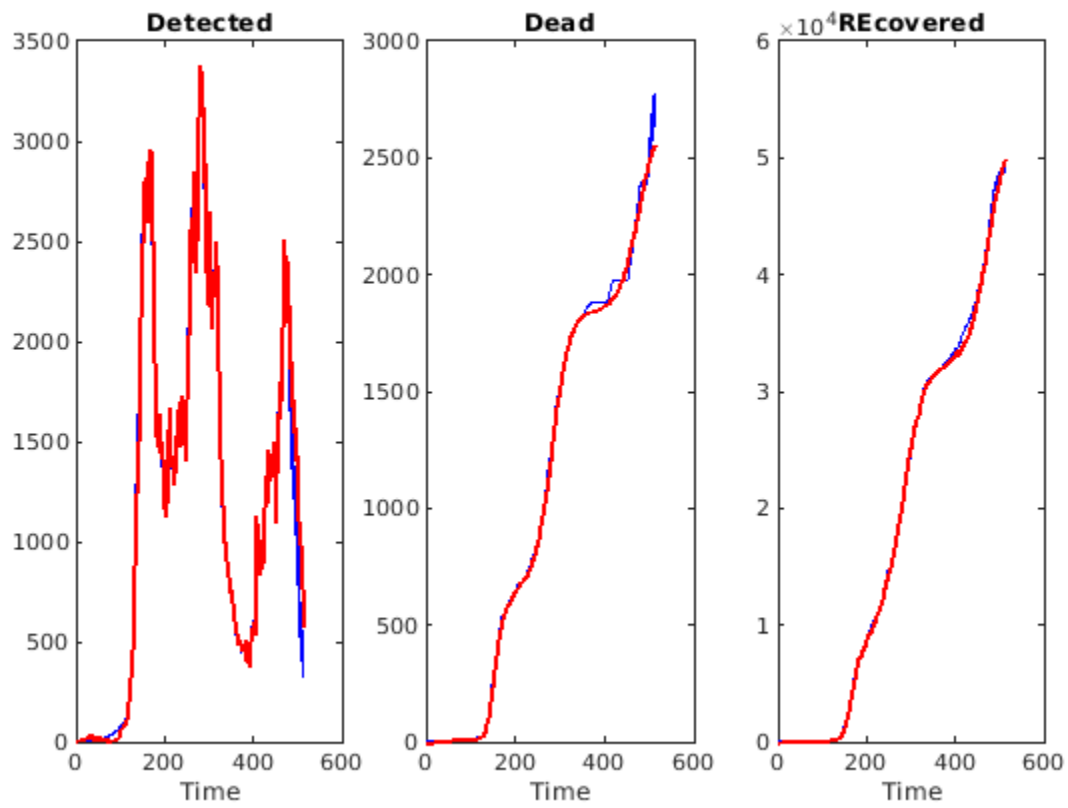






12.4. Uncertainty analysys

N=500



Chapter 13. Extension number13

13.1. Basic information

The extension to be validated consists of the time series from the data513 to the 598. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

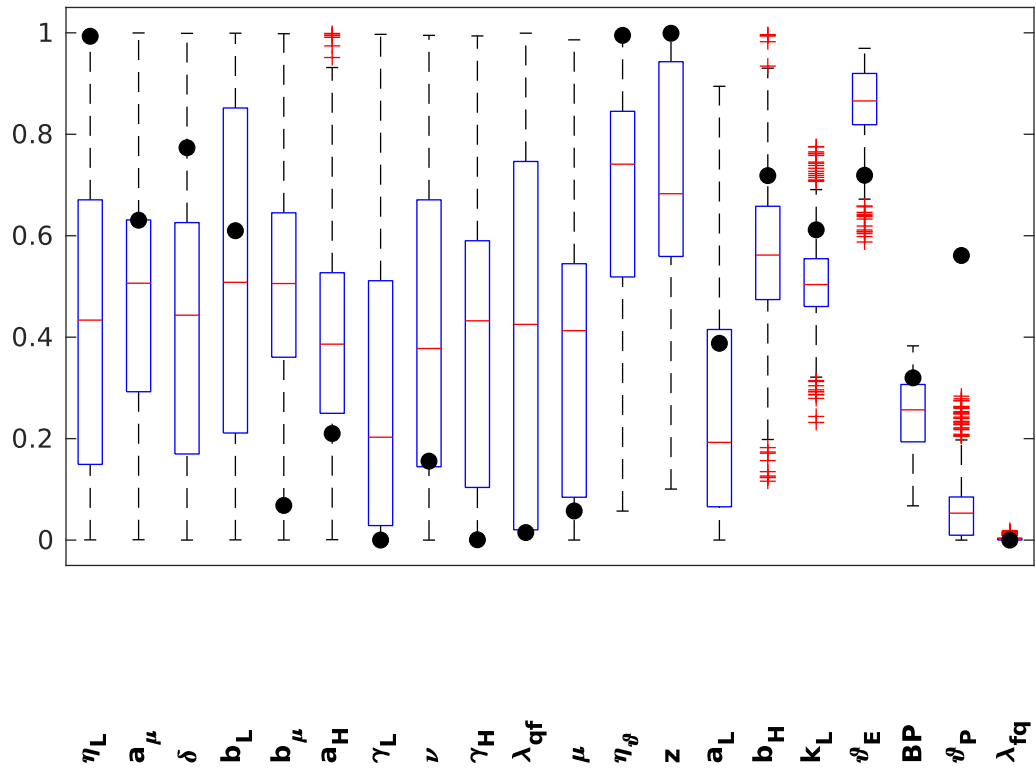
13.2. Estimated parameters with their intervals

