

Validation process forSUCRE

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 77. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was 2000.

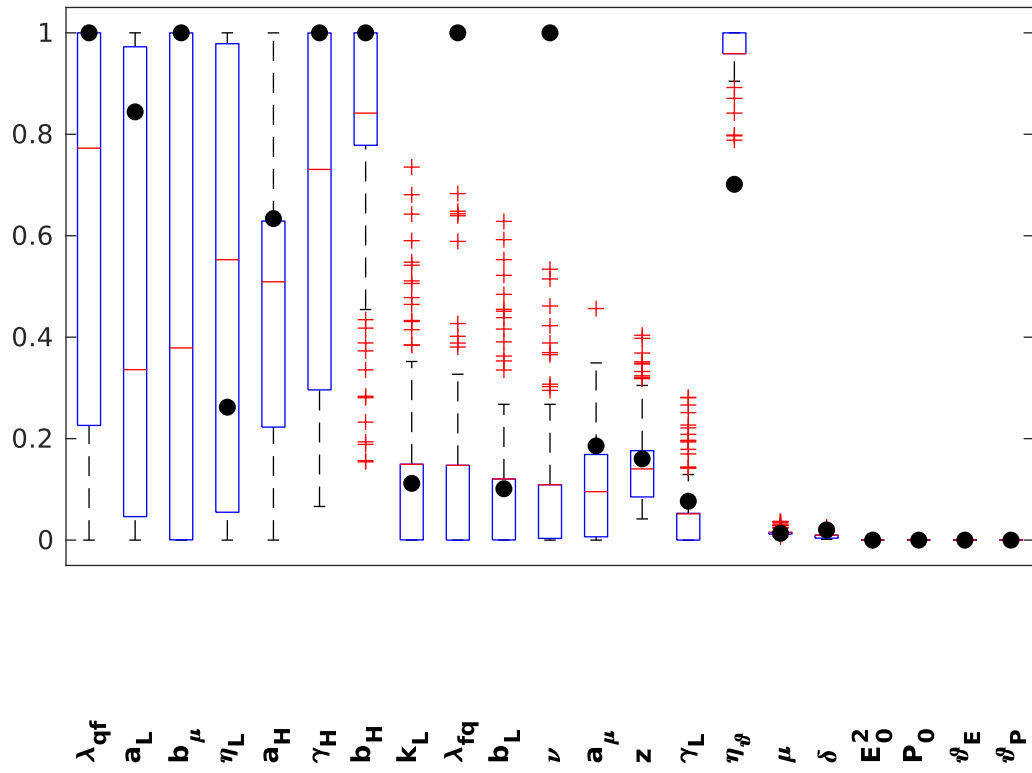
1.2. Estimated parameters with their intervals

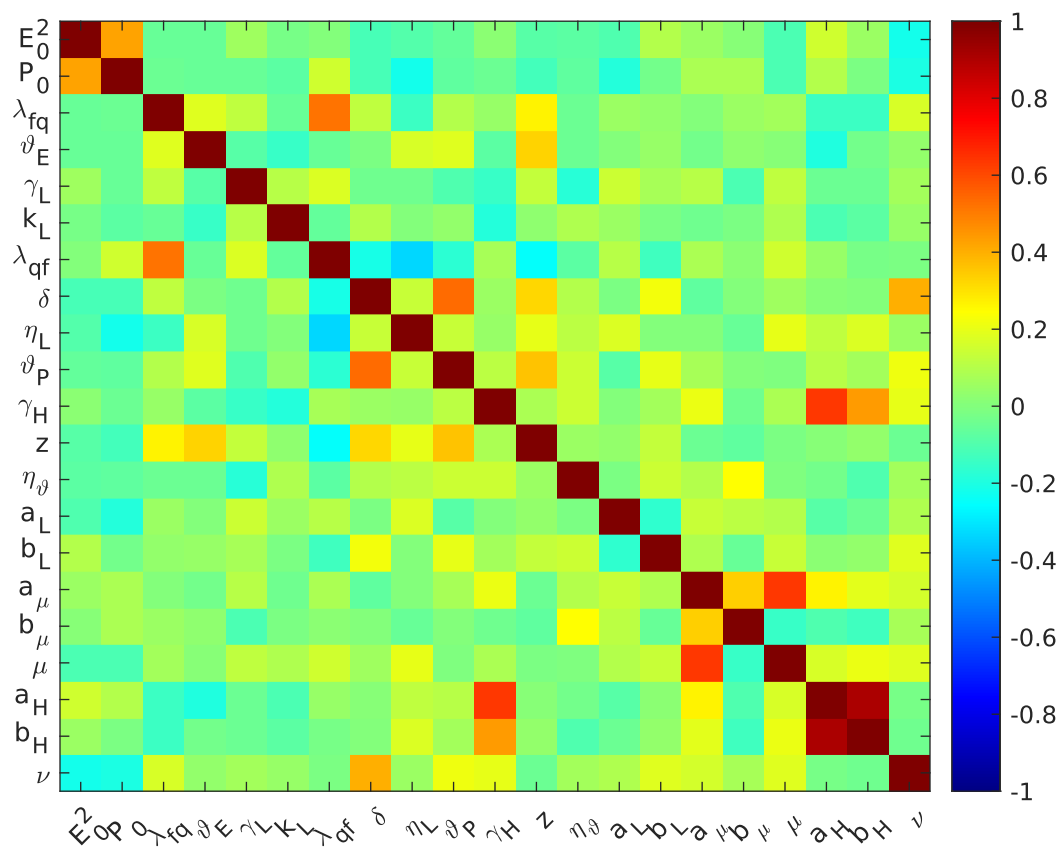
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

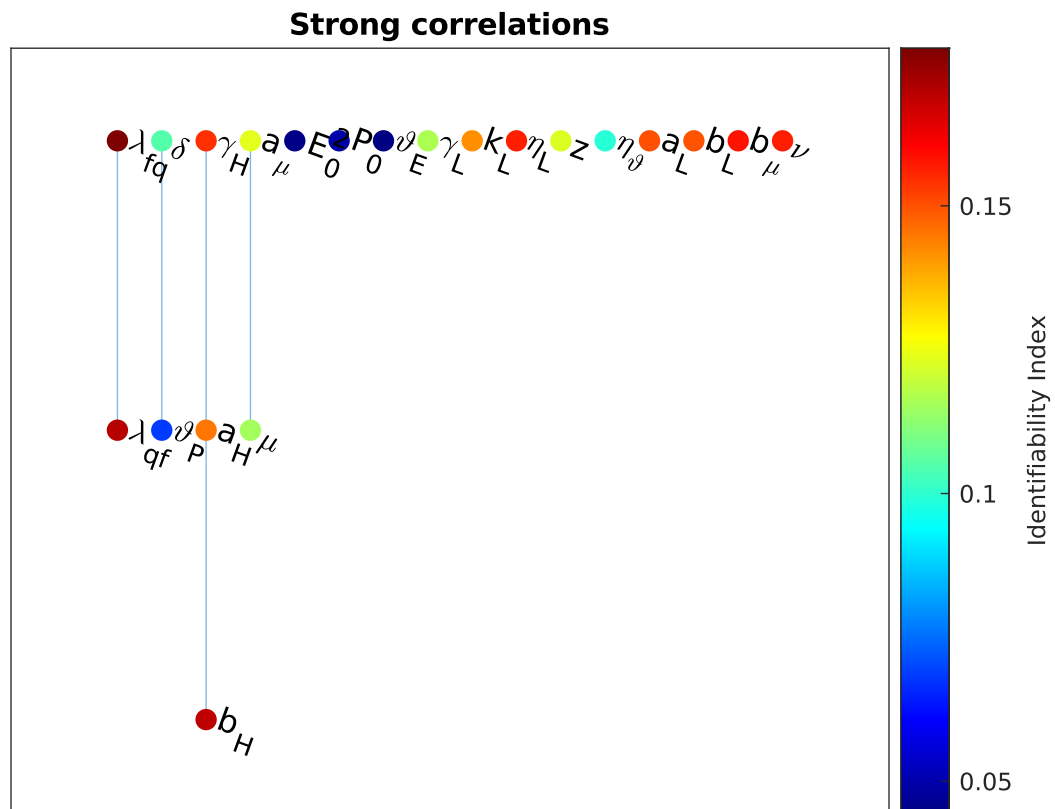
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
E^2_0	'0.0032'	'0.0042'	'0.0012'	'0.0032'	'0.0457'
P_0	'0'	'0'	'0.0002'	'0'	'0.0501'
λ_{fq}	'0.9992'	'1'	'0.1474'	'1'	'0.1774'
ϑ_E	'0'	'0'	'0'	'0'	'0.0446'
γ_L	'0'	'0.1587'	'0.0518'	'0.0767'	'0.1162'
k_L	'1'	'10'	'2.344'	'2.007'	'0.142'
λ_{qf}	'0.9992'	'1'	'0.7727'	'1'	'0.1698'
δ	'0.003'	'0.0035'	'0.0015'	'0.003'	'0.105'
η_L	'0.0975'	'0.9549'	'0.5528'	'0.262'	'0.1564'
ϑ_P	'0'	'0'	'0'	'0'	'0.0686'
γ_H	'0.5564'	'1'	'0.7307'	'1'	'0.1546'
z	'4.7455'	'4.9522'	'4.2095'	'4.8026'	'0.1226'
η_{ϑ}	'0.3161'	'0.965'	'0.9589'	'0.7014'	'0.0993'
a_L	'4.4707'	'15'	'5.7044'	'12.8185'	'0.1504'
b_L	'1.6913'	'15'	'2.6869'	'2.4165'	'0.1494'
a_{μ}	'2.5044'	'3.7232'	'2.3364'	'3.5993'	'0.1238'
b_{μ}	'9.473'	'15'	'6.3038'	'14.9998'	'0.158'
μ	'0.0097'	'0.0134'	'0.0152'	'0.0134'	'0.1153'
a_H	'8.7354'	'10.0187'	'8.1288'	'9.8734'	'0.1447'
b_H	'12.4138'	'15'	'12.7844'	'14.9999'	'0.169'
ν	'264.8439'	'500'	'54.5379'	'499.9909'	'0.1566'

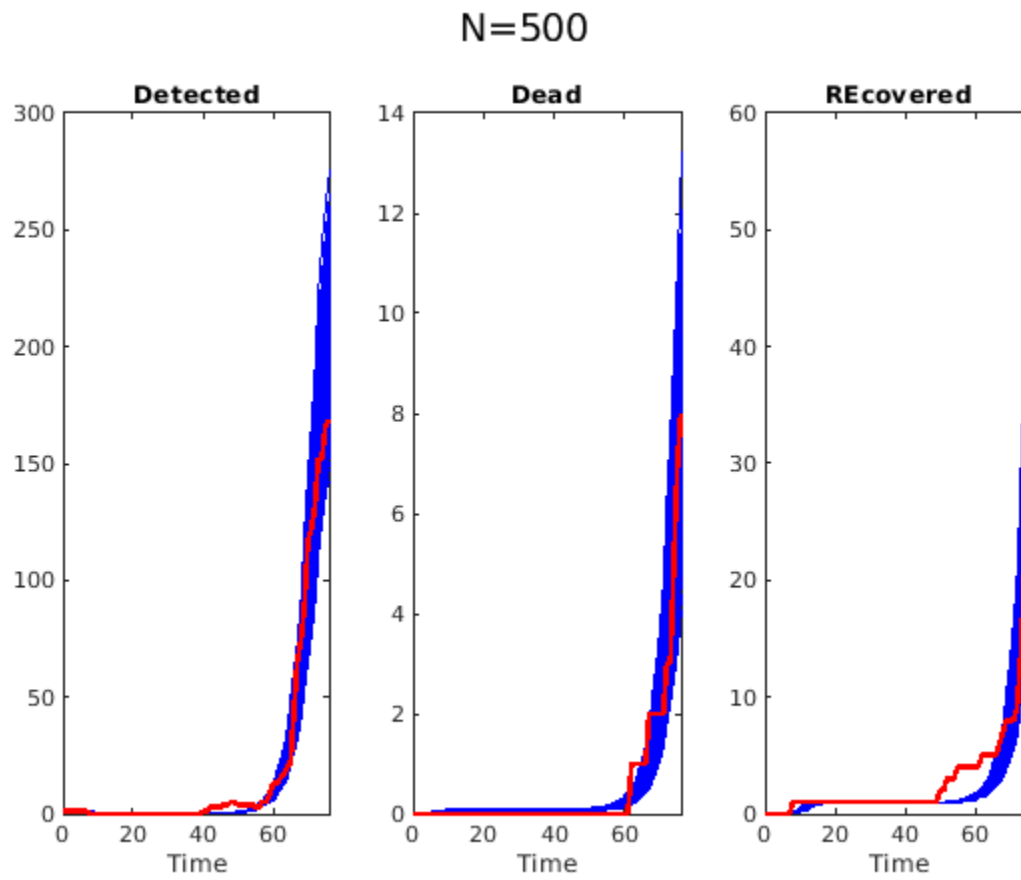
1.3. Identifiability analysis







1.4. Uncertainty analysis



Chapter 2. Extension number2

2.1. Basic information

The extension to be validated consists of the time series from the data77 to the 113. The status of the validation is: COMPLETED.

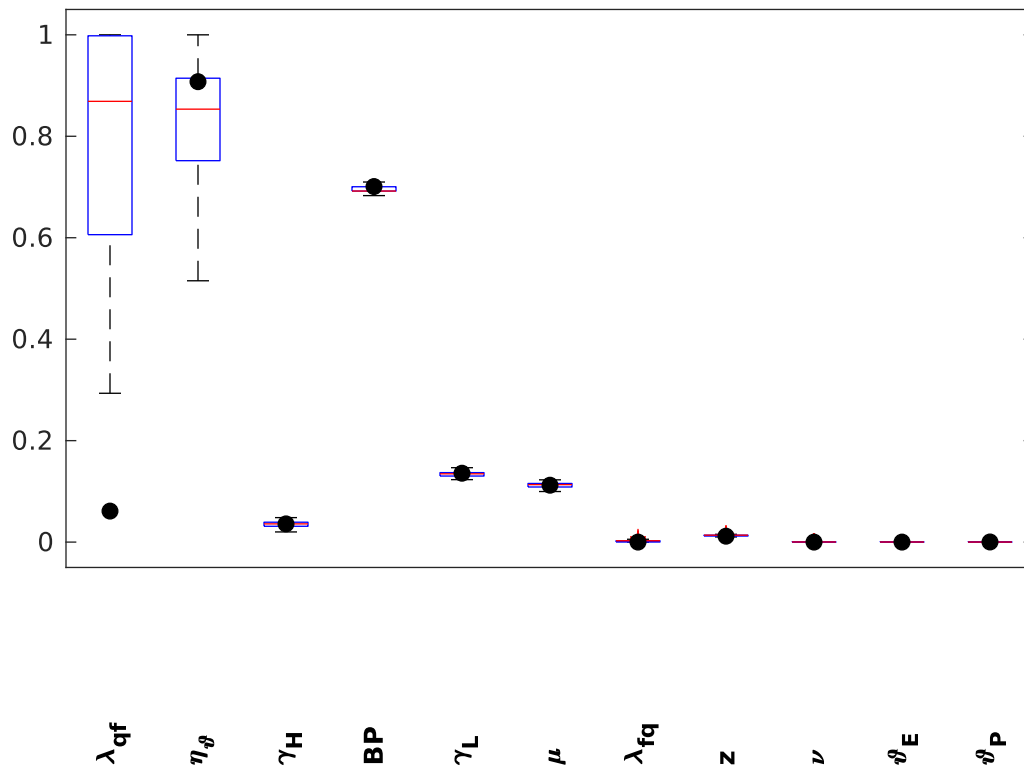
The number of estimations needed to perform the validation was33000.

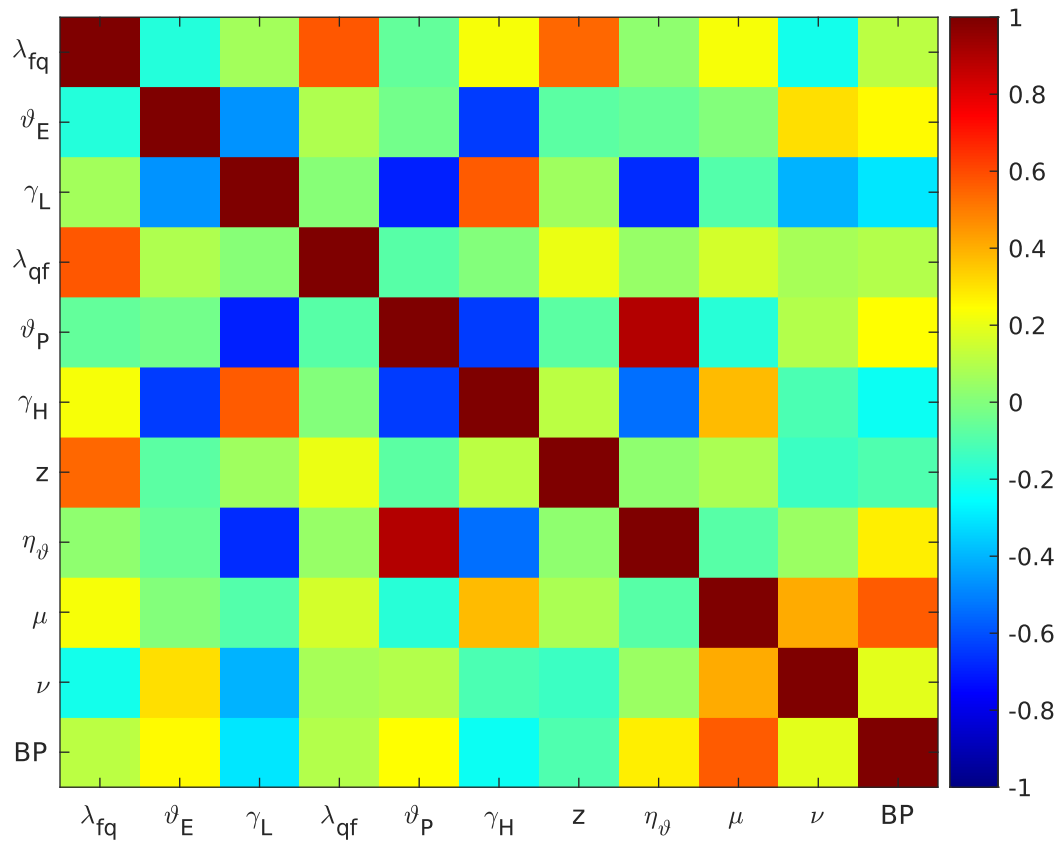
2.2. Estimated parameters with their intervals

