

Validation process for Cafeteros

The epidemiology research group, EAFIT

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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 87. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was 4000.

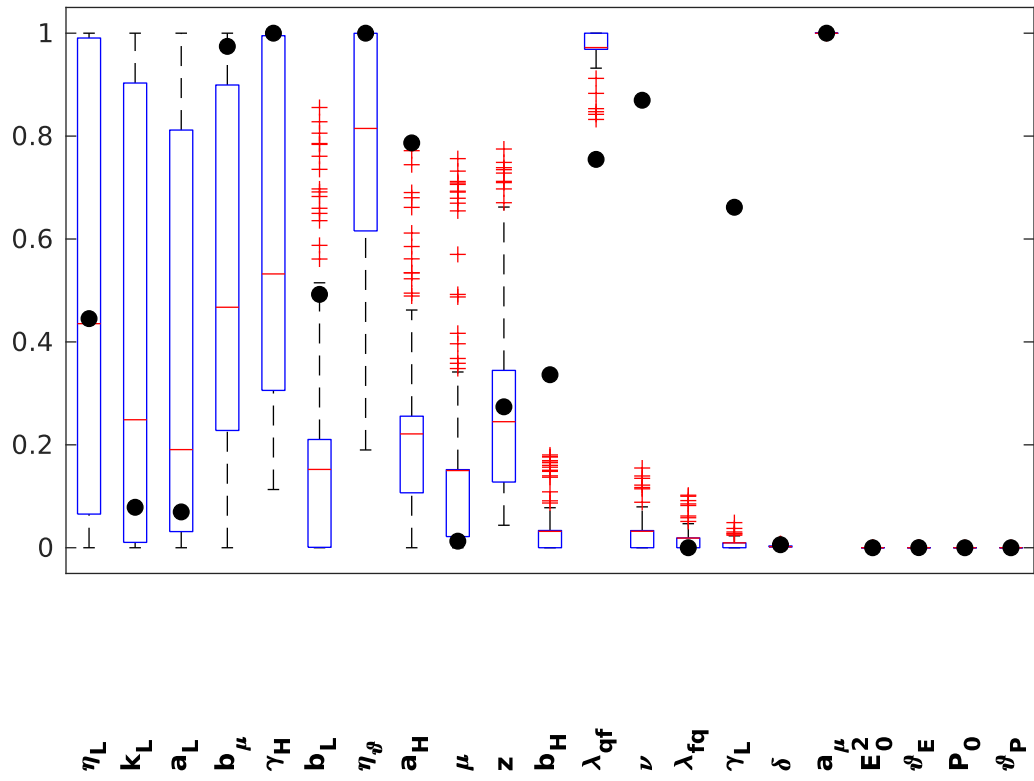
1.2. Estimated parameters with their intervals

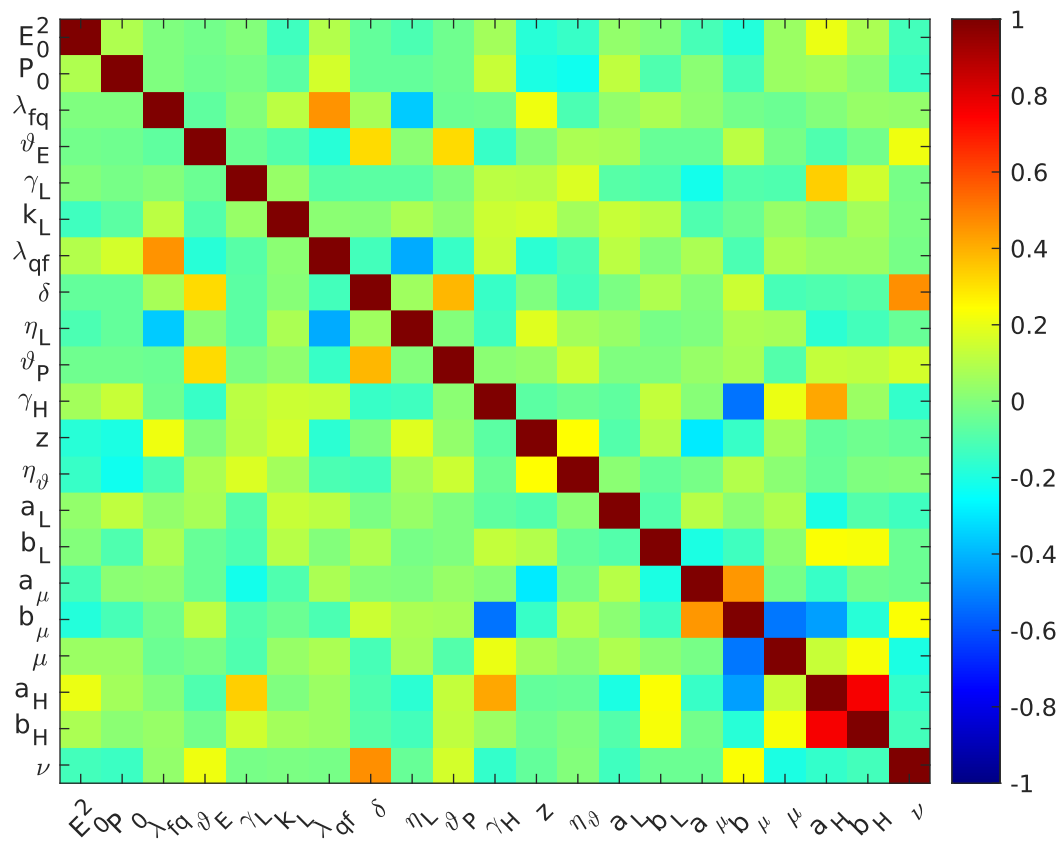
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

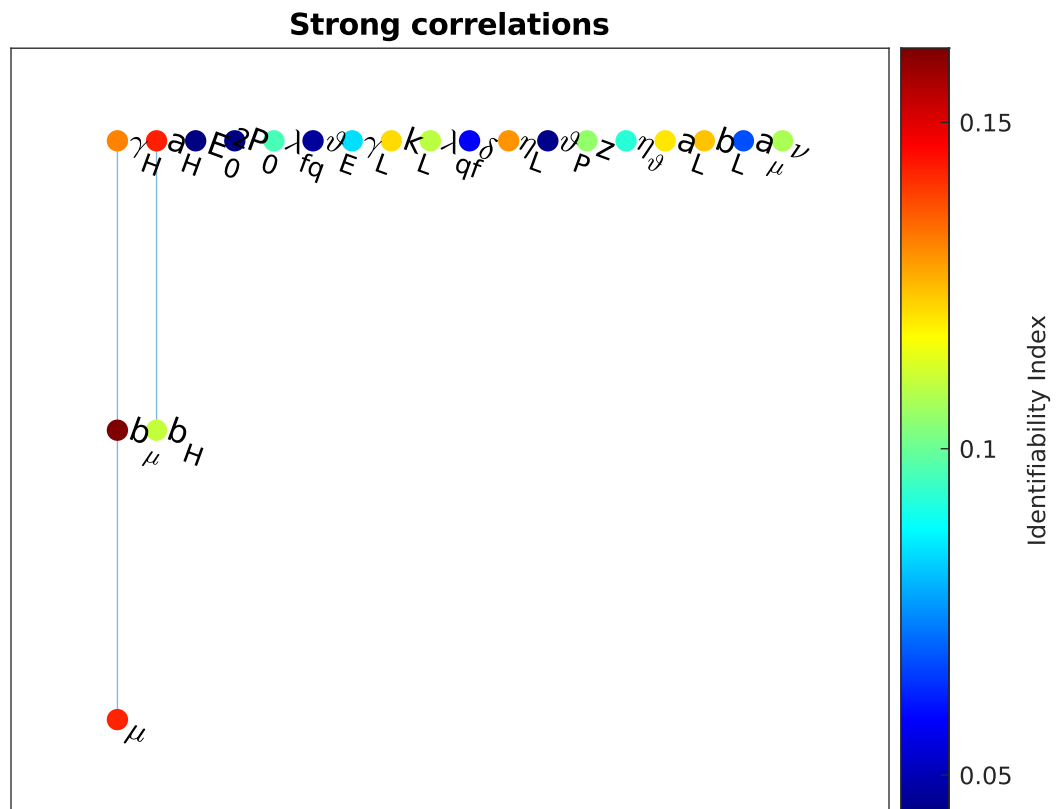
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
E^2_0	'0'	'0'	'0'	'0'	'0.0444'
P_0	'0'	'0'	'0'	'0'	'0.0443'
\lambda_{fq}	'0'	'0'	'0.0191'	'0'	'0.0962'
\vartheta_E	'0.0002'	'0.0003'	'0'	'0.0002'	'0.0474'
\gamma_L	'0.3863'	'0.7018'	'0.0095'	'0.6617'	'0.0843'
k_L	'1.364'	'8.3722'	'3.2388'	'1.7075'	'0.1212'
\lambda_{qf}	'0.0926'	'0.8814'	'0.9686'	'0.7547'	'0.1096'
\delta	'0.0007'	'0.0009'	'0.0003'	'0.0009'	'0.0581'
\eta_L	'0.2368'	'0.7774'	'0.4355'	'0.4453'	'0.1298'
\vartheta_P	'0'	'0'	'0'	'0'	'0.0454'
\gamma_H	'0.4906'	'1'	'0.5321'	'1'	'0.1315'
z	'7.7865'	'8.2406'	'7.3659'	'8.2167'	'0.1048'
\eta_{\vartheta}	'0.7662'	'1'	'0.8149'	'1'	'0.0927'
a_L	'1.7007'	'2.4109'	'3.6701'	'1.9745'	'0.1199'
b_L	'6.0594'	'13.4197'	'3.2044'	'7.8937'	'0.1242'
a_{\mu}	'13.609'	'15'	'14.9999'	'15'	'0.0681'
b_{\mu}	'12.5162'	'14.7663'	'7.5434'	'14.6412'	'0.1614'
\mu	'0.01'	'0.0128'	'0.1518'	'0.0128'	'0.1422'
a_H	'11.1615'	'12.8479'	'4.0979'	'12.0148'	'0.1426'
b_H	'4.173'	'5.7895'	'1.4691'	'5.7075'	'0.1103'
\nu	'299.4748'	'458.9152'	'16.6631'	'434.8396'	'0.1078'

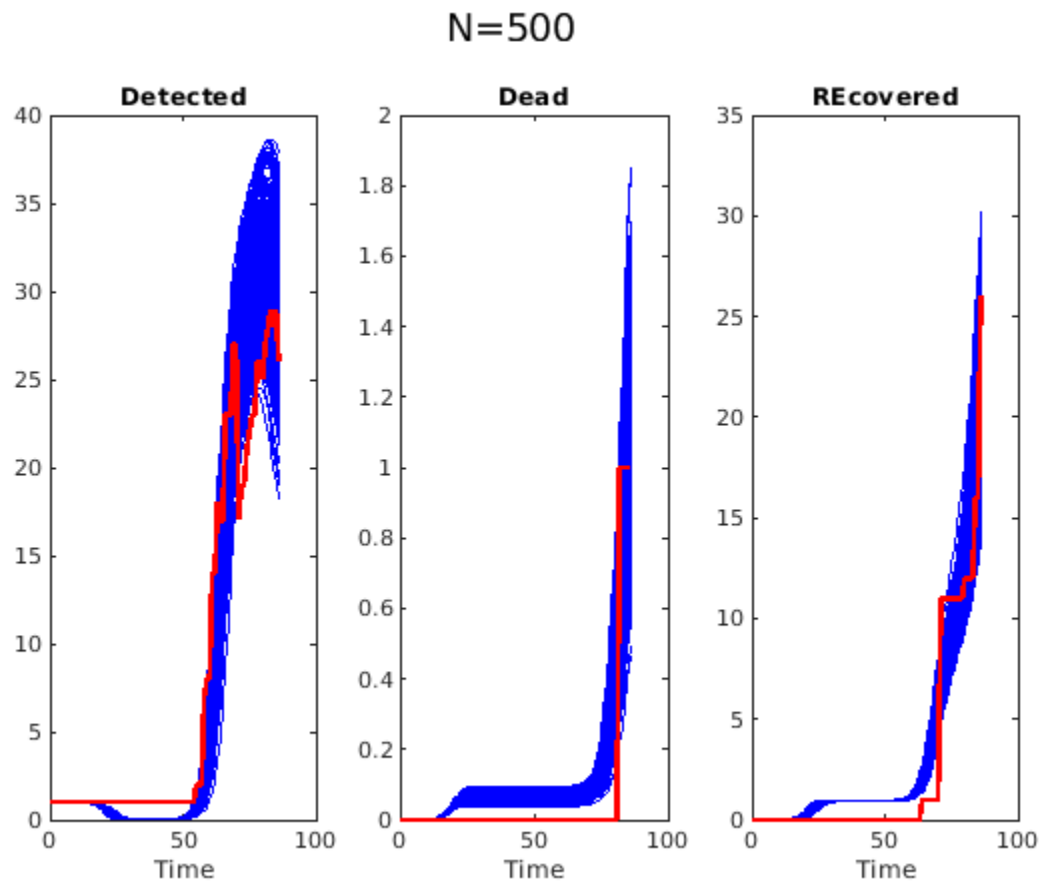
1.3. Identifiability analysis







1.4. Uncertainty analysis



Chapter 2. Extension number2

2.1. Basic information

The extension to be validated consists of the time series from the data87 to the 121. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

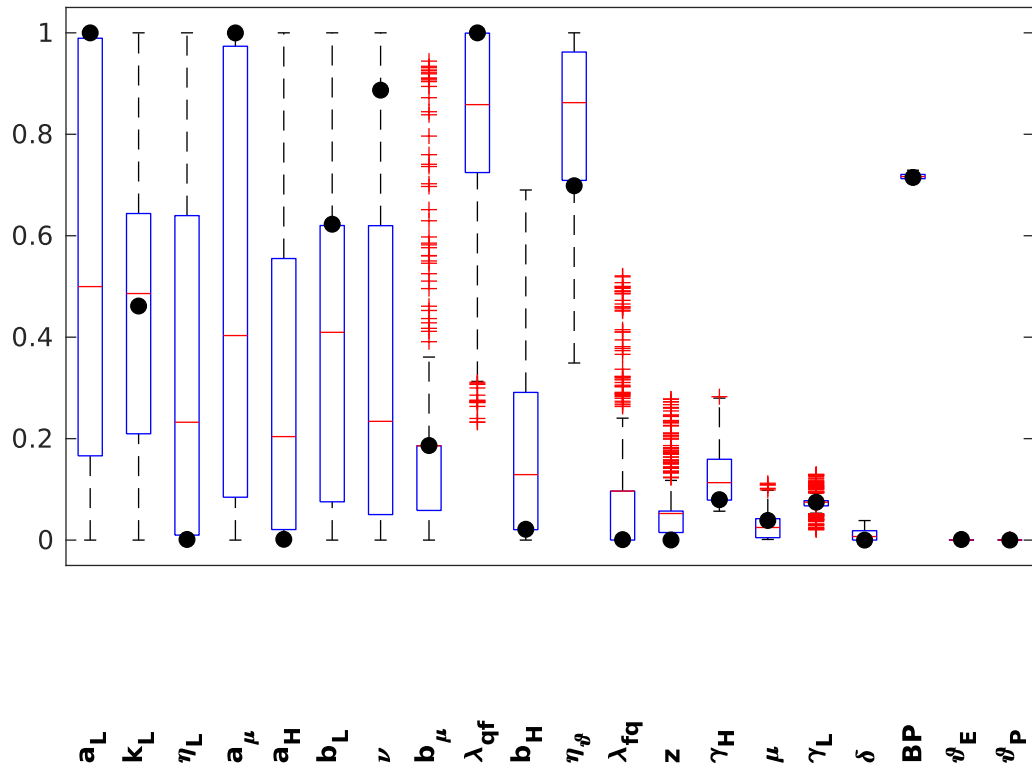
2.2. Estimated parameters with their intervals

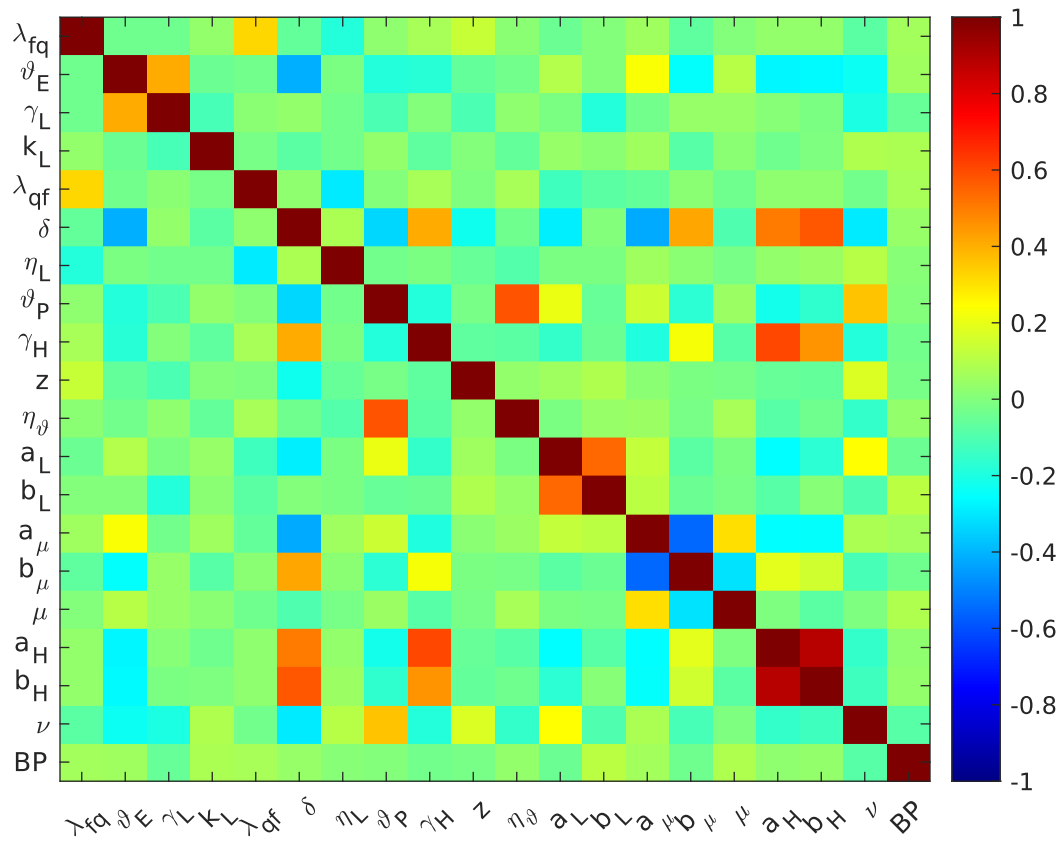
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

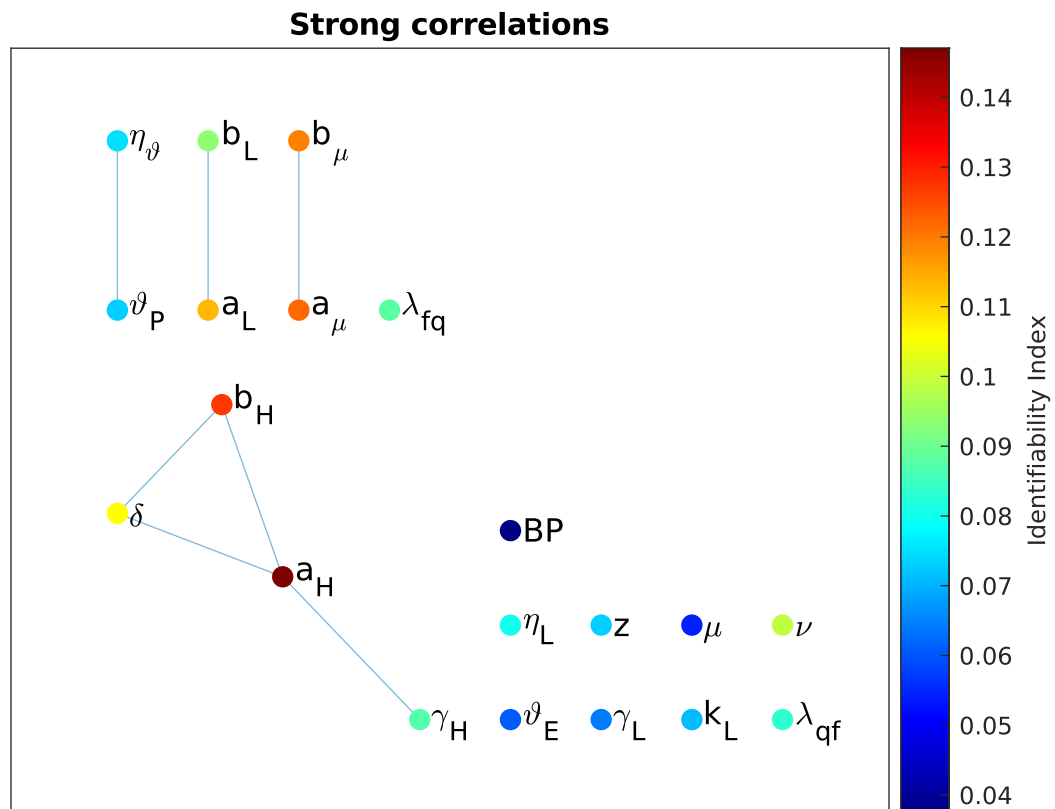
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.002'	'0.0966'	'0.0009'	'0.0883'
ϑ_E	'0.0001'	'0.0028'	'0.0003'	'0.0012'	'0.0611'
γ_L	'0.0354'	'0.085'	'0.0747'	'0.0747'	'0.0642'
k_L	'1'	'10'	'5.3744'	'5.1528'	'0.0711'
λ_{qf}	'0'	'1'	'0.8585'	'0.9999'	'0.0834'
δ	'0'	'0'	'0.0011'	'0'	'0.1056'
η_L	'0'	'0.0028'	'0.2323'	'0.0013'	'0.0806'
ϑ_P	'0'	'0'	'0.0001'	'0'	'0.0732'
γ_H	'0.0711'	'0.1068'	'0.1132'	'0.0797'	'0.0872'
z	'0'	'0.0162'	'1.5731'	'0.0072'	'0.0733'
η_{ϑ}	'0.6788'	'0.7178'	'0.8624'	'0.6986'	'0.075'
a_L	'7.4218'	'15'	'7.9965'	'14.9985'	'0.1136'
b_L	'5.1731'	'15'	'6.7345'	'9.7179'	'0.0937'
a_{μ}	'9.9501'	'15'	'6.6454'	'14.9978'	'0.1221'
b_{μ}	'3.1313'	'6.8965'	'3.603'	'3.61'	'0.1194'
μ	'0.0254'	'0.0402'	'0.0248'	'0.0387'	'0.0546'
a_H	'1'	'2.8209'	'3.8566'	'1.0222'	'0.147'
b_H	'1.1036'	'1.7142'	'2.8073'	'1.2992'	'0.127'
ν	'0'	'500'	'117.0577'	'443.4898'	'0.099'
BP	'86.552'	'89.5644'	'86.9899'	'86.7886'	'0.0375'

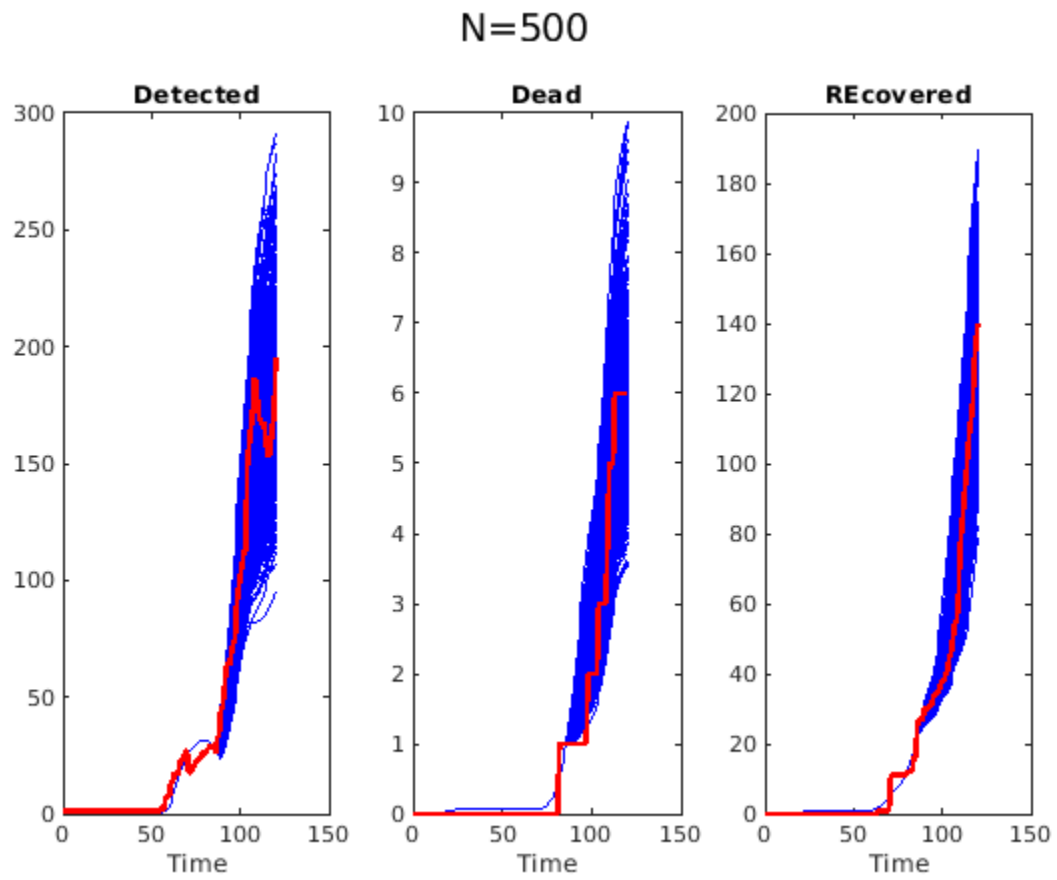
2.3. Identifiability analysis







2.4. Uncertainty analysys



Chapter 3. Extension number3

3.1. Basic information

The extension to be validated consists of the time series from the data121 to the 176. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