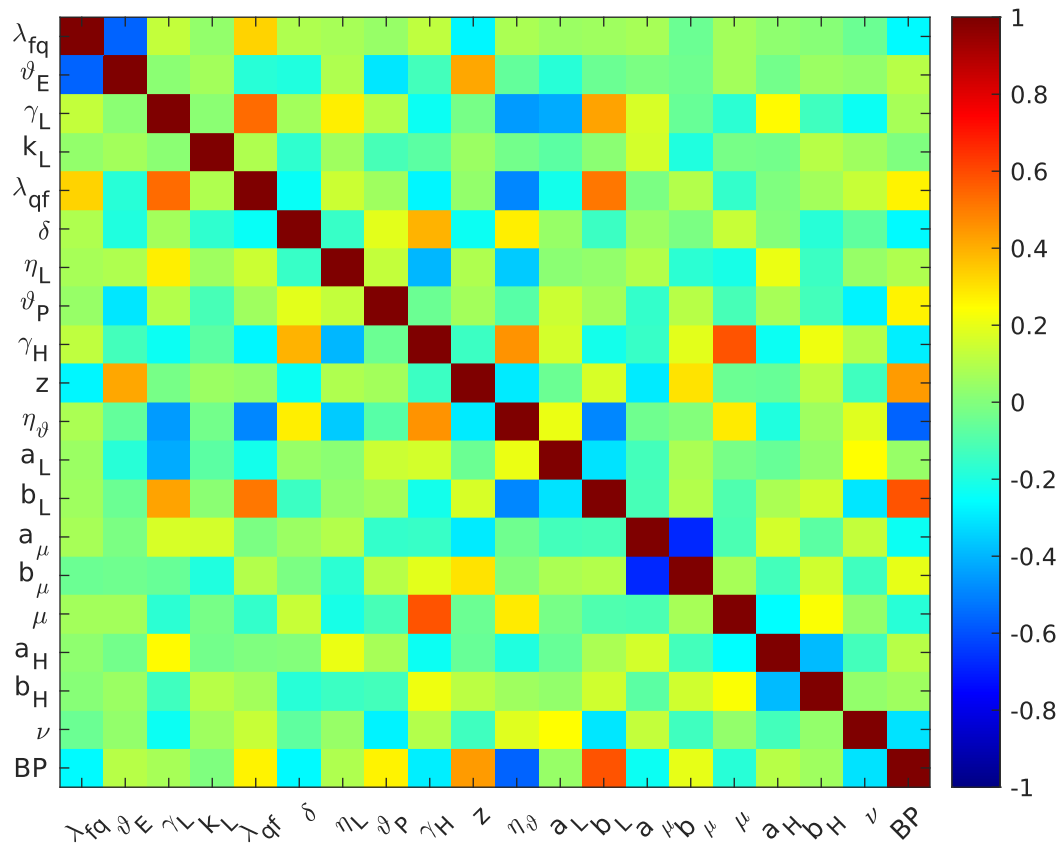
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

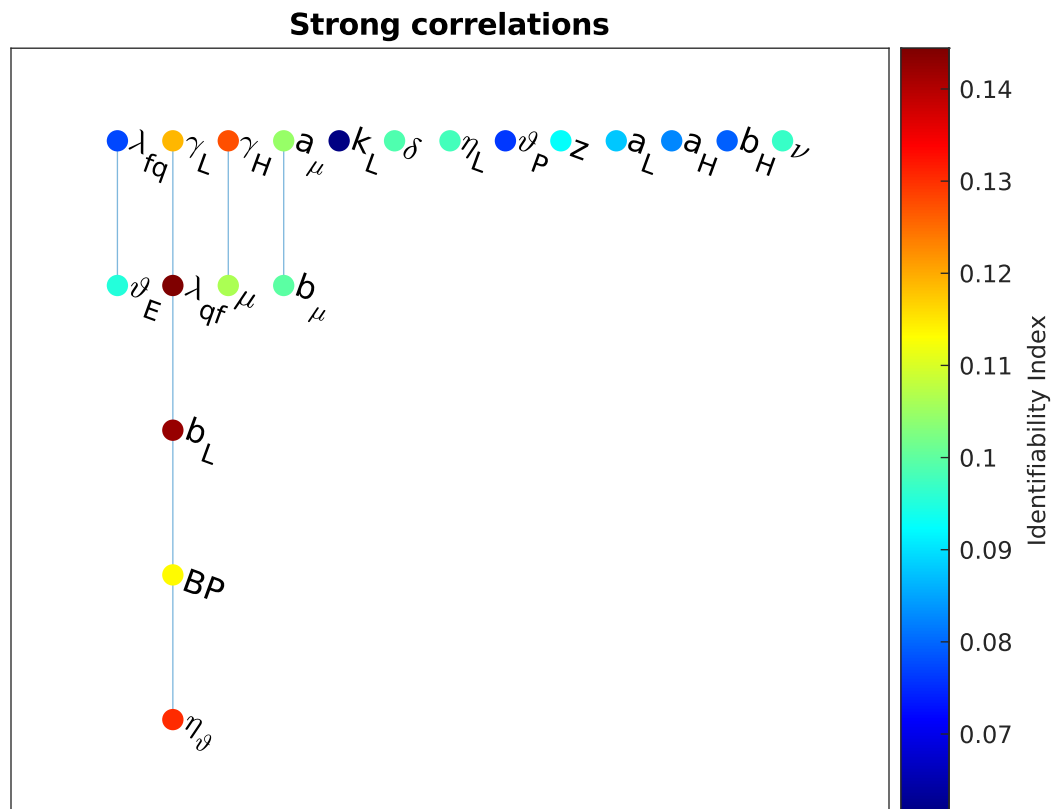
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0'	'0.0035'	'0'	'0.0776'
ϑ_E	'0.6908'	'0.7261'	'0.8657'	'0.7192'	'0.0952'
γ_L	'0'	'0.0002'	'0.2028'	'0.0001'	'0.1189'
k_L	'1'	'10'	'5.5336'	'6.5054'	'0.0615'
λ_{qf}	'0.0131'	'0.0175'	'0.4252'	'0.0149'	'0.1444'
δ	'0.0131'	'0.15'	'0.0665'	'0.116'	'0.099'
η_L	'0.1658'	'1'	'0.4337'	'0.9932'	'0.0979'
ϑ_P	'0.5317'	'0.5723'	'0.0531'	'0.561'	'0.0763'
γ_H	'0'	'0.0013'	'0.4323'	'0.0006'	'0.1273'
z	'28.2437'	'30'	'20.4832'	'29.9732'	'0.0926'
η_{ϑ}	'0.7732'	'1'	'0.7411'	'0.995'	'0.1302'
a_L	'1.7'	'14.335'	'3.6971'	'6.431'	'0.0878'
b_L	'1.609'	'13.6655'	'8.1145'	'9.5382'	'0.1422'
a_{μ}	'1'	'13.768'	'8.089'	'9.8279'	'0.1046'
b_{μ}	'1'	'15'	'8.0807'	'1.9566'	'0.1'
μ	'0'	'0.1293'	'0.4129'	'0.0575'	'0.1065'
a_H	'1.3325'	'13.6516'	'6.4078'	'3.9416'	'0.0828'
b_H	'1.266'	'14.3'	'8.8662'	'11.0589'	'0.0796'
ν	'69.4183'	'95.4533'	'188.871'	'77.8219'	'0.097'
BP	'509.4301'	'515.4288'	'505.5'	'512.5'	'0.1135'