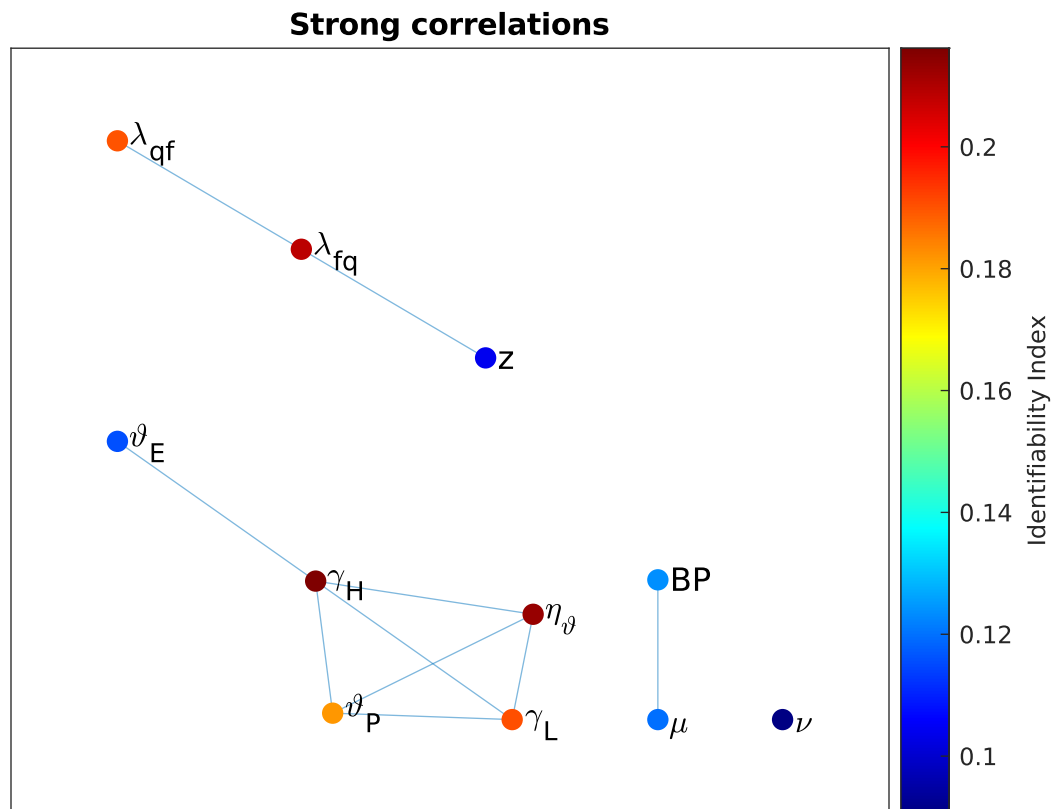
It was necessary to fix 9 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.1338'	'0.0027'	'0'	'0.2088'
ϑ_E	'0.0001'	'0.0003'	'0.0002'	'0'	'0.1159'
γ_L	'0.1332'	'0.136'	'0.1346'	'0.1358'	'0.1905'
k_L	'5.6305'	'5.6305'	'5.6305'	'5.6305'	'0'
λ_{qf}	'0.7776'	'0.9601'	'0.8689'	'0.0611'	'0.1902'
δ	'0.0014'	'0.0014'	'0.0014'	'0.0014'	'0'
η_L	'0.6979'	'0.6979'	'0.6979'	'0.6979'	'0'
ϑ_P	'0.0001'	'0.0002'	'0.0001'	'0.0002'	'0.1816'
γ_H	'0.0341'	'0.0377'	'0.0359'	'0.0359'	'0.2162'
z	'0.2898'	'0.53'	'0.4099'	'0.3498'	'0.1042'
η_{ϑ}	'0.8149'	'0.892'	'0.8535'	'0.9076'	'0.2128'
a_L	'1.4762'	'1.4762'	'1.4762'	'1.4762'	'0'
b_L	'13.5746'	'13.5746'	'13.5746'	'13.5746'	'0'
a_{μ}	'3.8426'	'3.8426'	'3.8426'	'3.8426'	'0'
b_{μ}	'2.201'	'2.201'	'2.201'	'2.201'	'0'
μ	'0.1113'	'0.1152'	'0.1133'	'0.1121'	'0.1197'
a_H	'3.4829'	'3.4829'	'3.4829'	'3.4829'	'0'
b_H	'3.8547'	'3.8547'	'3.8547'	'3.8547'	'0'
ν	'0.0112'	'0.2308'	'0.121'	'0.0057'	'0.0908'
BP	'78.3036'	'78.7114'	'78.5075'	'79.5'	'0.124'

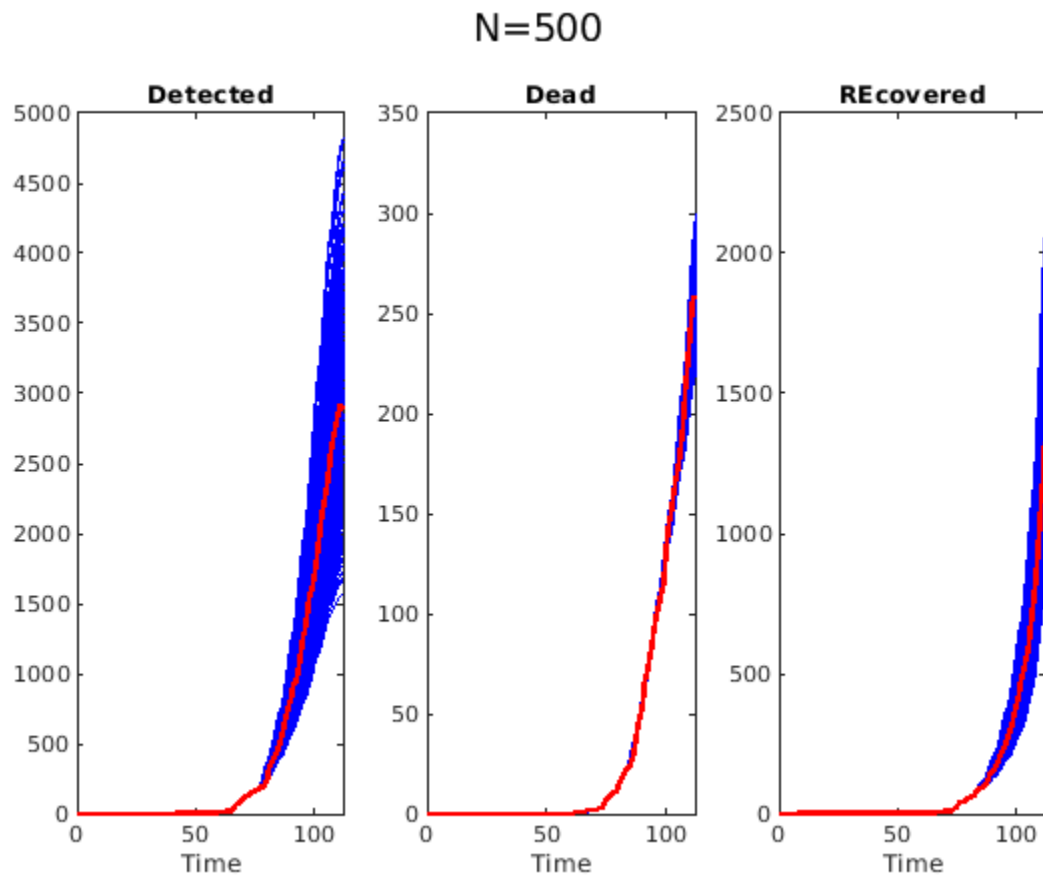
2.3. Identifiability analysis







2.4. Uncertainty analysis



Chapter 3. Extension number3

3.1. Basic information

The extension to be validated consists of the time series from the data113 to the 136. The status of the validation is: COMPLETED.

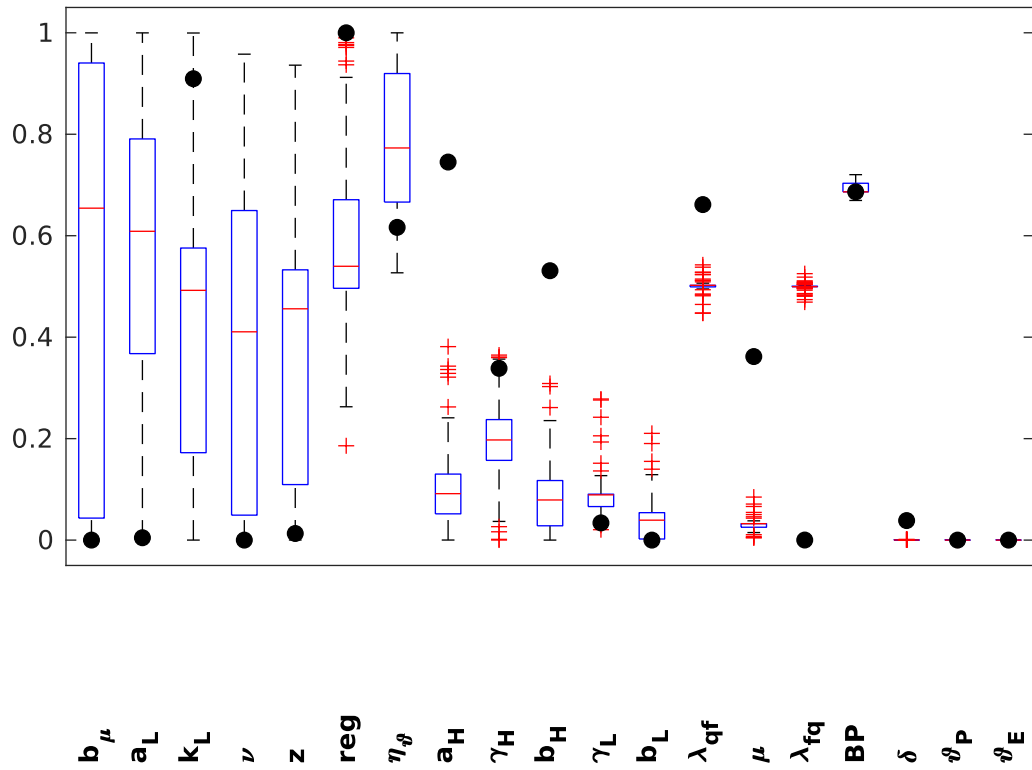
The number of estimations needed to perform the validation was11000.

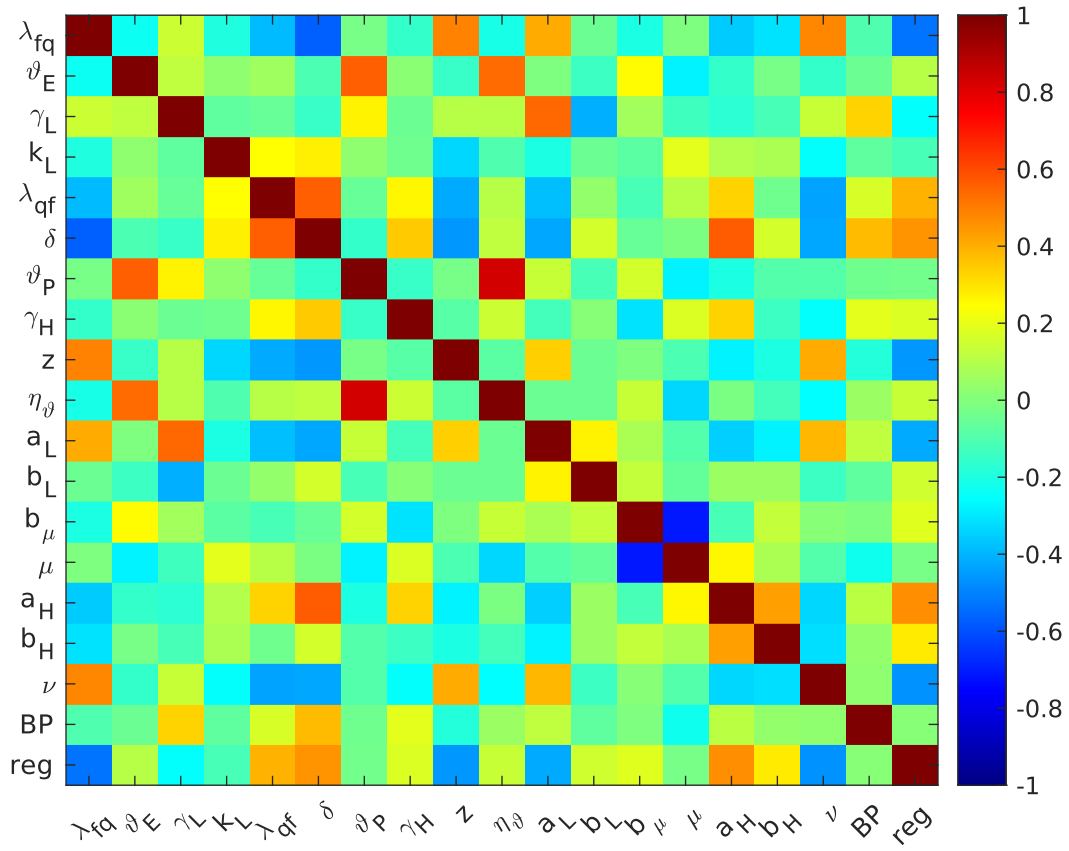
3.2. Estimated parameters with their intervals

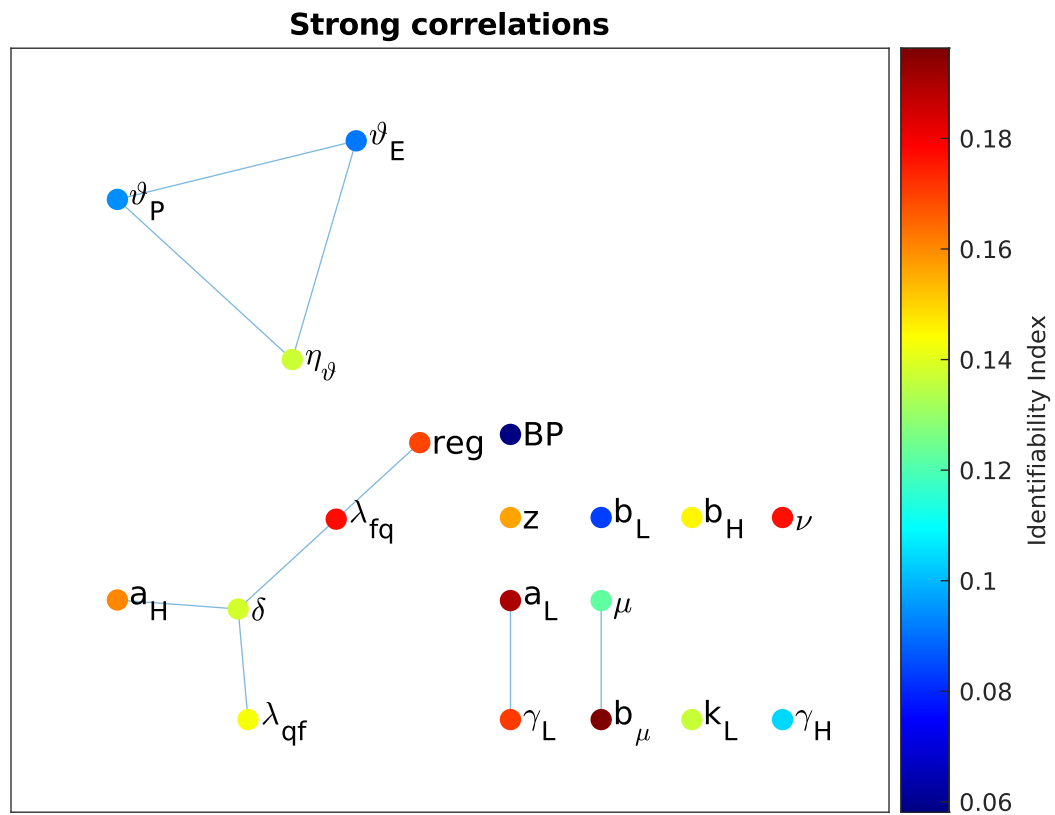
It was necessary to fix 2 parameters of 11 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4383'	'0.5607'	'0.4995'	'0.0001'	'0.1771'
\vartheta_E	'0'	'0.0001'	'0'	'0'	'0.0913'
\gamma_L	'0.0013'	'0.1797'	'0.0905'	'0.0339'	'0.1706'
k_L	'4.7207'	'6.1407'	'5.4307'	'9.1852'	'0.1369'
\lambda_{qf}	'0.4529'	'0.5515'	'0.5022'	'0.6614'	'0.1431'
\delta	'0'	'0.0006'	'0'	'0.0058'	'0.1385'
\eta_L	'0.7494'	'0.7494'	'0.7494'	'0.7494'	'0'
\vartheta_P	'0'	'0.0001'	'0'	'0'	'0.0948'
\gamma_H	'0.1603'	'0.239'	'0.1996'	'0.3386'	'0.1041'
z	'11.406'	'15.9501'	'13.678'	'0.3909'	'0.1565'
\eta_{\vartheta}	'0.7325'	'0.8134'	'0.773'	'0.6164'	'0.137'
a_L	'8.2548'	'10.789'	'9.5219'	'1.065'	'0.1903'
b_L	'1.1227'	'2.0114'	'1.5671'	'1'	'0.0839'
a_{\mu}	'5.1171'	'5.1171'	'5.1171'	'5.1171'	'0'
b_{\mu}	'8.4627'	'11.8575'	'10.1601'	'1.0003'	'0.1963'
\mu	'0'	'0.0835'	'0.0324'	'0.3618'	'0.1225'
a_H	'1.4347'	'3.1338'	'2.2842'	'11.4327'	'0.1607'
b_H	'1'	'3.2723'	'2.1102'	'8.4339'	'0.1454'
\nu	'160.5479'	'250.0254'	'205.2867'	'0.0001'	'0.1767'
BP	'117.2779'	'117.7221'	'117.5'	'117.5'	'0.0581'
reg	'0.1183'	'0.1528'	'0.1355'	'0.25'	'0.1693'

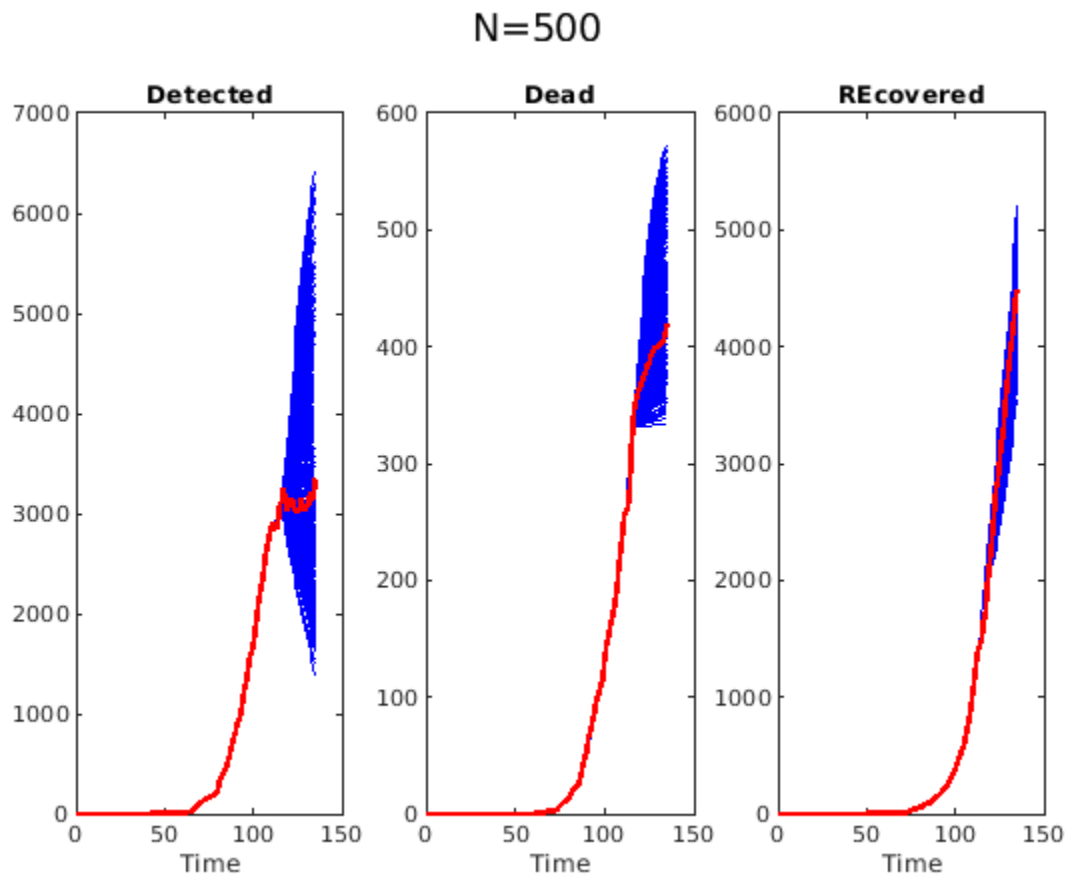
3.3. Identifiability analysis







3.4. Uncertainty analysis



Chapter 4. Extension number4

4.1. Basic information

The extension to be validated consists of the time series from the data136 to the 162. The status of the validation is: COMPLETED.