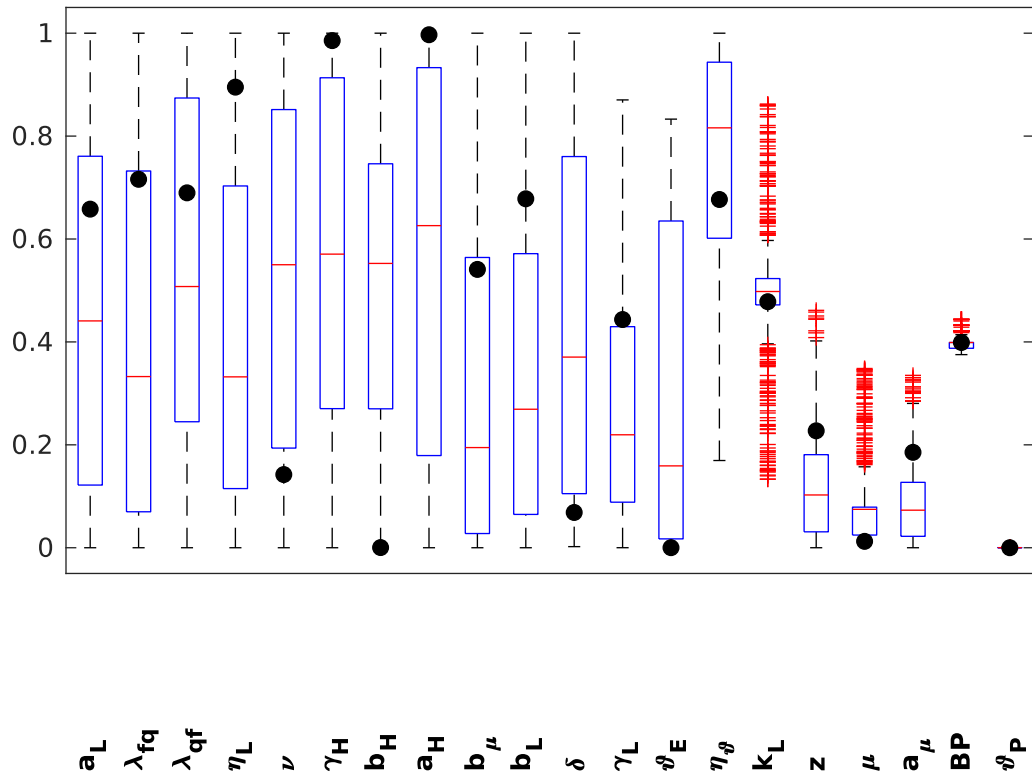
3.2. Estimated parameters with their intervals

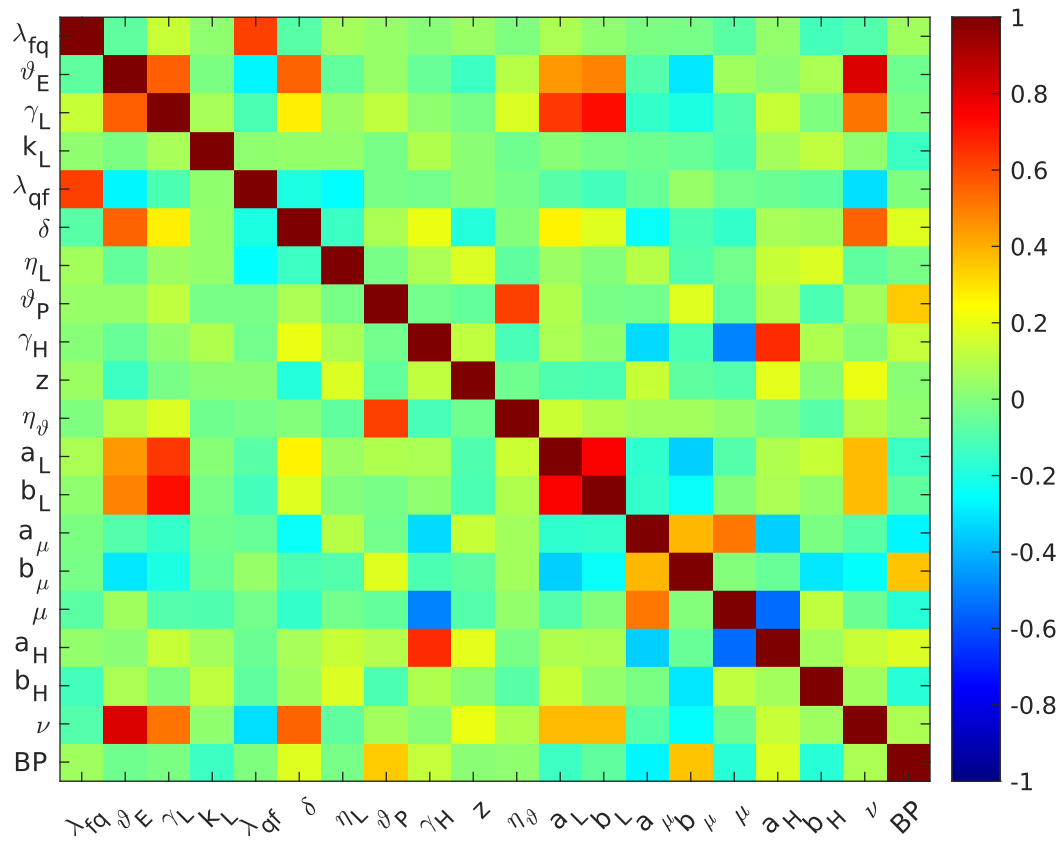
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

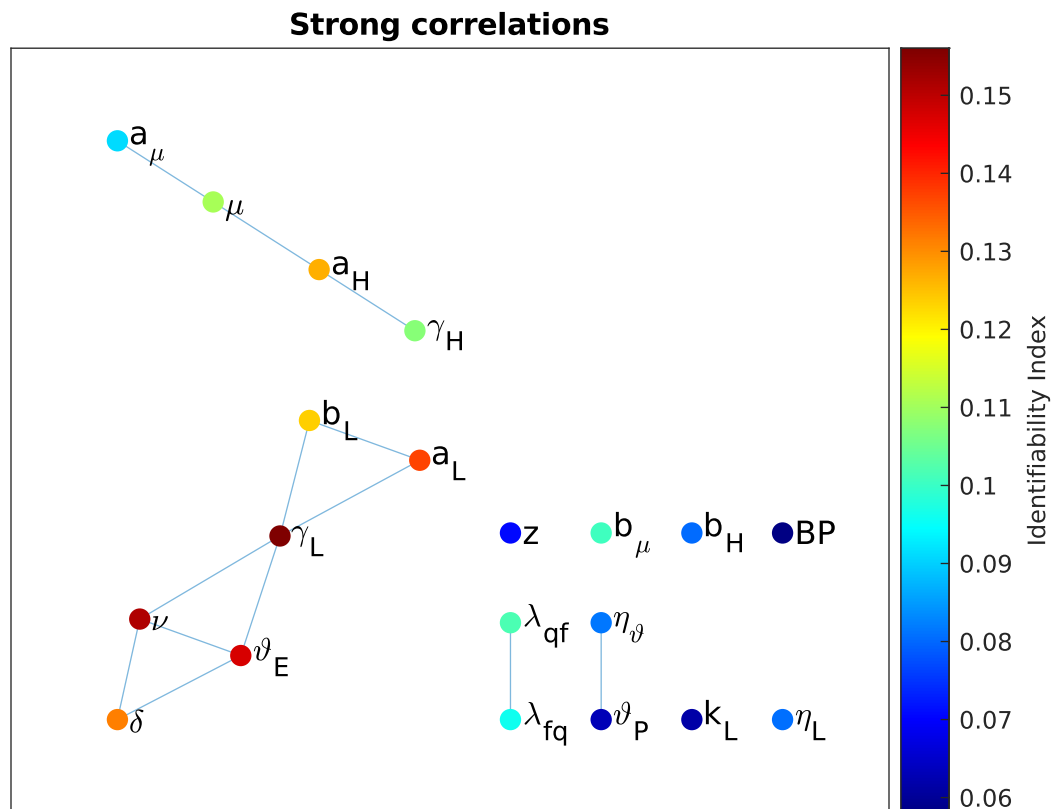
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.501'	'1'	'0.3327'	'0.716'	'0.0964'
\vartheta_E	'0'	'0.0003'	'0.1591'	'0.0001'	'0.1474'
\gamma_L	'0.1116'	'0.9637'	'0.2196'	'0.4435'	'0.156'
k_L	'1'	'9.64'	'5.4817'	'5.3036'	'0.0616'
\lambda_{qf}	'0.312'	'0.7623'	'0.5076'	'0.6897'	'0.1021'
\delta	'0.0098'	'0.0147'	'0.0556'	'0.0103'	'0.1314'
\eta_L	'0.0738'	'1'	'0.3321'	'0.8951'	'0.0807'
\vartheta_P	'0'	'0.0001'	'0.0001'	'0'	'0.0632'
\gamma_H	'0.4768'	'1'	'0.5706'	'0.9856'	'0.1077'
z	'6.4584'	'9.981'	'3.0771'	'6.8178'	'0.071'
\eta_{\vartheta}	'0.6618'	'0.9383'	'0.816'	'0.6768'	'0.0817'
a_L	'1'	'11.5903'	'7.1716'	'10.2127'	'0.1372'
b_L	'7.4674'	'15'	'4.7684'	'10.4942'	'0.1235'
a_{\mu}	'1.845'	'8.5419'	'2.0221'	'3.5959'	'0.0912'
b_{\mu}	'5.8276'	'15'	'3.7253'	'8.573'	'0.1009'
\mu	'0.0077'	'0.0146'	'0.0747'	'0.0124'	'0.1105'
a_H	'9.1088'	'15'	'9.7641'	'14.9578'	'0.1268'
b_H	'1'	'2.4672'	'8.7357'	'1.0048'	'0.0807'
\nu	'61.263'	'93.9924'	'275.0042'	'71.1016'	'0.1513'
BP	'122.4435'	'127.1698'	'122.5'	'122.5'	'0.0581'

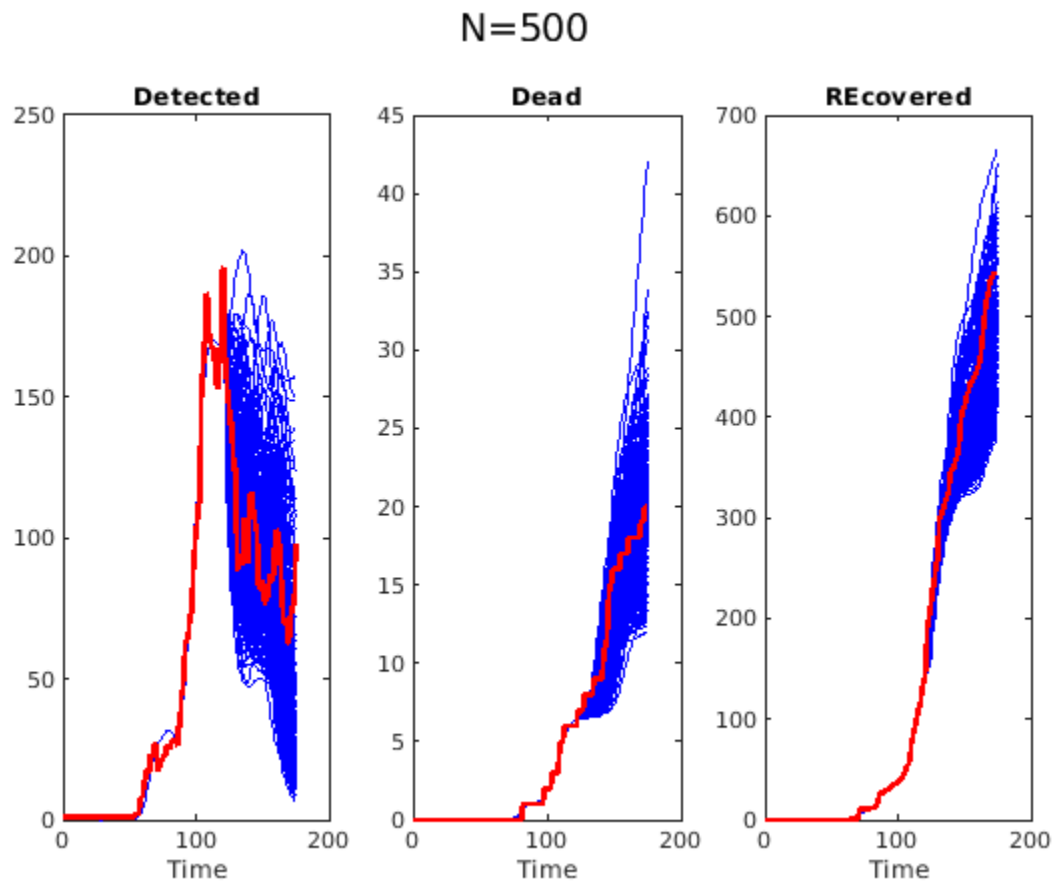
3.3. Identifiability analysis







3.4. Uncertainty analysis



Chapter 4. Extension number4

4.1. Basic information

The extension to be validated consists of the time series from the data176 to the 219. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

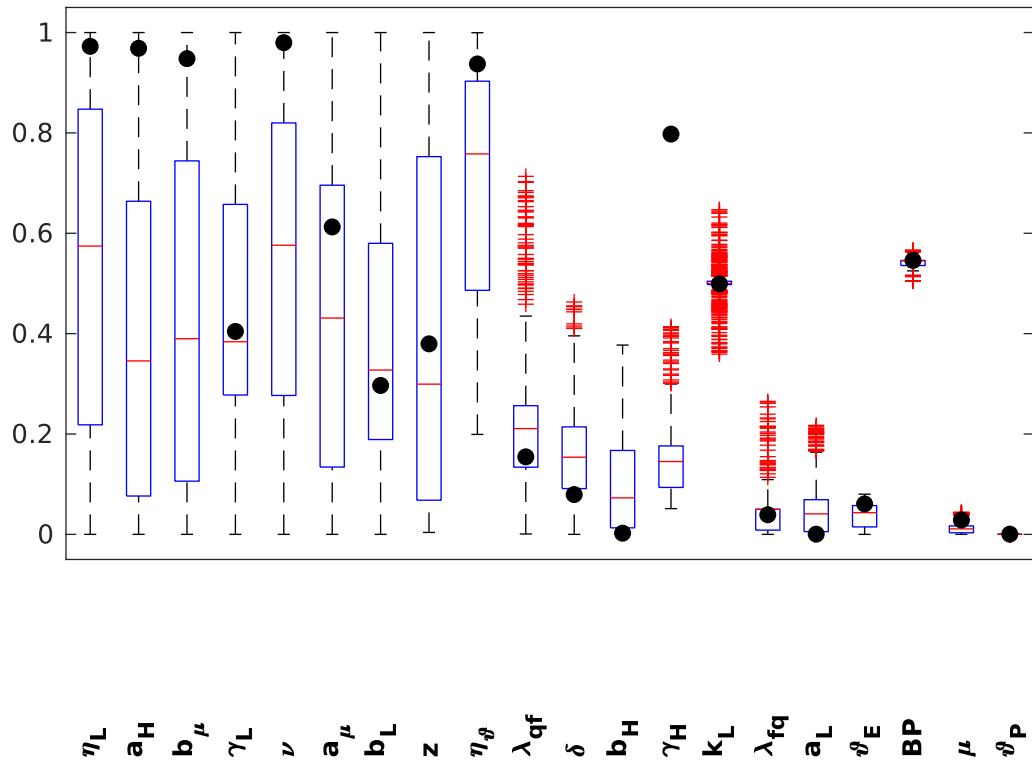
4.2. Estimated parameters with their intervals

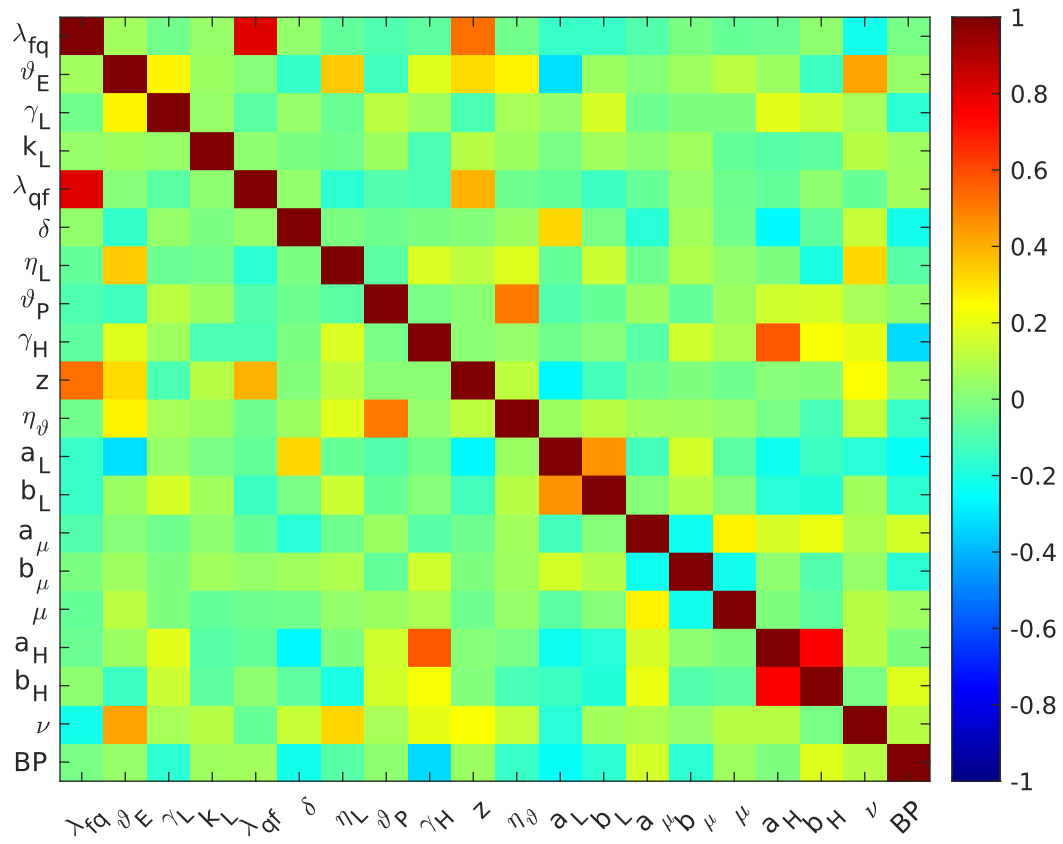
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

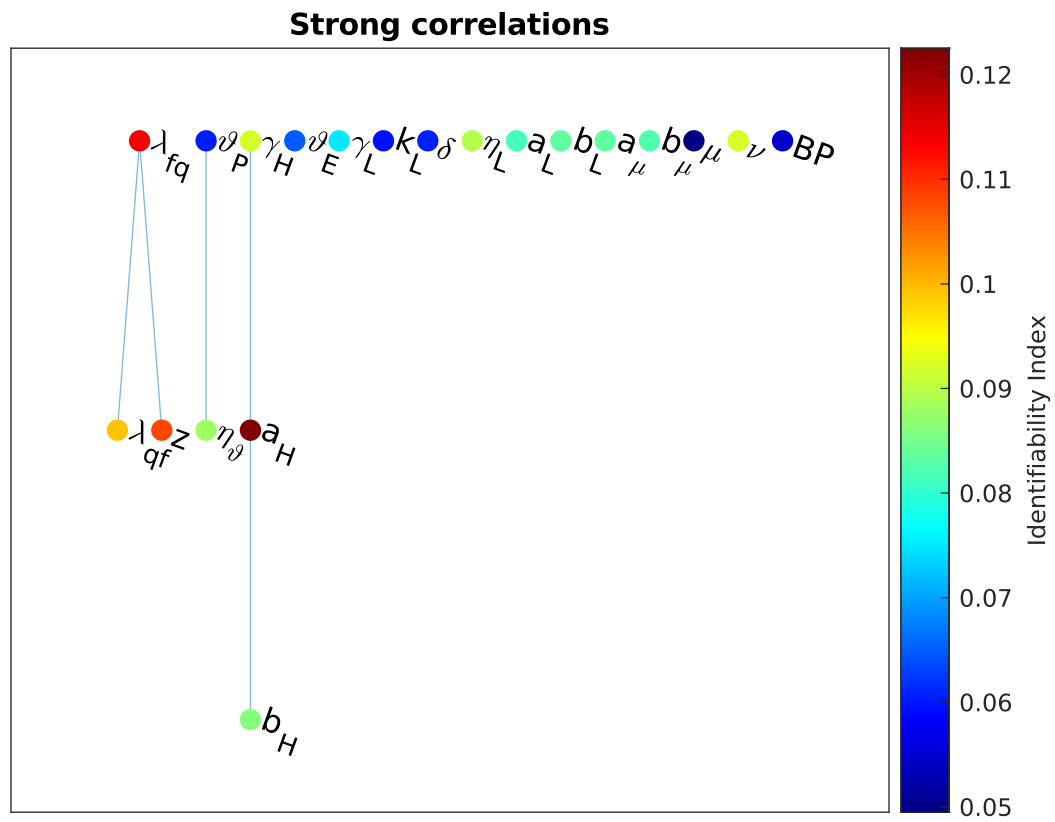
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0344'	'0.0502'	'0.05'	'0.0391'	'0.1139'
ϑ_E	'0.0499'	'0.0763'	'0.0432'	'0.0607'	'0.065'
γ_L	'0.1858'	'0.8408'	'0.3838'	'0.4044'	'0.0753'
k_L	'1.7414'	'8.4814'	'5.5'	'5.4938'	'0.0596'
λ_{qf}	'0.1482'	'0.2006'	'0.2107'	'0.1545'	'0.0994'
δ	'0.0068'	'0.0183'	'0.0231'	'0.0119'	'0.0606'
η_L	'0.6879'	'1'	'0.5745'	'0.9725'	'0.0897'
ϑ_P	'0.0002'	'0.001'	'0.0001'	'0.0005'	'0.0606'
γ_H	'0.3174'	'0.8023'	'0.1451'	'0.7976'	'0.0919'
z	'7.5695'	'15.1486'	'8.9812'	'11.3901'	'0.108'
η_{ϑ}	'0.8164'	'1'	'0.7582'	'0.9374'	'0.0882'
a_L	'1'	'1.9368'	'1.5728'	'1.0054'	'0.0815'
b_L	'4.37'	'10.8626'	'5.5842'	'5.1547'	'0.0837'
a_{μ}	'4.3076'	'13.5734'	'7.035'	'9.5767'	'0.0836'
b_{μ}	'3.6981'	'14.5162'	'6.4594'	'14.2721'	'0.0824'
μ	'0.0083'	'0.0439'	'0.011'	'0.0286'	'0.0495'
a_H	'7.205'	'15'	'5.8393'	'14.5609'	'0.1225'
b_H	'1'	'6.4962'	'2.0188'	'1.0329'	'0.0863'
ν	'393.6077'	'500'	'288.0864'	'489.9302'	'0.0921'
BP	'174.3641'	'188.7731'	'174.4137'	'174.4969'	'0.0549'

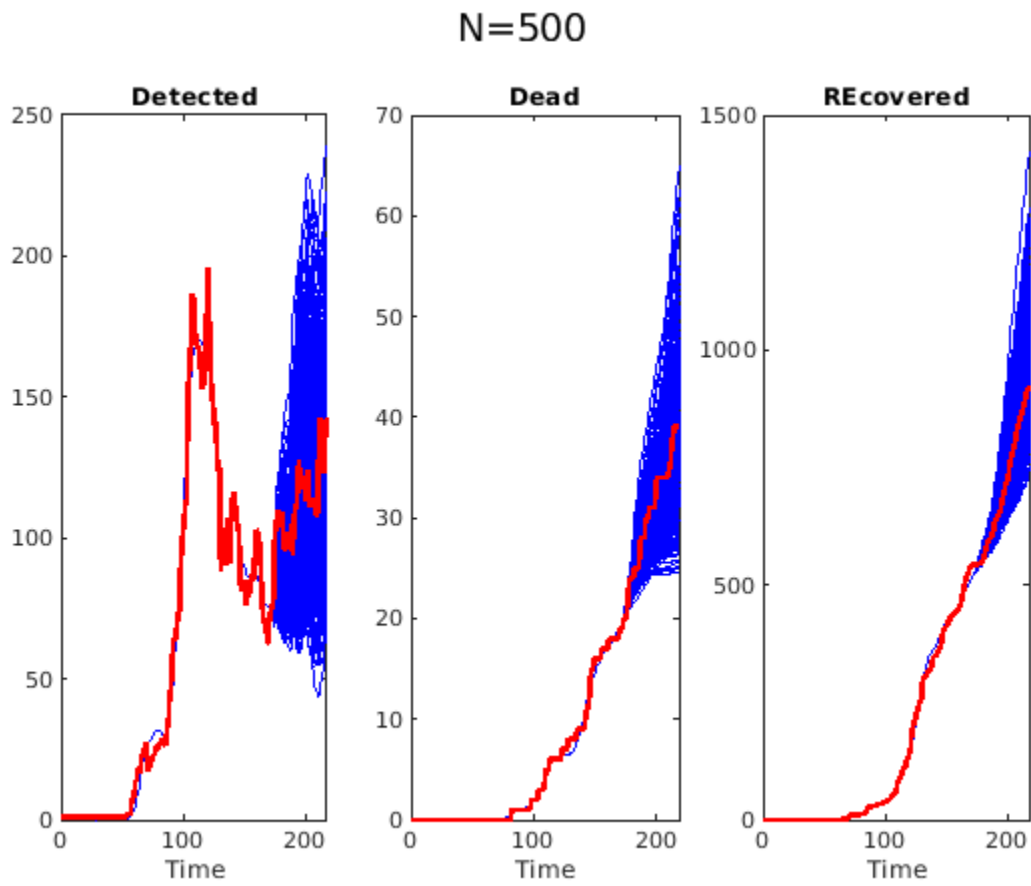
4.3. Identifiability analysis







4.4. Uncertainty analysis



Chapter 5. Extension number5

5.1. Basic information

The extension to be validated consists of the time series from the data219 to the 252. The status of the validation is: COMPLETED.

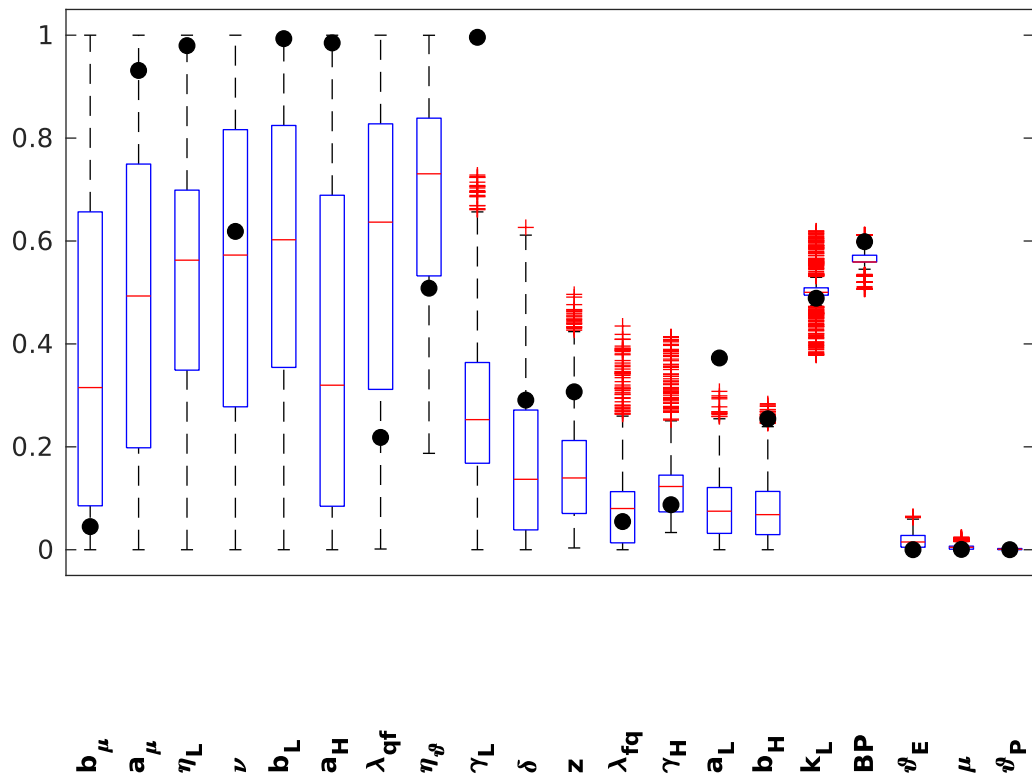
The number of estimations needed to perform the validation was1000.