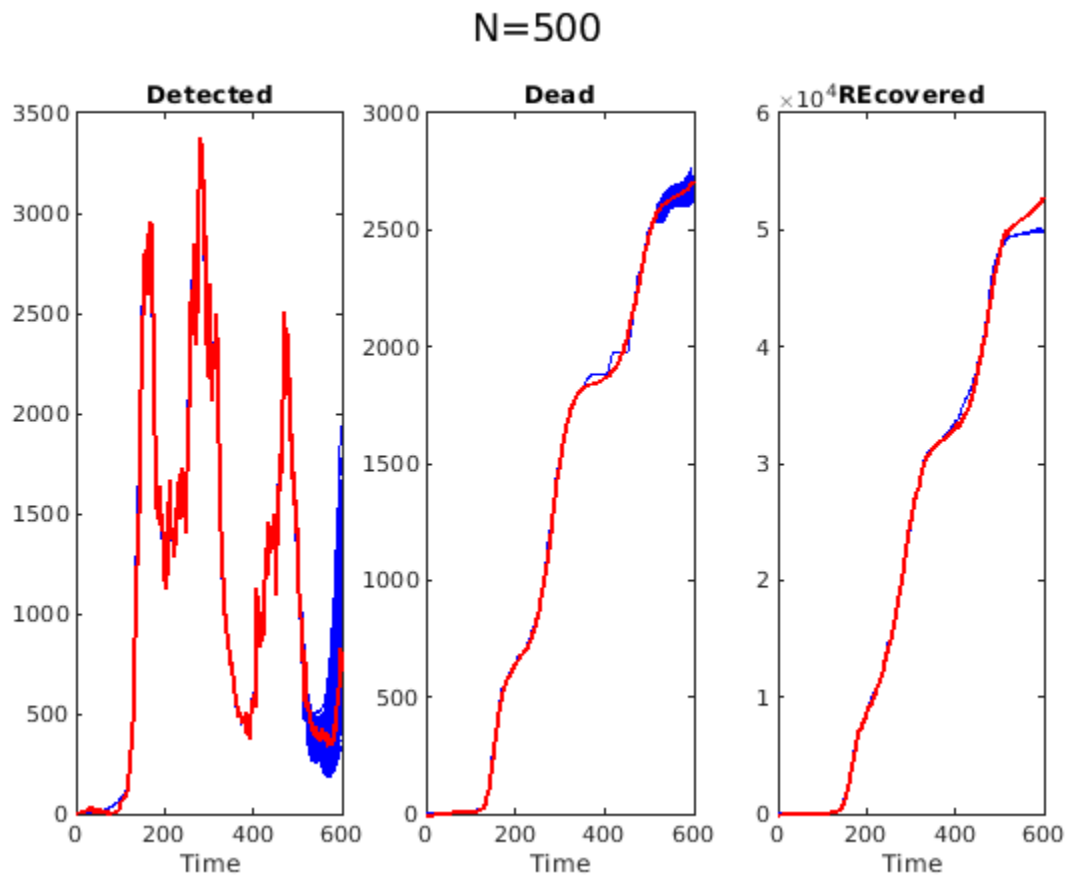
13.3. Identifiability analysis







13.4. Uncertainty analysis



Chapter 14. Extension number14

14.1. Basic information

The extension to be validated consists of the time series from the data598 to the 605. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

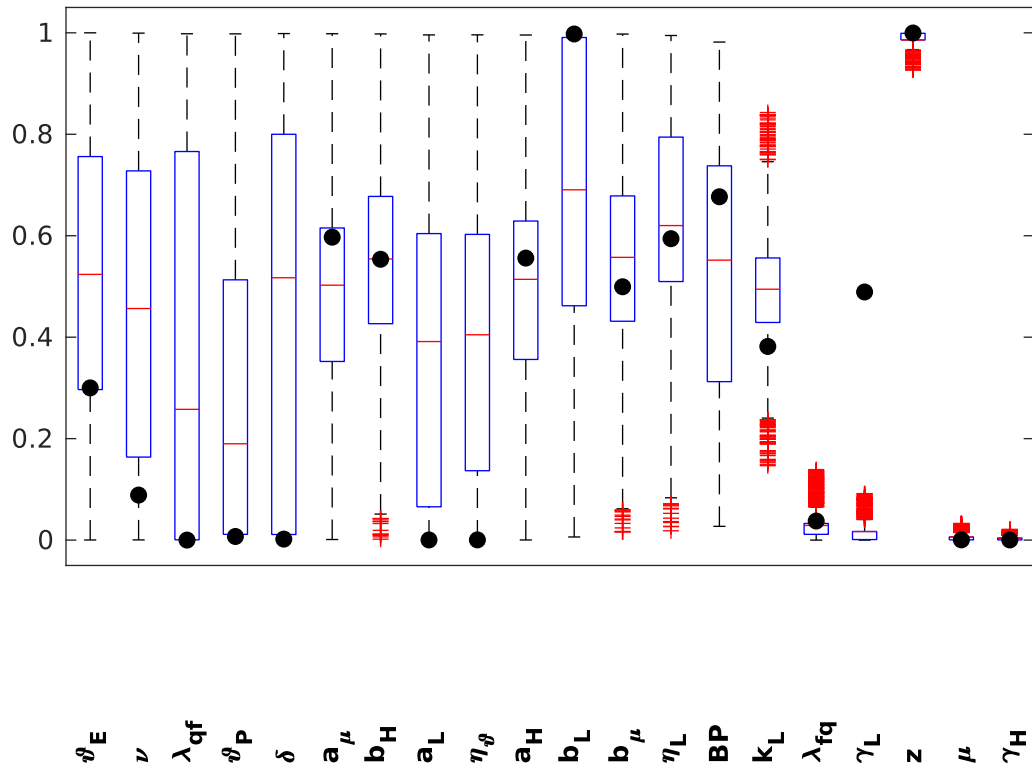
14.2. Estimated parameters with their intervals