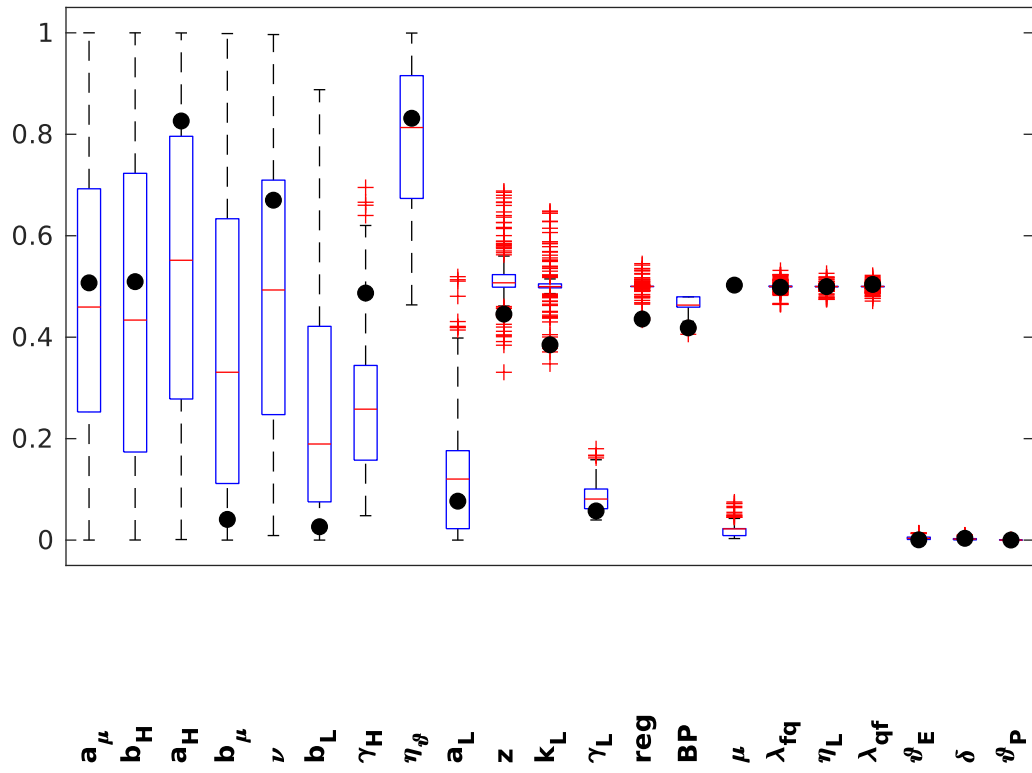
The number of estimations needed to perform the validation was1000.

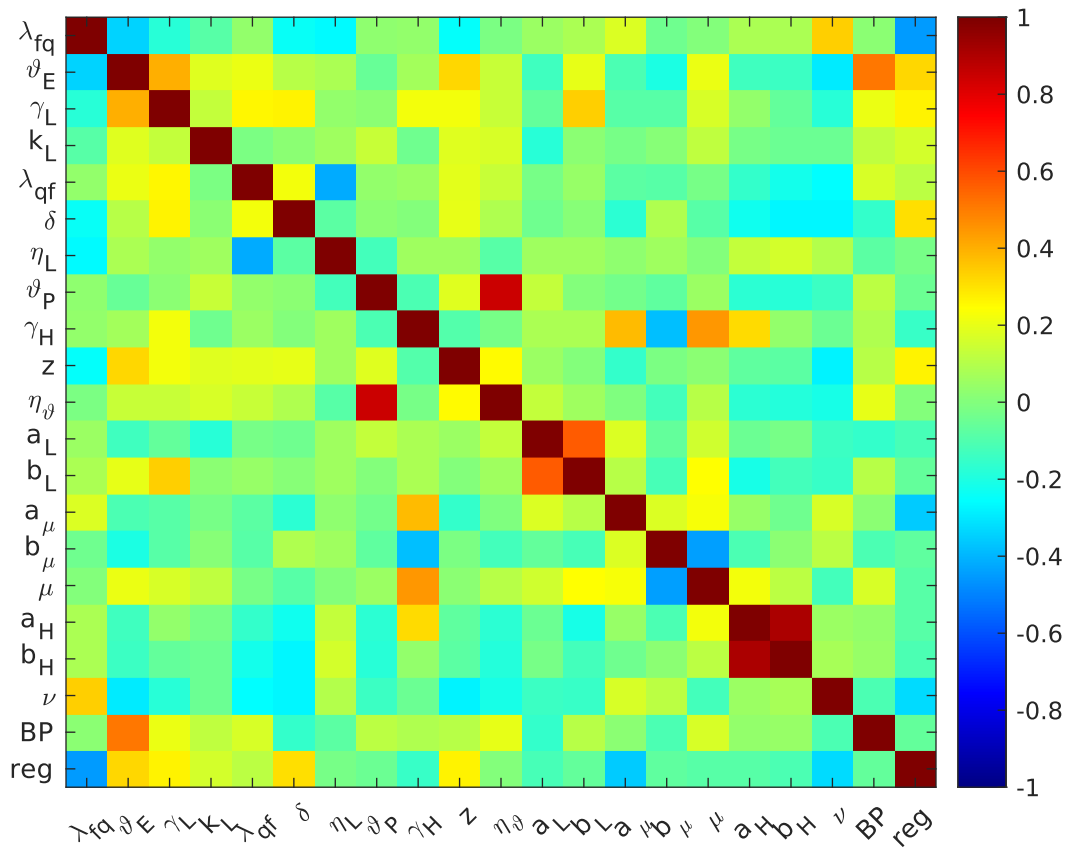
4.2. Estimated parameters with their intervals

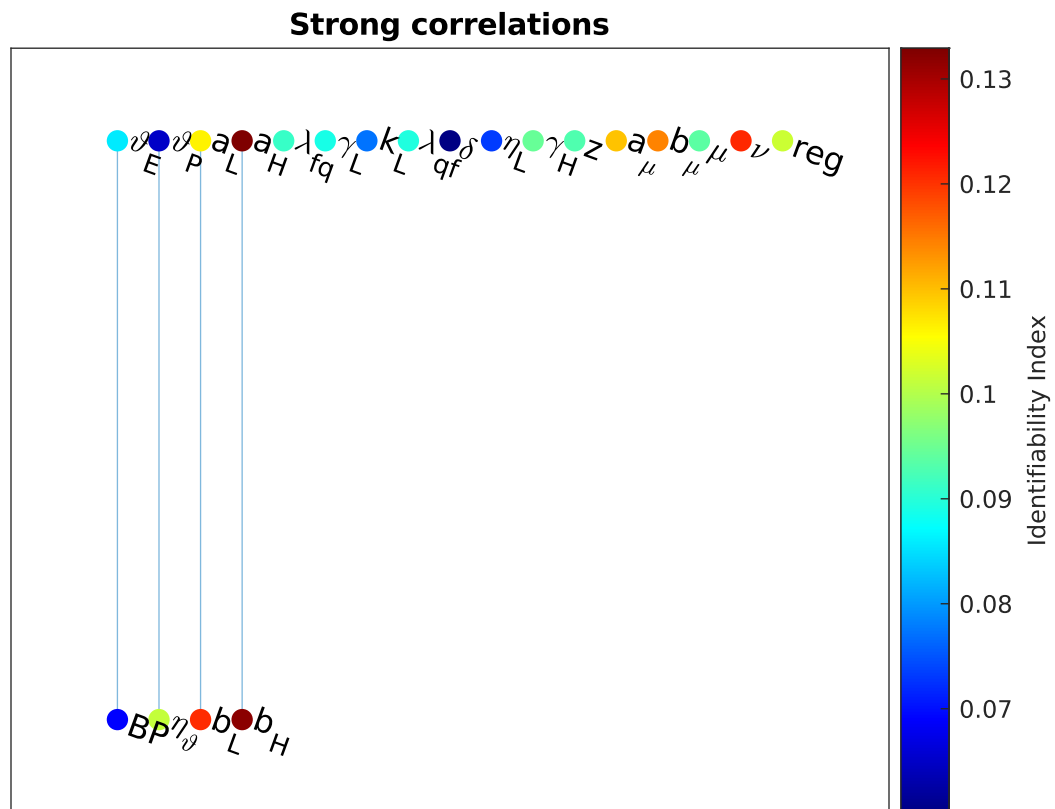
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.4654'	'0.5345'	'0.5'	'0.4984'	'0.0914'
ϑ_E	'0.0026'	'0.0045'	'0.0035'	'0.0005'	'0.0859'
γ_L	'0.0559'	'0.1066'	'0.0812'	'0.0575'	'0.0889'
k_L	'5.2026'	'5.7924'	'5.4975'	'4.4653'	'0.0773'
λ_{qf}	'0.4667'	'0.5333'	'0.5'	'0.504'	'0.0894'
δ	'0'	'0.0007'	'0.0003'	'0.0005'	'0.0601'
η_L	'0.4731'	'0.5264'	'0.4998'	'0.4998'	'0.0733'
ϑ_P	'0.0001'	'0.0001'	'0.0001'	'0.0001'	'0.065'
γ_H	'0.2193'	'0.2977'	'0.2585'	'0.487'	'0.0948'
z	'14.2037'	'16.2291'	'15.2164'	'13.3661'	'0.093'
η_{ϑ}	'0.7844'	'0.8422'	'0.8133'	'0.8316'	'0.1012'
a_L	'2.1009'	'3.303'	'2.7019'	'2.0745'	'0.1064'
b_L	'2.8976'	'4.4107'	'3.6541'	'1.3692'	'0.1205'
a_{μ}	'6.6481'	'8.2158'	'7.432'	'8.0996'	'0.1098'
b_{μ}	'4.7556'	'6.5093'	'5.6324'	'1.5714'	'0.1142'
μ	'0'	'0.0682'	'0.0227'	'0.5027'	'0.0938'
a_H	'7.8952'	'9.551'	'8.7231'	'12.5671'	'0.1329'
b_H	'6.2087'	'7.9358'	'7.0722'	'8.1327'	'0.1319'
ν	'218.0106'	'275.0424'	'246.5265'	'335.0251'	'0.1208'
BP	'135.5496'	'135.85'	'135.6998'	'133.5001'	'0.0692'
reg	'0.1155'	'0.1346'	'0.125'	'0.109'	'0.1019'

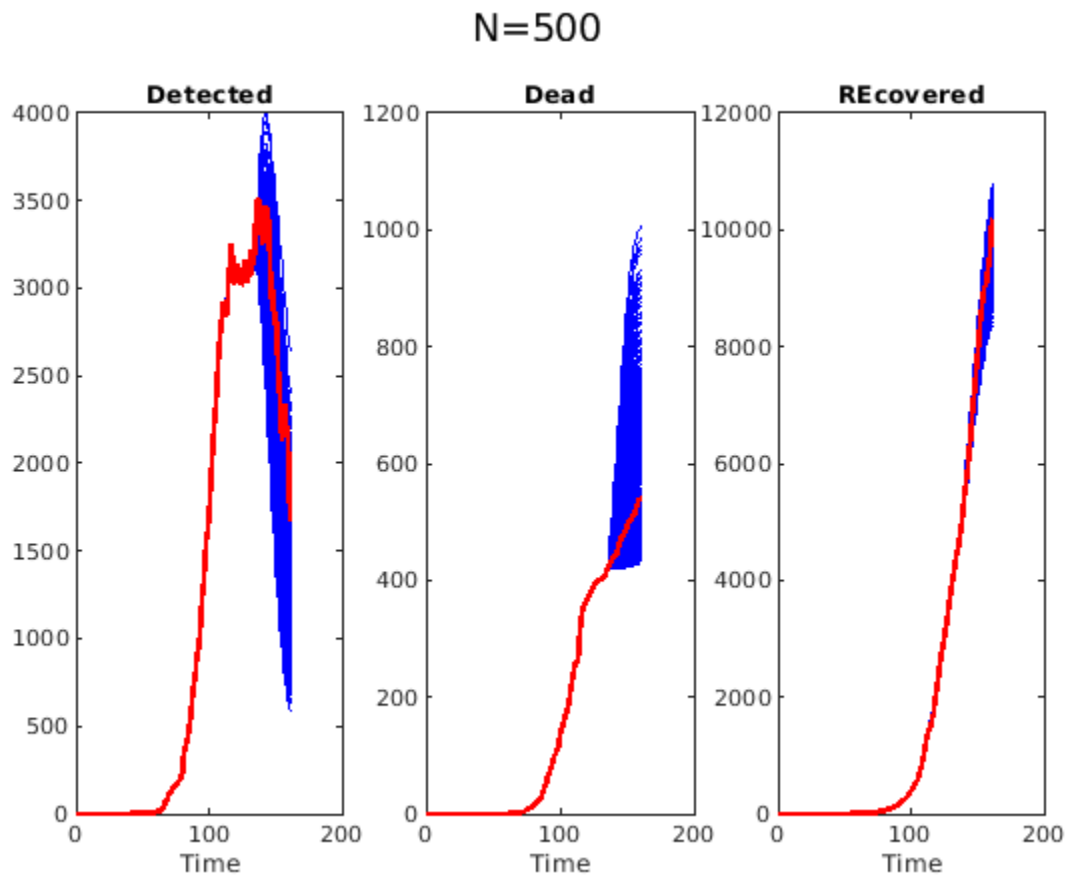
4.3. Identifiability analysys







4.4. Uncertainty analysys



Chapter 5. Extension number5

5.1. Basic information

The extension to be validated consists of the time series from the data162 to the 184. The status of the validation is: COMPLETED.

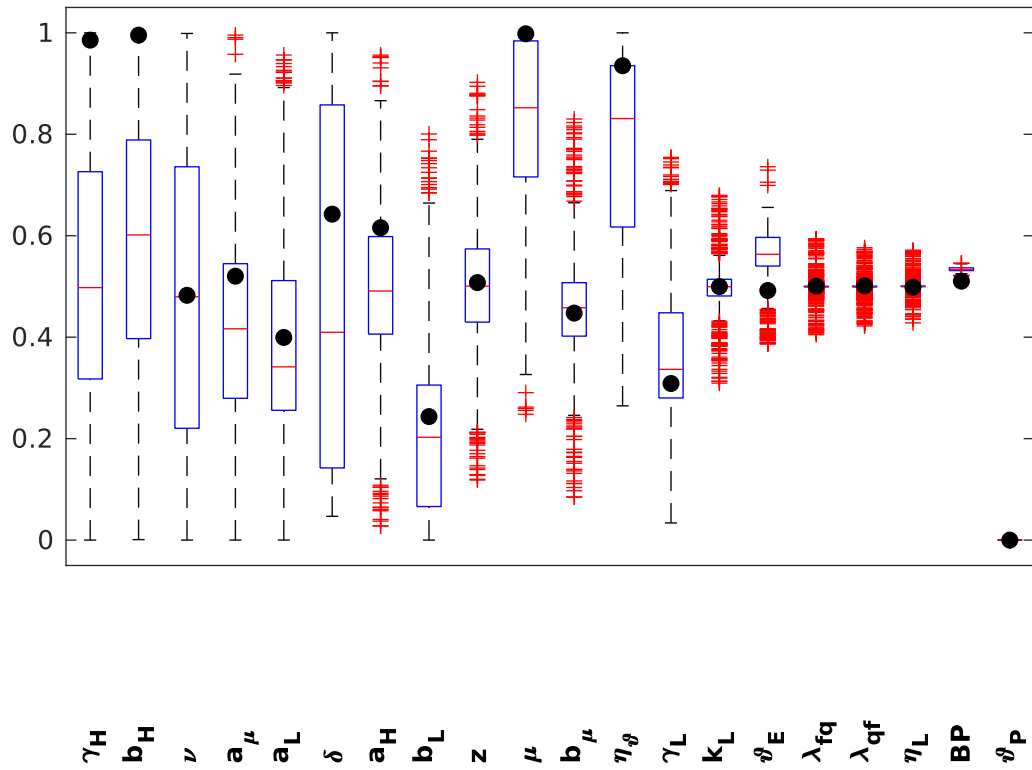
The number of estimations needed to perform the validation was1000.