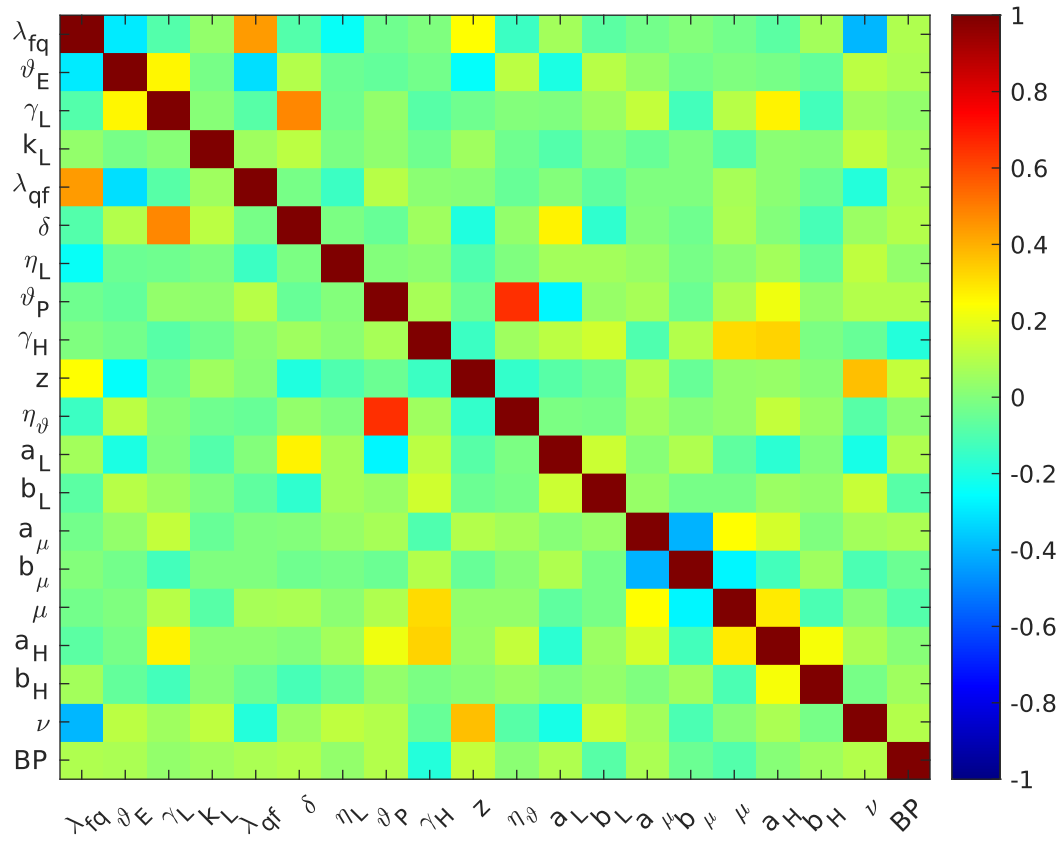
5.2. Estimated parameters with their intervals

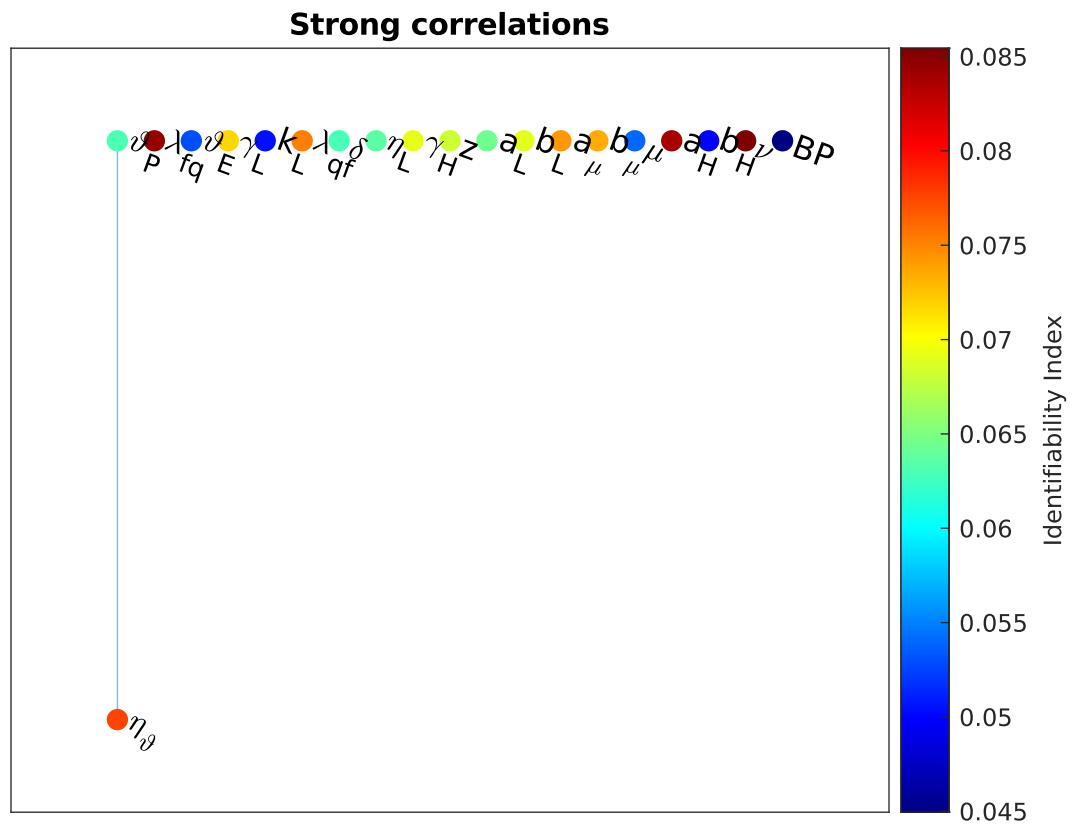
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0513'	'0.1095'	'0.0804'	'0.0548'	'0.0844'
ϑ_E	'0.0134'	'0.0168'	'0.0151'	'0.0001'	'0.0531'
γ_L	'0.2311'	'0.2746'	'0.2529'	'0.9959'	'0.0717'
k_L	'5.3681'	'5.6369'	'5.5025'	'5.3988'	'0.0506'
λ_{qf}	'0.608'	'0.6654'	'0.6367'	'0.2183'	'0.0752'
δ	'0.0186'	'0.0225'	'0.0205'	'0.0436'	'0.0628'
η_L	'0.5376'	'0.5879'	'0.5628'	'0.9797'	'0.0638'
ϑ_P	'0.0007'	'0.0011'	'0.0009'	'0.0001'	'0.0631'
γ_H	'0.1022'	'0.1437'	'0.1229'	'0.0875'	'0.0692'
z	'3.6755'	'4.7132'	'4.1943'	'9.2084'	'0.0681'
η_{ϑ}	'0.711'	'0.7497'	'0.7303'	'0.5083'	'0.0776'
a_L	'1.8393'	'2.2644'	'2.0519'	'6.2174'	'0.0646'
b_L	'9.0486'	'9.8191'	'9.4339'	'14.9059'	'0.069'
a_{μ}	'7.5035'	'8.3042'	'7.9038'	'14.0406'	'0.0743'
b_{μ}	'5.002'	'5.8227'	'5.4124'	'1.629'	'0.0734'
μ	'0.0002'	'0.0094'	'0.0048'	'0.0006'	'0.0541'
a_H	'5.0554'	'5.8981'	'5.4767'	'14.79'	'0.0838'
b_H	'1.7932'	'2.1177'	'1.9554'	'4.563'	'0.0501'
ν	'271.0094'	'301.6538'	'286.3316'	'309.3338'	'0.0854'
BP	'218.3597'	'218.6403'	'218.5'	'221.5'	'0.045'

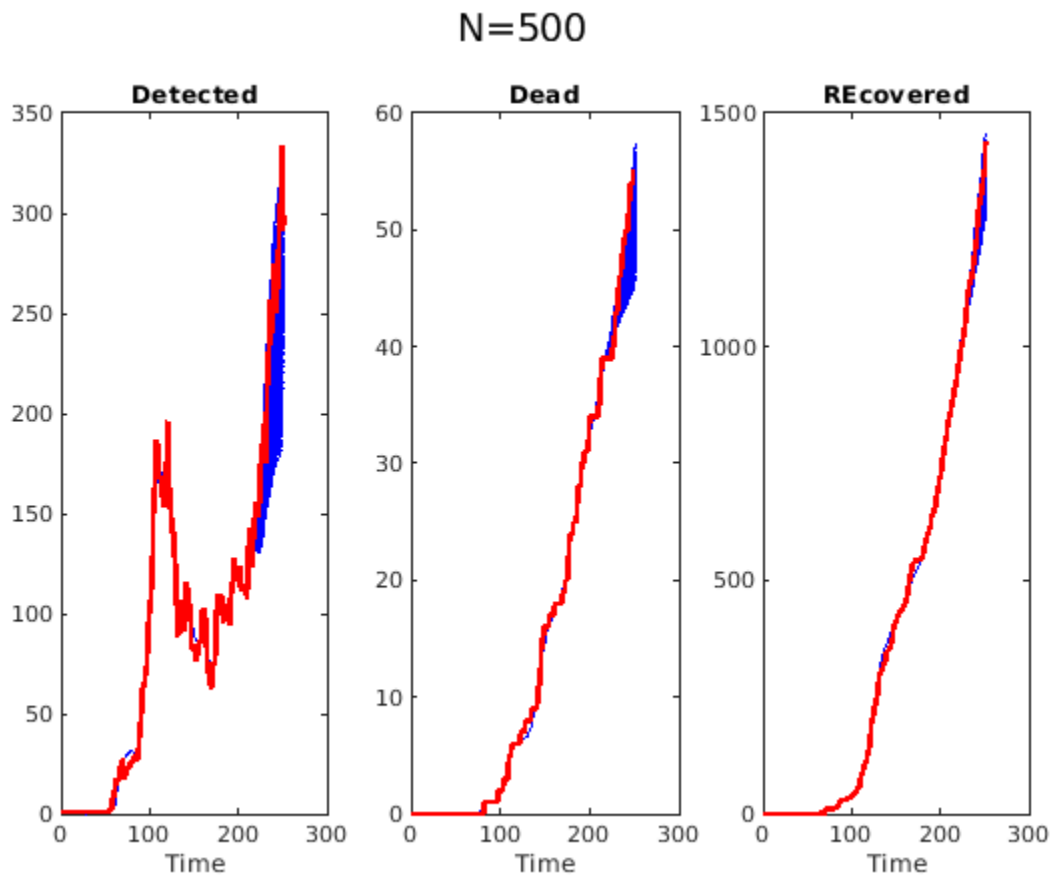
5.3. Identifiability analysis







5.4. Uncertainty analysys



Chapter 6. Extension number6

6.1. Basic information

The extension to be validated consists of the time series from the data252 to the 278. The status of the validation is: COMPLETED.

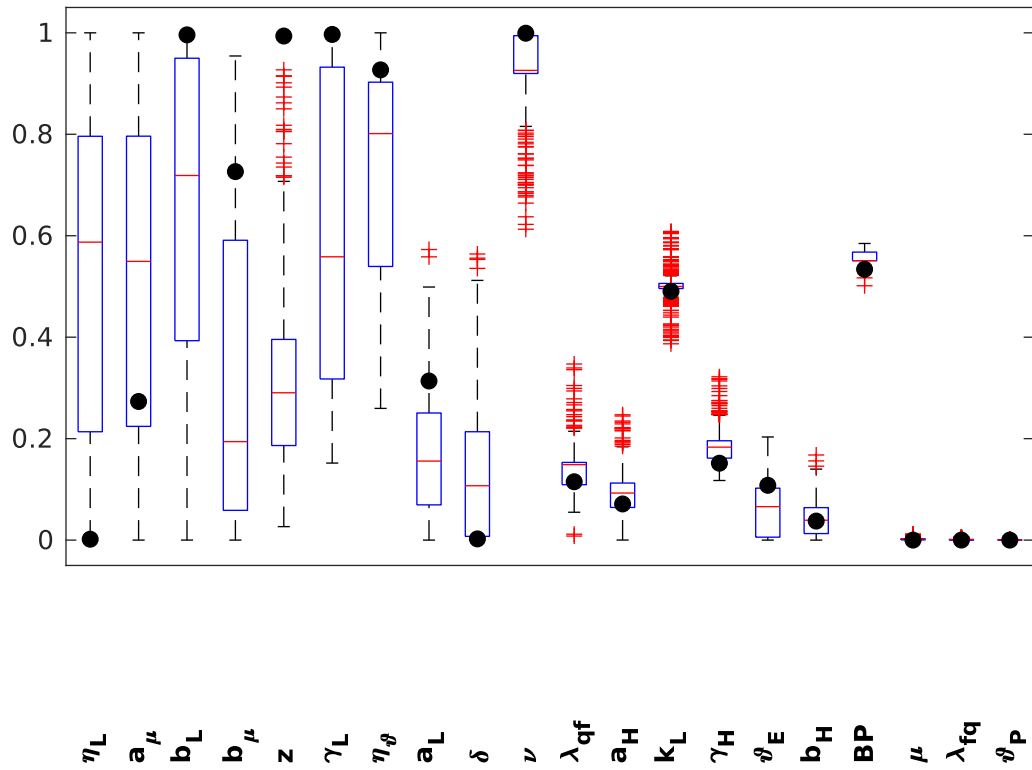
The number of estimations needed to perform the validation was1000.

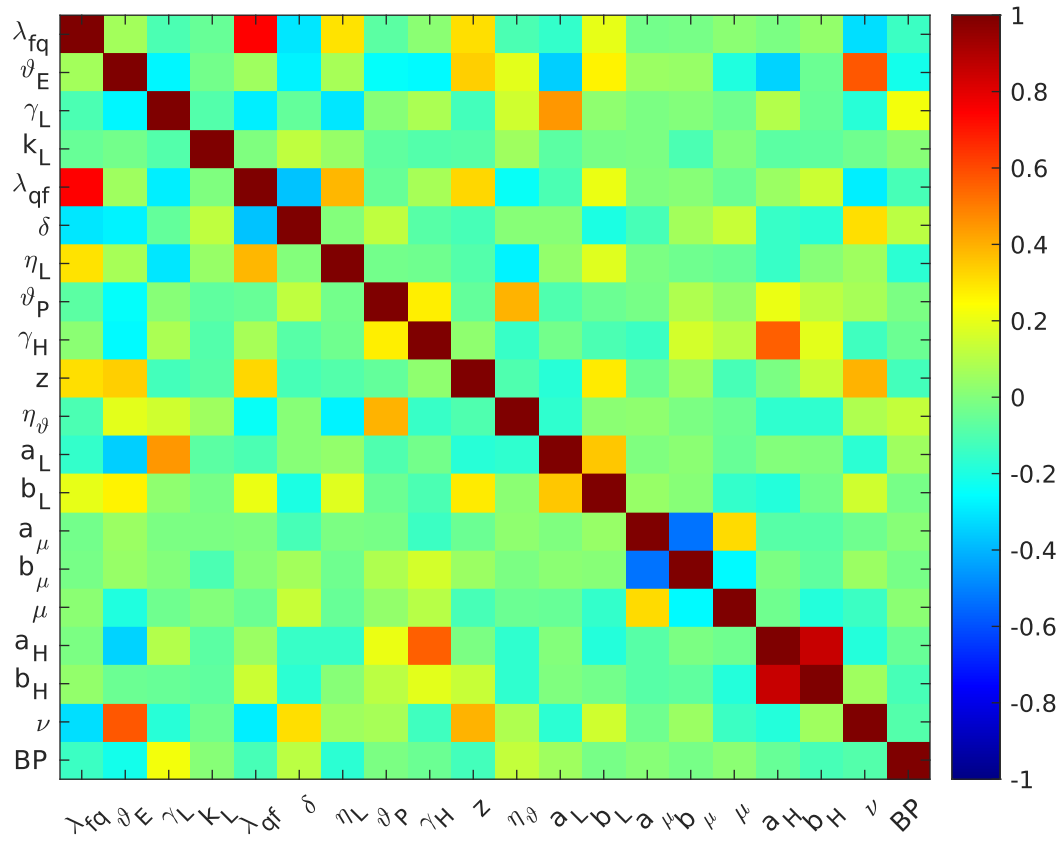
6.2. Estimated parameters with their intervals

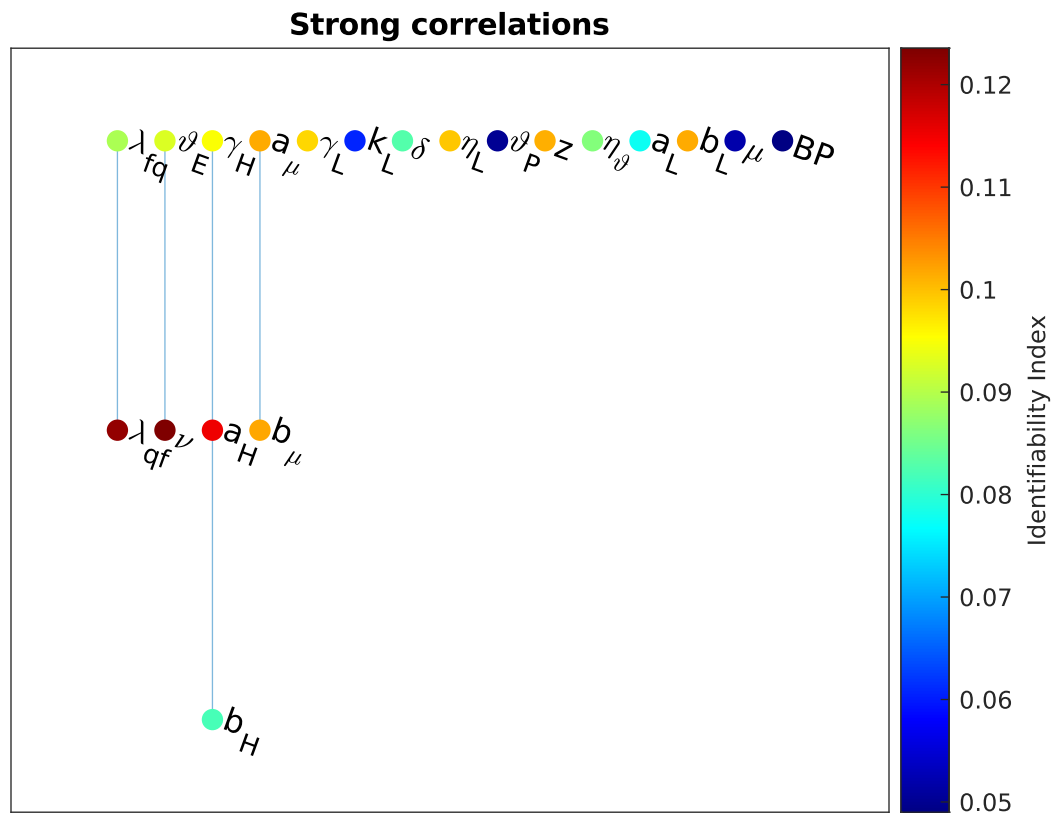
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0286'	'0.0012'	'0.0001'	'0.0893'
ϑ_E	'0.0592'	'0.0726'	'0.0659'	'0.108'	'0.0929'
γ_L	'0.517'	'0.6'	'0.5585'	'0.9968'	'0.0983'
k_L	'5.2929'	'5.7089'	'5.5009'	'5.4132'	'0.0609'
λ_{qf}	'0.1081'	'0.1894'	'0.1487'	'0.115'	'0.1218'
δ	'0.0125'	'0.0197'	'0.0161'	'0.0004'	'0.083'
η_L	'0.5407'	'0.6341'	'0.5874'	'0.0018'	'0.0996'
ϑ_P	'0'	'0.0005'	'0.0002'	'0'	'0.0502'
γ_H	'0.1575'	'0.209'	'0.1833'	'0.1516'	'0.0951'
z	'7.513'	'9.9135'	'8.7133'	'29.8105'	'0.1011'
η_{ϑ}	'0.7711'	'0.8316'	'0.8013'	'0.927'	'0.0863'
a_L	'2.8425'	'3.5187'	'3.1806'	'5.3908'	'0.0778'
b_L	'10.4258'	'11.6991'	'11.0625'	'14.944'	'0.1016'
a_{μ}	'8.0702'	'9.3142'	'8.6922'	'4.8254'	'0.1014'
b_{μ}	'3.0922'	'4.3431'	'3.7177'	'11.1696'	'0.1019'
μ	'0'	'0.0056'	'0.0022'	'0'	'0.052'
a_H	'1.9458'	'2.6511'	'2.2984'	'1.9975'	'0.1152'
b_H	'1.3644'	'1.7322'	'1.5483'	'1.5249'	'0.0821'
ν	'440.6924'	'485.2544'	'462.9734'	'499.6102'	'0.1236'
BP	'251.3025'	'251.6975'	'251.5'	'250.5'	'0.049'

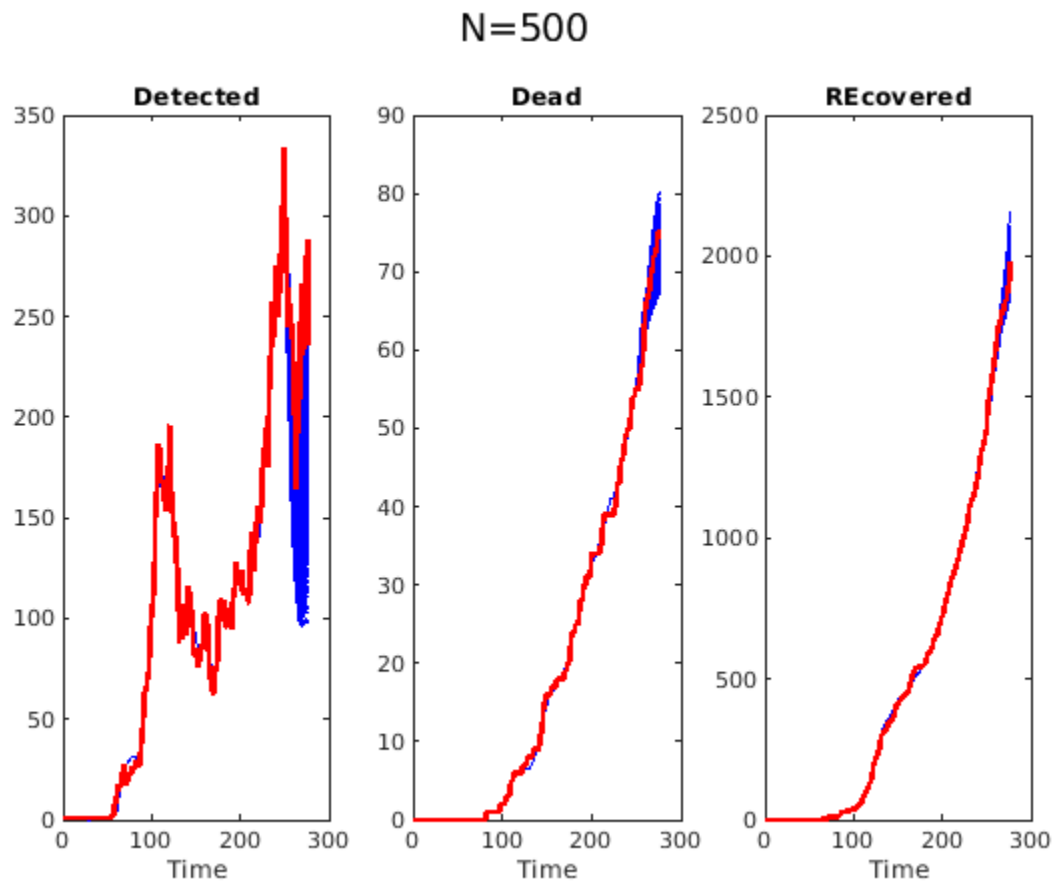
6.3. Identifiability analysys







6.4. Uncertainty analysis



Chapter 7. Extension number7

7.1. Basic information

The extension to be validated consists of the time series from the data278 to the 306. The status of the validation is: COMPLETED.

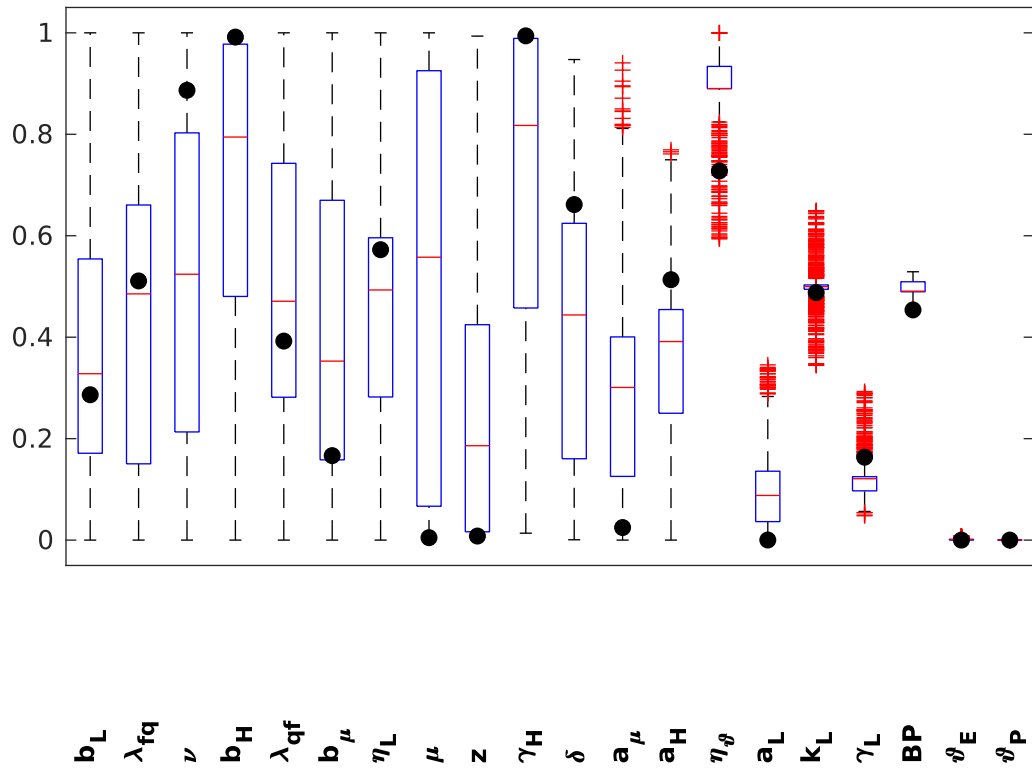
The number of estimations needed to perform the validation was1000.