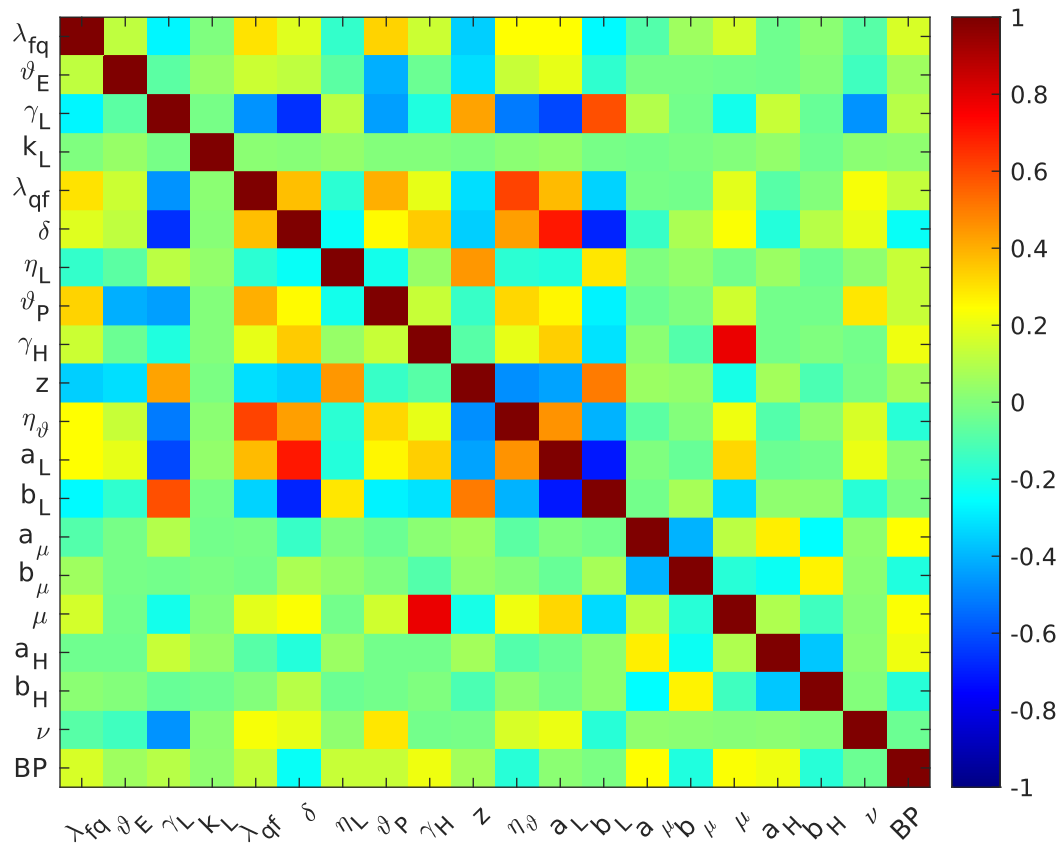
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

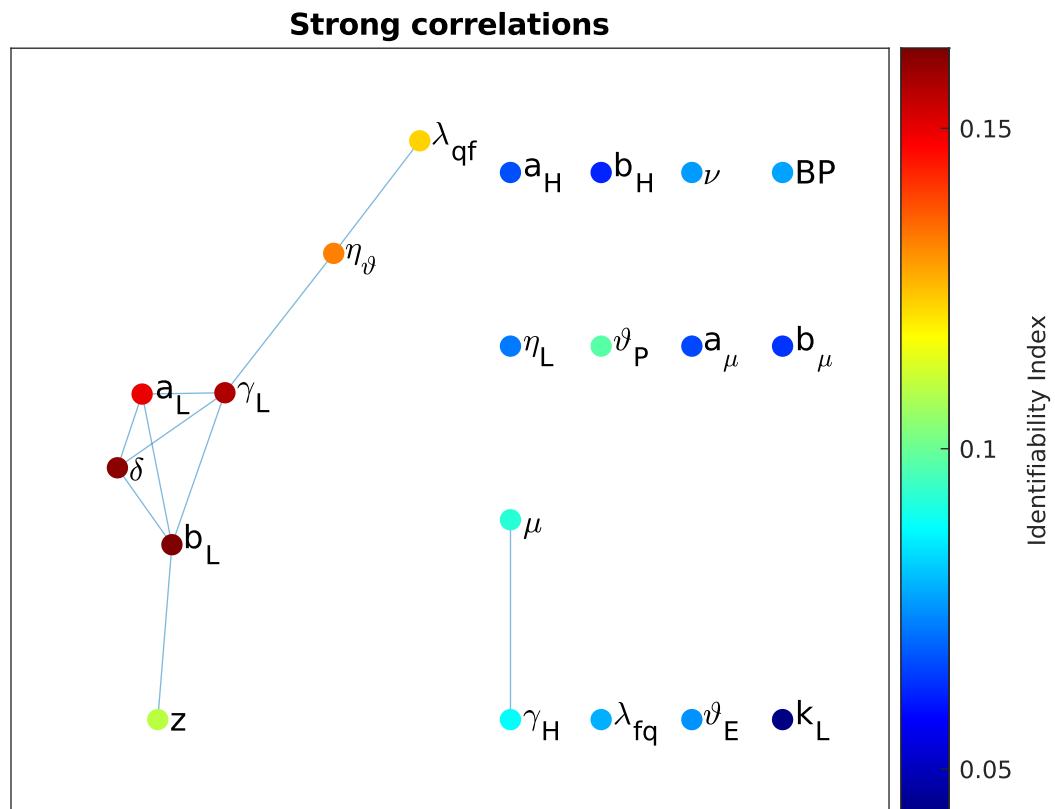
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0333'	'0.0389'	'0.0289'	'0.0376'	'0.0783'
ϑ_E	'0.1159'	'0.3277'	'0.5238'	'0.3001'	'0.0751'
γ_L	'0.3746'	'0.5937'	'0.0169'	'0.4891'	'0.1566'
k_L	'1'	'9.64'	'5.4511'	'4.4358'	'0.0433'
λ_{qf}	'0'	'0.0001'	'0.2578'	'0'	'0.1227'
δ	'0'	'0.0007'	'0.0776'	'0.0003'	'0.1608'
η_L	'0'	'1'	'0.62'	'0.5941'	'0.0723'
ϑ_P	'0'	'0.016'	'0.1899'	'0.0071'	'0.098'
γ_H	'0'	'0.0007'	'0.004'	'0.0003'	'0.0881'
z	'25.4004'	'30'	'29.5788'	'29.9889'	'0.1096'
η_{ϑ}	'0'	'0.0009'	'0.4048'	'0.0004'	'0.1327'
a_L	'1'	'3.1619'	'6.4796'	'1.0042'	'0.1499'
b_L	'8.0347'	'15'	'10.6676'	'14.9678'	'0.1625'
a_{μ}	'1.35'	'15'	'8.0351'	'9.3598'	'0.0663'
b_{μ}	'1'	'15'	'8.8006'	'7.9914'	'0.0641'
μ	'0'	'0.001'	'0.0062'	'0.0004'	'0.0926'
a_H	'1.8624'	'13.656'	'8.1964'	'8.7831'	'0.0675'
b_H	'1.252'	'13.6'	'8.7585'	'8.7502'	'0.0623'
ν	'32.8076'	'53.1488'	'228.2628'	'44.3931'	'0.076'
BP	'568.3826'	'575.4048'	'558.2542'	'568.5'	'0.0772'