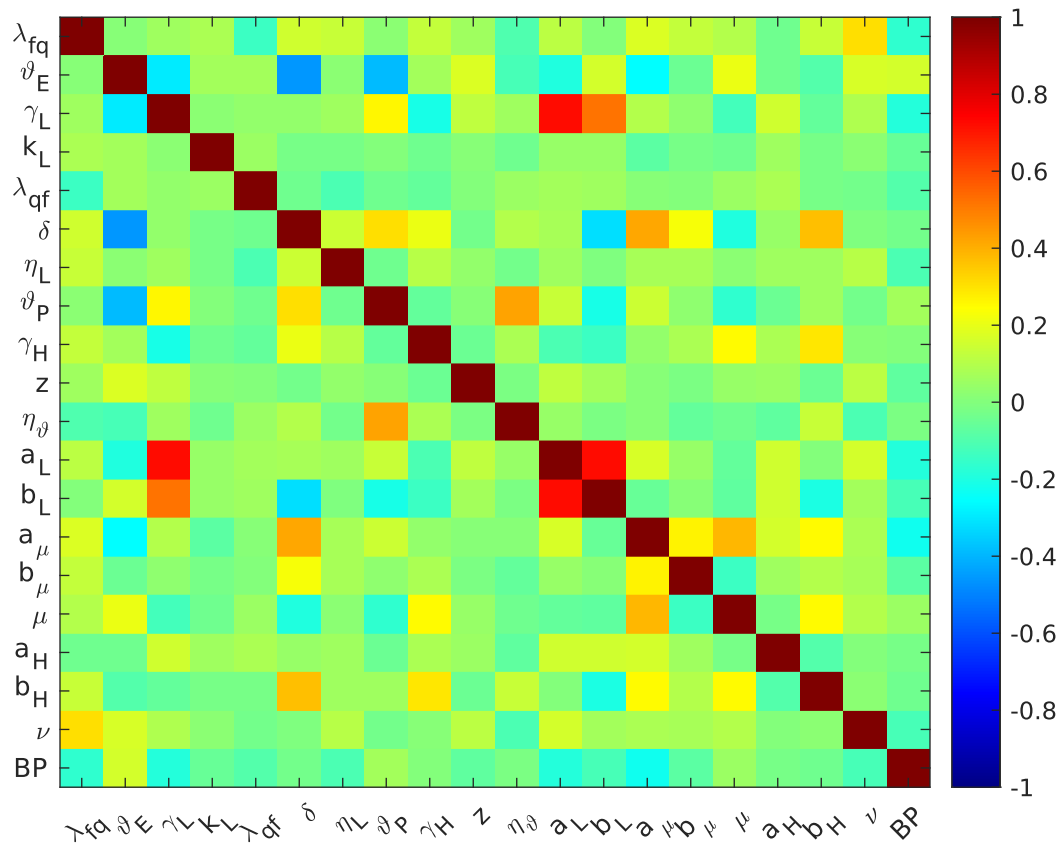
5.2. Estimated parameters with their intervals

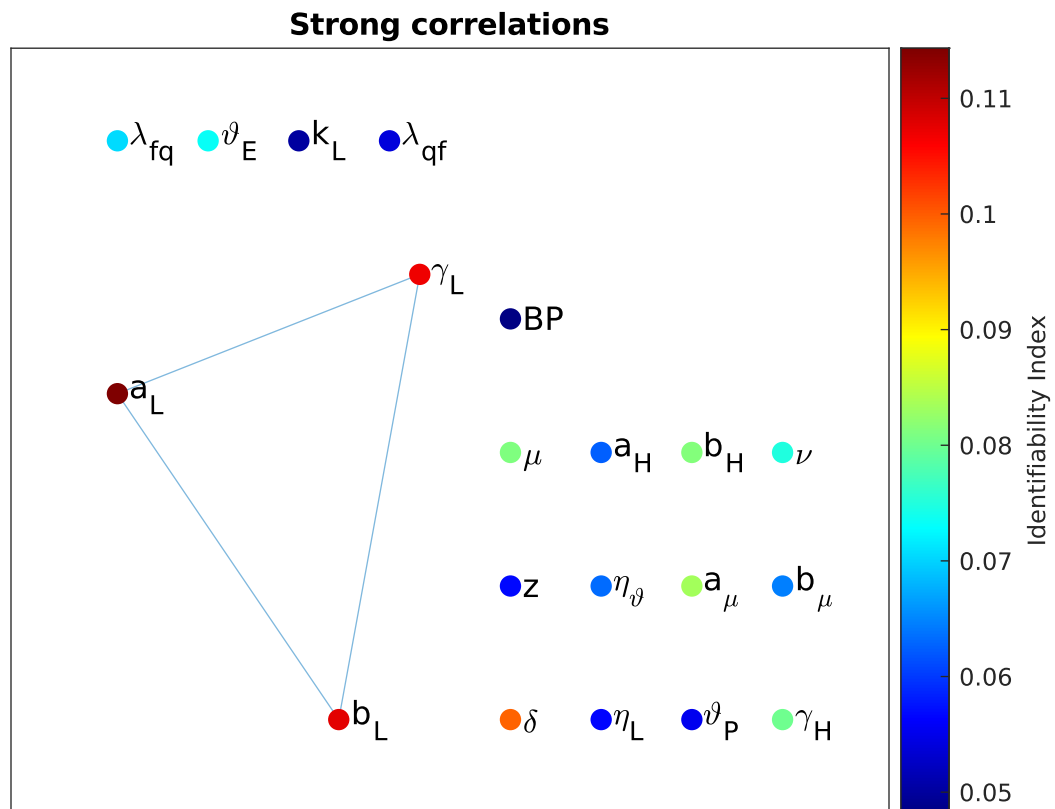
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.4795'	'0.5196'	'0.4996'	'0.5007'	'0.0706'
ϑ_E	'0.5518'	'0.575'	'0.5634'	'0.492'	'0.0735'
γ_L	'0.3189'	'0.3543'	'0.3366'	'0.3087'	'0.1069'
k_L	'5.3486'	'5.6414'	'5.495'	'5.4976'	'0.0502'
λ_{qf}	'0.4832'	'0.5168'	'0.5'	'0.5014'	'0.0541'
δ	'0.0562'	'0.0667'	'0.0615'	'0.0964'	'0.0994'
η_L	'0.4836'	'0.5164'	'0.5'	'0.4986'	'0.0568'
ϑ_P	'0'	'0'	'0'	'0'	'0.0554'
γ_H	'0.4676'	'0.5279'	'0.4977'	'0.9856'	'0.0801'
z	'14.4402'	'15.598'	'15.0191'	'15.2294'	'0.057'
η_{ϑ}	'0.8114'	'0.8507'	'0.831'	'0.9351'	'0.0633'
a_L	'5.4344'	'6.1294'	'5.7819'	'6.5933'	'0.1143'
b_L	'3.5395'	'4.1364'	'3.838'	'4.4086'	'0.1077'
a_{μ}	'6.5169'	'7.1463'	'6.8316'	'8.2836'	'0.0835'
b_{μ}	'7.1161'	'7.7088'	'7.4125'	'7.2651'	'0.0646'
μ	'0.8244'	'0.8802'	'0.8523'	'0.9981'	'0.0812'
a_H	'7.586'	'8.1626'	'7.8743'	'9.6211'	'0.0627'
b_H	'9.0218'	'9.8223'	'9.4221'	'14.9357'	'0.0815'
ν	'224.6755'	'254.8367'	'239.7561'	'241.2875'	'0.075'
BP	'161.5047'	'161.6604'	'161.5825'	'160.5'	'0.0483'

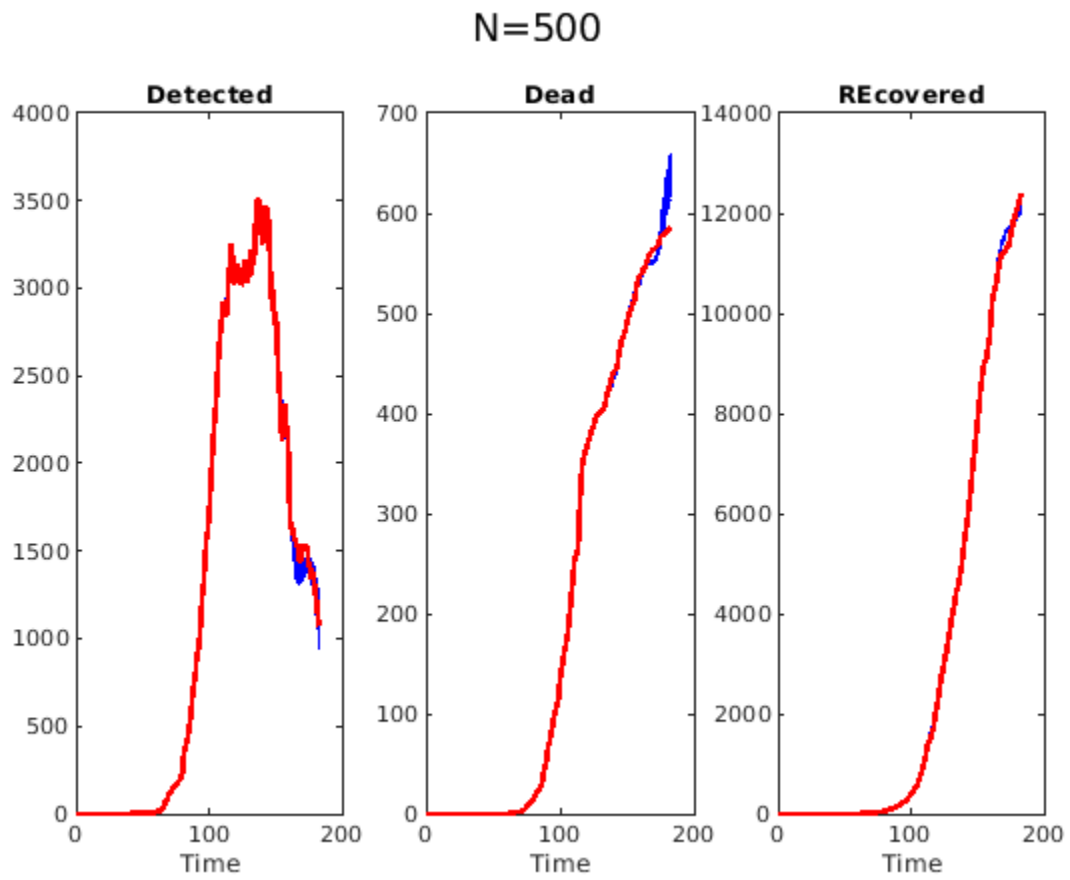
5.3. Identifiability analysis







5.4. Uncertainty analysys



Chapter 6. Extension number6

6.1. Basic information

The extension to be validated consists of the time series from the data184 to the 237. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

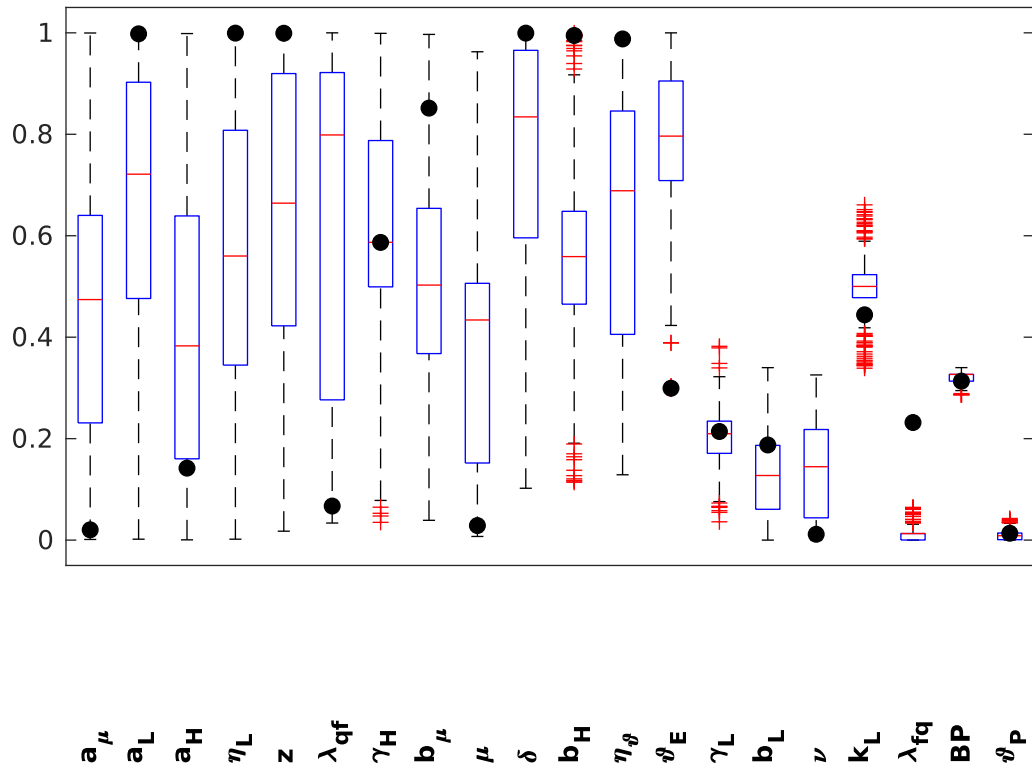
6.2. Estimated parameters with their intervals

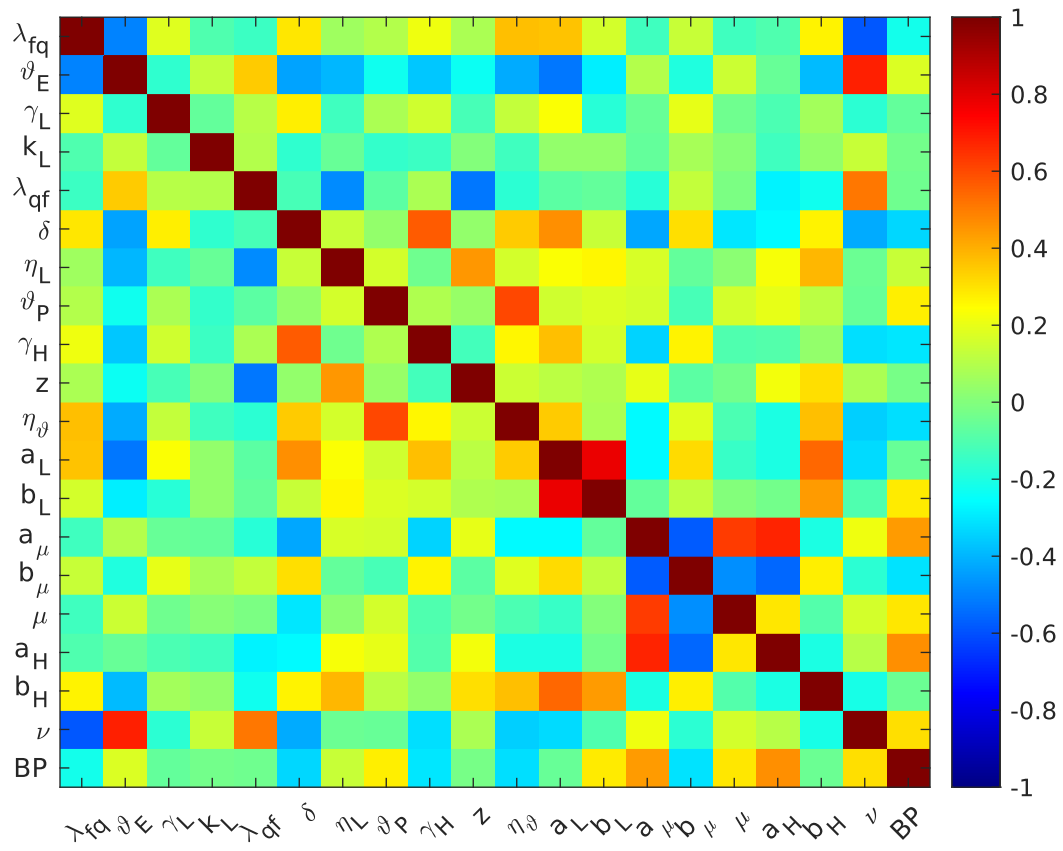
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

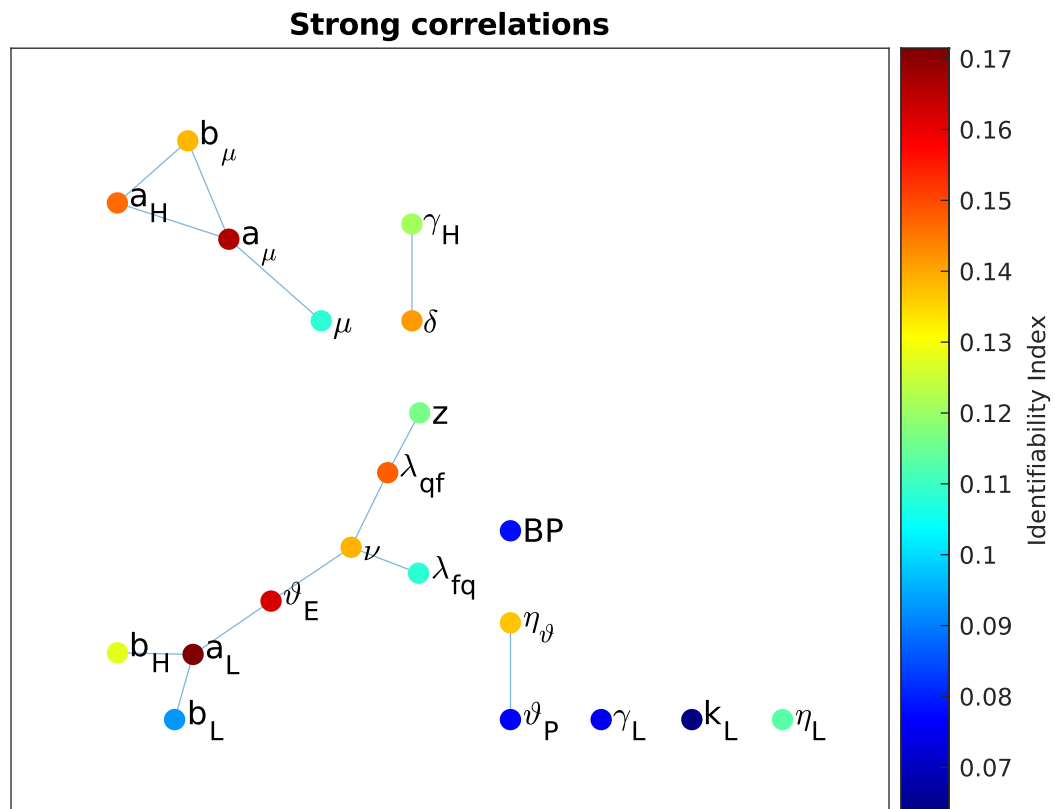
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.1984'	'0.2561'	'0.0129'	'0.2318'	'0.1085'
ϑ_E	'0.1205'	'0.6515'	'0.7964'	'0.2994'	'0.1622'
γ_L	'0.1187'	'0.2176'	'0.2097'	'0.2141'	'0.0752'
k_L	'1.1656'	'9.28'	'5.5005'	'4.9973'	'0.0637'
λ_{qf}	'0.0606'	'0.0787'	'0.7987'	'0.0671'	'0.1476'
δ	'0.0285'	'0.15'	'0.1251'	'0.1499'	'0.1415'
η_L	'0.7868'	'1'	'0.56'	'0.9994'	'0.113'
ϑ_P	'0.0049'	'0.0294'	'0.0086'	'0.0135'	'0.0771'
γ_H	'0'	'1'	'0.5871'	'0.5869'	'0.121'
z	'19.5534'	'30'	'19.9272'	'29.9752'	'0.1166'
η_{ϑ}	'0.6283'	'1'	'0.6887'	'0.988'	'0.1372'
a_L	'9.4261'	'15'	'11.0991'	'14.9723'	'0.1715'
b_L	'1.7838'	'4.936'	'2.7826'	'3.6253'	'0.0931'
a_{μ}	'1'	'15'	'7.6382'	'1.2834'	'0.1662'
b_{μ}	'1'	'13.768'	'8.0379'	'12.9223'	'0.1384'
μ	'0'	'0.0645'	'0.4339'	'0.0287'	'0.1085'
a_H	'1.266'	'14.3'	'6.3603'	'2.9862'	'0.1463'
b_H	'3.66'	'15'	'8.8241'	'14.9262'	'0.1277'
ν	'4.6798'	'7.7888'	'72.3171'	'5.7536'	'0.139'
BP	'184.5379'	'186.999'	'186.5'	'185.4997'	'0.0782'