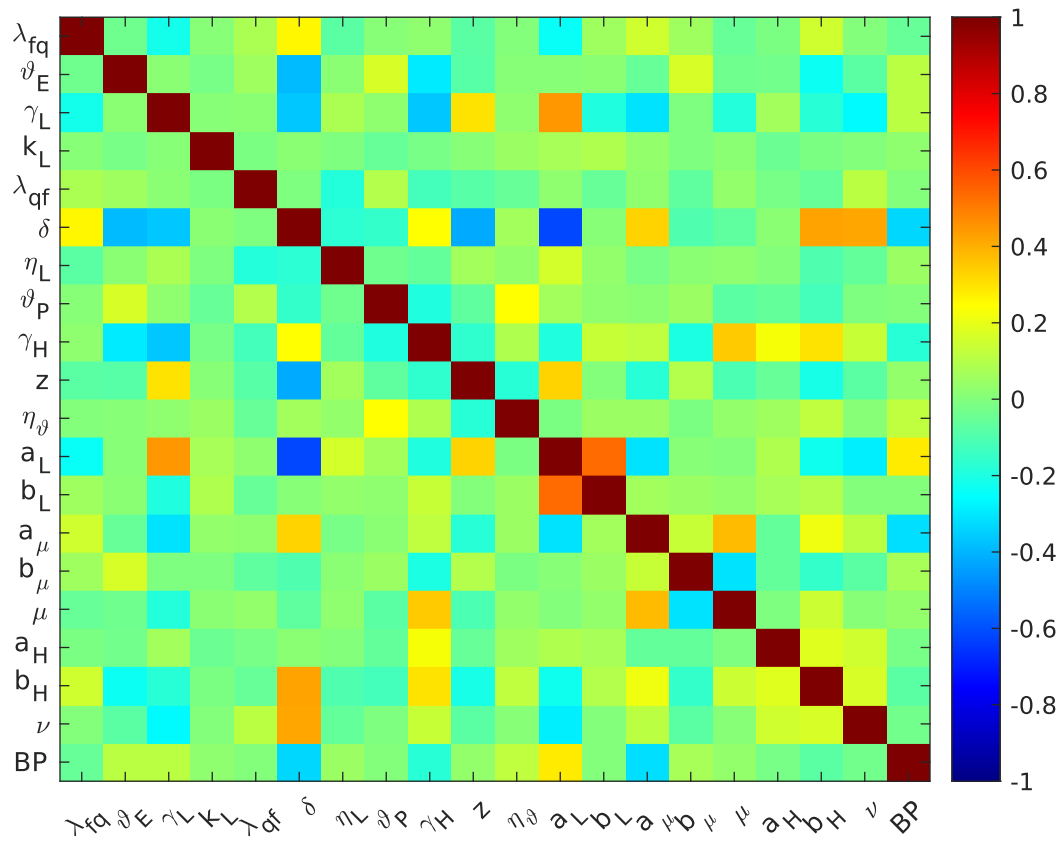
7.2. Estimated parameters with their intervals

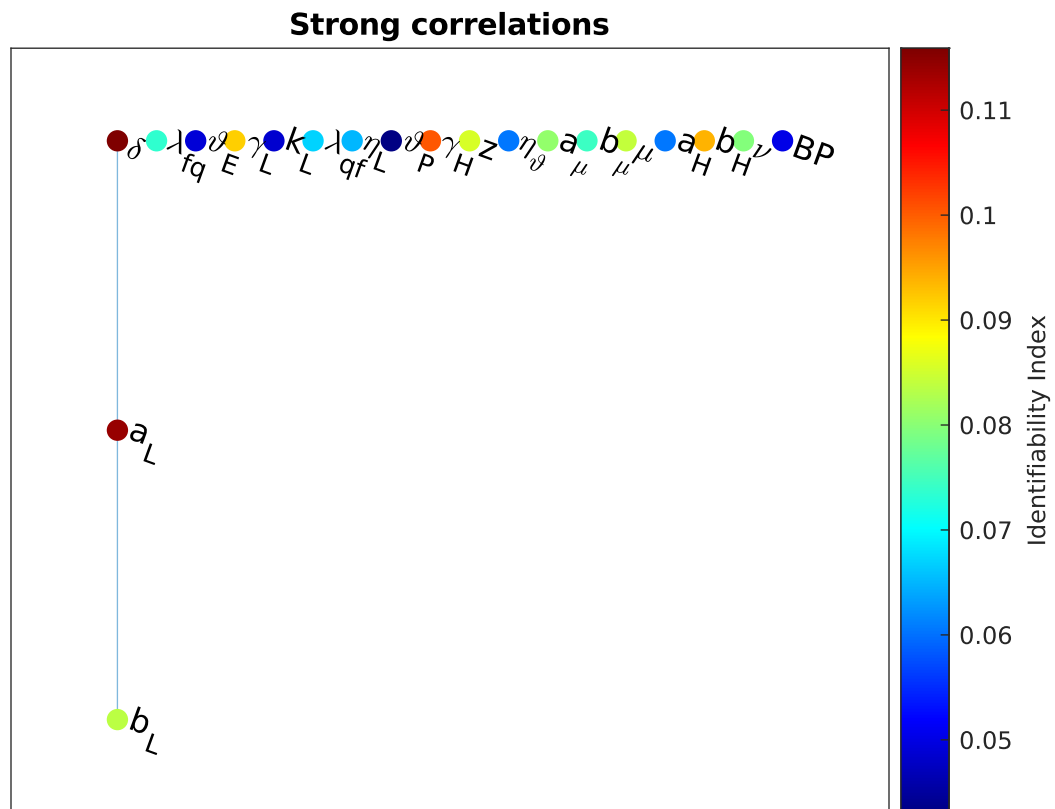
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.4562'	'0.5146'	'0.4854'	'0.5109'	'0.0736'
ϑ_E	'0'	'0.003'	'0.0014'	'0'	'0.0491'
γ_L	'0.0939'	'0.1481'	'0.121'	'0.1634'	'0.0917'
k_L	'5.3442'	'5.6507'	'5.4975'	'5.391'	'0.0486'
λ_{qf}	'0.4425'	'0.4992'	'0.4708'	'0.3923'	'0.0671'
δ	'0.0631'	'0.0701'	'0.0666'	'0.0992'	'0.1159'
η_L	'0.4678'	'0.5184'	'0.4931'	'0.5725'	'0.0652'
ϑ_P	'0'	'0'	'0'	'0'	'0.0431'
γ_H	'0.7845'	'0.8499'	'0.8172'	'0.9941'	'0.1004'
z	'4.7116'	'6.4619'	'5.5868'	'0.2395'	'0.0856'
η_{ϑ}	'0.8697'	'0.9104'	'0.89'	'0.7278'	'0.0606'
a_L	'2.021'	'2.4455'	'2.2333'	'1.0024'	'0.114'
b_L	'5.213'	'5.9706'	'5.5918'	'5.0114'	'0.0836'
a_{μ}	'4.9361'	'5.49'	'5.213'	'1.3463'	'0.0807'
b_{μ}	'5.5341'	'6.3454'	'5.9398'	'3.3311'	'0.0745'
μ	'0.5221'	'0.5933'	'0.5577'	'0.0048'	'0.0842'
a_H	'6.1991'	'6.7634'	'6.4813'	'8.1866'	'0.0605'
b_H	'11.7068'	'12.5405'	'12.1236'	'14.8823'	'0.0939'
ν	'247.0874'	'277.016'	'262.0517'	'443.3674'	'0.0796'
BP	'278.378'	'278.622'	'278.5'	'276.5032'	'0.0505'

7.3. Identifiability analysis

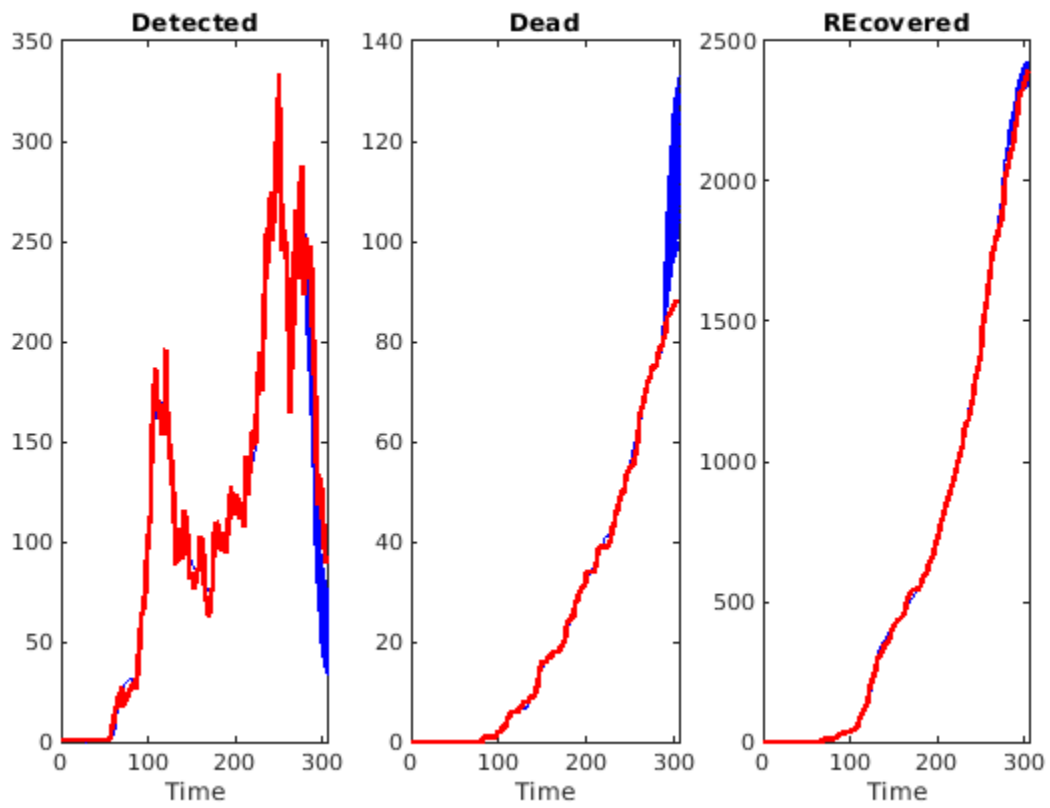






7.4. Uncertainty analysis

N=500



Chapter 8. Extension number8

8.1. Basic information

The extension to be validated consists of the time series from the data306 to the 353. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

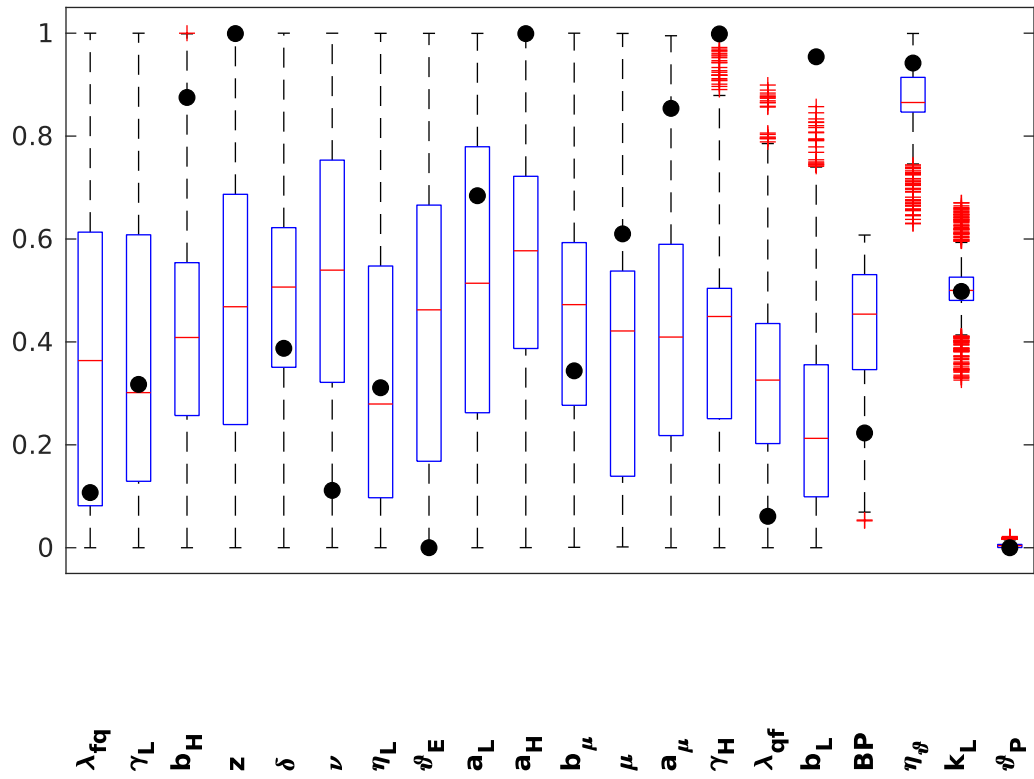
8.2. Estimated parameters with their intervals

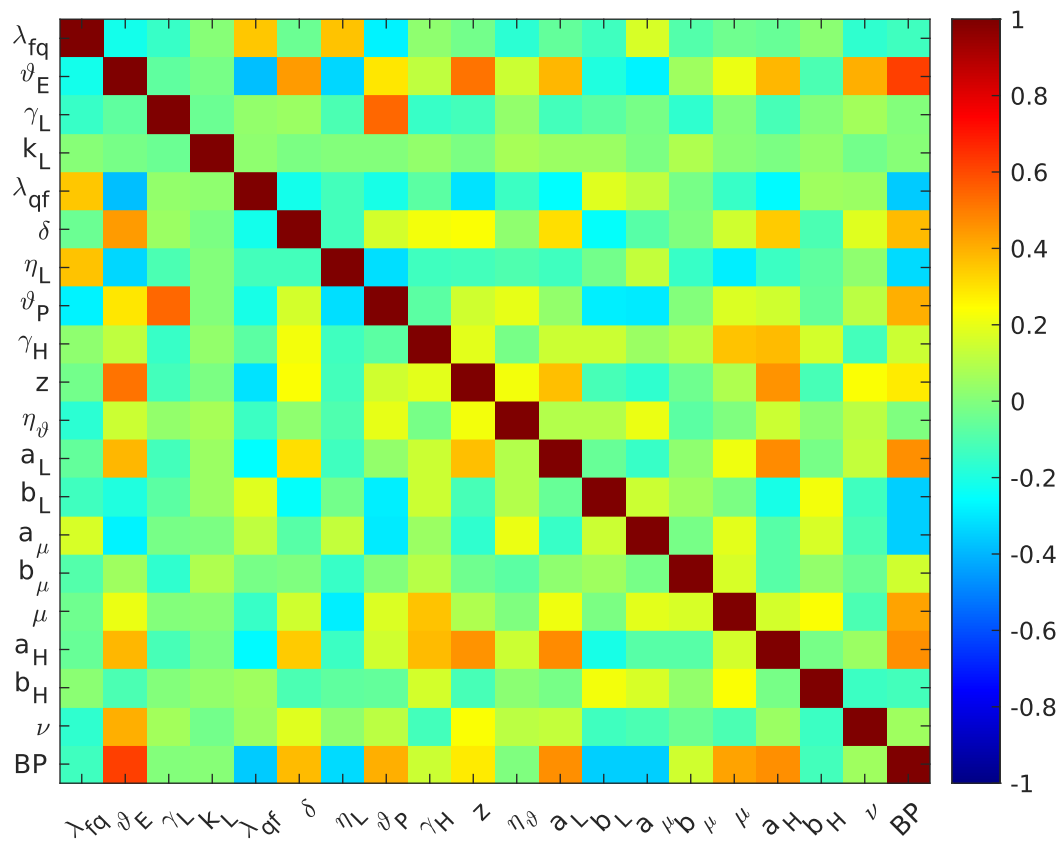
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

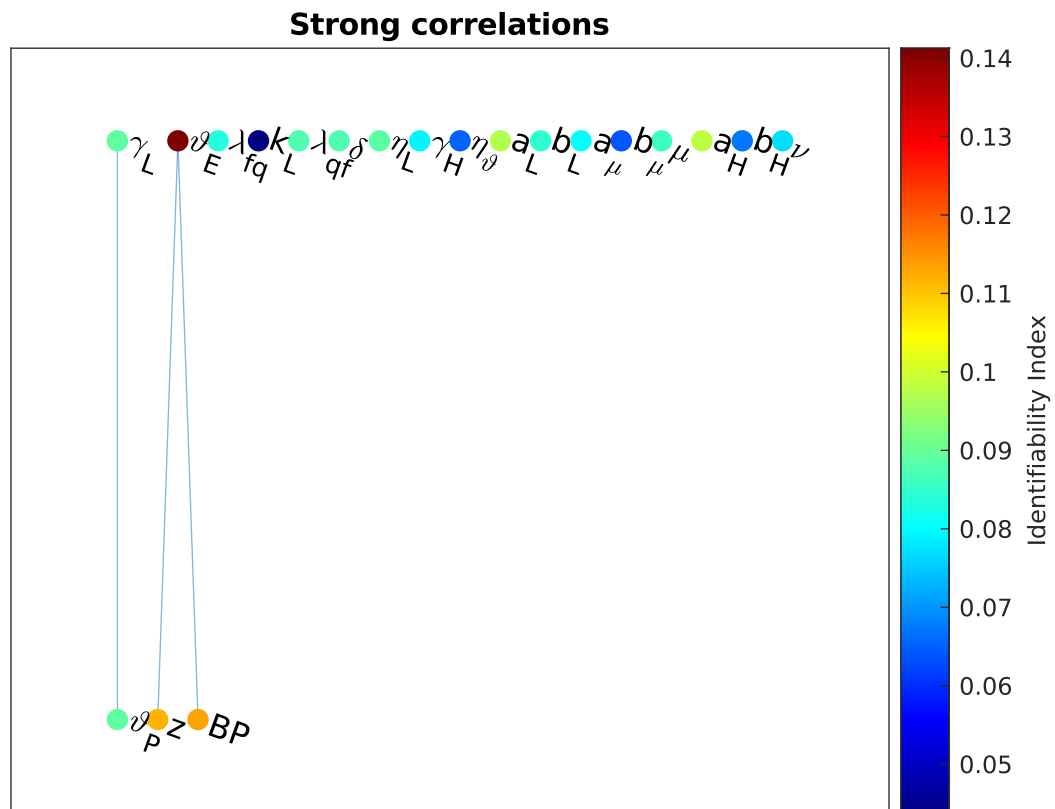
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.1065'	'0.1262'	'0.3637'	'0.1072'	'0.0835'
ϑ_E	'0'	'0.0002'	'0.4623'	'0.0001'	'0.1413'
γ_L	'0.265'	'0.9252'	'0.3015'	'0.3174'	'0.0893'
k_L	'1.7708'	'9.55'	'5.5009'	'5.4832'	'0.0439'
λ_{qf}	'0.0515'	'0.0624'	'0.3258'	'0.061'	'0.0877'
δ	'0.0443'	'0.064'	'0.076'	'0.0581'	'0.0877'
η_L	'0.2821'	'0.5362'	'0.2793'	'0.3109'	'0.0889'
ϑ_P	'0'	'0'	'0.0041'	'0'	'0.0893'
γ_H	'0.3881'	'1'	'0.4494'	'0.9986'	'0.0796'
z	'21.0931'	'30'	'14.0509'	'29.9773'	'0.1119'
η_{ϑ}	'0.4082'	'0.9497'	'0.8653'	'0.942'	'0.0654'
a_L	'6.6682'	'10.8206'	'8.1966'	'10.5781'	'0.097'
b_L	'10.7565'	'15'	'3.9762'	'14.3578'	'0.0846'
a_{μ}	'10.2181'	'14.4926'	'6.7322'	'12.9547'	'0.0805'
b_{μ}	'1'	'6.5206'	'7.6144'	'5.8134'	'0.0642'
μ	'0.025'	'0.9513'	'0.4213'	'0.61'	'0.0859'
a_H	'11.089'	'15'	'9.0798'	'14.9881'	'0.0981'
b_H	'10.2412'	'14.7563'	'6.7205'	'13.2514'	'0.0671'
ν	'45.0587'	'59.3798'	'269.7509'	'55.7107'	'0.0772'
BP	'289.8079'	'304.1487'	'307.5096'	'292.4996'	'0.1132'

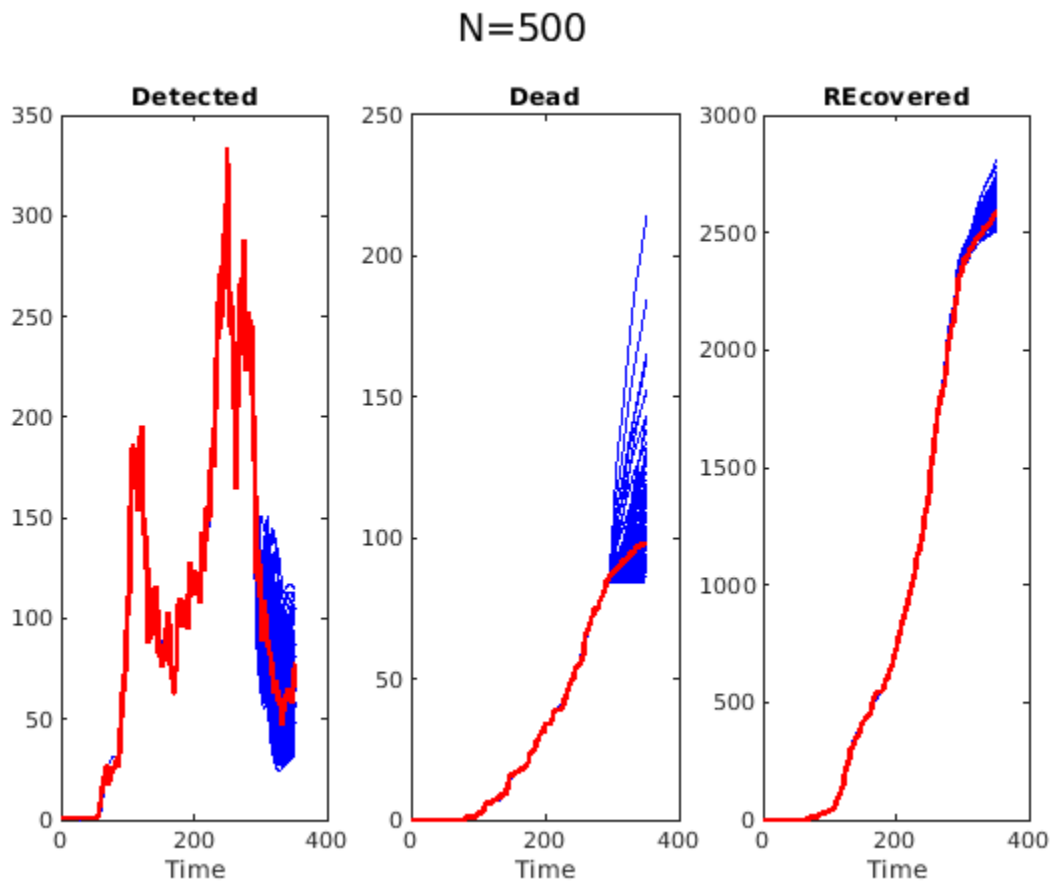
8.3. Identifiability analysis







8.4. Uncertainty analysis



Chapter 9. Extension number9

9.1. Basic information

The extension to be validated consists of the time series from the data353 to the 425. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

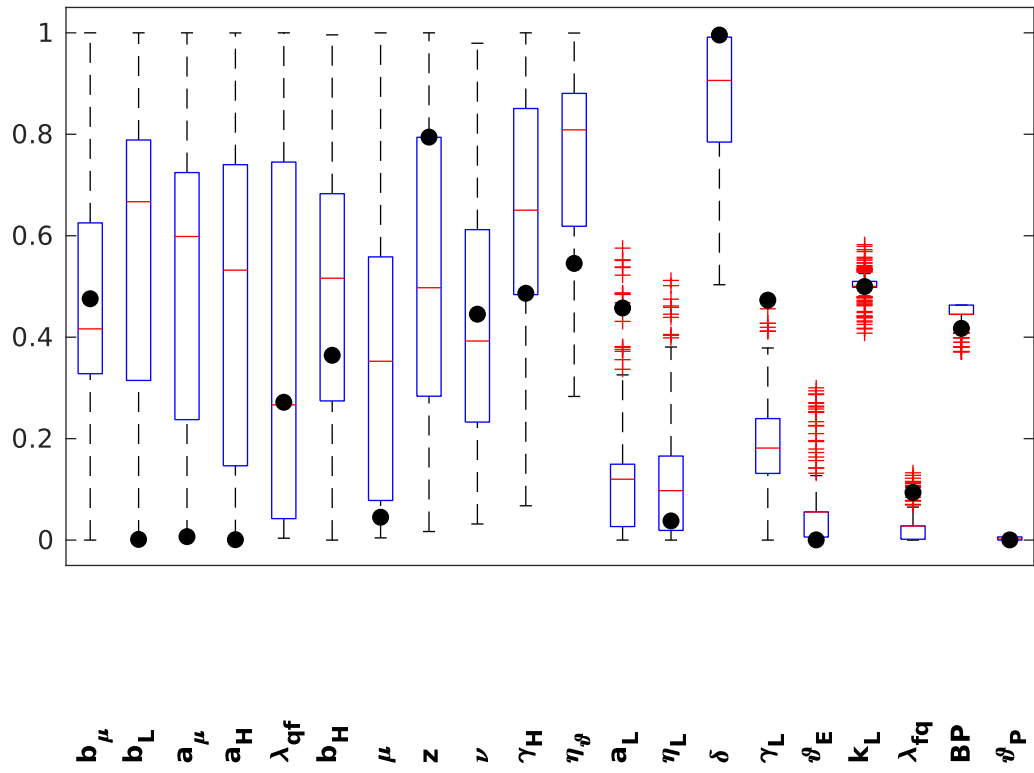
9.2. Estimated parameters with their intervals

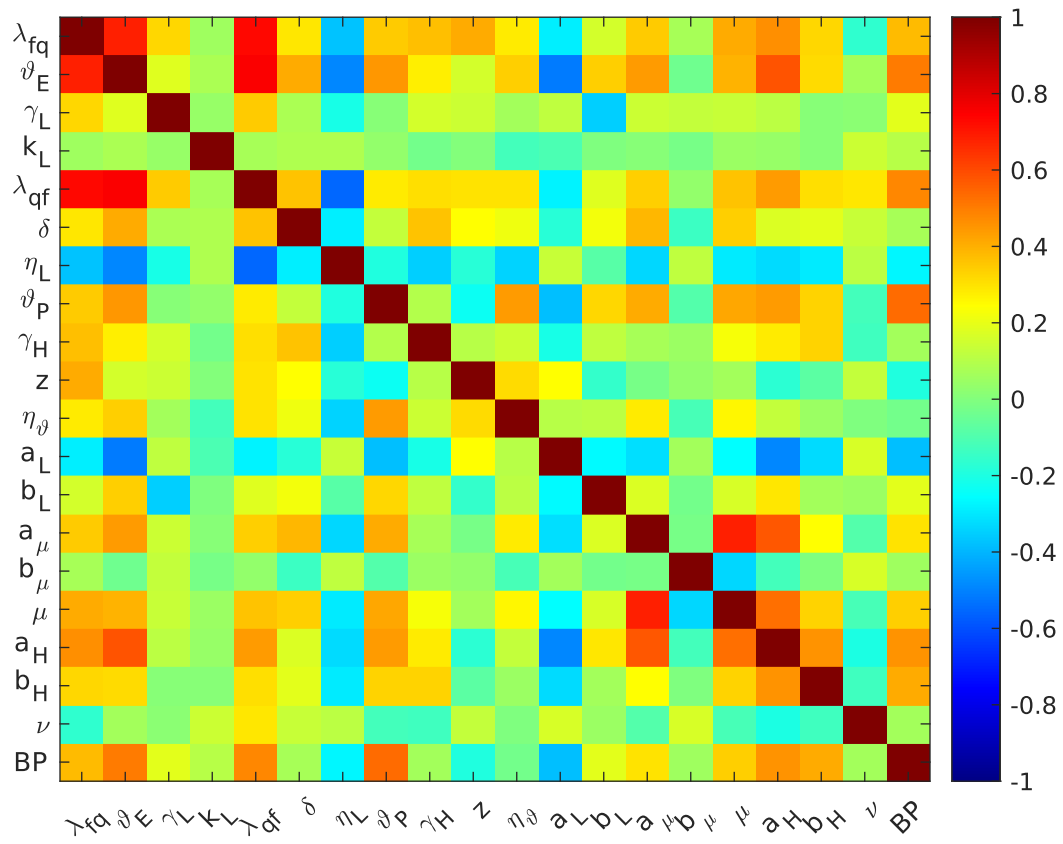
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