14.3. Identifiability analysis

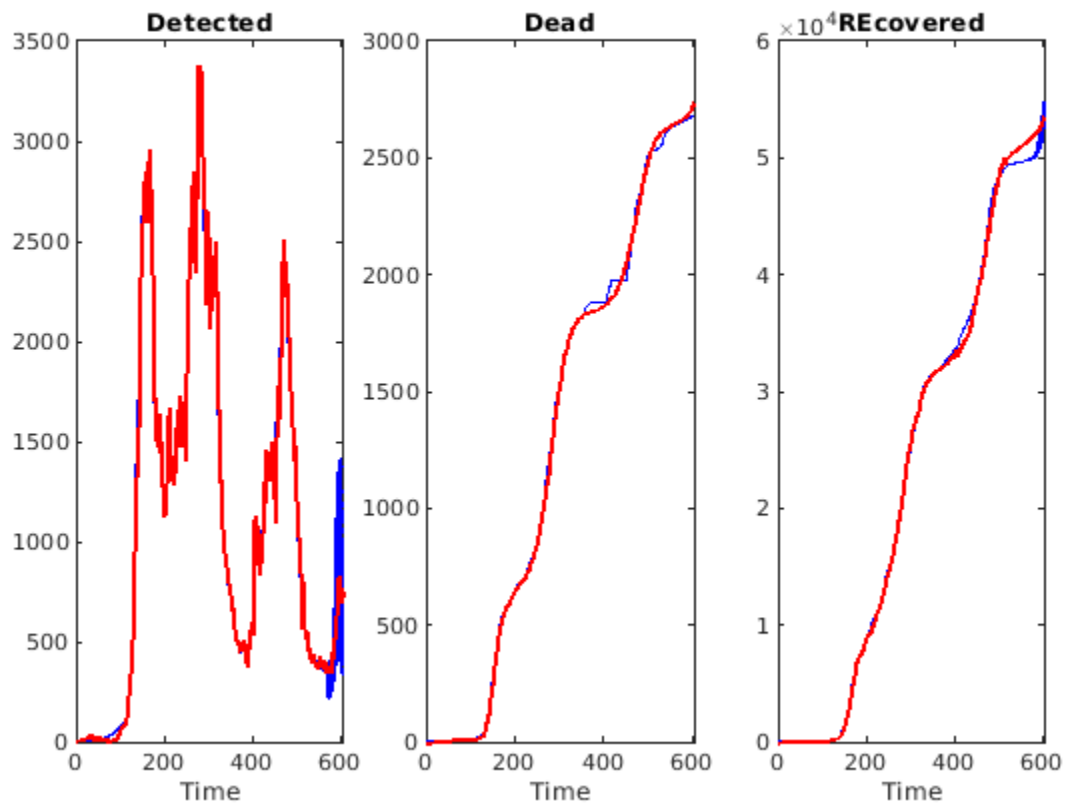






14.4. Uncertainty analysys

N=500



Chapter 15. Extension number15

15.1. Basic information

The extension to be validated consists of the time series from the data605 to the 623. The status of the validation is: COMPLETED.

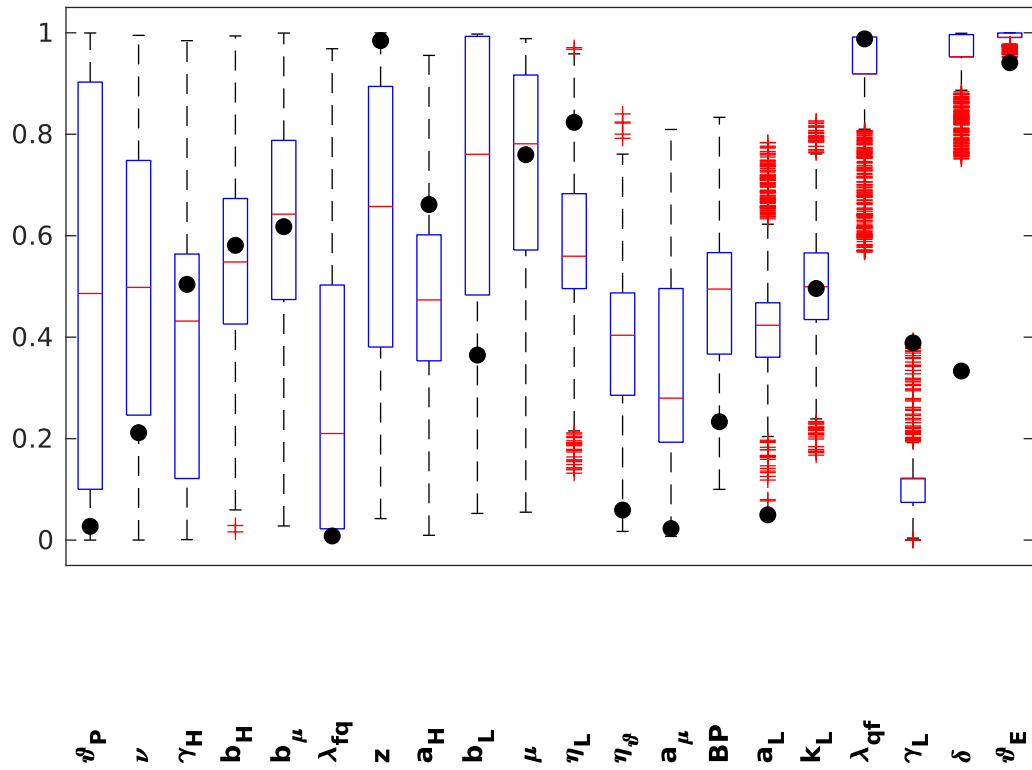
The number of estimations needed to perform the validation was1000.