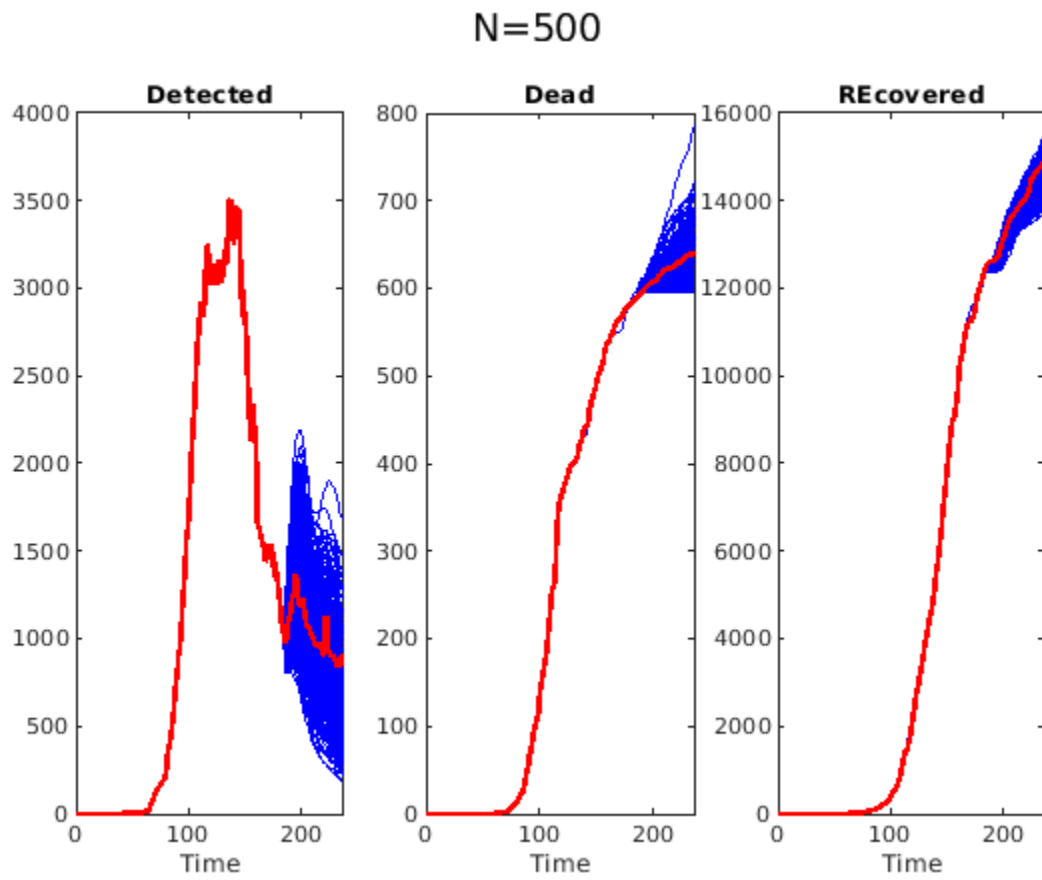
6.3. Identifiability analysis







6.4. Uncertainty analysis



Chapter 7. Extension number7

7.1. Basic information

The extension to be validated consists of the time series from the data237 to the 293. The status of the validation is: COMPLETED.

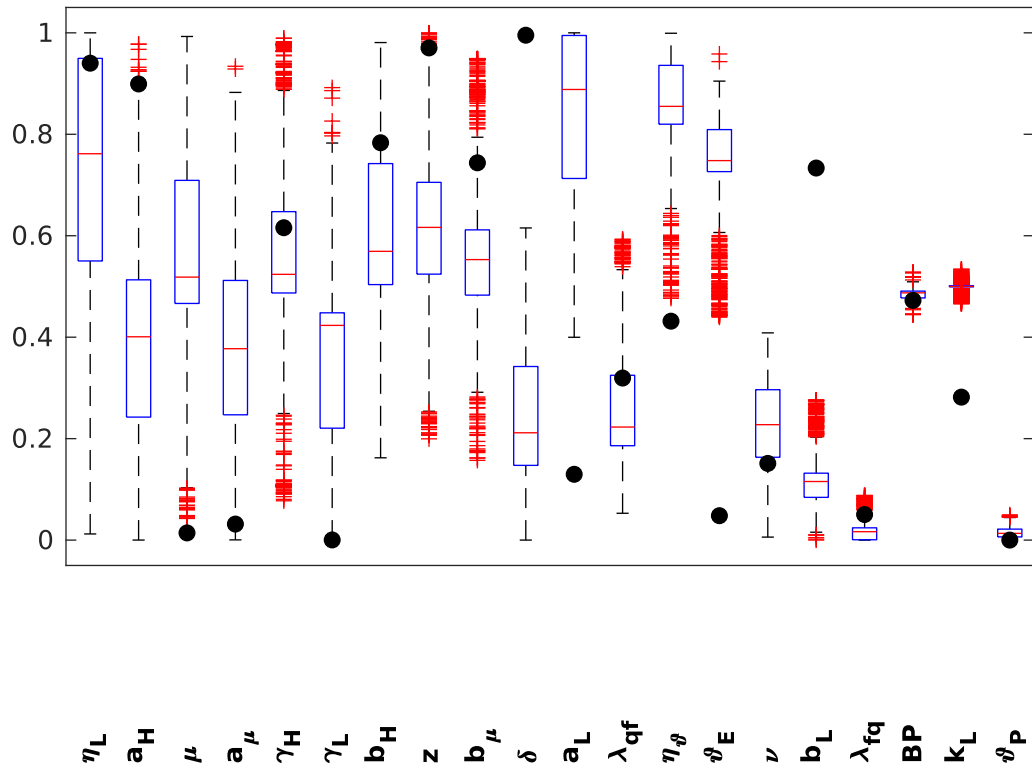
The number of estimations needed to perform the validation was1000.

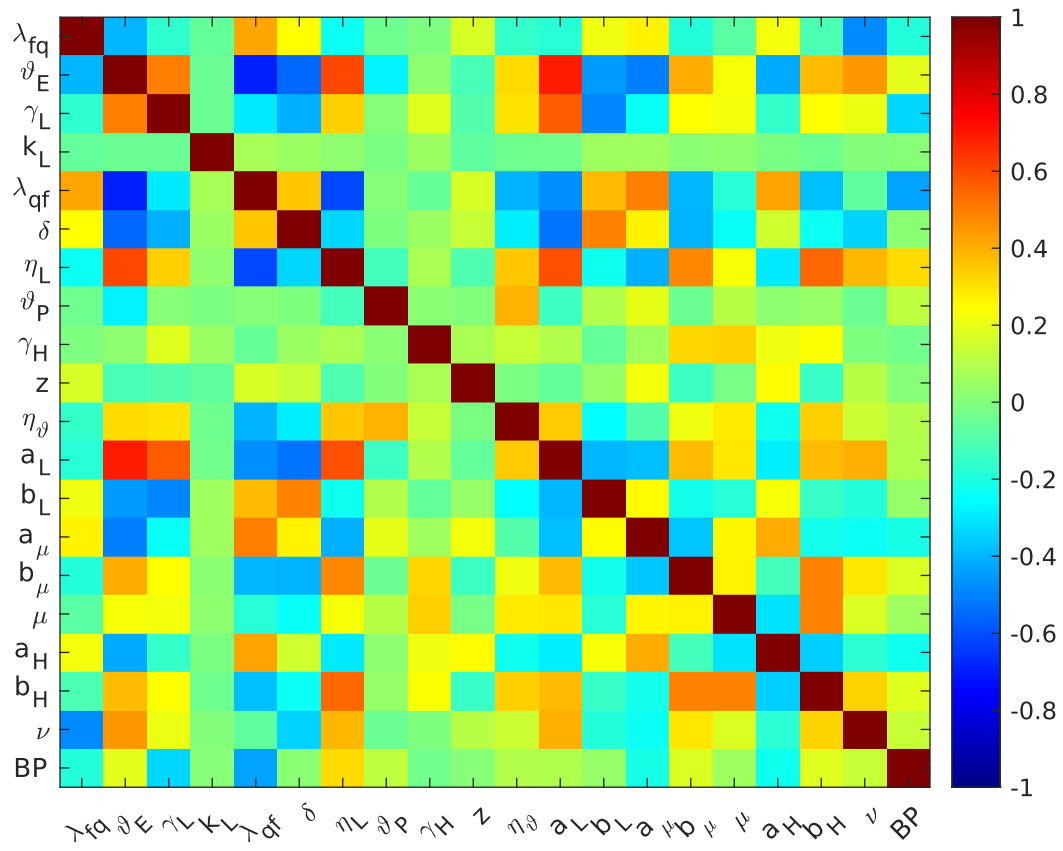
7.2. Estimated parameters with their intervals

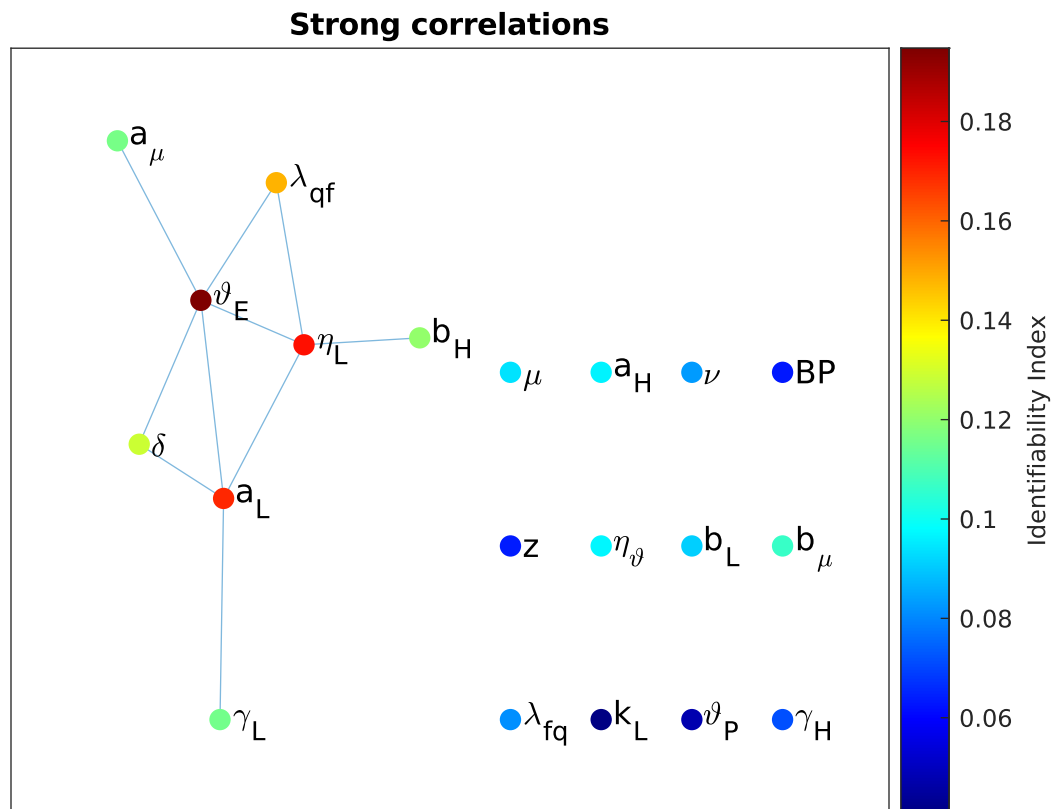
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0074'	'0.0257'	'0.0166'	'0.0504'	'0.0815'
ϑ_E	'0.7313'	'0.765'	'0.7481'	'0.0481'	'0.1948'
γ_L	'0.4077'	'0.4388'	'0.4233'	'0.0003'	'0.116'
k_L	'5.4352'	'5.5654'	'5.5003'	'3.5365'	'0.041'
λ_{qf}	'0.2038'	'0.242'	'0.2229'	'0.3195'	'0.148'
δ	'0.0294'	'0.034'	'0.0317'	'0.1493'	'0.1288'
η_L	'0.7425'	'0.7808'	'0.7616'	'0.9401'	'0.1729'
ϑ_P	'0.0118'	'0.0147'	'0.0133'	'0'	'0.0477'
γ_H	'0.5024'	'0.5453'	'0.5239'	'0.6158'	'0.0719'
z	'18.0457'	'18.9408'	'18.4933'	'29.1087'	'0.0641'
η_{ϑ}	'0.8376'	'0.8724'	'0.855'	'0.4316'	'0.0972'
a_L	'13.2135'	'13.6595'	'13.4365'	'2.8163'	'0.1694'
b_L	'2.457'	'2.7771'	'2.617'	'11.2684'	'0.0913'
a_{μ}	'6.0777'	'6.4866'	'6.2822'	'1.4425'	'0.1163'
b_{μ}	'8.5019'	'8.981'	'8.7415'	'11.4128'	'0.1065'
μ	'0.4988'	'0.538'	'0.5184'	'0.0142'	'0.0944'
a_H	'6.3884'	'6.8341'	'6.6113'	'13.5886'	'0.0968'
b_H	'8.7266'	'9.212'	'8.9693'	'11.9665'	'0.1206'
ν	'110.5409'	'117.0291'	'113.785'	'75.5835'	'0.0836'
BP	'236.8235'	'237.43'	'237.1268'	'235.5'	'0.0634'

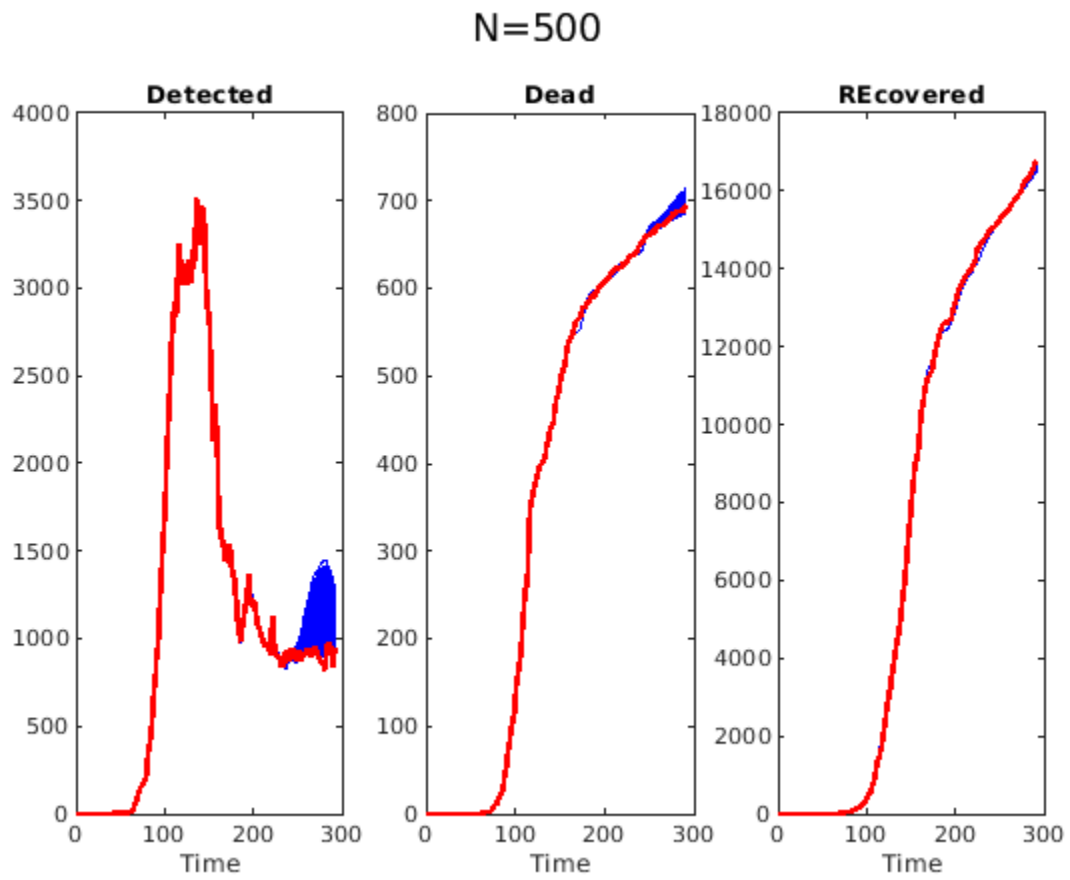
7.3. Identifiability analysis







7.4. Uncertainty analysys



Chapter 8. Extension number8

8.1. Basic information

The extension to be validated consists of the time series from the data293 to the 323. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