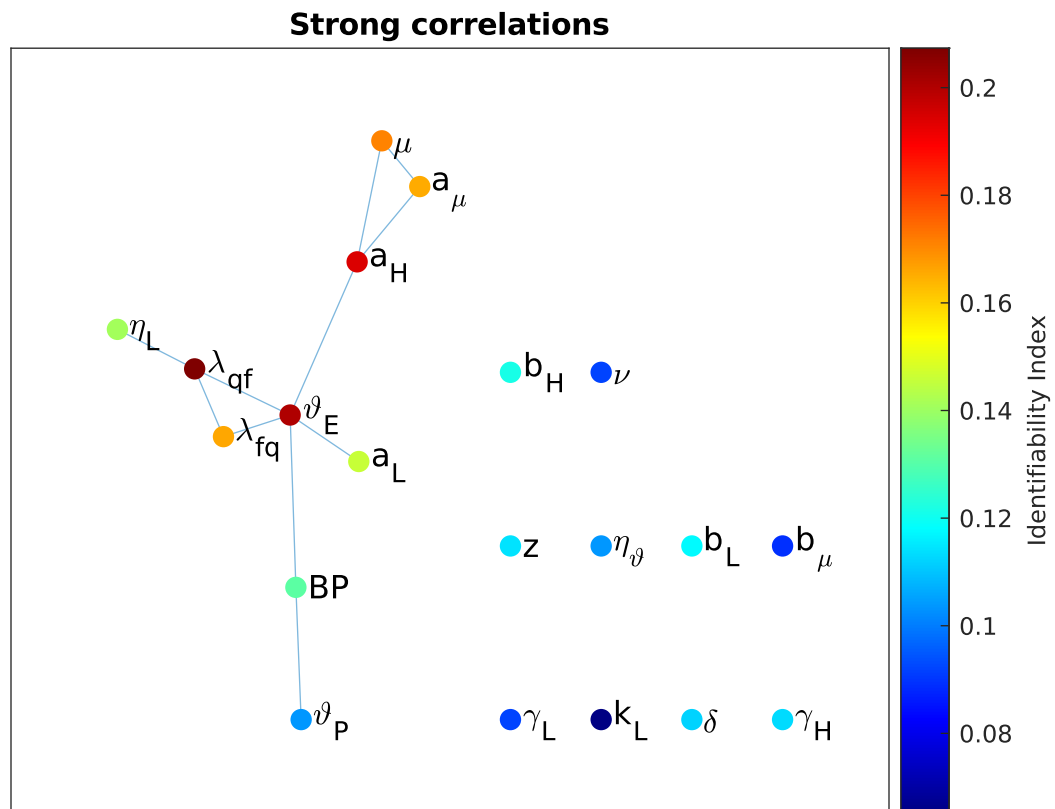
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0772'	'0.1125'	'0.028'	'0.0939'	'0.1657'
ϑ_E	'0'	'0.0008'	'0.0556'	'0.0004'	'0.2003'
γ_L	'0.2437'	'0.8373'	'0.1816'	'0.4731'	'0.0924'
k_L	'1'	'8.65'	'5.5024'	'5.4983'	'0.0653'
λ_{qf}	'0.2618'	'0.3731'	'0.2666'	'0.2717'	'0.2073'
δ	'0.0781'	'0.15'	'0.1355'	'0.1493'	'0.112'
η_L	'0.003'	'0.0701'	'0.0987'	'0.0378'	'0.1412'
ϑ_P	'0.0004'	'0.0007'	'0.0021'	'0.0004'	'0.1038'
γ_H	'0.1892'	'0.8102'	'0.6504'	'0.4865'	'0.1133'
z	'15.14'	'25.1341'	'14.9248'	'23.8332'	'0.1142'
η_{ϑ}	'0.5421'	'0.5942'	'0.8073'	'0.5454'	'0.1038'
a_L	'7.3785'	'11.597'	'2.6821'	'7.4058'	'0.146'
b_L	'1'	'1.7464'	'10.3389'	'1.0197'	'0.1179'
a_{μ}	'1'	'8.1426'	'9.3792'	'1.0955'	'0.1655'
b_{μ}	'3.8539'	'13.908'	'6.8294'	'7.6606'	'0.0893'
μ	'0.0062'	'0.0741'	'0.3525'	'0.0451'	'0.1707'
a_H	'1'	'10.7226'	'8.4505'	'1.0113'	'0.1946'
b_H	'2.9273'	'15'	'8.2276'	'6.1008'	'0.1215'
ν	'217.3067'	'286.8401'	'196.2418'	'222.6662'	'0.0922'
BP	'348.8425'	'354.6546'	'354.5'	'351.4998'	'0.1309'

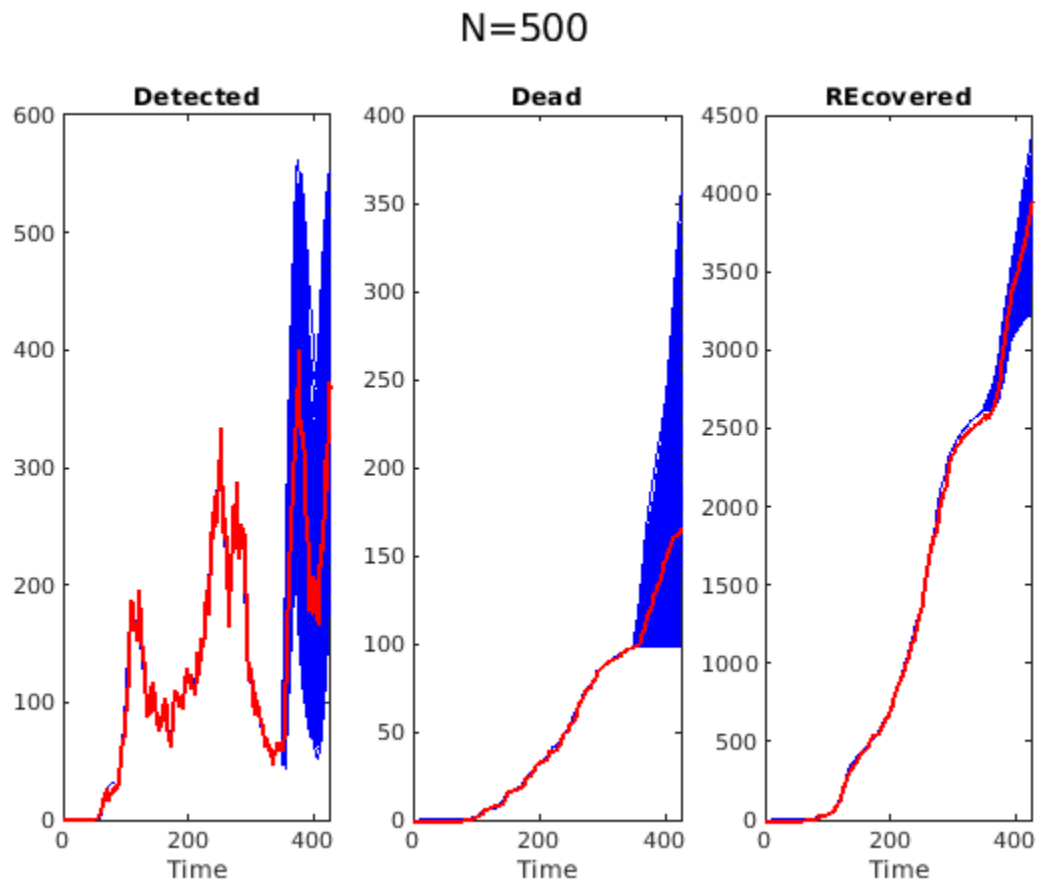
9.3. Identifiability analysis







9.4. Uncertainty analysis



Chapter 10. Extension number10

10.1. Basic information

The extension to be validated consists of the time series from the data425 to the 437. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

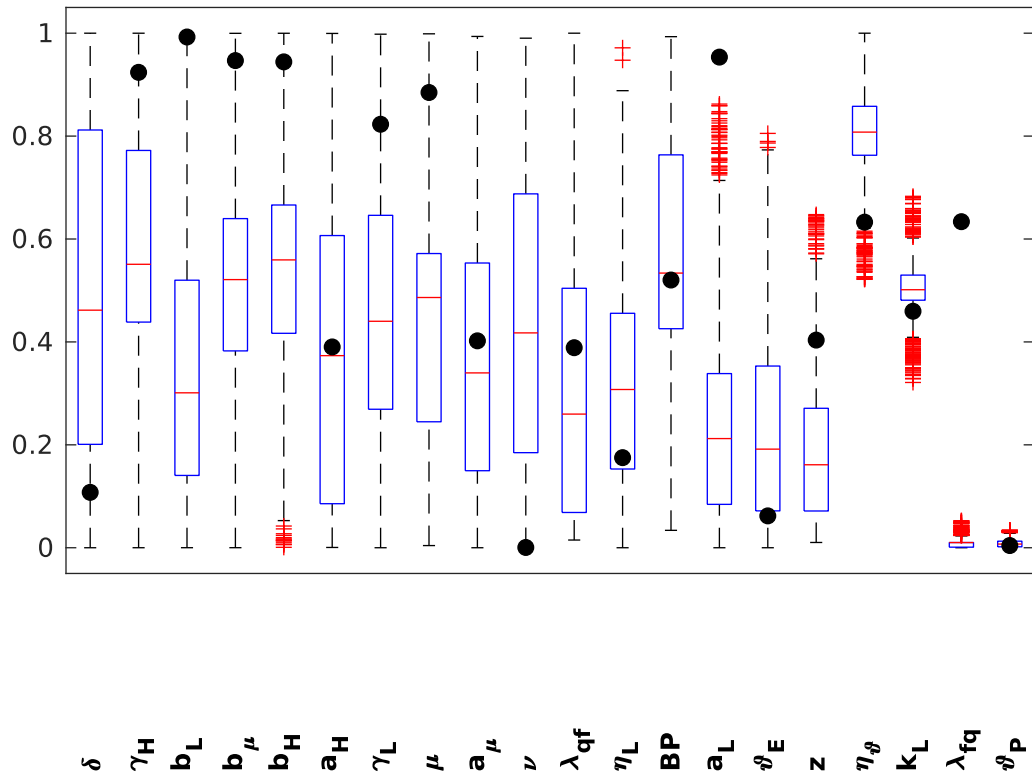
10.2. Estimated parameters with their intervals

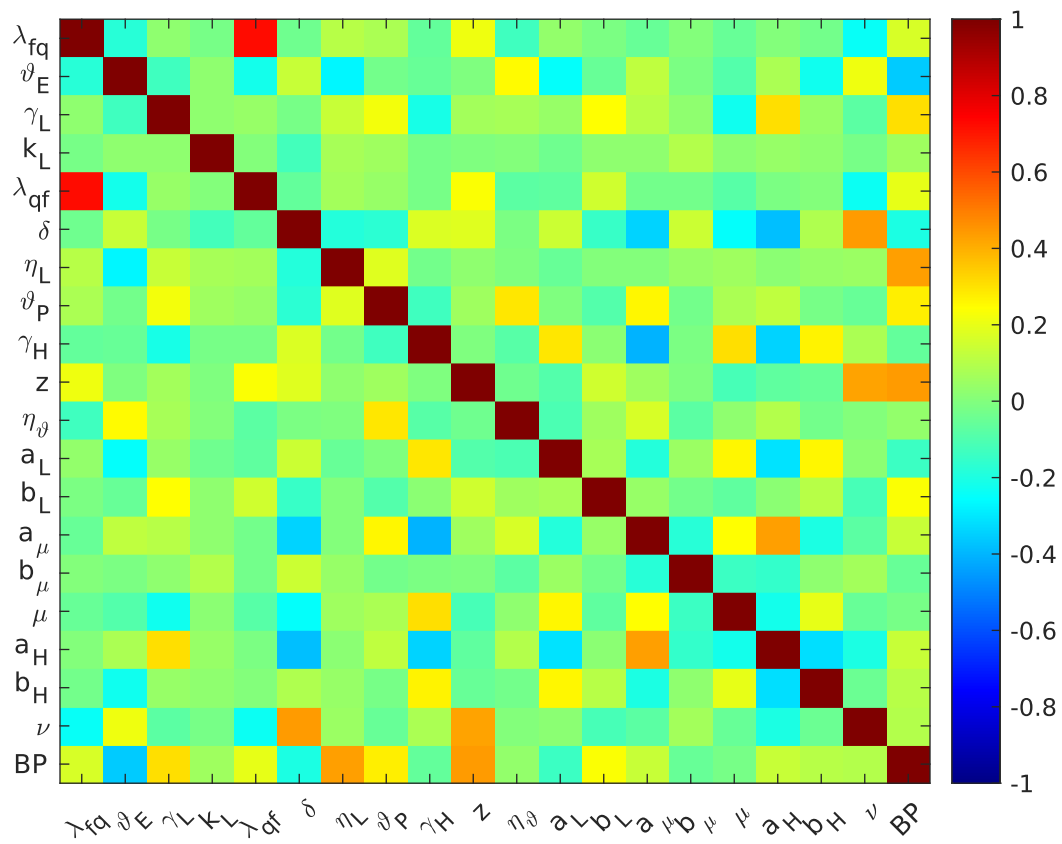
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

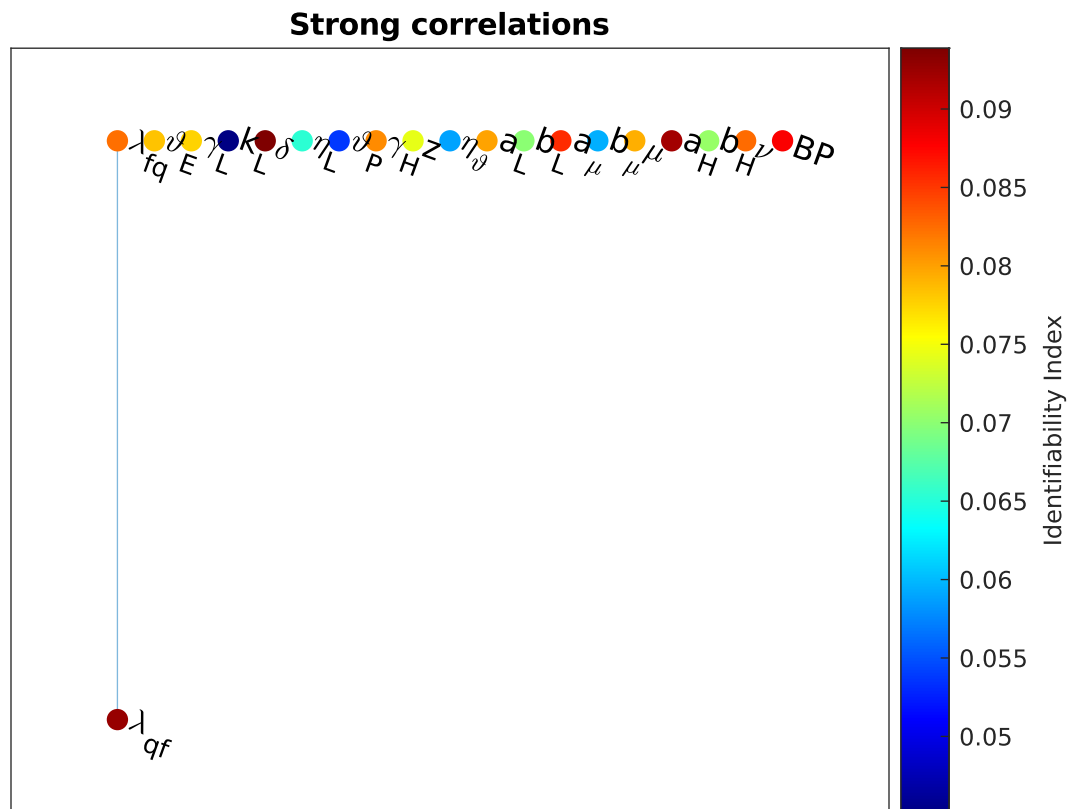
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.594'	'0.6518'	'0.0101'	'0.6337'	'0.0823'
ϑ_E	'0.0173'	'0.0982'	'0.1916'	'0.0619'	'0.0784'
γ_L	'0.3229'	'0.8796'	'0.4401'	'0.823'	'0.0776'
k_L	'1.9571'	'9.325'	'5.5129'	'5.1364'	'0.0452'
λ_{qf}	'0.3594'	'0.3954'	'0.2597'	'0.3888'	'0.0926'
δ	'0.0005'	'0.0271'	'0.0693'	'0.0161'	'0.0939'
η_L	'0.0516'	'0.1773'	'0.3075'	'0.1751'	'0.0655'
ϑ_P	'0.0032'	'0.006'	'0.0071'	'0.0043'	'0.0539'
γ_H	'0.1706'	'0.927'	'0.5509'	'0.9239'	'0.0811'
z	'11.4794'	'12.7524'	'4.8375'	'12.1064'	'0.0744'
η_{ϑ}	'0.6247'	'0.7216'	'0.8078'	'0.6328'	'0.059'
a_L	'10.6686'	'14.632'	'3.9701'	'14.3491'	'0.0799'
b_L	'9.8783'	'15'	'5.215'	'14.8963'	'0.0701'
a_{μ}	'5.0942'	'13.9197'	'5.757'	'6.6295'	'0.0856'
b_{μ}	'3.3185'	'15'	'8.2956'	'14.2547'	'0.0595'
μ	'0.1999'	'0.9074'	'0.4863'	'0.8847'	'0.0793'
a_H	'1.4796'	'12.6319'	'6.2265'	'6.4634'	'0.092'
b_H	'3.6096'	'15'	'8.8315'	'14.2197'	'0.0706'
ν	'0.0135'	'0.4867'	'208.7721'	'0.2663'	'0.0826'
BP	'391.3569'	'399.162'	'392.5'	'391.5'	'0.0878'

10.3. Identifiability analysis

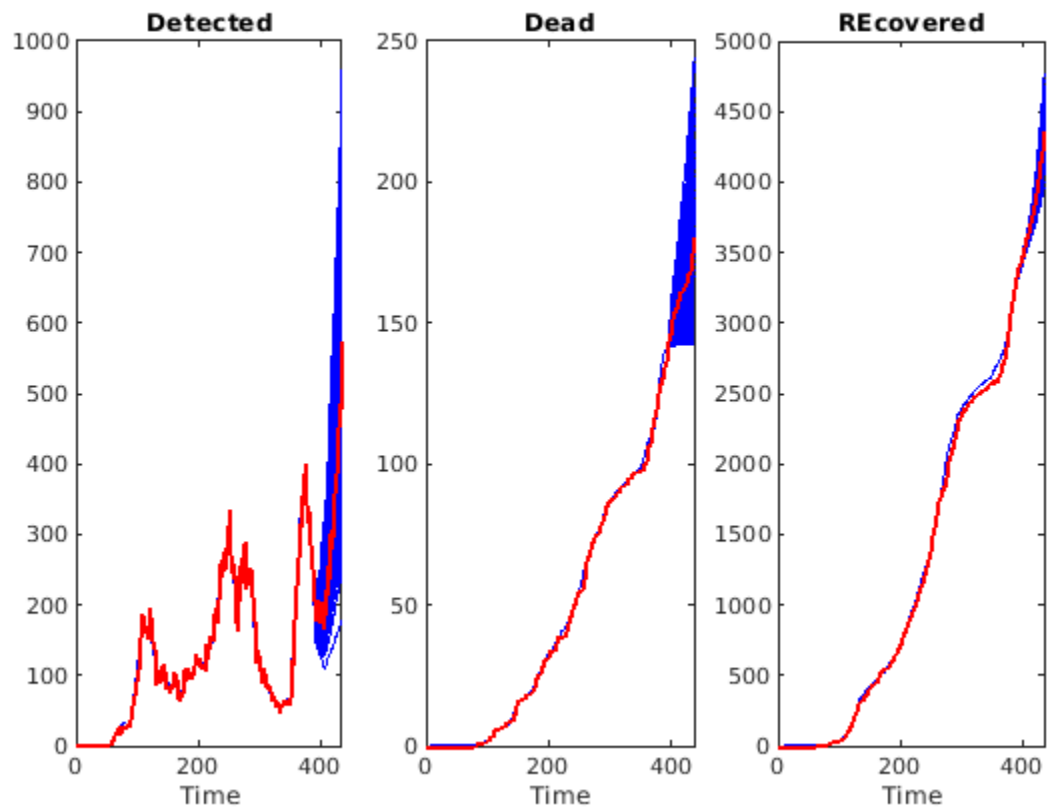






10.4. Uncertainty analysys

N=500



Chapter 11. Extension number11

11.1. Basic information

The extension to be validated consists of the time series from the data437 to the 453. The status of the validation is: COMPLETED.

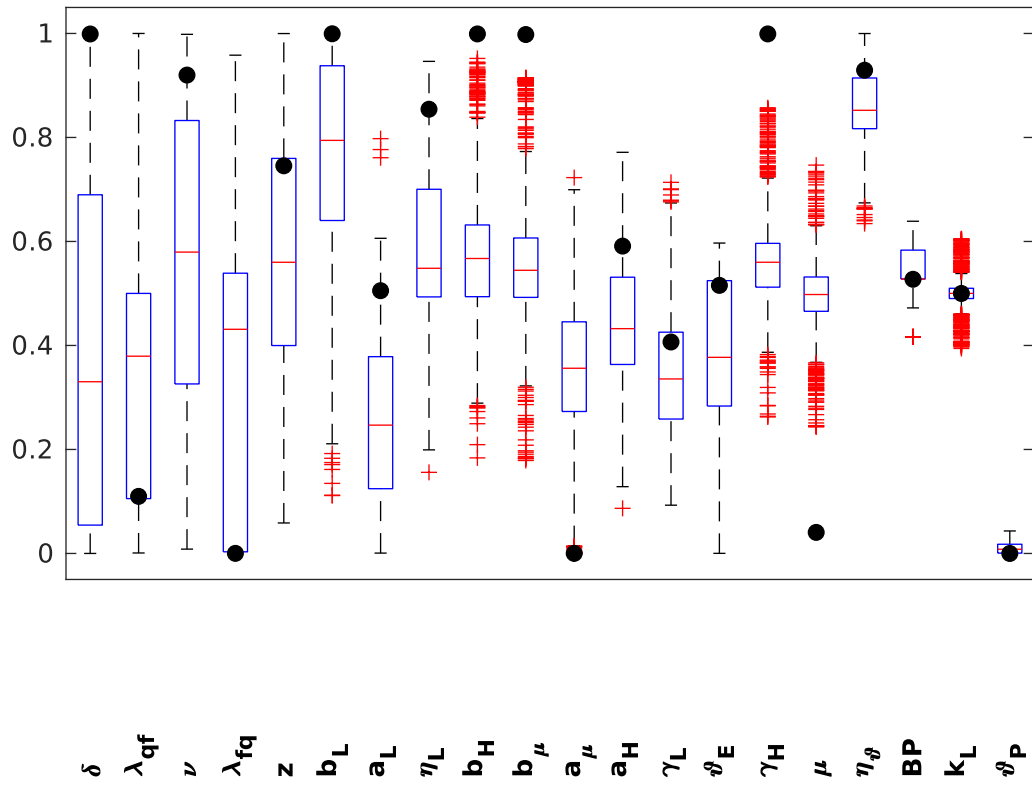
The number of estimations needed to perform the validation was1000.