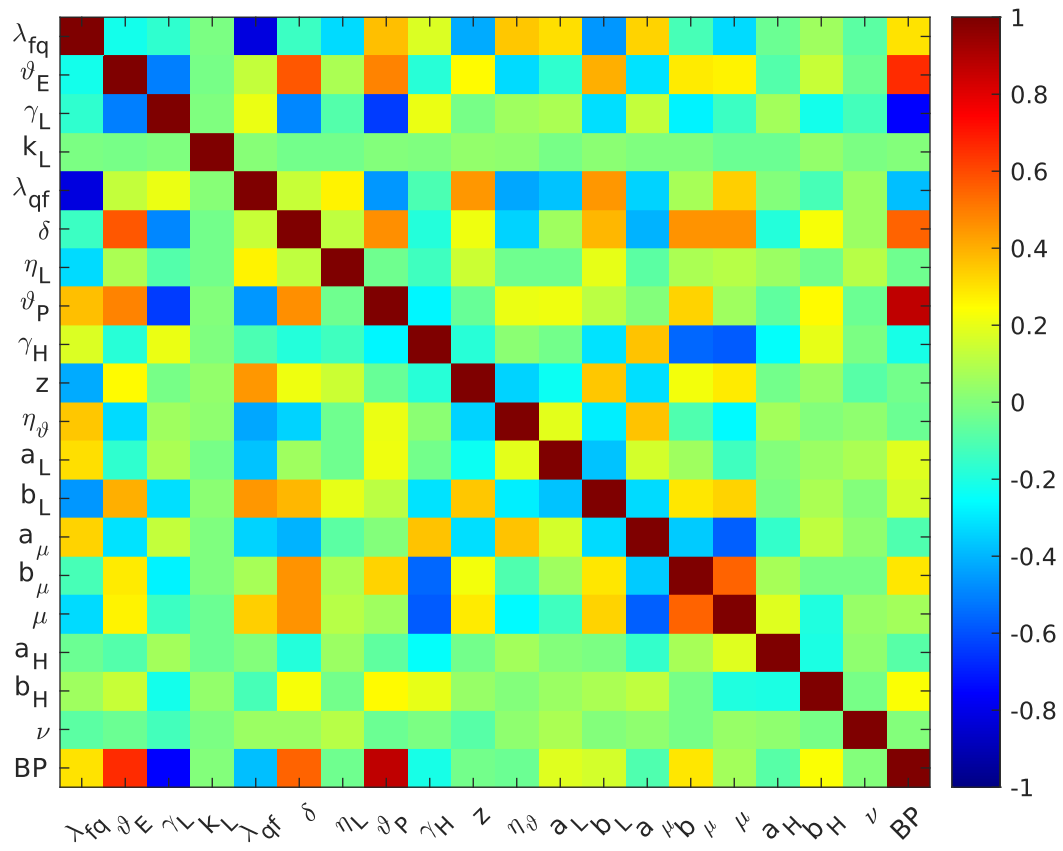
15.2. Estimated parameters with their intervals

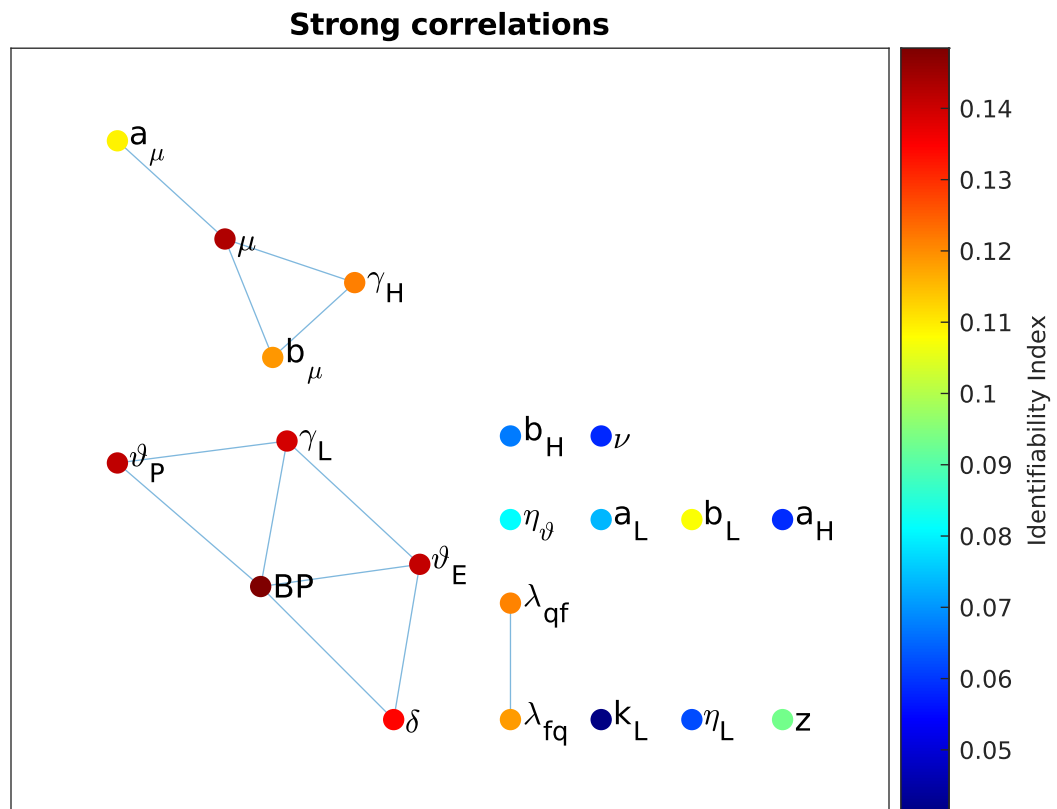
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.1914'	'0.2288'	'0.2101'	'0.0082'	'0.1185'
\vartheta_E	'0.9712'	'1'	'0.9908'	'0.941'	'0.141'
\gamma_L	'0.0995'	'0.1418'	'0.1206'	'0.3887'	'0.1395'
k_L	'5.388'	'5.6012'	'5.4946'	'5.4634'	'0.0413'
\lambda_{qf}	'0.8994'	'0.9384'	'0.9189'	'0.9879'	'0.121'
\delta	'0.1405'	'0.1453'	'0.1429'	'0.05'	'0.1344'
\eta_L	'0.5466'	'0.5726'	'0.5596'	'0.8235'	'0.0626'
\vartheta_P	'0.4565'	'0.5157'	'0.4861'	'0.0271'	'0.1414'
\gamma_H	'0.4097'	'0.4537'	'0.4317'	'0.5041'	'0.1213'
z	'19.0649'	'20.3929'	'19.7289'	'29.5365'	'0.0932'
\eta_{\vartheta}	'0.3912'	'0.4164'	'0.4038'	'0.0593'	'0.0813'
a_L	'6.7278'	'7.131'	'6.9294'	'1.6972'	'0.0739'
b_L	'11.3436'	'11.9515'	'11.6476'	'6.1063'	'0.1075'
a_{\mu}	'4.6966'	'5.1459'	'4.9213'	'1.3182'	'0.1092'
b_{\mu}	'9.7568'	'10.2333'	'9.995'	'9.65'	'0.1191'
\mu	'0.7618'	'0.8002'	'0.781'	'0.7597'	'0.1432'
a_H	'7.4371'	'7.8193'	'7.6282'	'10.2607'	'0.0589'
b_H	'8.4697'	'8.882'	'8.6758'	'9.134'	'0.0675'
\nu	'237.7224'	'260.4036'	'249.063'	'105.8221'	'0.0585'
BP	'605.2505'	'605.5932'	'605.4218'	'601.5'	'0.1484'