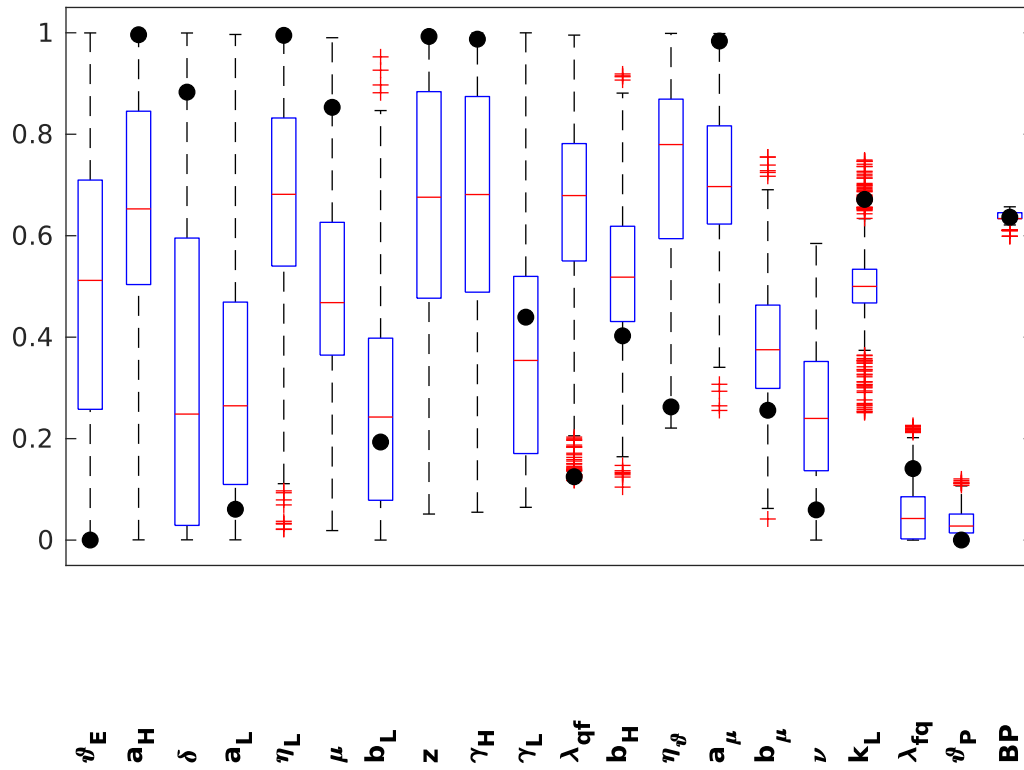
8.2. Estimated parameters with their intervals

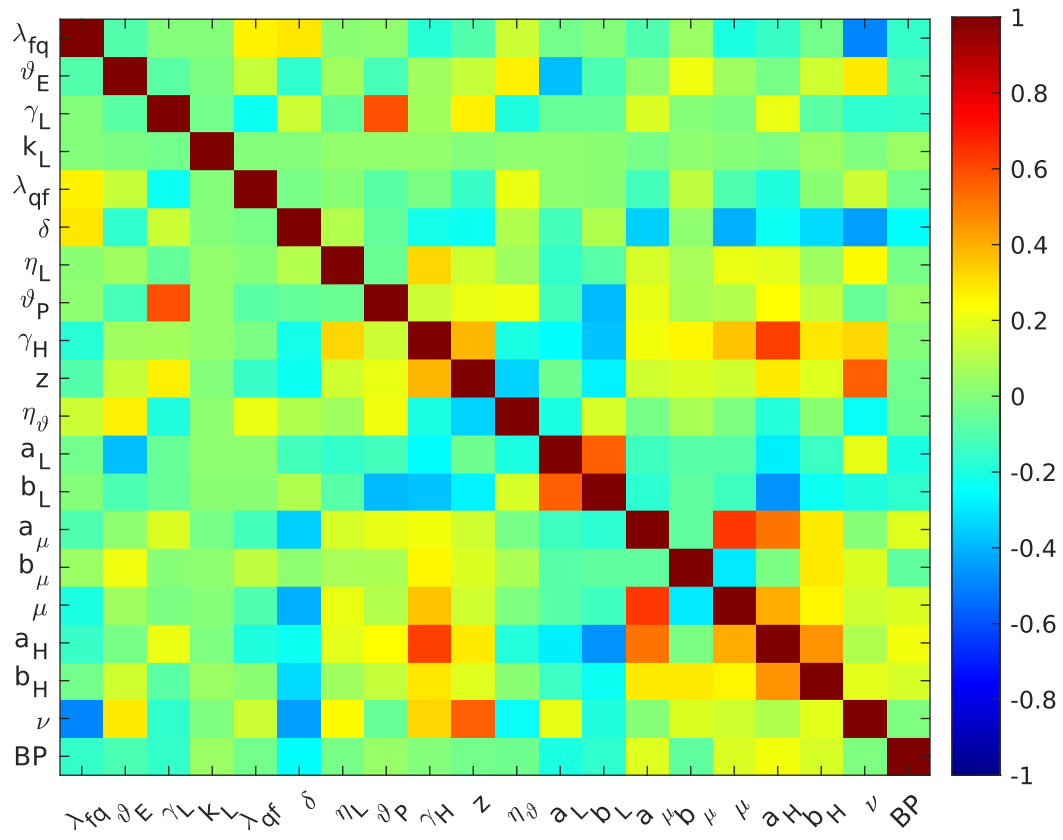
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

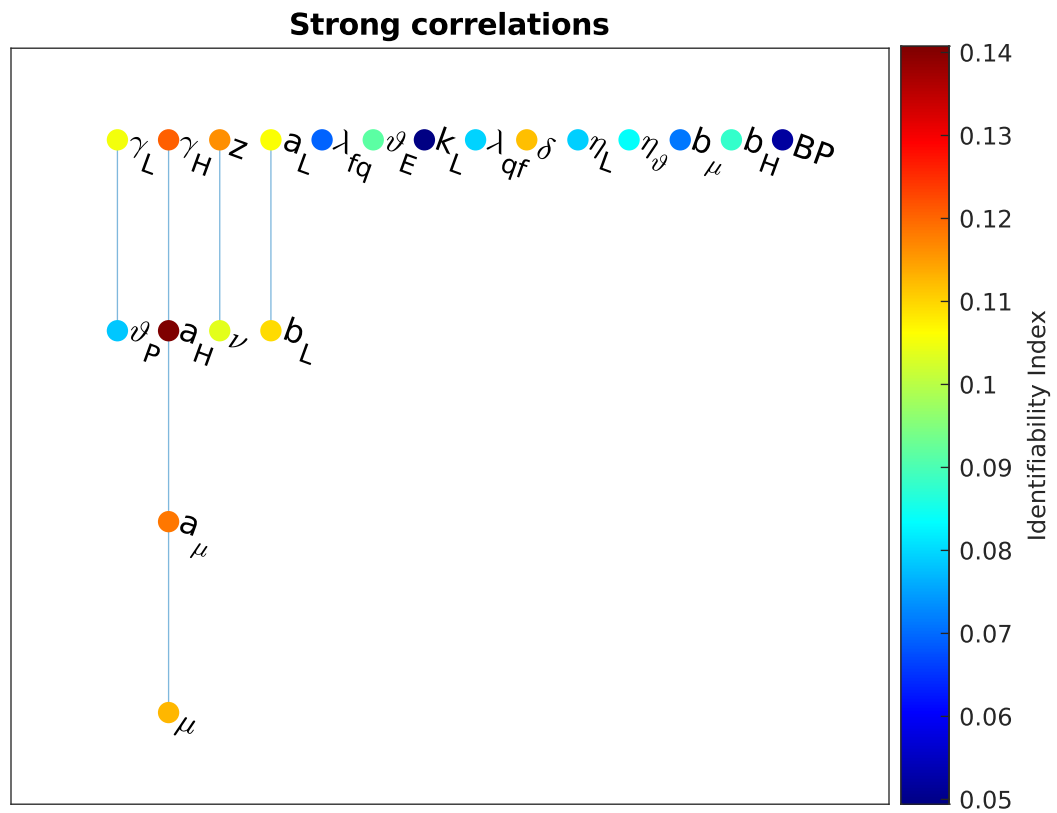
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0806'	'0.7242'	'0.0426'	'0.141'	'0.0695'
ϑ_E	'0'	'0.0002'	'0.5119'	'0.0001'	'0.0918'
γ_L	'0.3604'	'0.4495'	'0.3541'	'0.4394'	'0.1052'
k_L	'1'	'10'	'5.5006'	'7.0441'	'0.0494'
λ_{qf}	'0'	'0.2809'	'0.6787'	'0.1249'	'0.0795'
δ	'0.0753'	'0.15'	'0.0373'	'0.1325'	'0.1119'
η_L	'0.025'	'1'	'0.6815'	'0.9949'	'0.0792'
ϑ_P	'0'	'0.0003'	'0.0278'	'0.0001'	'0.0786'
γ_H	'0.1'	'1'	'0.6812'	'0.9874'	'0.1206'
z	'16.1307'	'30'	'20.2762'	'29.7826'	'0.1163'
η_{ϑ}	'0.2424'	'0.2986'	'0.7791'	'0.2625'	'0.084'
a_L	'1.4646'	'1.9005'	'4.7062'	'1.8514'	'0.1058'
b_L	'3.6263'	'4.4267'	'4.3999'	'3.7065'	'0.1096'
a_{μ}	'7.3964'	'15'	'10.753'	'14.772'	'0.1185'
b_{μ}	'1'	'7.6343'	'6.2548'	'4.5827'	'0.0713'
μ	'0'	'1'	'0.4681'	'0.8531'	'0.1127'
a_H	'7.525'	'15'	'10.1398'	'14.9463'	'0.1408'
b_H	'1'	'9.064'	'8.2564'	'6.6372'	'0.0881'
ν	'19.9775'	'29.8202'	'119.9095'	'29.7964'	'0.1038'
BP	'291.495'	'293.9485'	'291.5'	'291.7407'	'0.0521'

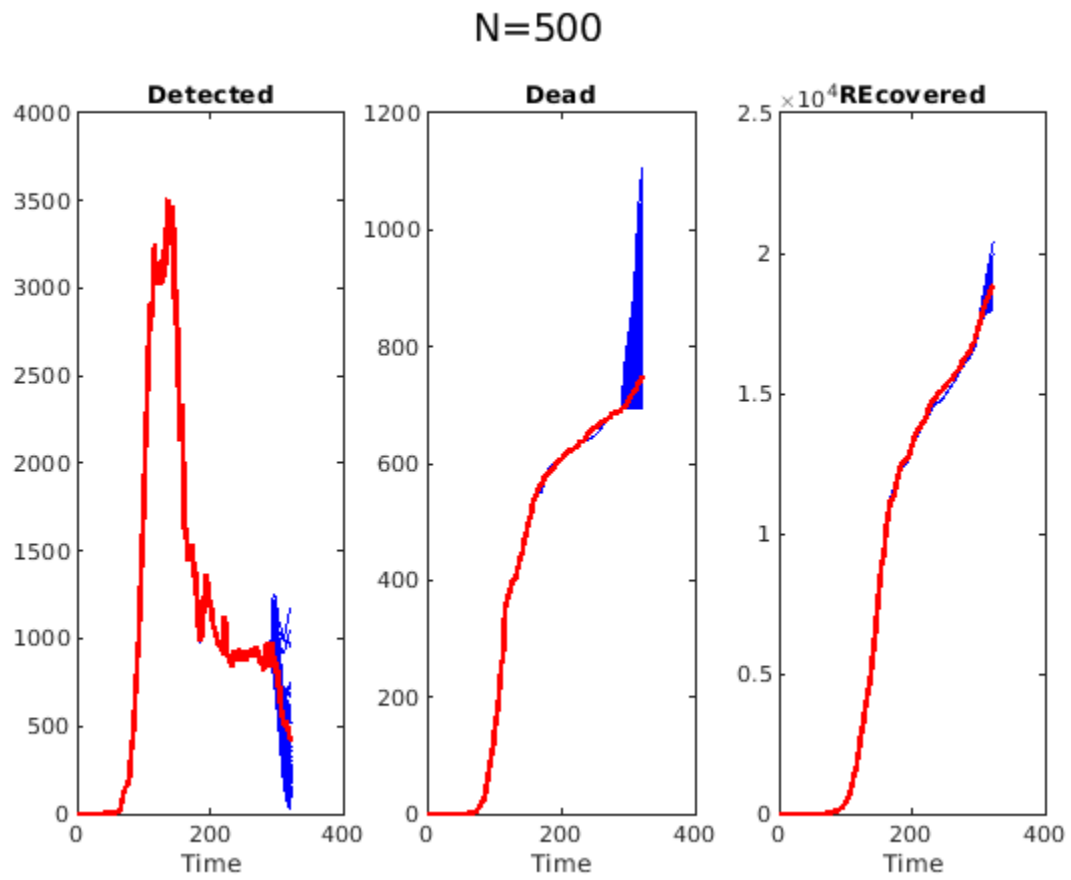
8.3. Identifiability analysis







8.4. Uncertainty analysis



Chapter 9. Extension number9

9.1. Basic information

The extension to be validated consists of the time series from the data323 to the 391. The status of the validation is: COMPLETED.

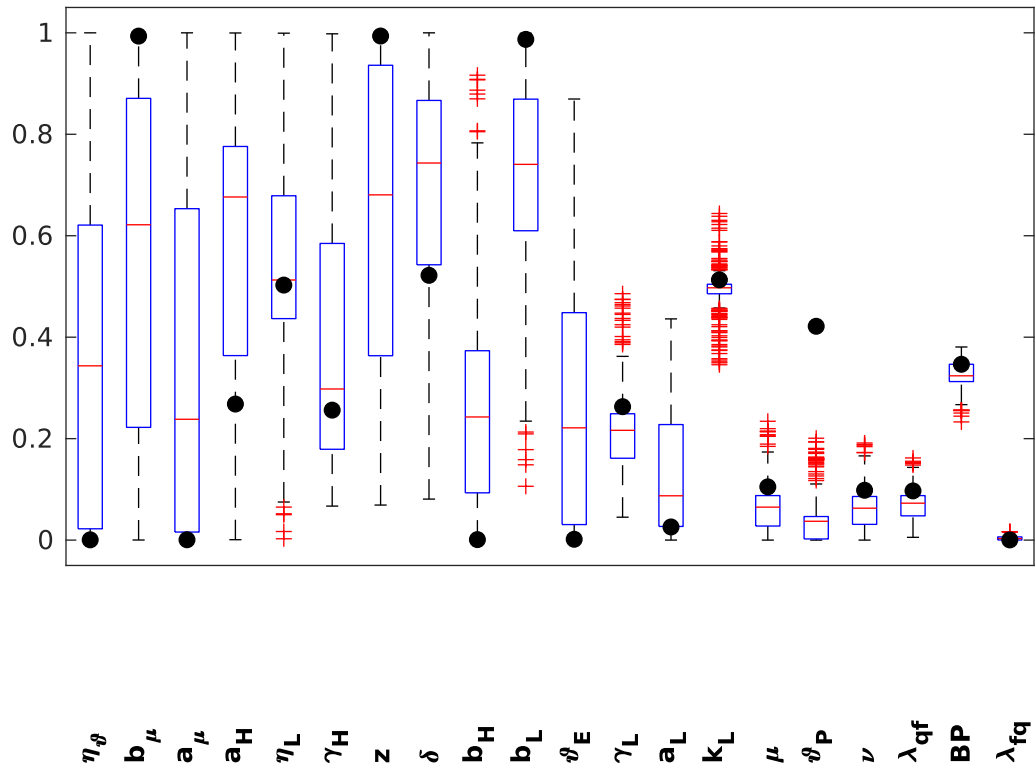
The number of estimations needed to perform the validation was1000.

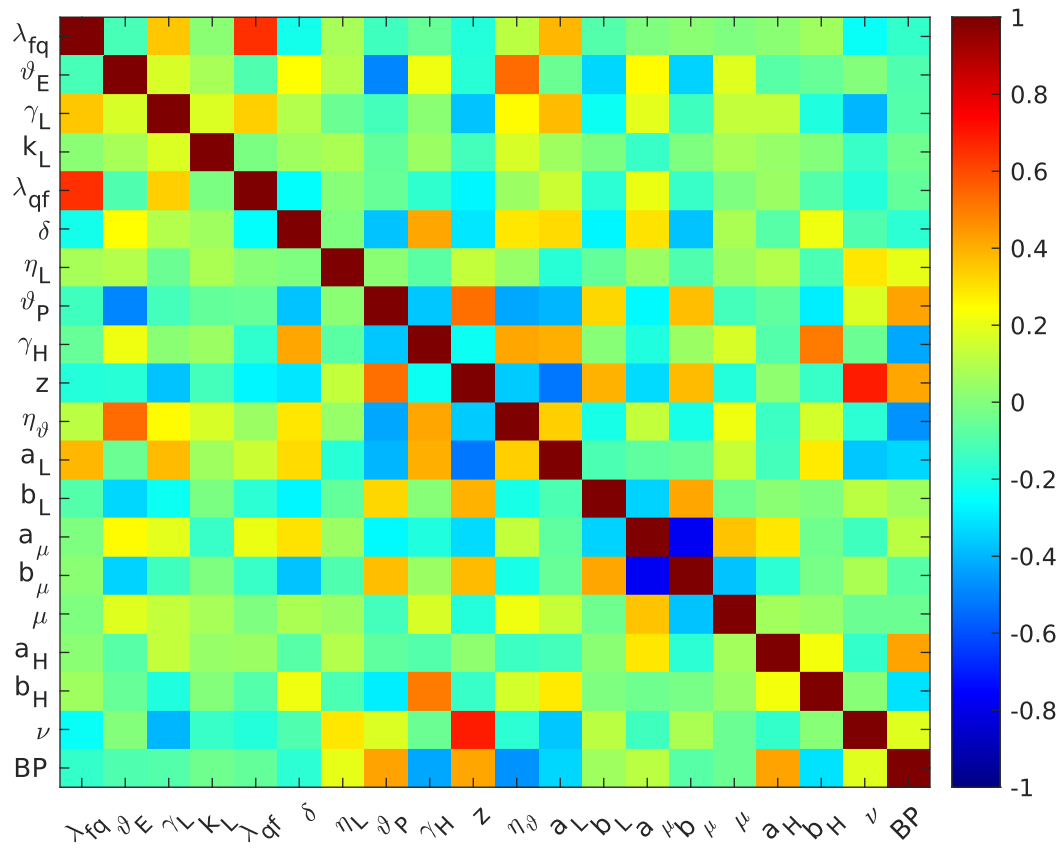
9.2. Estimated parameters with their intervals