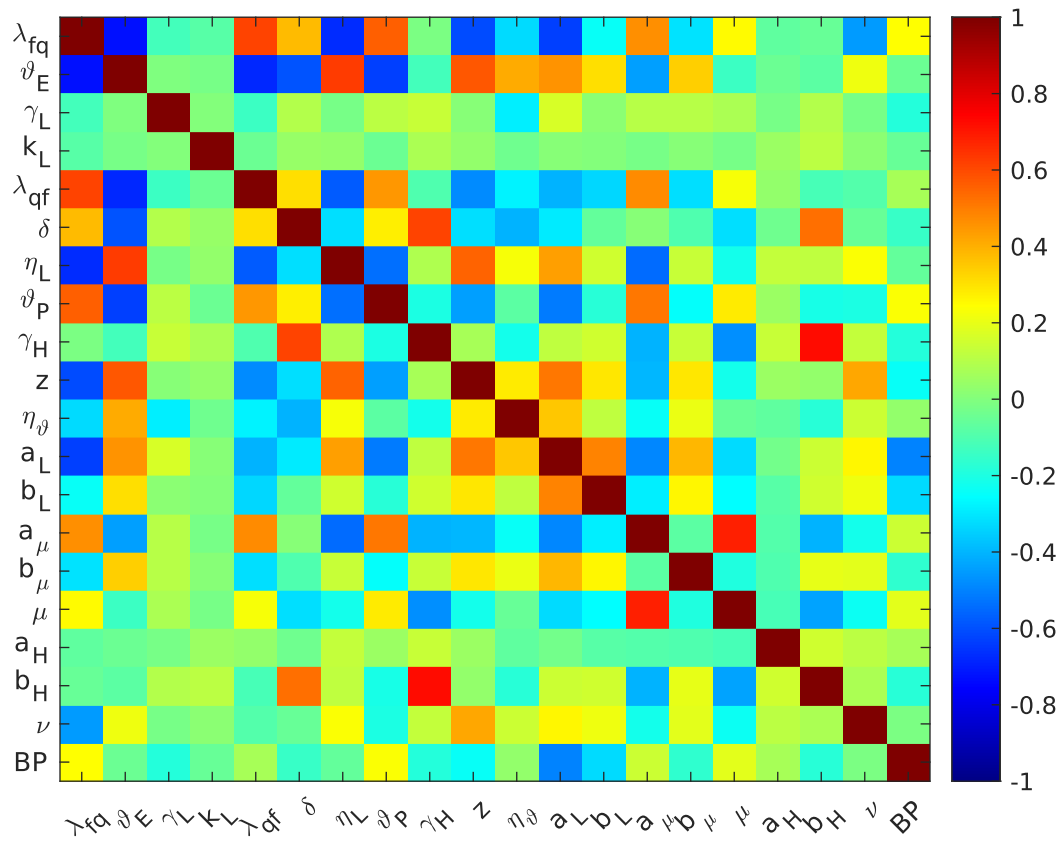
11.2. Estimated parameters with their intervals

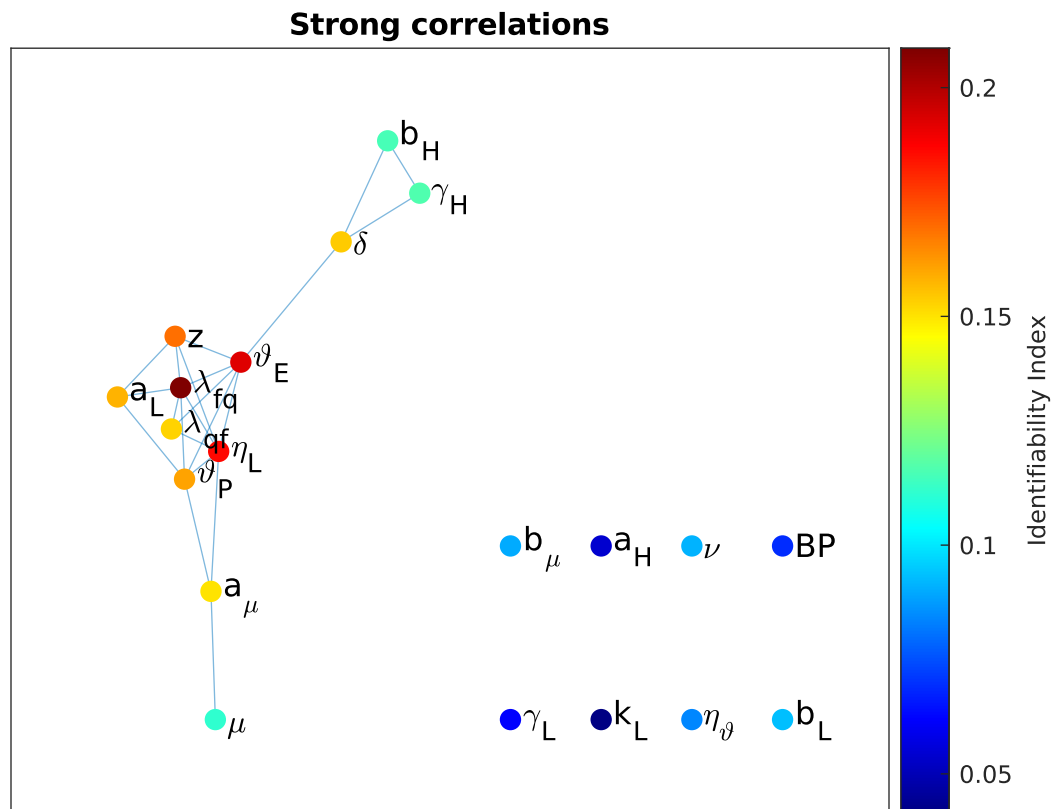
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4074'	'0.4548'	'0.4311'	'0.0002'	'0.2086'
\vartheta_E	'0.3648'	'0.3895'	'0.3772'	'0.5156'	'0.1928'
\gamma_L	'0.3204'	'0.3516'	'0.336'	'0.4067'	'0.0621'
k_L	'5.4329'	'5.5704'	'5.5017'	'5.5'	'0.0416'
\lambda_{qf}	'0.3605'	'0.3983'	'0.3794'	'0.1098'	'0.1529'
\delta	'0.0449'	'0.0541'	'0.0495'	'0.1498'	'0.1541'
\eta_L	'0.5335'	'0.5634'	'0.5484'	'0.8543'	'0.1859'
\vartheta_P	'0.0069'	'0.0093'	'0.0081'	'0'	'0.1605'
\gamma_H	'0.5444'	'0.5757'	'0.56'	'0.9991'	'0.1168'
z	'16.1496'	'17.4503'	'16.7999'	'22.3649'	'0.1694'
\eta_{\vartheta}	'0.8419'	'0.8625'	'0.8522'	'0.9293'	'0.0842'
a_L	'4.2565'	'4.6607'	'4.4586'	'8.0748'	'0.1583'
b_L	'11.8369'	'12.3837'	'12.1103'	'14.9918'	'0.0933'
a_{\mu}	'5.8107'	'6.1655'	'5.9881'	'1.0021'	'0.15'
b_{\mu}	'8.3665'	'8.881'	'8.6238'	'14.9712'	'0.0905'
\mu	'0.4824'	'0.5135'	'0.498'	'0.0405'	'0.1117'
a_H	'6.8972'	'7.2085'	'7.0528'	'9.2751'	'0.054'
b_H	'8.7198'	'9.163'	'8.9414'	'14.9875'	'0.1154'
\nu	'277.1555'	'302.386'	'289.7707'	'459.992'	'0.0914'
BP	'434.3892'	'434.6108'	'434.5'	'434.4914'	'0.0695'

11.3. Identifiability analysis

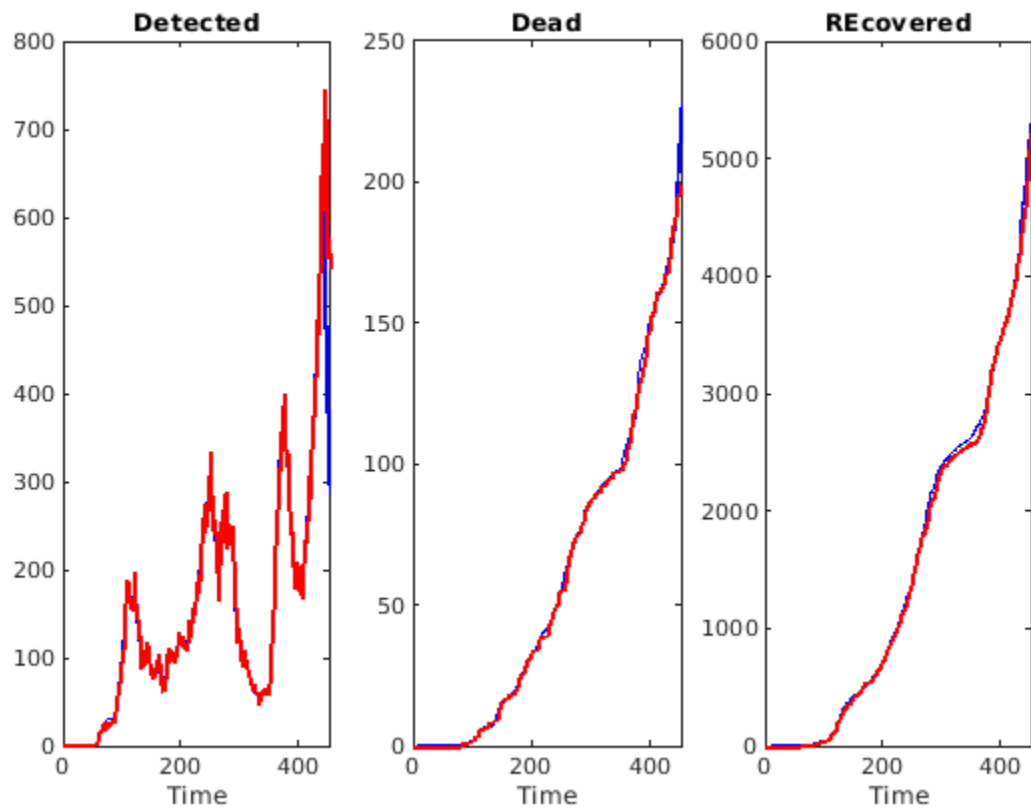






11.4. Uncertainty analysys

N=500



Chapter 12. Extension number12

12.1. Basic information

The extension to be validated consists of the time series from the data453 to the 461. The status of the validation is: COMPLETED.

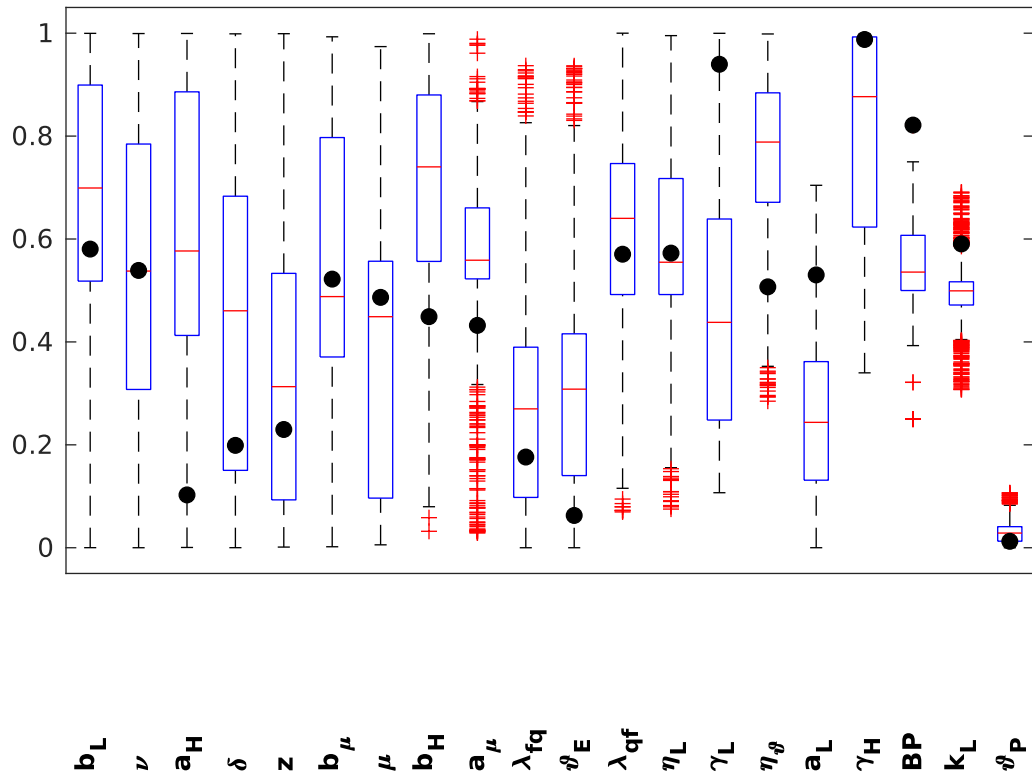
The number of estimations needed to perform the validation was1000.

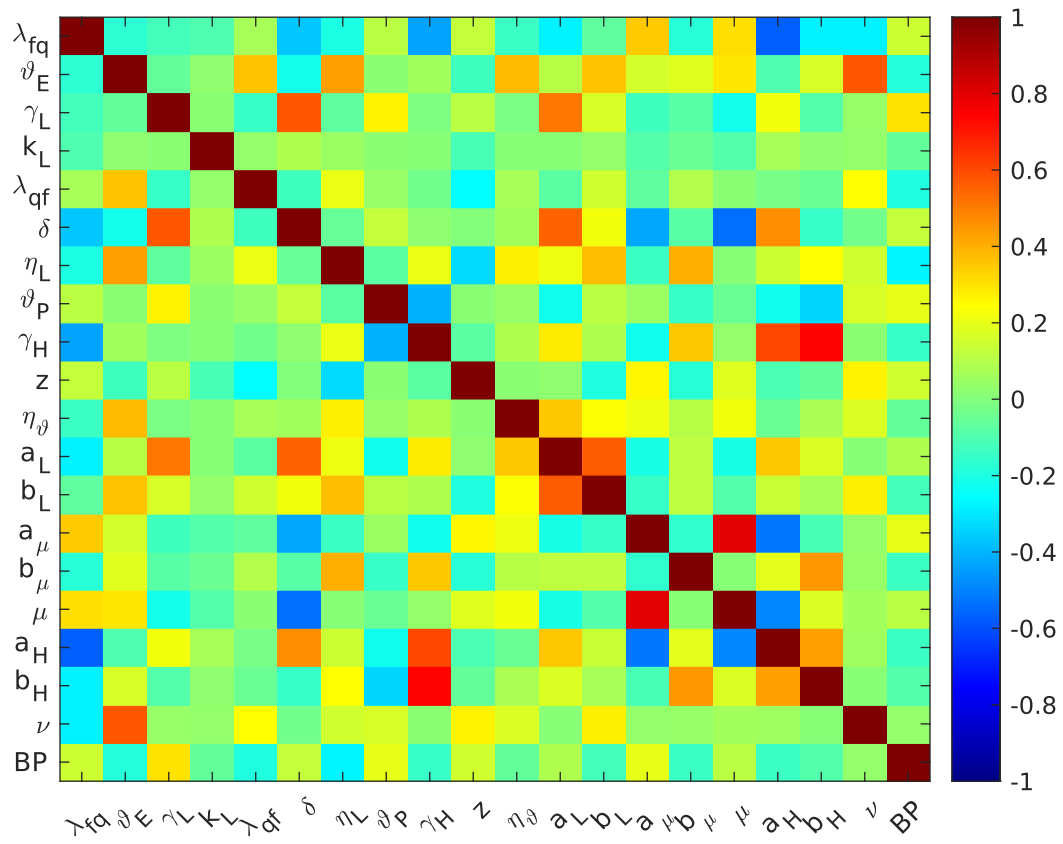
12.2. Estimated parameters with their intervals

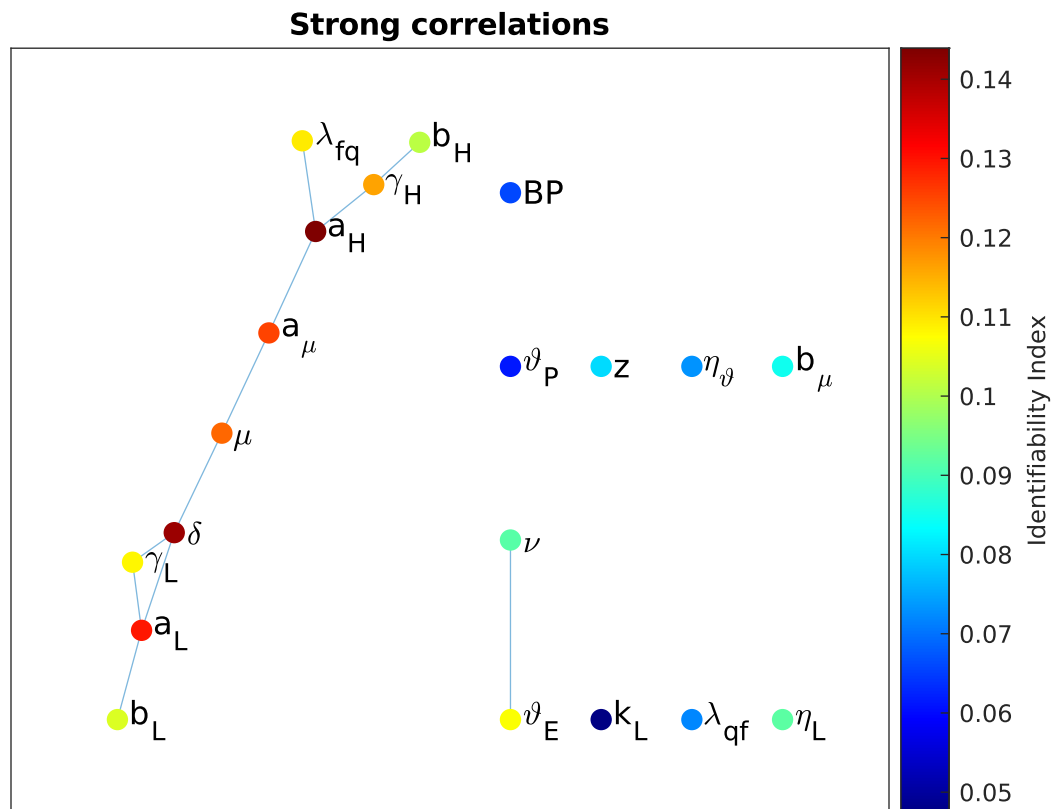
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.2514'	'0.2884'	'0.2699'	'0.1763'	'0.1095'
ϑ_E	'0.2883'	'0.3282'	'0.3082'	'0.0627'	'0.1071'
γ_L	'0.4191'	'0.4569'	'0.438'	'0.9396'	'0.1081'
k_L	'5.3963'	'5.5902'	'5.4933'	'6.314'	'0.0475'
λ_{qf}	'0.6211'	'0.6592'	'0.6401'	'0.5705'	'0.0723'
δ	'0.0652'	'0.073'	'0.0691'	'0.0298'	'0.1412'
η_L	'0.5359'	'0.5738'	'0.5549'	'0.5726'	'0.092'
ϑ_P	'0.0246'	'0.0324'	'0.0285'	'0.0125'	'0.0616'
γ_H	'0.8582'	'0.8951'	'0.8767'	'0.9878'	'0.1161'
z	'8.7204'	'10.0622'	'9.3913'	'6.8942'	'0.08'
η_{ϑ}	'0.7726'	'0.8042'	'0.7884'	'0.507'	'0.0732'
a_L	'4.2412'	'4.5819'	'4.4115'	'8.4232'	'0.1293'
b_L	'10.4763'	'11.0996'	'10.7879'	'9.1258'	'0.104'
a_{μ}	'8.5143'	'9.1317'	'8.823'	'7.0499'	'0.1254'
b_{μ}	'7.5308'	'8.1355'	'7.8332'	'8.3089'	'0.0851'
μ	'0.426'	'0.4721'	'0.449'	'0.4866'	'0.122'
a_H	'8.7866'	'9.3619'	'9.0743'	'2.4374'	'0.1439'
b_H	'11.1234'	'11.6019'	'11.3626'	'7.2873'	'0.1013'
ν	'257.5375'	'280.1611'	'268.8493'	'269.4642'	'0.0917'
BP	'444.4022'	'444.5978'	'444.5'	'448.4998'	'0.0663'

12.3. Identifiability analysis

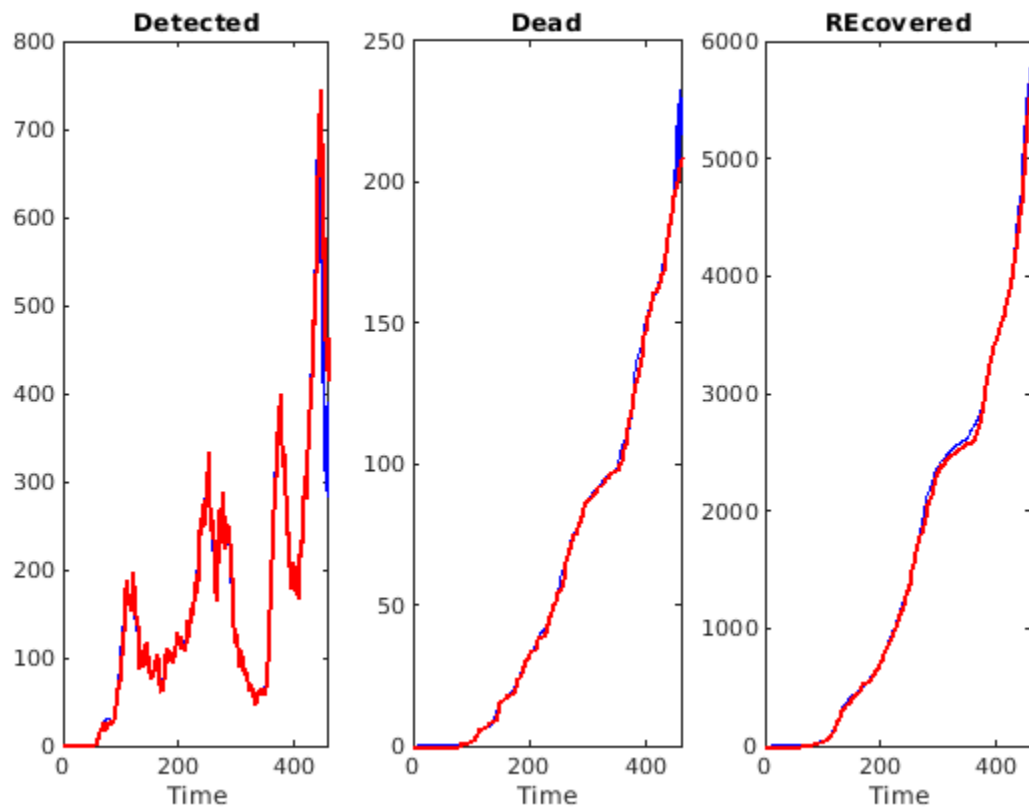






12.4. Uncertainty analysys

N=500



Chapter 13. Extension number13

13.1. Basic information

The extension to be validated consists of the time series from the data461 to the 482. The status of the validation is: COMPLETED.

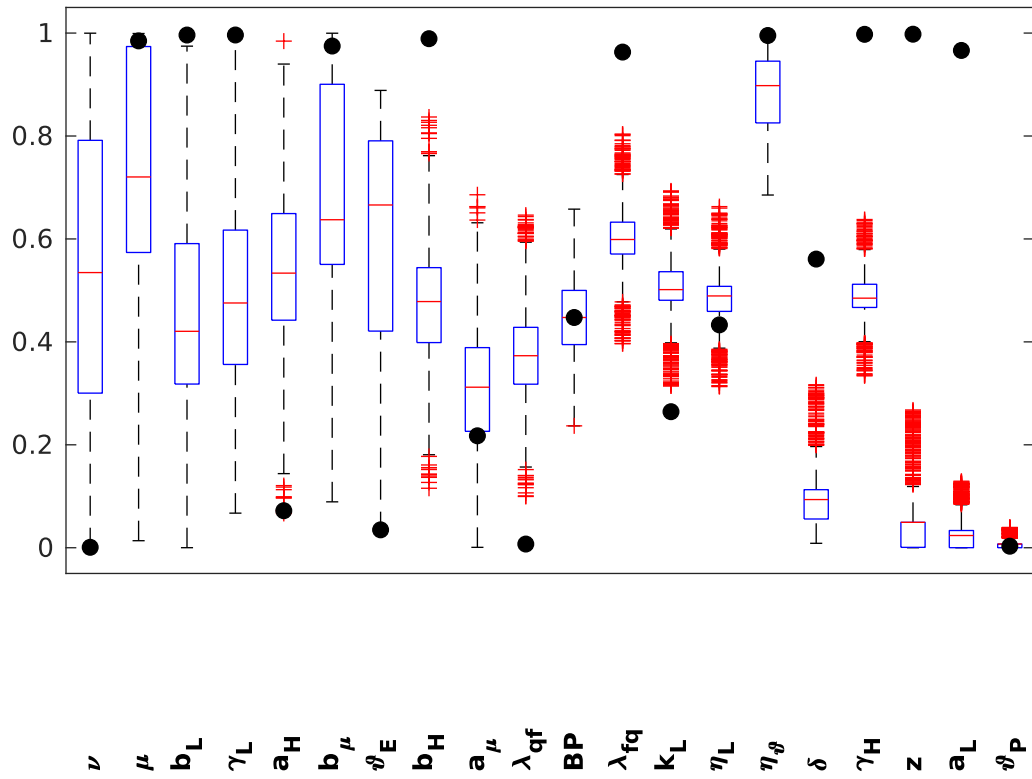
The number of estimations needed to perform the validation was1000.

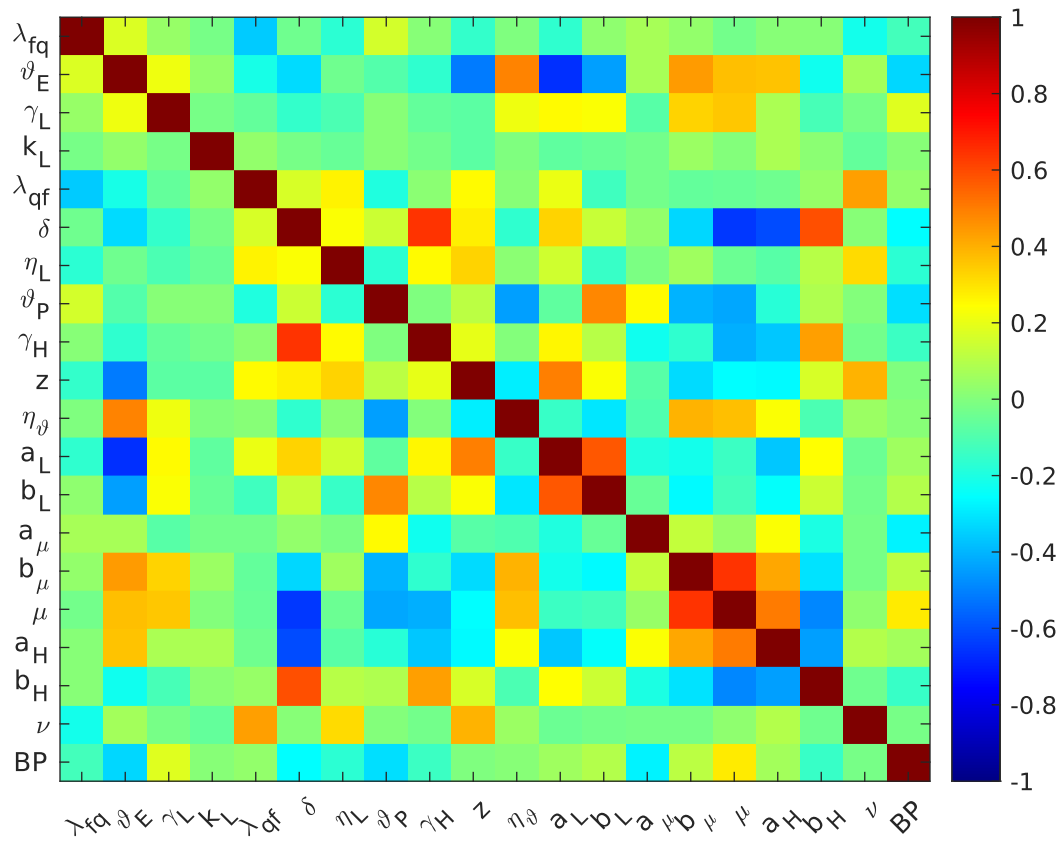
13.2. Estimated parameters with their intervals