15.3. Identifiability analysis

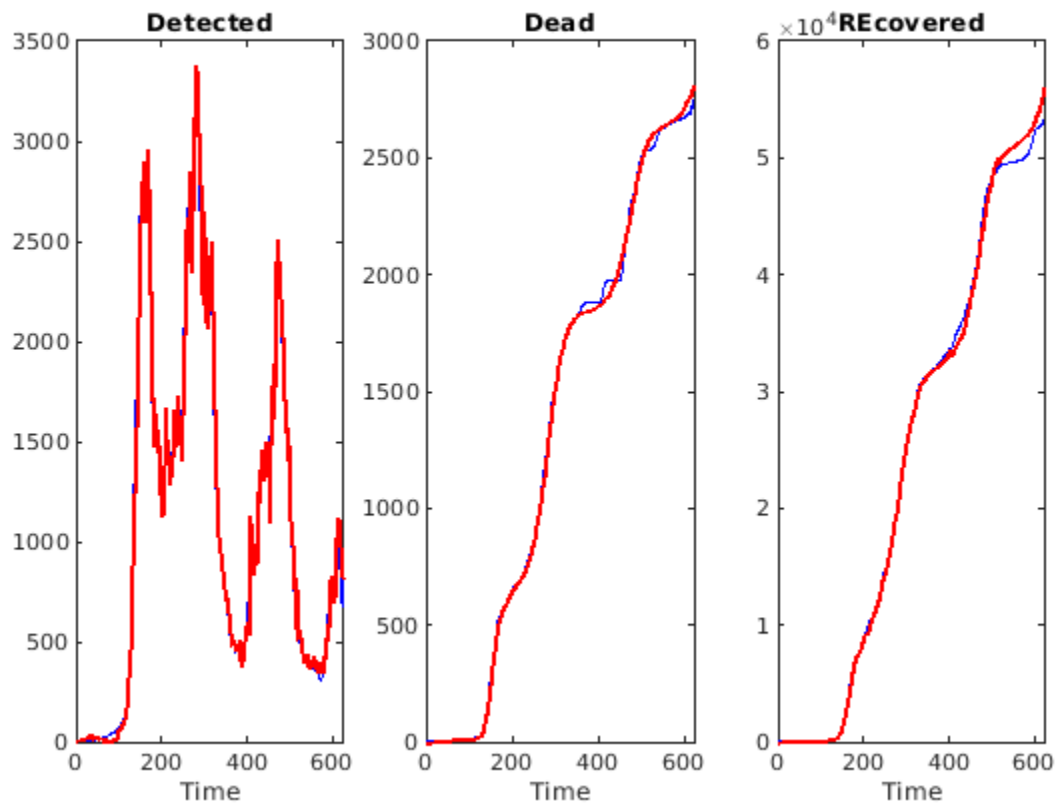






15.4. Uncertainty analysis

N=500



Chapter 16. Extension number16

16.1. Basic information

The extension to be validated consists of the time series from the data623 to the 719. The status of the validation is: COMPLETED.

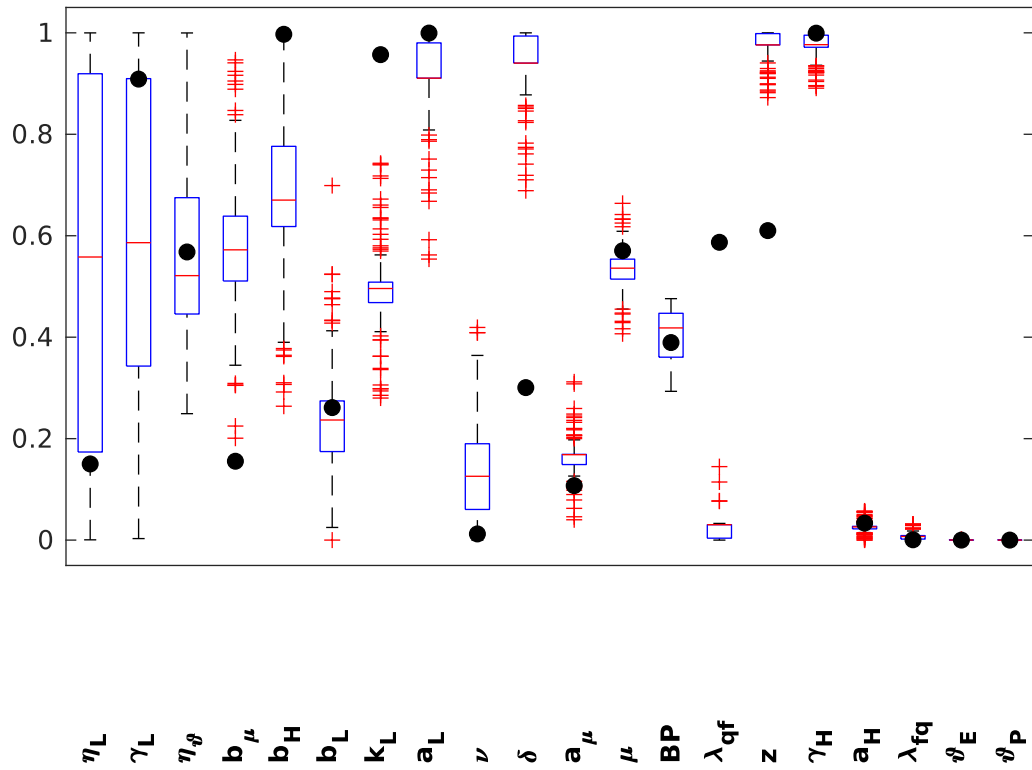
The number of estimations needed to perform the validation was1000.