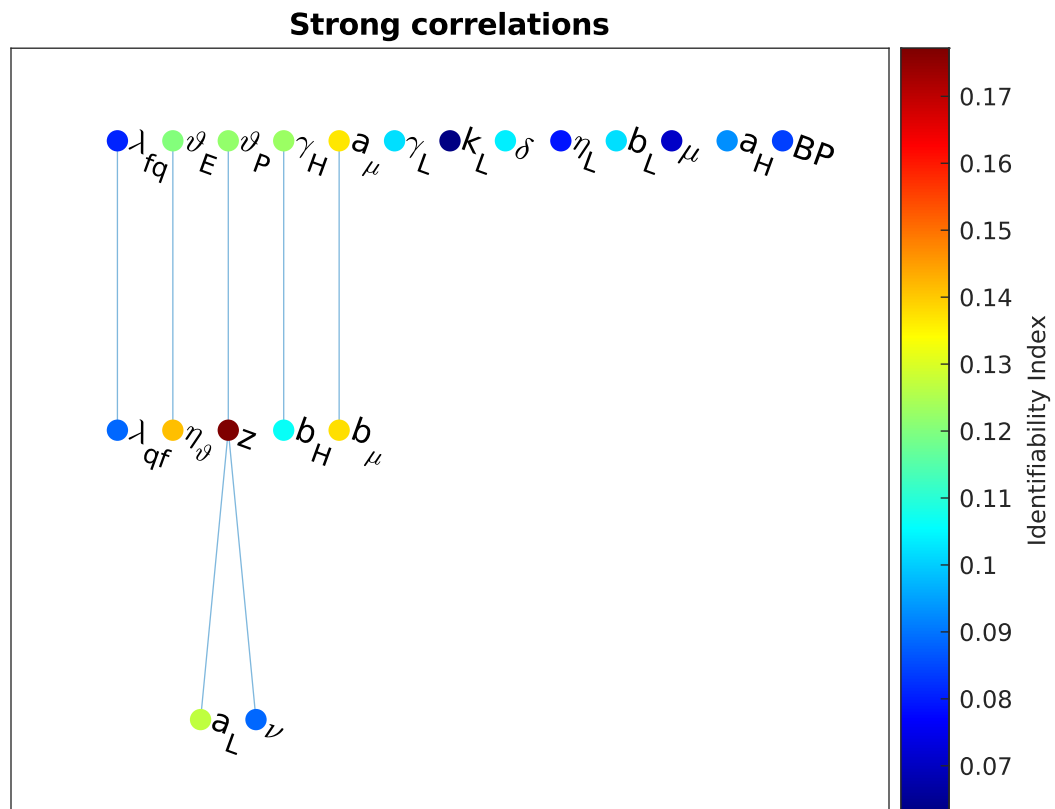
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0149'	'0.0031'	'0.0004'	'0.0809'
ϑ_E	'0.1834'	'0.2593'	'0.2213'	'0.0016'	'0.1202'
γ_L	'0.187'	'0.2458'	'0.2164'	'0.263'	'0.1021'
k_L	'5.2831'	'5.6695'	'5.4763'	'5.6172'	'0.0631'
λ_{qf}	'0.0584'	'0.0871'	'0.0728'	'0.097'	'0.0886'
δ	'0.1074'	'0.1156'	'0.1115'	'0.0783'	'0.1039'
η_L	'0.4799'	'0.5455'	'0.5127'	'0.5027'	'0.0792'
ϑ_P	'0.0149'	'0.0594'	'0.0371'	'0.4215'	'0.1219'
γ_H	'0.2609'	'0.3349'	'0.2979'	'0.2562'	'0.1228'
z	'19.1309'	'21.7038'	'20.4174'	'29.8112'	'0.1772'
η_{ϑ}	'0.2981'	'0.389'	'0.3435'	'0.0005'	'0.1415'
a_L	'1.7767'	'2.6691'	'2.2229'	'1.3626'	'0.1271'
b_L	'10.8491'	'11.8898'	'11.3695'	'14.8189'	'0.102'
a_{μ}	'3.6737'	'4.996'	'4.3349'	'1.0096'	'0.1367'
b_{μ}	'9.0108'	'10.3946'	'9.7027'	'14.9095'	'0.1378'
μ	'0.0481'	'0.0818'	'0.065'	'0.1049'	'0.0708'
a_H	'9.9146'	'11.0236'	'10.4691'	'4.7547'	'0.0932'
b_H	'3.9119'	'4.8847'	'4.3983'	'1.0136'	'0.1063'
ν	'27.7407'	'35.1586'	'31.4497'	'49.1255'	'0.0886'
BP	'320.7747'	'322.2253'	'321.5'	'323.4999'	'0.0843'

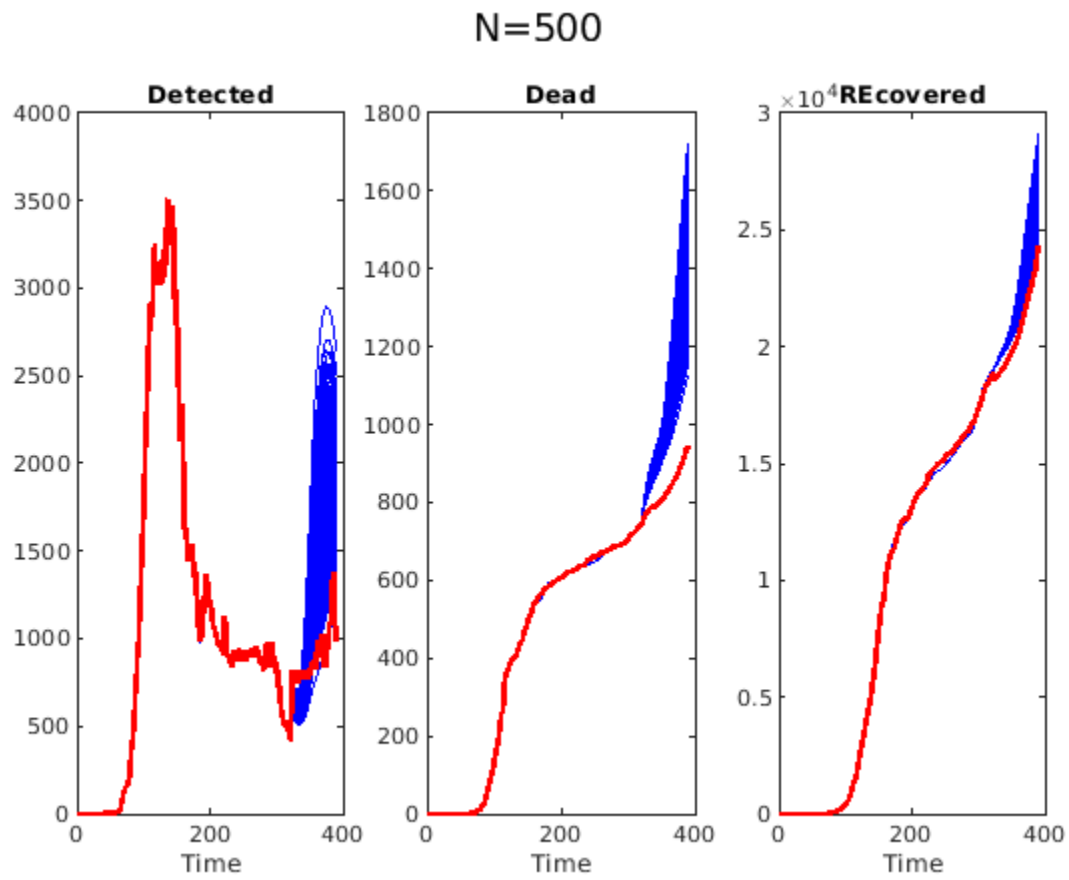
9.3. Identifiability analysis







9.4. Uncertainty analysis



Chapter 10. Extension number10

10.1. Basic information

The extension to be validated consists of the time series from the data391 to the 421. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

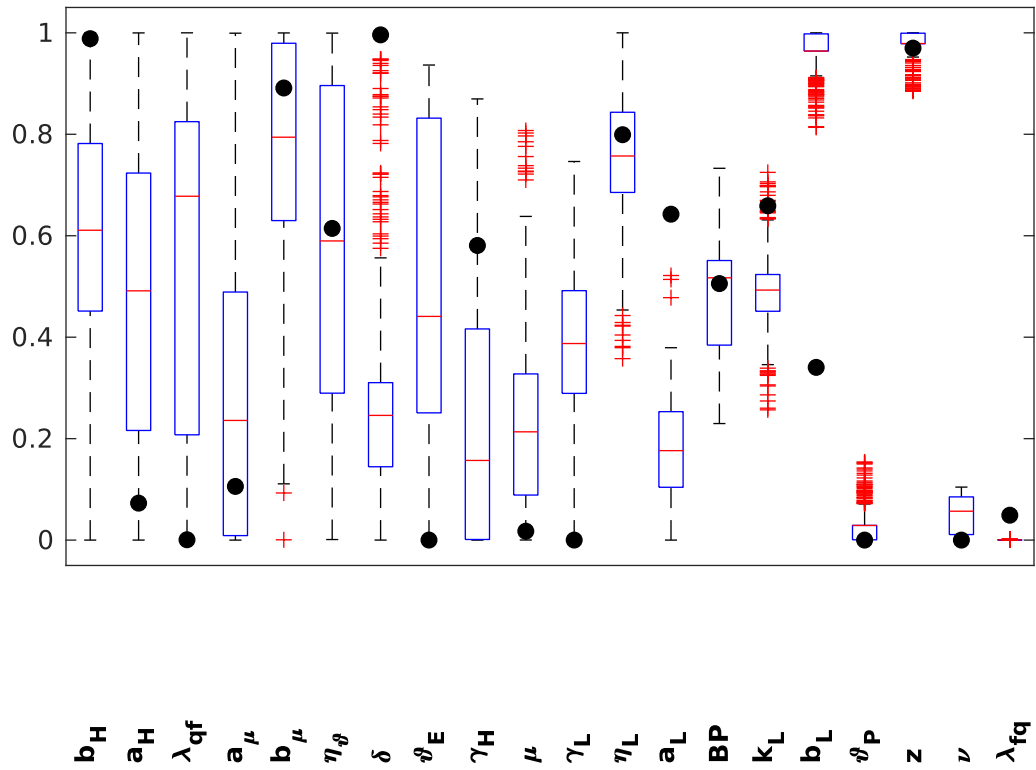
10.2. Estimated parameters with their intervals

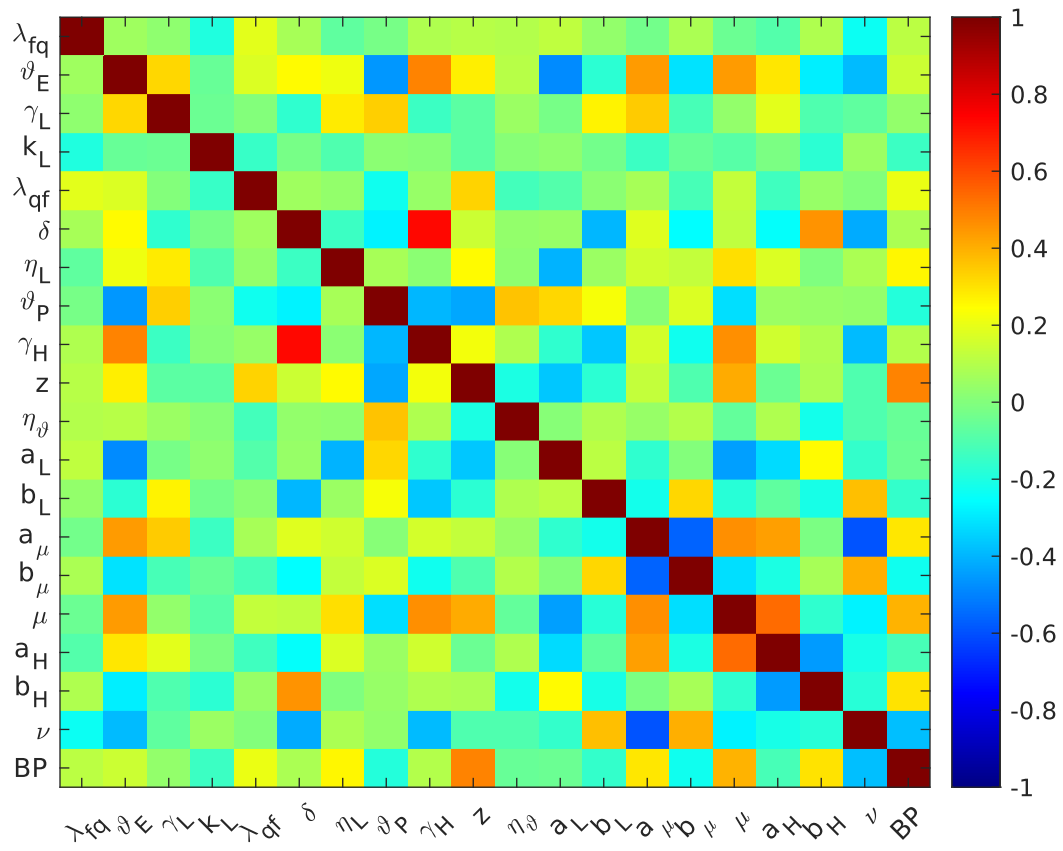
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

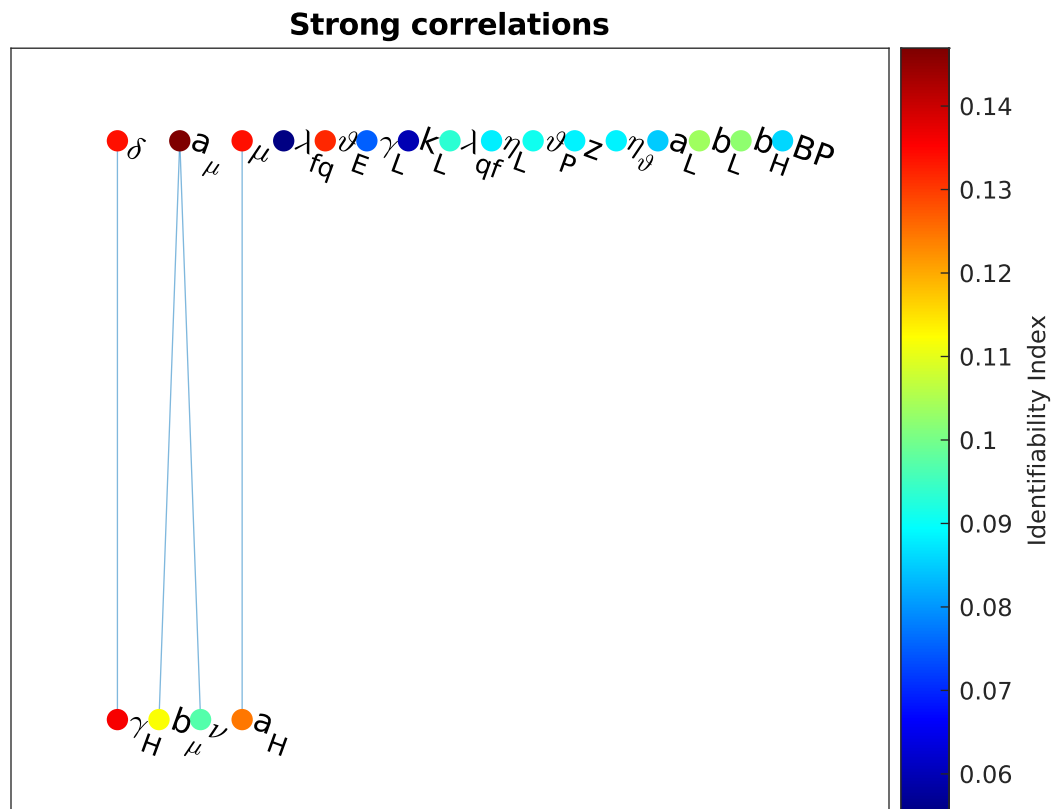
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0394'	'0.0503'	'0.0003'	'0.0491'	'0.0554'
ϑ_E	'0'	'0.0002'	'0.4409'	'0.0001'	'0.1318'
γ_L	'0'	'0.0002'	'0.3875'	'0.0001'	'0.0753'
k_L	'1'	'9.1'	'5.4359'	'6.9317'	'0.0597'
λ_{qf}	'0'	'0.0015'	'0.6779'	'0.0007'	'0.0936'
δ	'0.0923'	'0.15'	'0.0371'	'0.1494'	'0.1337'
η_L	'0.5484'	'0.9503'	'0.7569'	'0.7992'	'0.0882'
ϑ_P	'0'	'0.0001'	'0.029'	'0'	'0.0908'
γ_H	'0.4313'	'0.826'	'0.1599'	'0.5808'	'0.1361'
z	'22.1663'	'29.2125'	'29.3551'	'29.0948'	'0.0885'
η_{ϑ}	'0.5959'	'0.6435'	'0.5897'	'0.6144'	'0.0886'
a_L	'1.35'	'15'	'3.4744'	'9.9947'	'0.0851'
b_L	'1'	'15'	'14.4963'	'5.7671'	'0.1039'
a_{μ}	'1'	'14.44'	'4.3024'	'2.4818'	'0.1469'
b_{μ}	'1'	'14.3'	'12.1194'	'13.4776'	'0.1119'
μ	'0'	'0.0379'	'0.2135'	'0.0175'	'0.1339'
a_H	'1.0728'	'2.468'	'7.8793'	'2.0199'	'0.1247'
b_H	'7.058'	'15'	'9.5518'	'14.8383'	'0.1023'
ν	'0.0001'	'0.002'	'28.4732'	'0.0009'	'0.0971'
BP	'364.1117'	'397.7318'	'368.5'	'367.5'	'0.0858'

10.3. Identifiability analysis

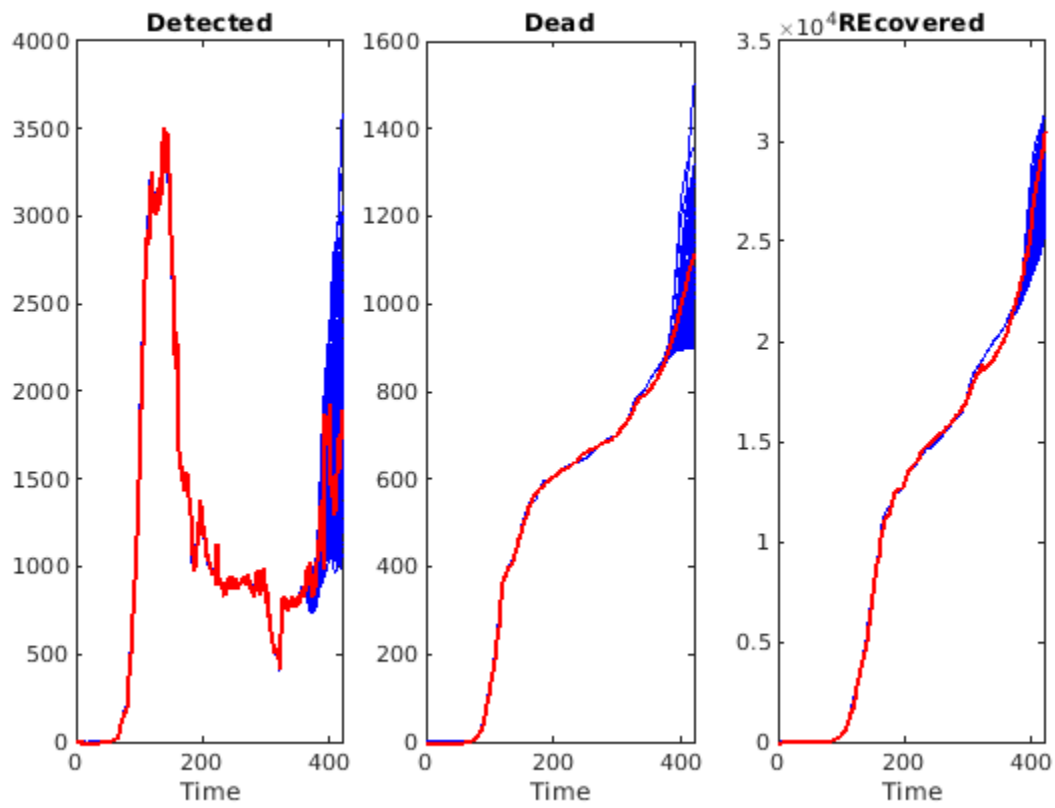






10.4. Uncertainty analysis

N=500



Chapter 11. Extension number11

11.1. Basic information

The extension to be validated consists of the time series from the data421 to the 442. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