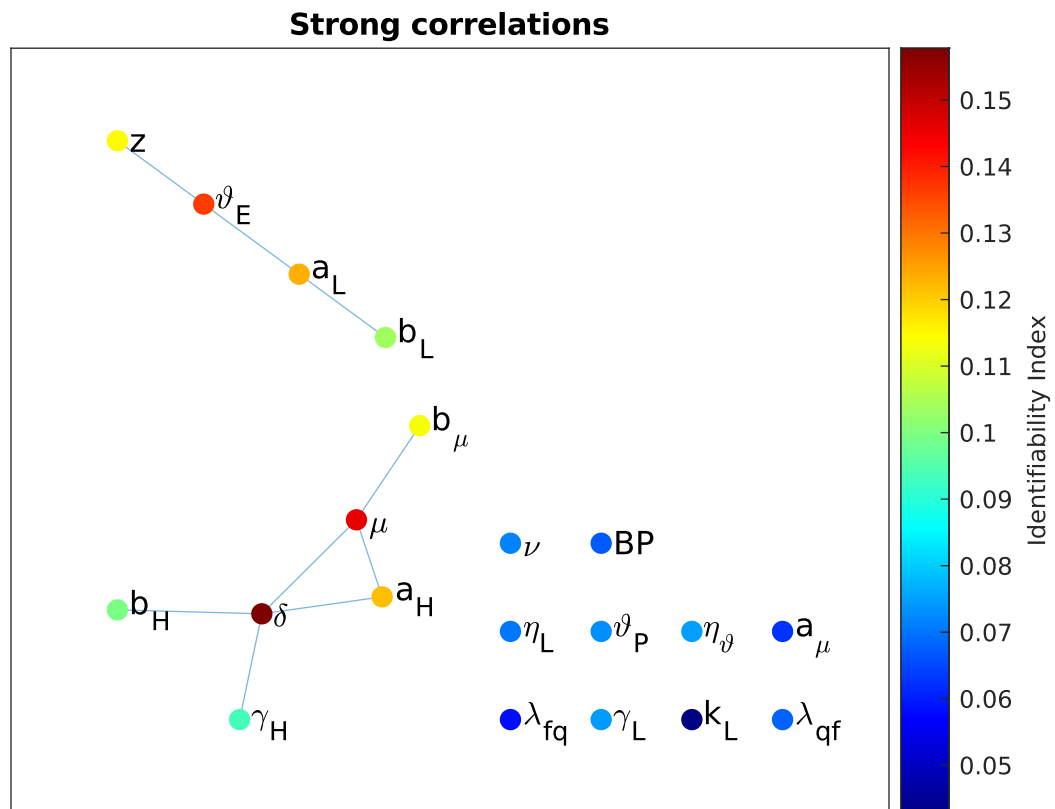
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.5879'	'0.6099'	'0.5989'	'0.9631'	'0.0586'
\vartheta_E	'0.6446'	'0.6874'	'0.666'	'0.0348'	'0.1365'
\gamma_L	'0.4589'	'0.4923'	'0.4756'	'0.9963'	'0.0745'
k_L	'5.4276'	'5.6'	'5.5138'	'3.3789'	'0.0429'
\lambda_{qf}	'0.3622'	'0.384'	'0.3731'	'0.0072'	'0.0683'
\delta	'0.0112'	'0.0169'	'0.014'	'0.0841'	'0.1578'
\eta_L	'0.4777'	'0.5008'	'0.4893'	'0.4331'	'0.0706'
\vartheta_P	'0.0034'	'0.0111'	'0.0072'	'0.003'	'0.0732'
\gamma_H	'0.4727'	'0.4971'	'0.4849'	'0.9976'	'0.0934'
z	'0.842'	'2.1195'	'1.4808'	'29.9342'	'0.1151'
\eta_{\vartheta}	'0.8896'	'0.9062'	'0.8979'	'0.9953'	'0.075'
a_L	'1.1146'	'1.5501'	'1.3324'	'14.5276'	'0.1234'
b_L	'6.6282'	'7.1465'	'6.8873'	'14.9467'	'0.1037'
a_{\mu}	'5.2062'	'5.5277'	'5.367'	'4.0452'	'0.0631'
b_{\mu}	'9.6755'	'10.1693'	'9.9224'	'14.6474'	'0.1136'
\mu	'0.7024'	'0.7384'	'0.7204'	'0.9848'	'0.1457'
a_H	'8.284'	'8.6561'	'8.47'	'2.0068'	'0.1217'
b_H	'7.5097'	'7.8834'	'7.6965'	'14.8472'	'0.0998'
\nu	'255.5269'	'279.1232'	'267.3251'	'0.4263'	'0.0719'
BP	'461.3207'	'461.6793'	'461.5'	'461.5'	'0.0674'

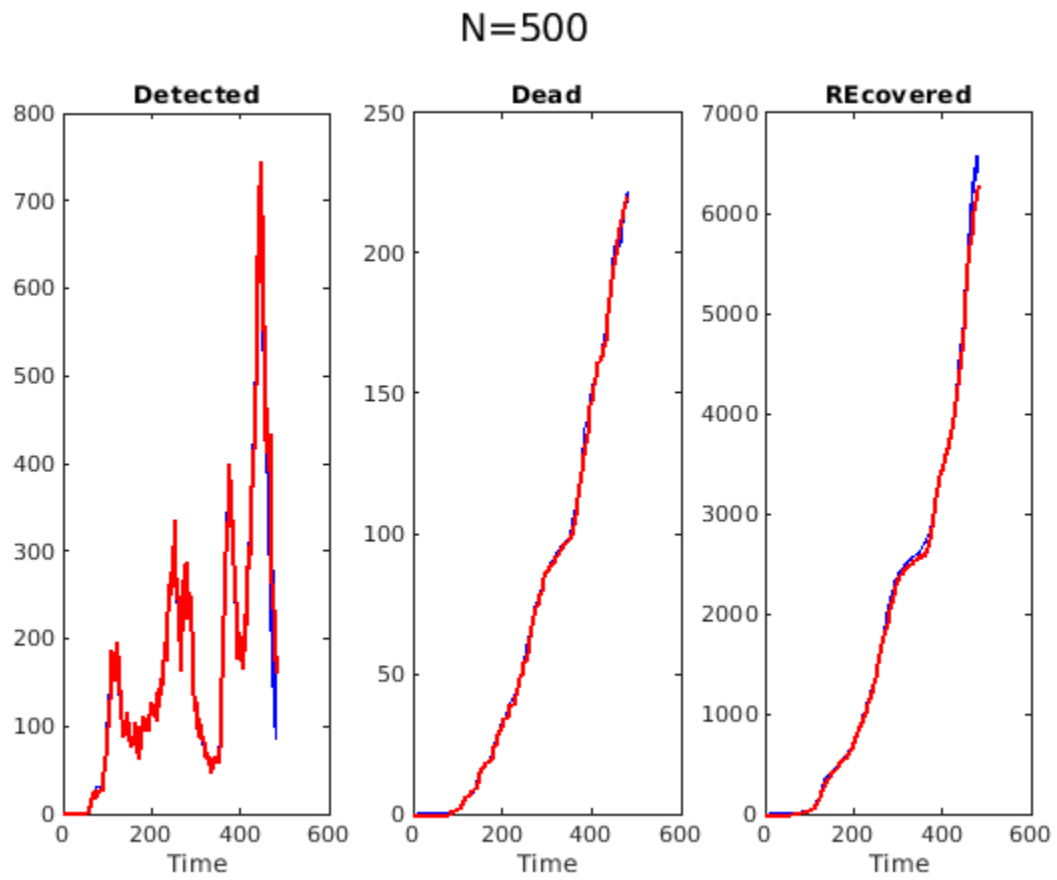
13.3. Identifiability analysis







13.4. Uncertainty analysis



Chapter 14. Extension number14

14.1. Basic information

The extension to be validated consists of the time series from the data482 to the 493. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

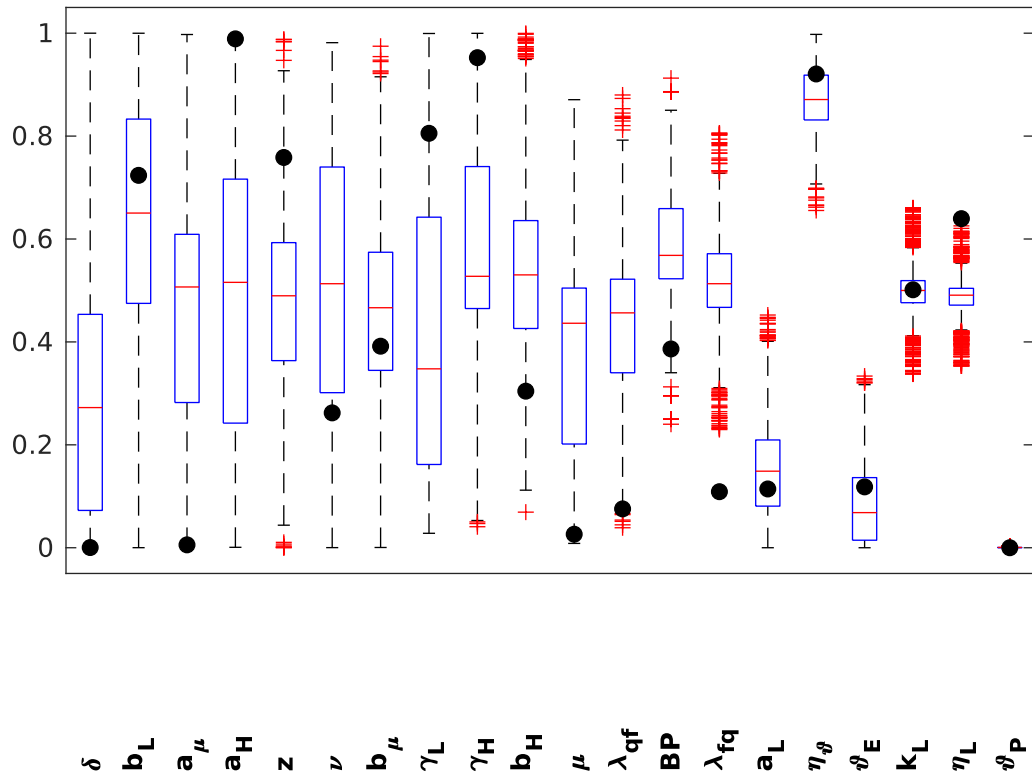
14.2. Estimated parameters with their intervals

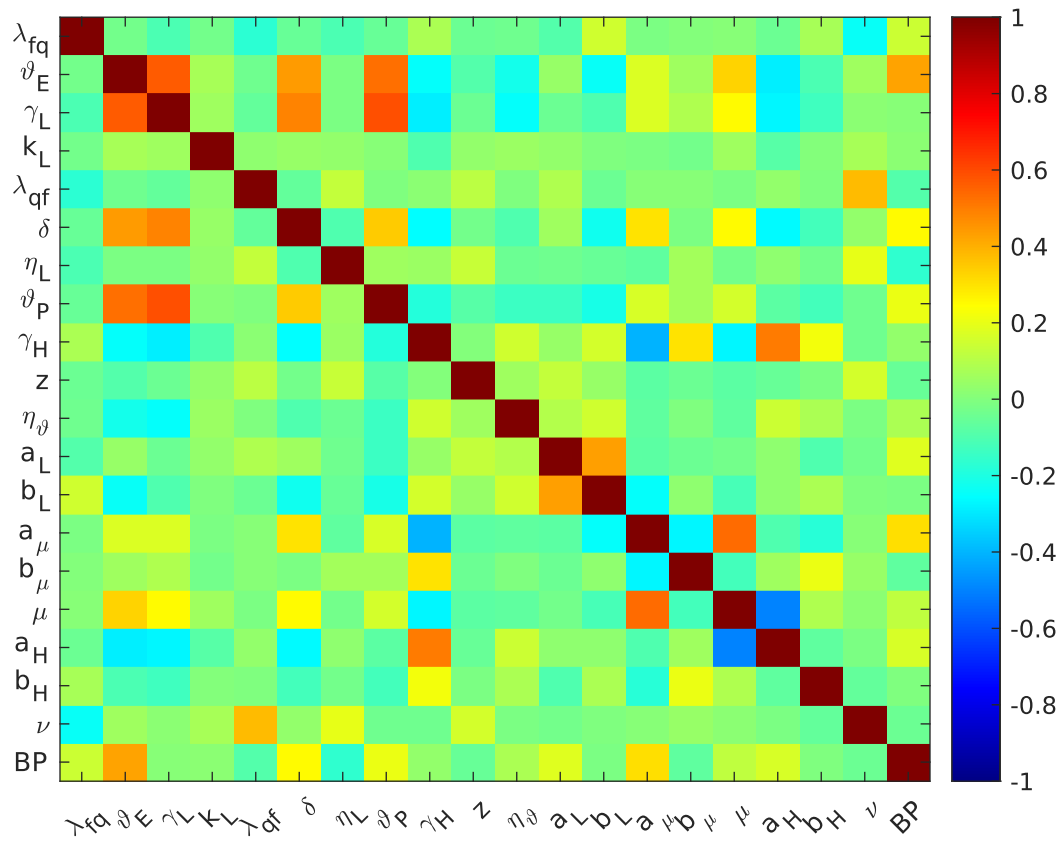
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

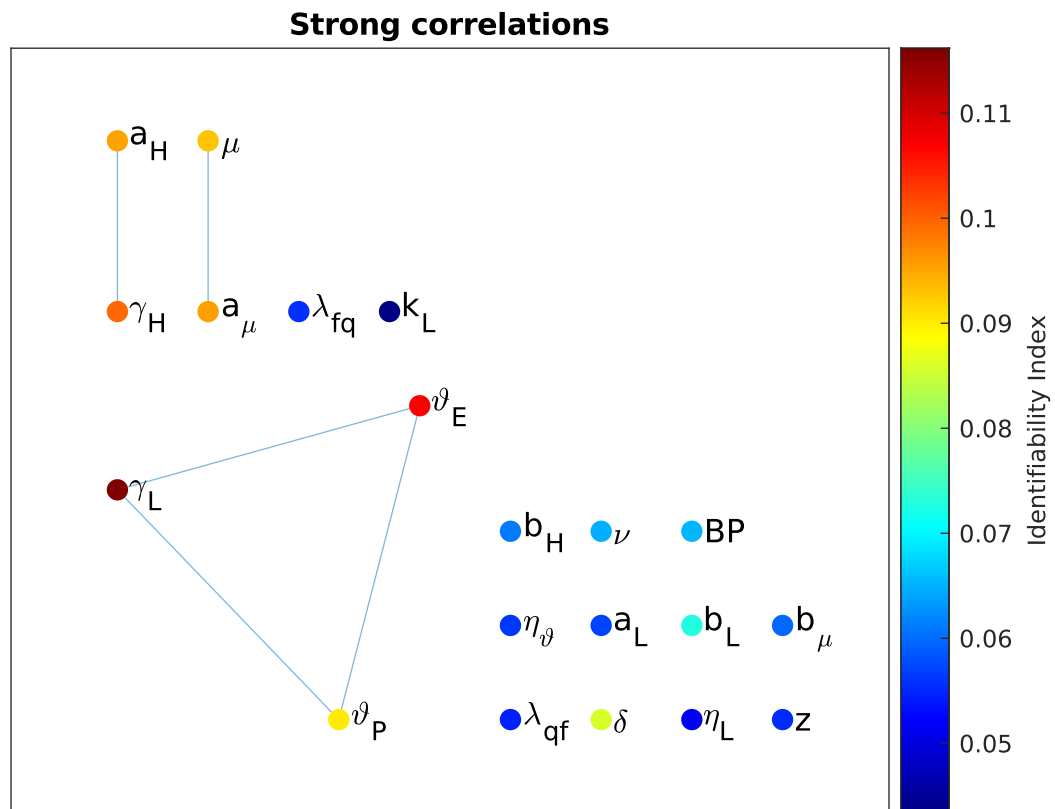
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0975'	'1'	'0.5131'	'0.1089'	'0.0559'
\vartheta_E	'0.1169'	'0.2443'	'0.0685'	'0.1183'	'0.1072'
\gamma_L	'0.3839'	'0.8386'	'0.3477'	'0.8054'	'0.1162'
k_L	'1'	'10'	'5.4999'	'5.512'	'0.0434'
\lambda_{qf}	'0'	'0.1614'	'0.4565'	'0.0755'	'0.0546'
\delta	'0'	'0.0001'	'0.0409'	'0.0001'	'0.0859'
\eta_L	'0.02'	'1'	'0.4908'	'0.6395'	'0.0515'
\vartheta_P	'0'	'0'	'0.0006'	'0'	'0.0903'
\gamma_H	'0'	'0.96'	'0.5275'	'0.9524'	'0.0995'
z	'0'	'30'	'14.6903'	'22.7542'	'0.0556'
\eta_{\vartheta}	'0.4548'	'1'	'0.871'	'0.9207'	'0.0564'
a_L	'1.8405'	'7.104'	'3.0829'	'2.5991'	'0.0572'
b_L	'8.5761'	'14.6872'	'10.106'	'11.1321'	'0.0729'
a_{\mu}	'1'	'15'	'8.095'	'1.0784'	'0.0957'
b_{\mu}	'1'	'15'	'7.5302'	'6.4834'	'0.0599'
\mu	'0'	'0.059'	'0.4363'	'0.0262'	'0.0931'
a_H	'7.9108'	'15'	'8.2206'	'14.8458'	'0.0952'
b_H	'1'	'5.842'	'8.4227'	'5.2601'	'0.0611'
\nu	'53.5393'	'500'	'256.5563'	'131.0477'	'0.0648'
BP	'469.0462'	'473.4817'	'473.5'	'469.4997'	'0.0654'

14.3. Identifiability analysis

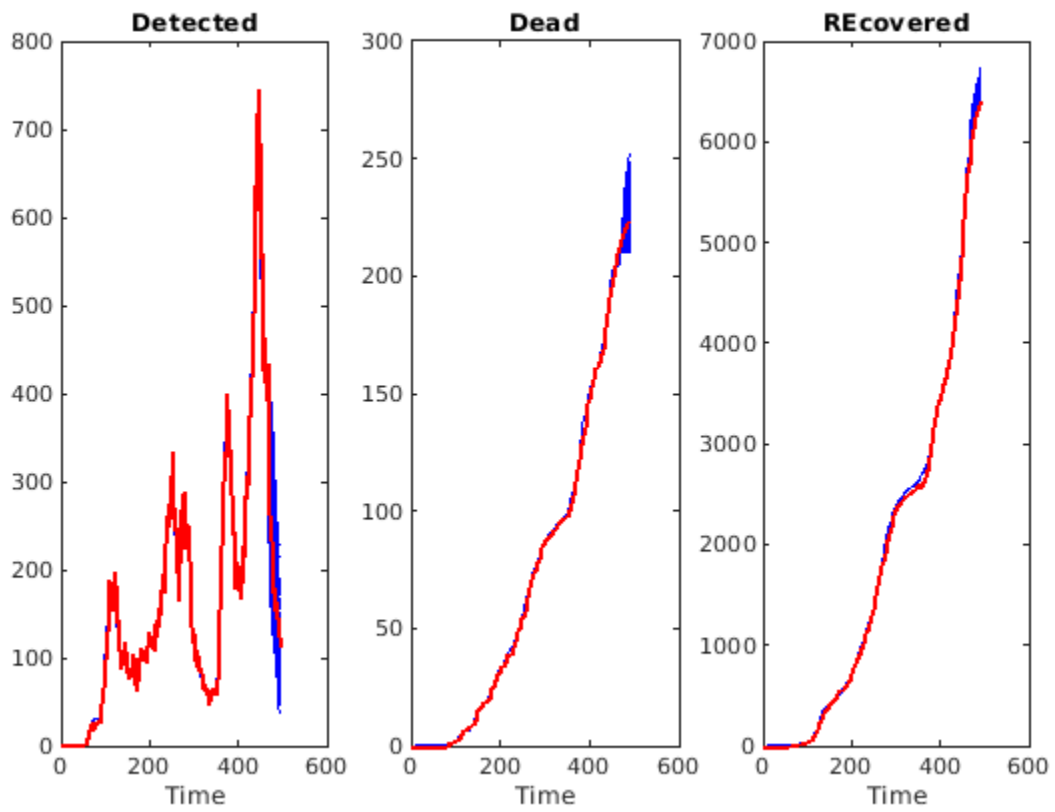






14.4. Uncertainty analysys

N=500



Chapter 15. Extension number15

15.1. Basic information

The extension to be validated consists of the time series from the data493 to the 542. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

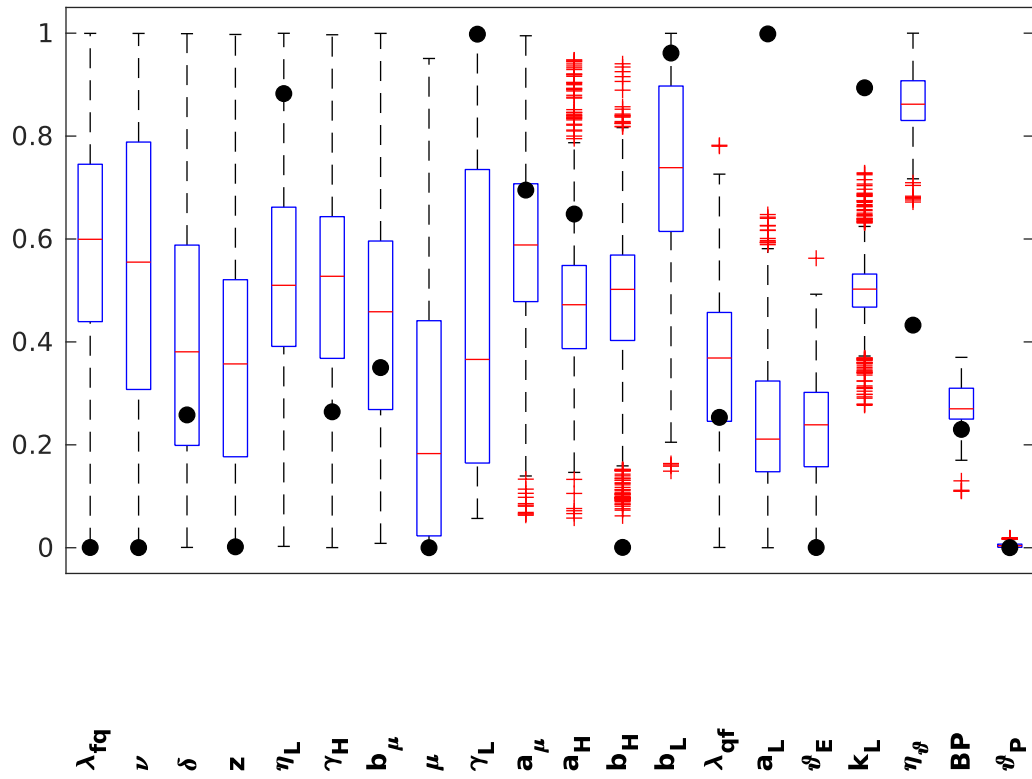
15.2. Estimated parameters with their intervals

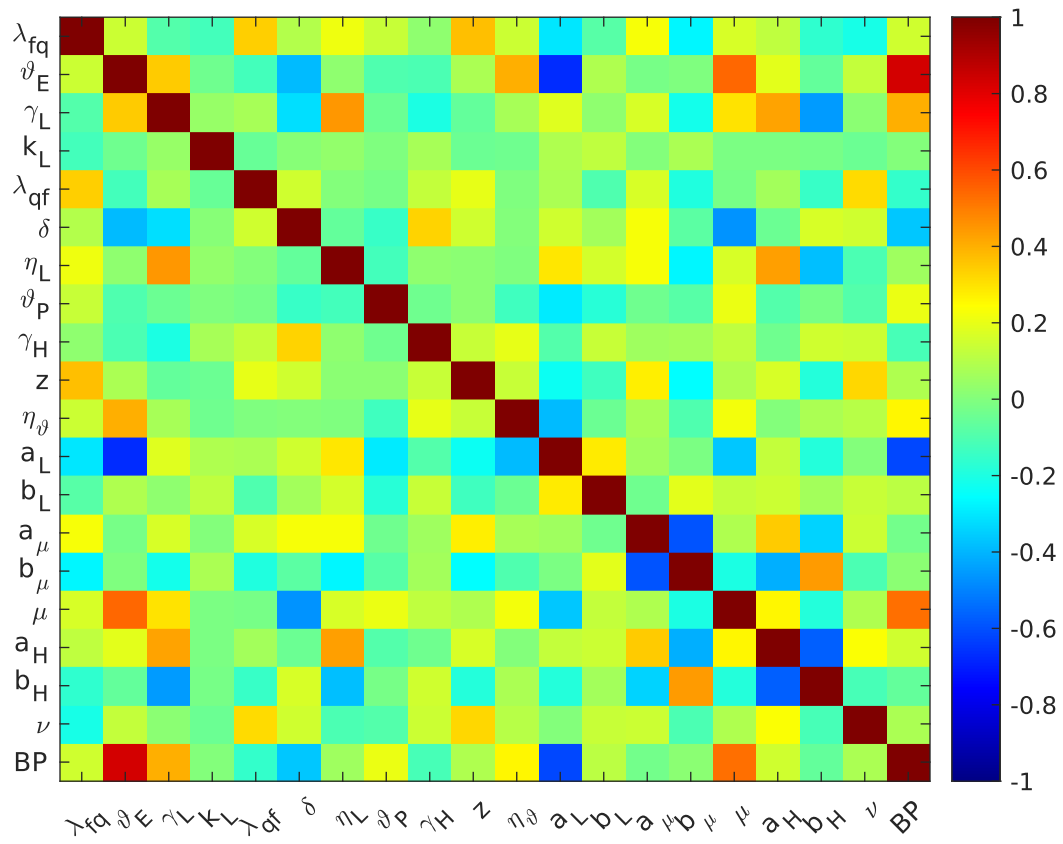
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

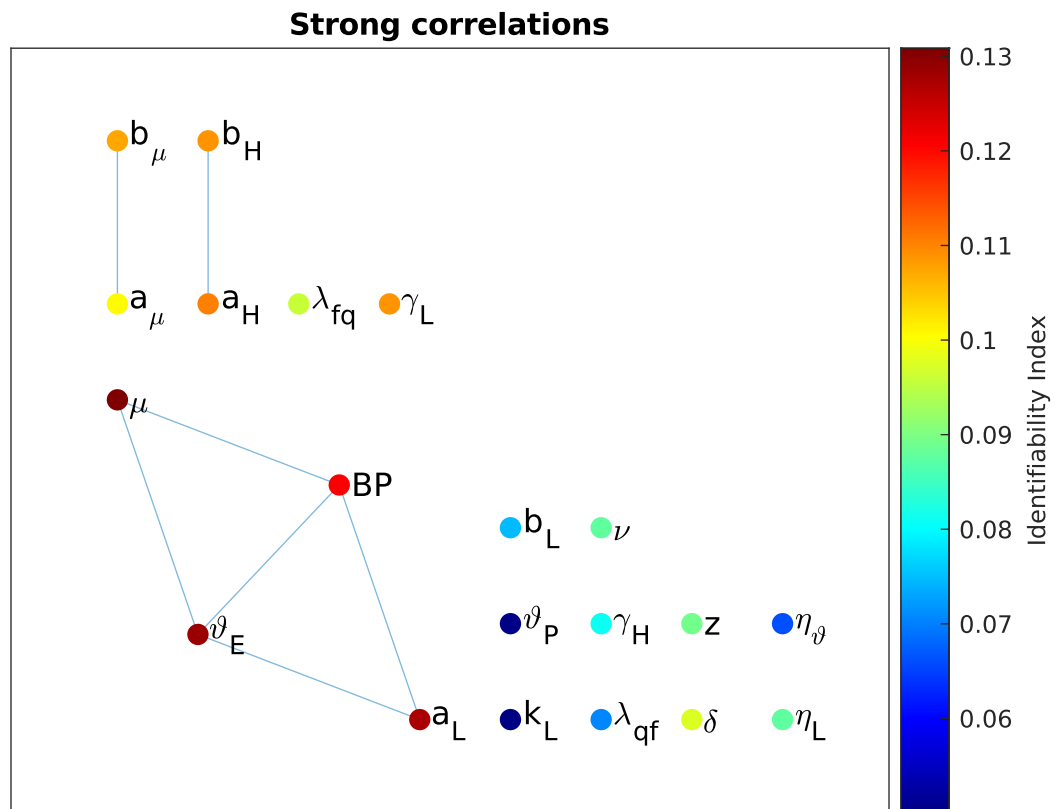
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.001'	'0.5994'	'0.0005'	'0.0959'
ϑ_E	'0'	'0.001'	'0.2389'	'0.0004'	'0.1286'
γ_L	'0.4104'	'1'	'0.366'	'0.9981'	'0.1088'
k_L	'1.9929'	'9.8578'	'5.5233'	'9.0449'	'0.0501'
λ_{qf}	'0.0823'	'0.57'	'0.3687'	'0.2533'	'0.0709'
δ	'0.0163'	'0.0776'	'0.0571'	'0.0387'	'0.0975'
η_L	'0.3226'	'0.9076'	'0.51'	'0.8826'	'0.0878'
ϑ_P	'0.0001'	'0.0003'	'0.0039'	'0.0001'	'0.0506'
γ_H	'0.0103'	'0.4109'	'0.5275'	'0.2642'	'0.0813'
z	'0.0362'	'0.1064'	'10.717'	'0.0539'	'0.0894'
η_{ϑ}	'0.4188'	'0.4898'	'0.862'	'0.4326'	'0.0663'
a_L	'11.825'	'15'	'3.9553'	'14.98'	'0.1271'
b_L	'9.9767'	'14.7275'	'11.3406'	'14.4591'	'0.0749'
a_{μ}	'1'	'14.44'	'9.2377'	'10.7306'	'0.1006'
b_{μ}	'1.5544'	'15'	'7.4203'	'5.9013'	'0.1072'
μ	'0'	'0.0002'	'0.183'	'0.0001'	'0.1309'
a_H	'1.5544'	'15'	'7.6117'	'10.0792'	'0.1104'
b_H	'1'	'10.6957'	'8.0299'	'1.0094'	'0.109'
ν	'0'	'0.2846'	'277.5282'	'0.1265'	'0.0879'
BP	'490.4582'	'494.2934'	'495.5'	'493.4999'	'0.1208'