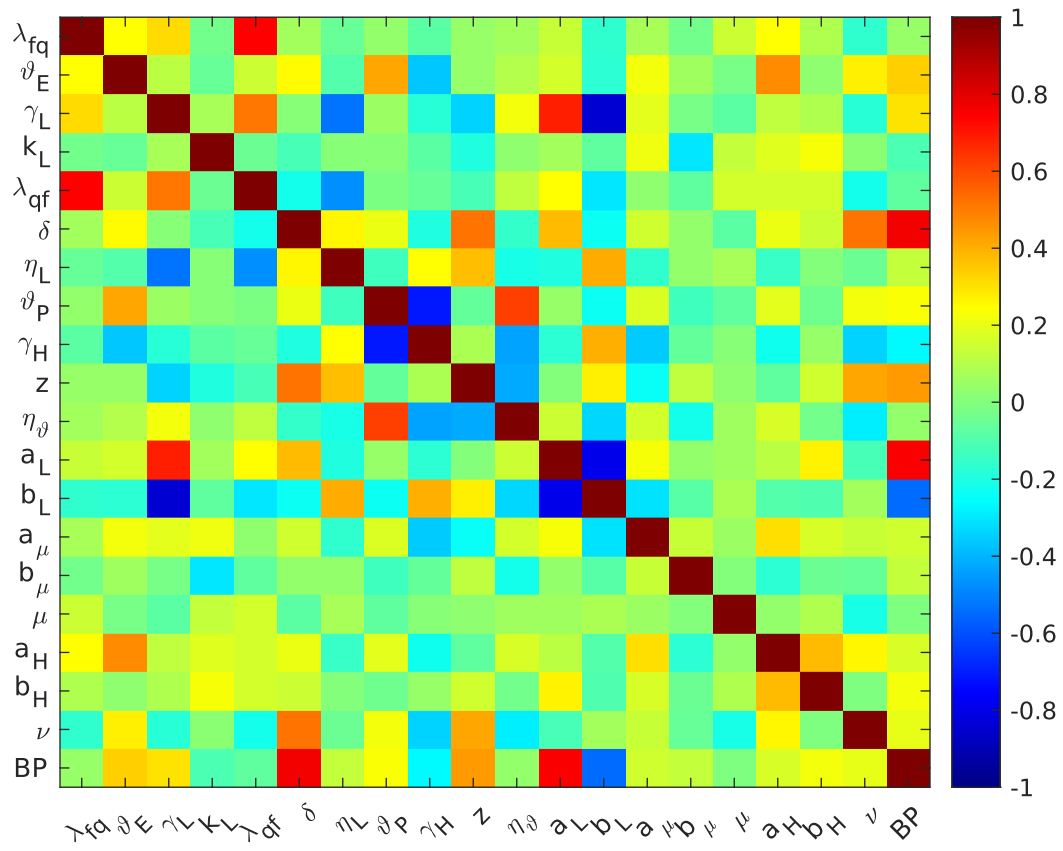
16.2. Estimated parameters with their intervals

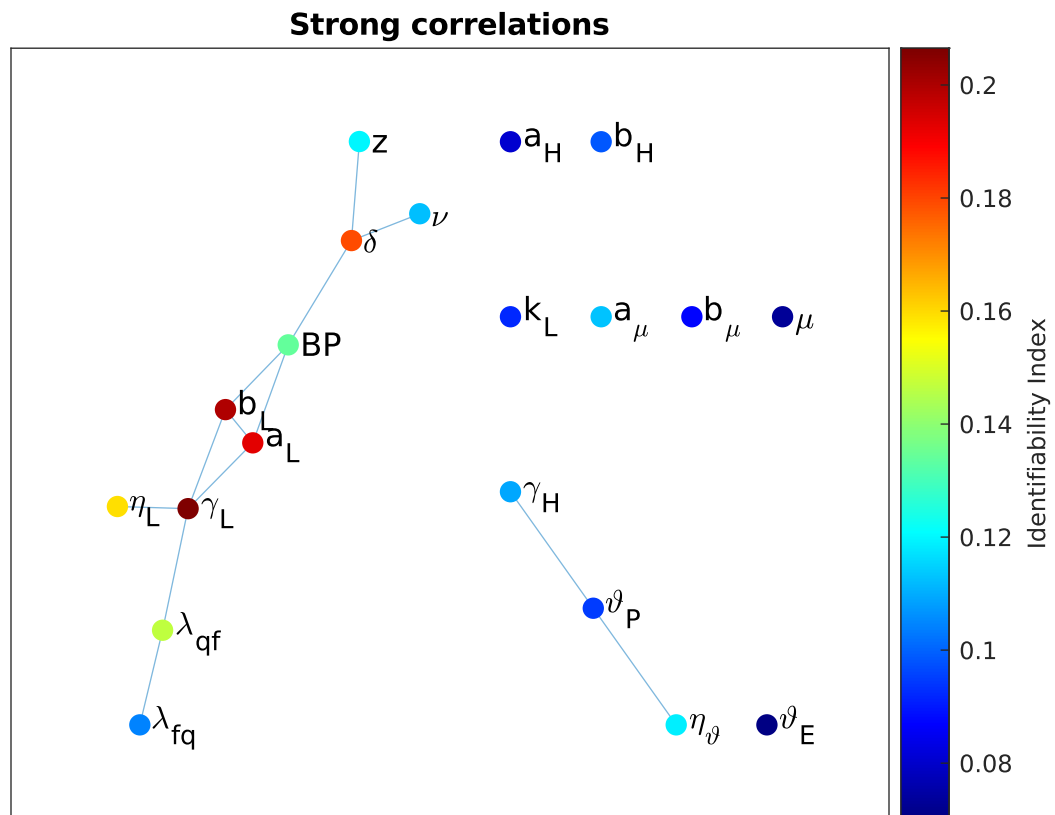
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0659'	'0.0072'	'0.0006'	'0.1047'
ϑ_E	'0'	'0.0019'	'0.0002'	'0'	'0.0703'
γ_L	'0.5151'	'0.6575'	'0.5863'	'0.9088'	'0.2065'
k_L	'5.0773'	'5.8501'	'5.4637'	'9.6129'	'0.0921'
λ_{qf}	'0'	'0.0974'	'0.0304'	'0.5871'	'0.1465'
δ	'0.1319'	'0.15'	'0.141'	'0.0451'	'0.1793'
η_L	'0.481'	'0.6351'	'0.5581'	'0.1501'	'0.1592'
ϑ_P	'0'	'0.0004'	'0.0001'	'0'	'0.0949'
γ_H	'0.9581'	'0.9952'	'0.9767'	'0.9993'	'0.1093'
z	'27.9832'	'30'	'29.2848'	'18.3033'	'0.1202'
η_{ϑ}	'0.4874'	'0.5553'	'0.5214'	'0.568'	'0.1187'
a_L	'12.7237'	'14.7738'	'13.7488'	'14.9935'	'0.193'
b_L	'3.3545'	'5.2741'	'4.3143'	'4.6568'	'0.1997'
a_{μ}	'2.727'	'3.9878'	'3.3574'	'2.5032'	'0.1133'
b_{μ}	'8.4377'	'9.5841'	'9.0109'	'3.1765'	'0.0876'
μ	'0.5048'	'0.5673'	'0.5361'	'0.5704'	'0.0732'
a_H	'1.2342'	'1.4944'	'1.3643'	'1.469'	'0.0805'
b_H	'9.75'	'11.017'	'10.3835'	'14.9598'	'0.0985'
ν	'48.6012'	'77.2054'	'62.9033'	'6.0792'	'0.1124'
BP	'647.3658'	'649.6342'	'648.5'	'645.4994'	'0.1344'

16.3. Identifiability analysis







16.4. Uncertainty analysys