15.3. Identifiability analysis

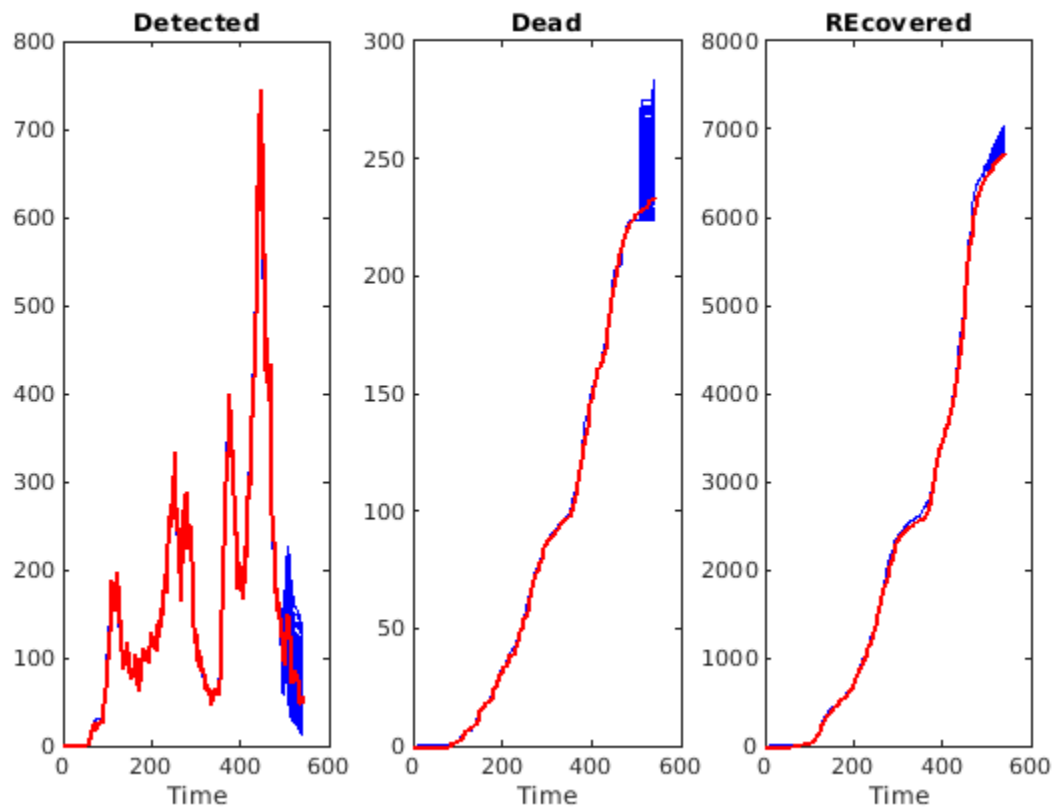






15.4. Uncertainty analysis

N=500



Chapter 16. Extension number16

16.1. Basic information

The extension to be validated consists of the time series from the data542 to the 688. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was2000.

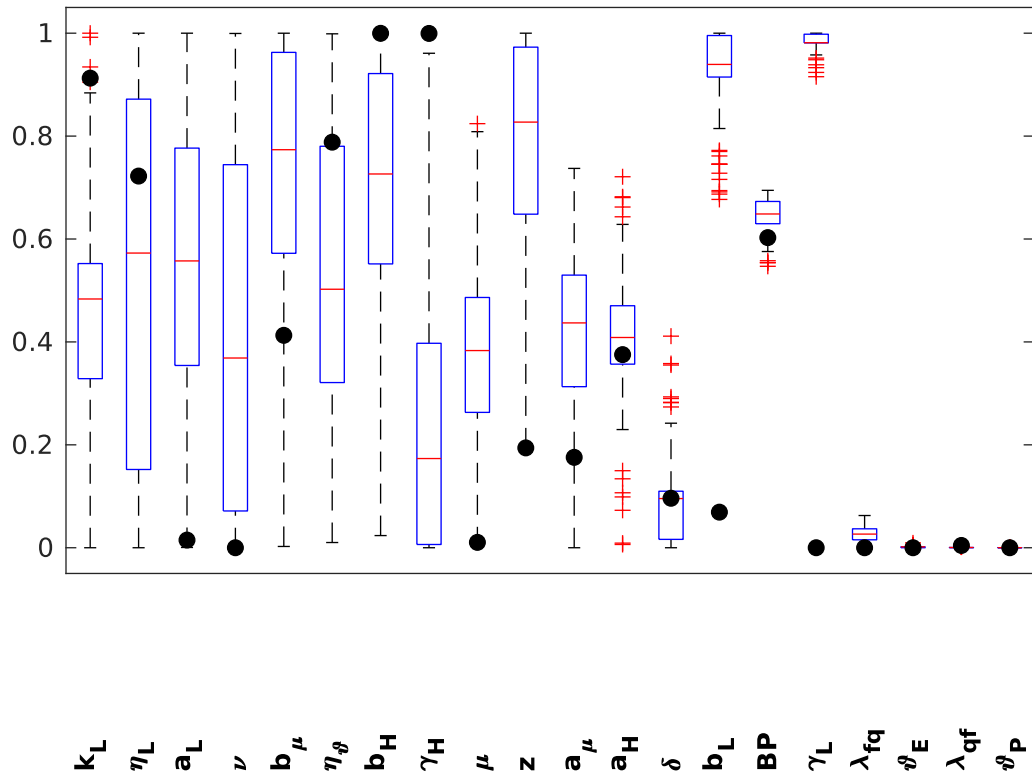
16.2. Estimated parameters with their intervals

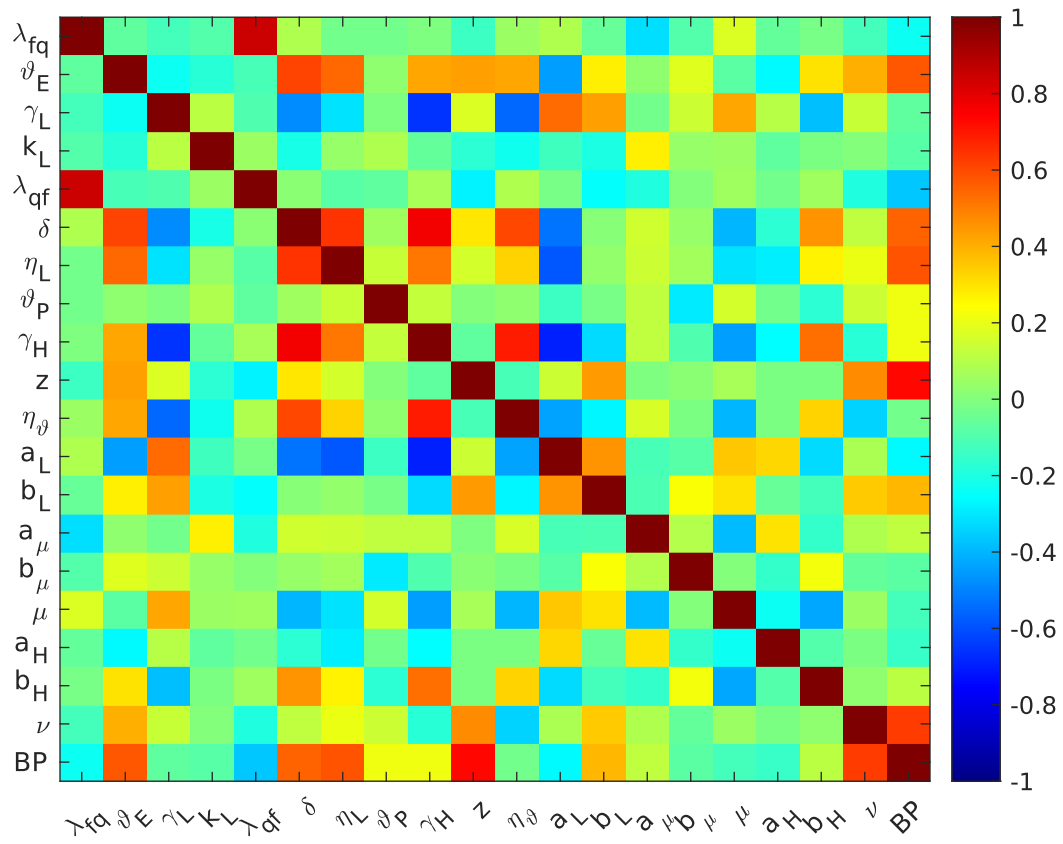
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

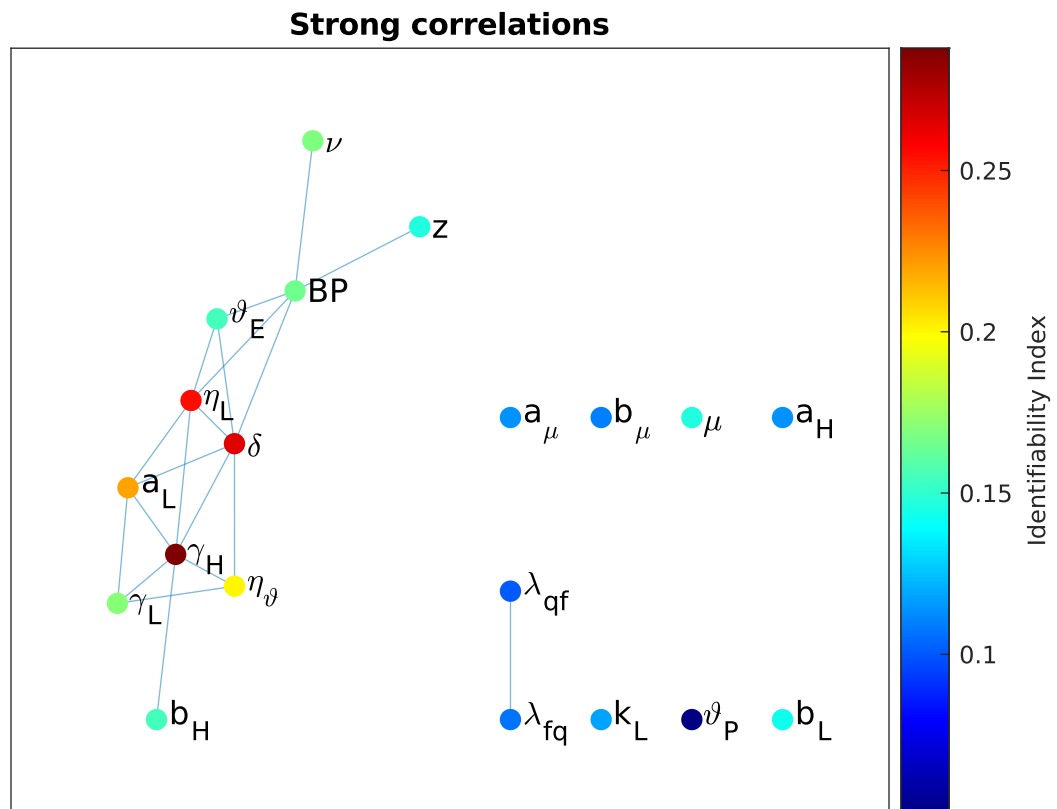
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0'	'0.0266'	'0'	'0.1074'
ϑ_E	'0'	'0'	'0.0018'	'0'	'0.1551'
γ_L	'0'	'0'	'0.9811'	'0'	'0.1705'
k_L	'6.0724'	'9.2861'	'5.3509'	'9.2139'	'0.1184'
λ_{qf}	'0.0027'	'0.0047'	'0.0005'	'0.0044'	'0.1018'
δ	'0.0132'	'0.0146'	'0.0144'	'0.0144'	'0.2654'
η_L	'0.519'	'0.84'	'0.5727'	'0.7223'	'0.2549'
ϑ_P	'0'	'0'	'0.0001'	'0'	'0.051'
γ_H	'0.8812'	'1'	'0.1777'	'0.9995'	'0.2879'
z	'5.2742'	'6.2736'	'24.7695'	'5.8211'	'0.147'
η_{ϑ}	'0.7092'	'0.7983'	'0.5024'	'0.7882'	'0.2009'
a_L	'1'	'4.423'	'8.8038'	'1.2084'	'0.2203'
b_L	'1.9028'	'4.3055'	'14.1483'	'1.968'	'0.1434'
a_{μ}	'3.4227'	'7.8199'	'7.1172'	'3.4593'	'0.114'
b_{μ}	'3.7226'	'10.8049'	'11.8296'	'6.7794'	'0.1097'
μ	'0.0081'	'0.0141'	'0.3848'	'0.0104'	'0.1466'
a_H	'5.5171'	'6.3371'	'6.7377'	'6.2545'	'0.1142'
b_H	'14.4902'	'15'	'11.1694'	'14.9964'	'0.1555'
ν	'0'	'0.0001'	'184.3594'	'0'	'0.1695'
BP	'600.5'	'678'	'613'	'604.5'	'0.1655'

16.3. Identifiability analysis

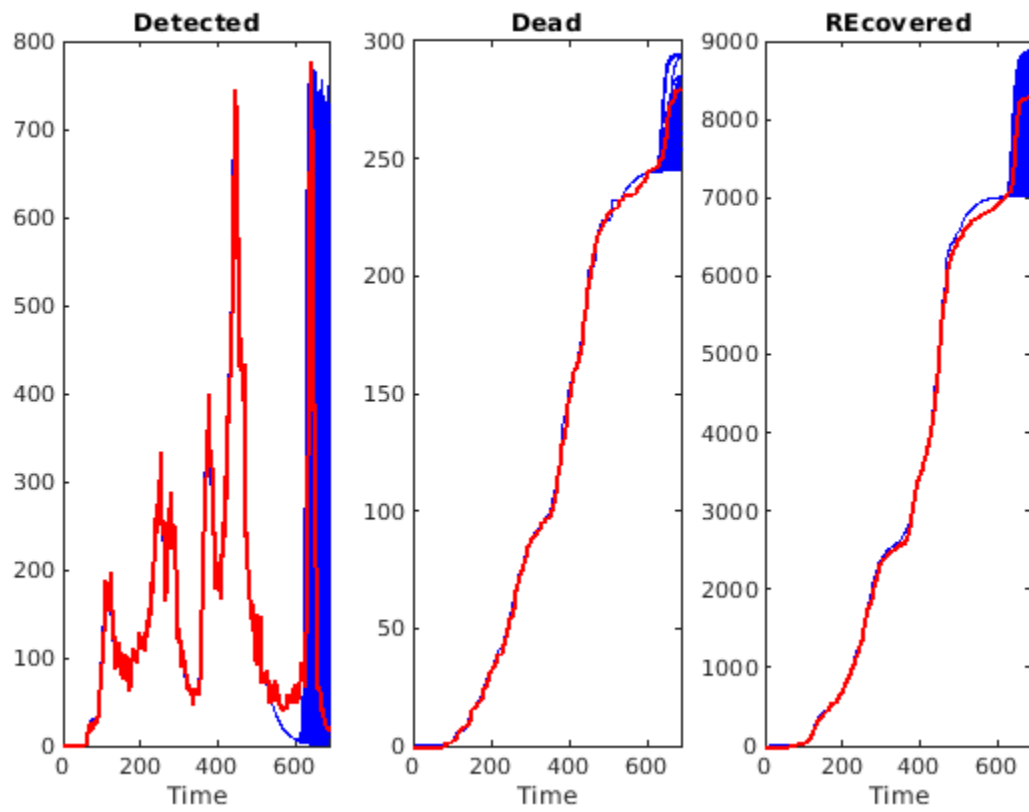






16.4. Uncertainty analysys

N=500



Chapter 17. Extension number17

17.1. Basic information

The extension to be validated consists of the time series from the data688 to the 702. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

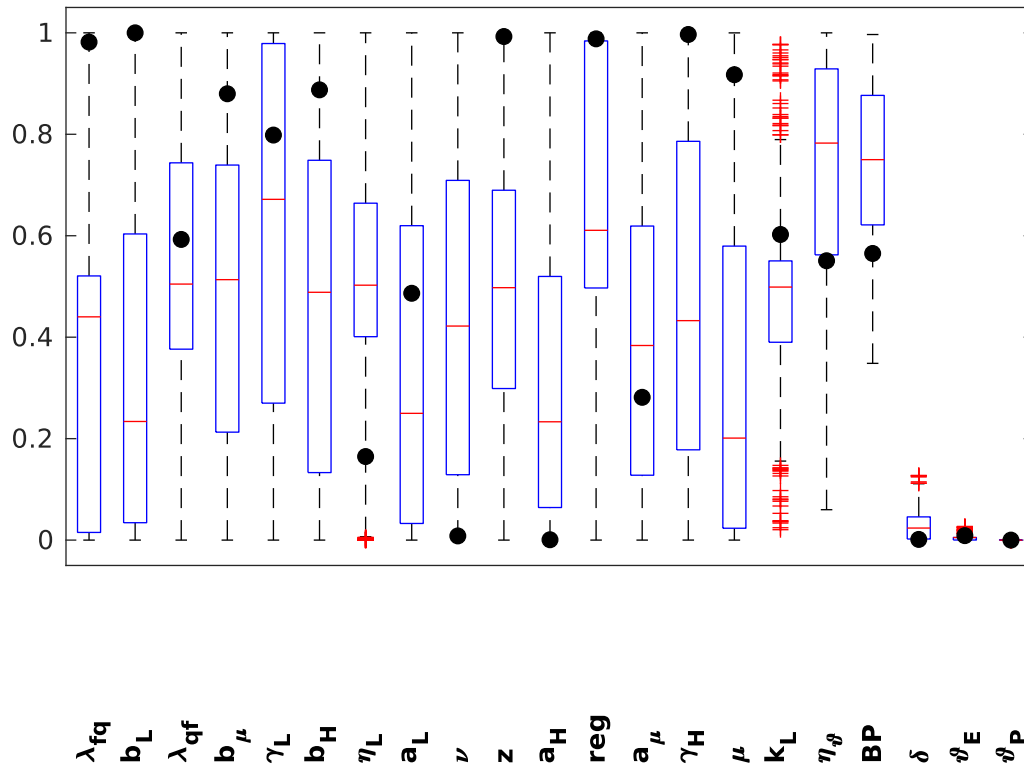
17.2. Estimated parameters with their intervals

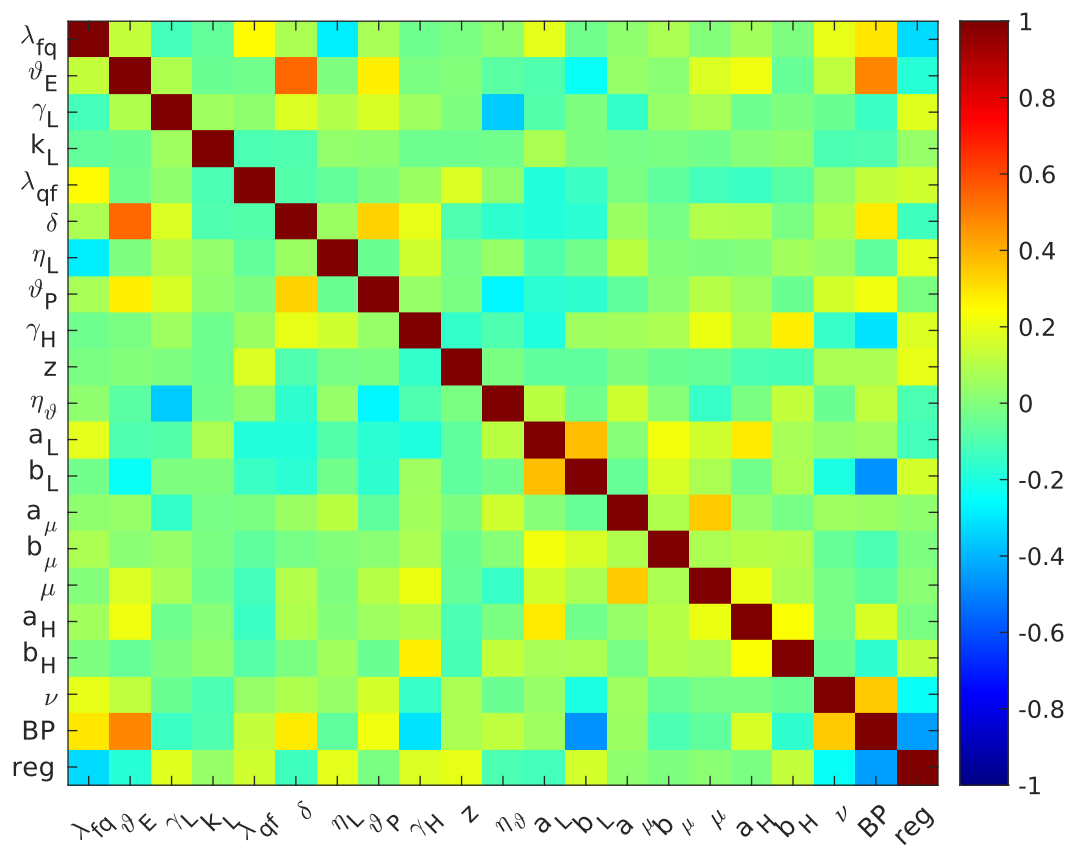
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

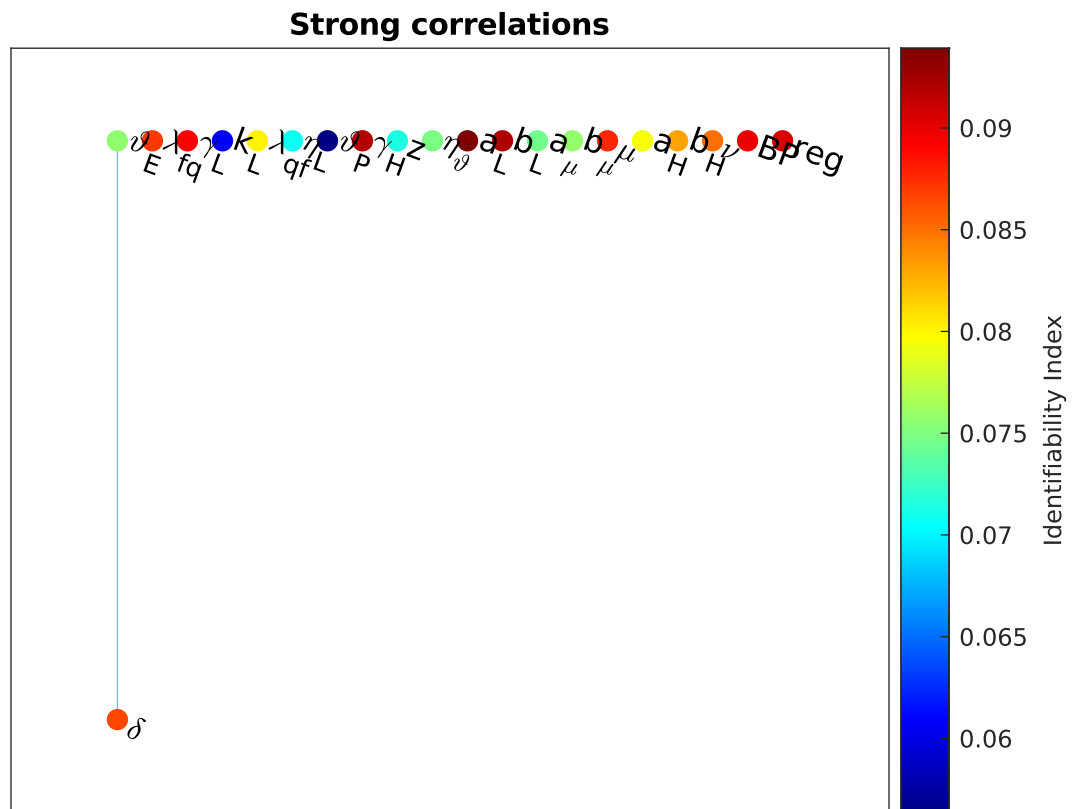
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.8981'	'0.984'	'0.4401'	'0.9818'	'0.0871'
ϑ_E	'0.0085'	'0.0088'	'0.0051'	'0.0088'	'0.0756'
γ_L	'0.7984'	'0.9136'	'0.6717'	'0.7985'	'0.0892'
k_L	'3.0773'	'6.6401'	'5.4893'	'6.4224'	'0.061'
λ_{qf}	'0.565'	'0.5946'	'0.5047'	'0.5927'	'0.0802'
δ	'0'	'0.0003'	'0.0036'	'0.0002'	'0.0866'
η_L	'0.1417'	'0.166'	'0.5025'	'0.1647'	'0.0708'
ϑ_P	'0'	'0'	'0'	'0'	'0.0564'
γ_H	'0.6446'	'1'	'0.4326'	'0.9967'	'0.0919'
z	'24.2779'	'30'	'14.9281'	'29.7815'	'0.0714'
η_{ϑ}	'0.5454'	'0.5965'	'0.7826'	'0.5507'	'0.0749'
a_L	'7.4491'	'7.8154'	'4.4983'	'7.8118'	'0.0939'
b_L	'13.8191'	'15'	'4.2739'	'15'	'0.0921'
a_{μ}	'3.1722'	'11.0087'	'6.3708'	'4.9406'	'0.0746'
b_{μ}	'6.7959'	'14.1406'	'8.188'	'13.318'	'0.0758'
μ	'0.3715'	'0.9534'	'0.2011'	'0.9175'	'0.0877'
a_H	'1'	'2.2956'	'4.2653'	'1.0098'	'0.0795'
b_H	'5.3347'	'14.3462'	'7.8394'	'13.4262'	'0.0832'
ν	'4.1194'	'4.9416'	'210.9781'	'4.1211'	'0.085'
BP	'574.7405'	'633.3686'	'654.5'	'626.7602'	'0.0899'
reg	'0.2312'	'0.2479'	'0.1527'	'0.247'	'0.0906'

17.3. Identifiability analysis







17.4. Uncertainty analysys

N=500