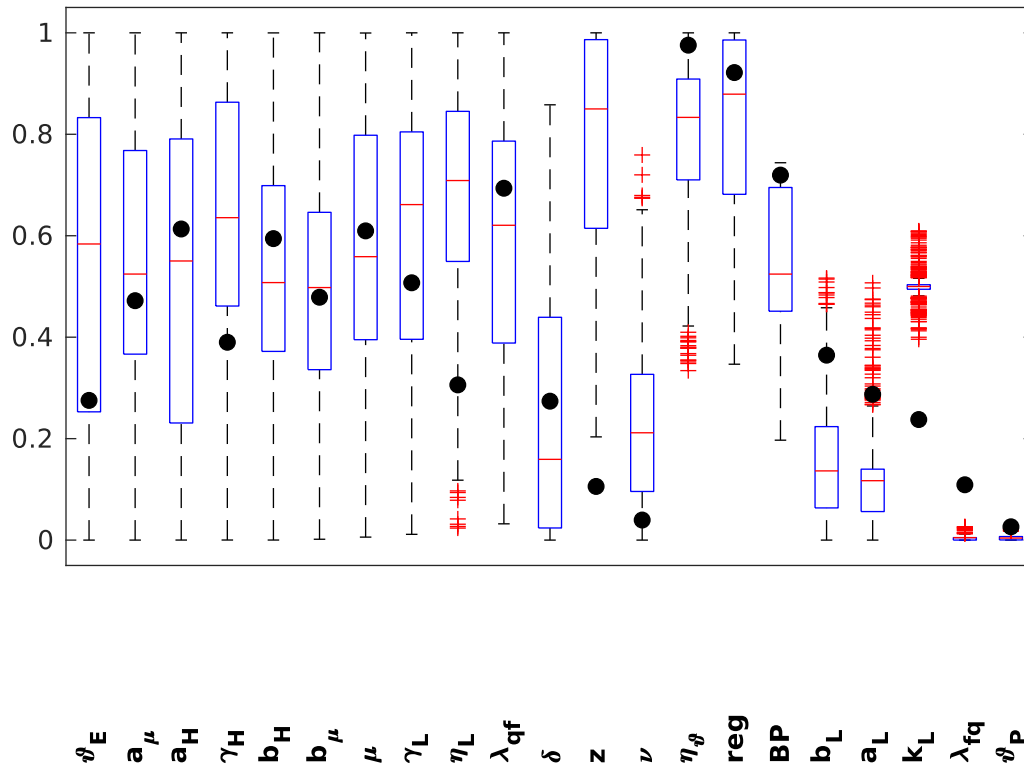
11.2. Estimated parameters with their intervals

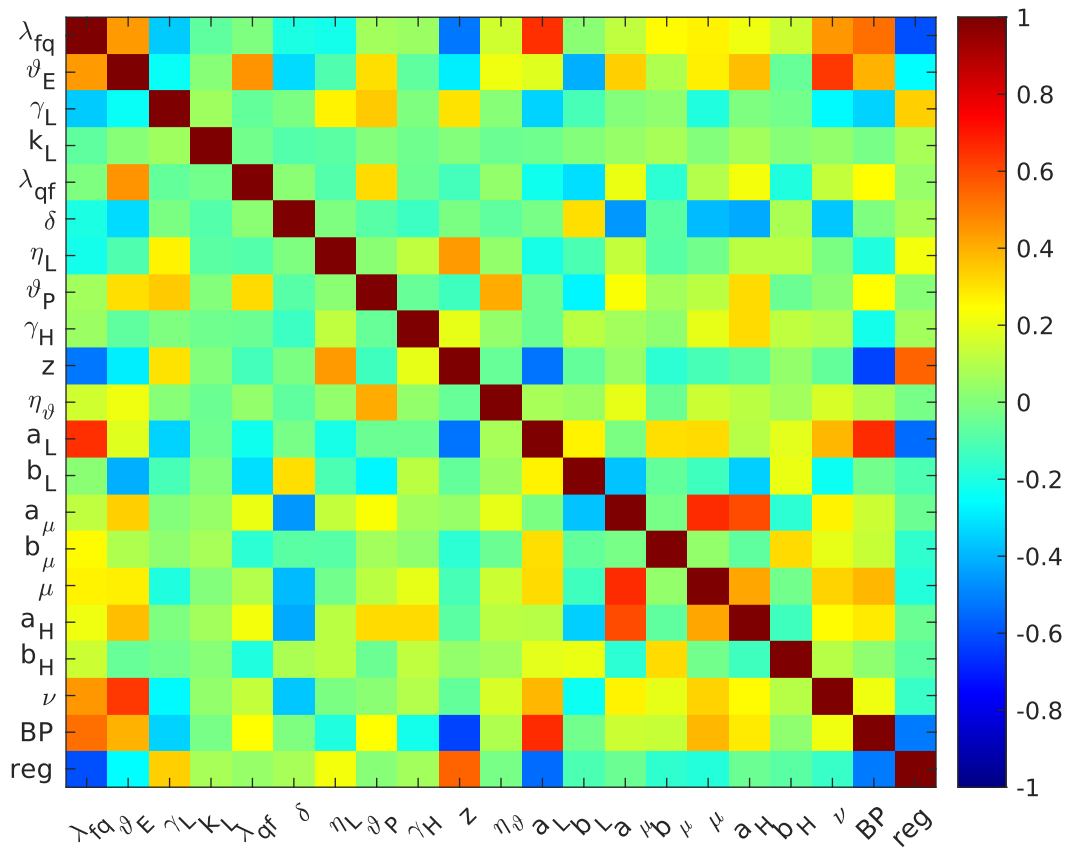
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

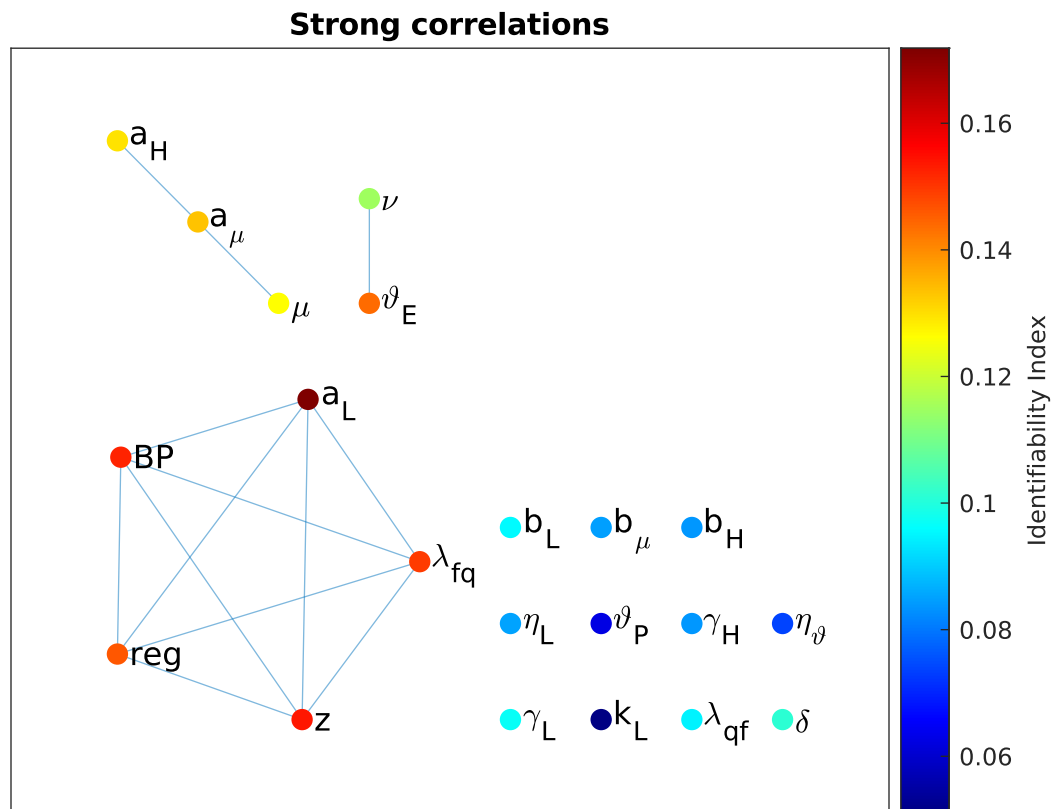
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.077'	'0.2381'	'0.0049'	'0.1091'	'0.1496'
\vartheta_E	'0.2625'	'0.6197'	'0.5837'	'0.2754'	'0.1437'
\gamma_L	'0.3432'	'0.5097'	'0.6614'	'0.5073'	'0.097'
k_L	'1.225'	'10'	'5.4995'	'3.139'	'0.0512'
\lambda_{qf}	'0.6098'	'0.8448'	'0.6206'	'0.6936'	'0.0946'
\delta	'0.0021'	'0.0832'	'0.024'	'0.0411'	'0.1013'
\eta_L	'0.2372'	'0.5558'	'0.7088'	'0.306'	'0.0852'
\vartheta_P	'0.0202'	'0.0319'	'0.004'	'0.0262'	'0.0629'
\gamma_H	'0'	'0.8775'	'0.6356'	'0.39'	'0.084'
z	'2.1307'	'4.8482'	'25.4882'	'3.1737'	'0.1537'
\eta_{\vartheta}	'0.862'	'0.9833'	'0.8333'	'0.9757'	'0.0743'
a_L	'4.9897'	'7.2265'	'2.6433'	'5.0241'	'0.1719'
b_L	'4.8705'	'6.1783'	'2.9149'	'6.1038'	'0.0957'
a_{\mu}	'1.6913'	'15'	'8.3423'	'7.6076'	'0.1336'
b_{\mu}	'1'	'12.97'	'7.9697'	'7.7025'	'0.0849'
\mu	'0.025'	'1'	'0.5587'	'0.6096'	'0.1263'
a_H	'1'	'14.3'	'8.7033'	'9.5861'	'0.1297'
b_H	'1'	'14.3'	'8.1069'	'9.3205'	'0.0838'
\nu	'18.9179'	'31.5421'	'105.8071'	'19.7724'	'0.115'
BP	'420.4856'	'423.7817'	'412.5'	'420.5'	'0.1524'
reg	'0.1707'	'0.2308'	'0.2196'	'0.2304'	'0.146'

11.3. Identifiability analysis

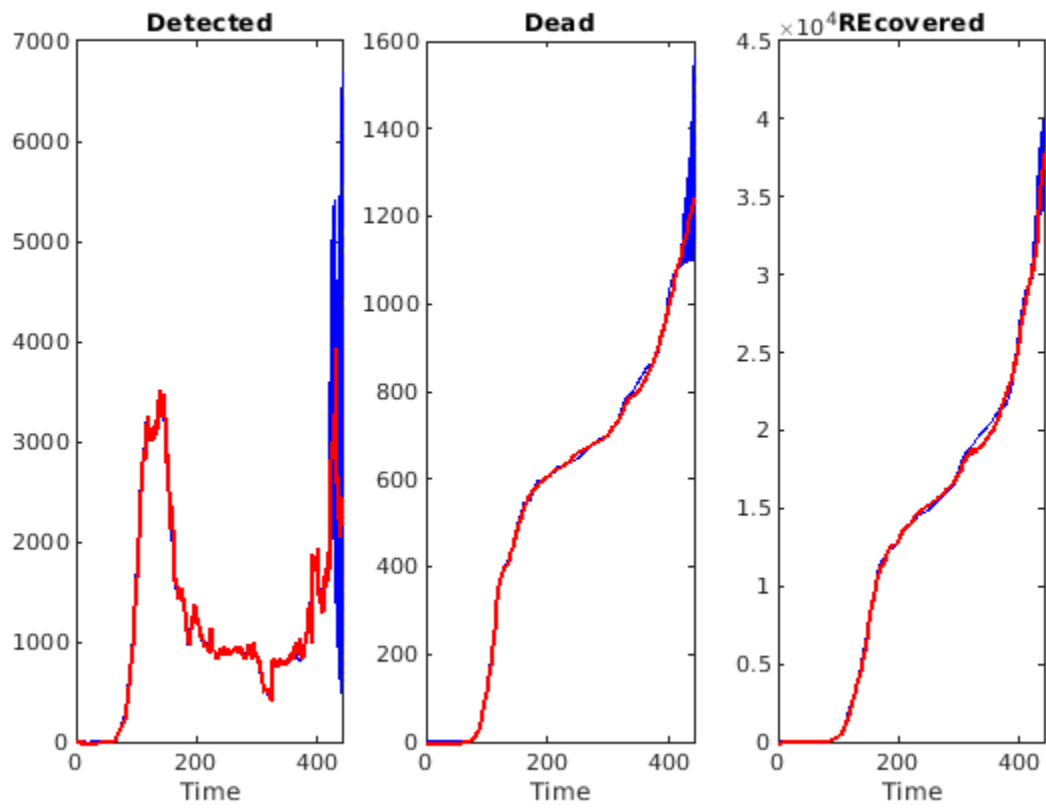






11.4. Uncertainty analysis

N=500



Chapter 12. Extension number12

12.1. Basic information

The extension to be validated consists of the time series from the data442 to the 454. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

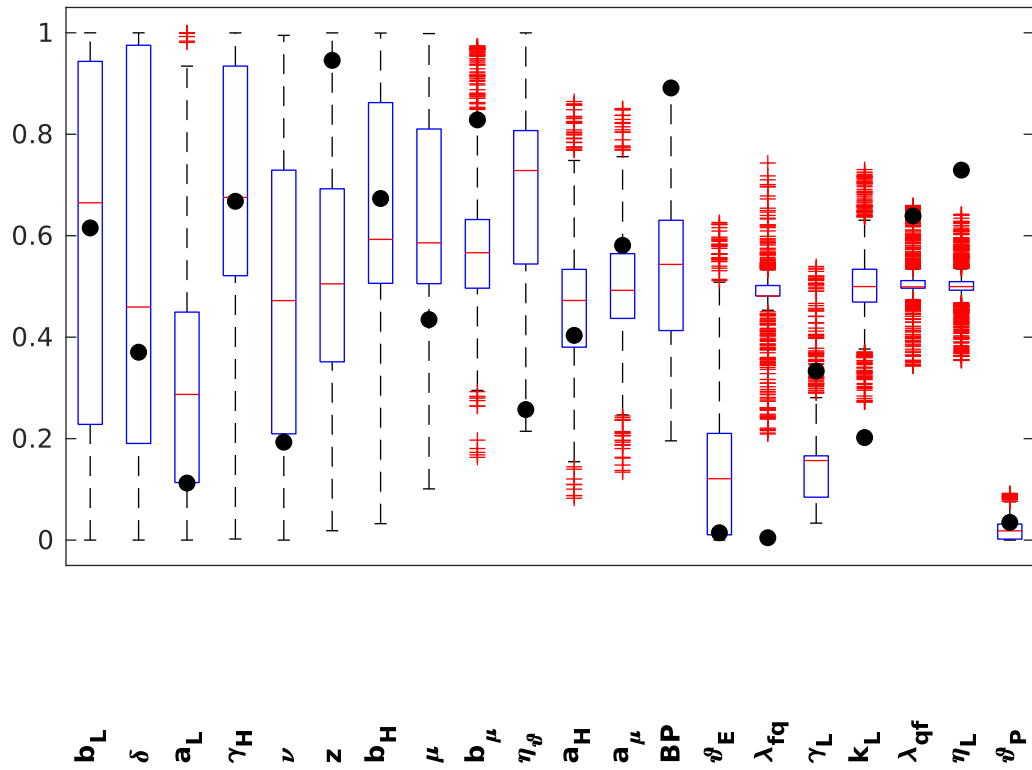
12.2. Estimated parameters with their intervals

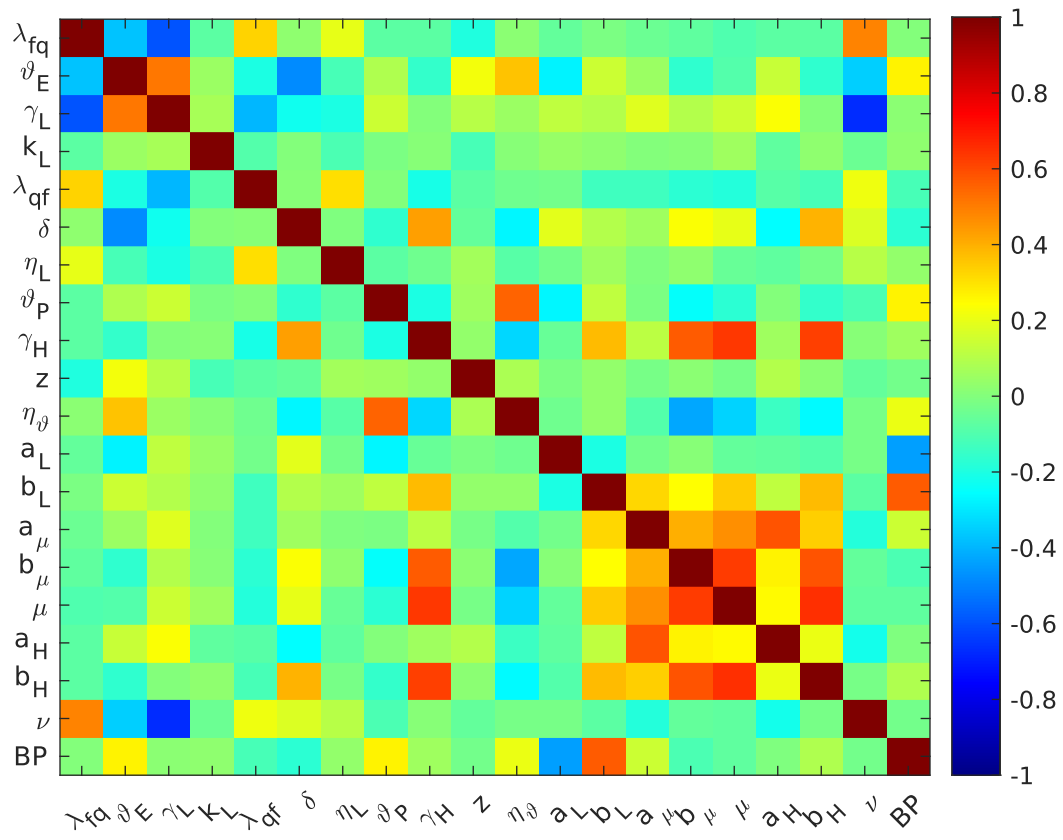
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

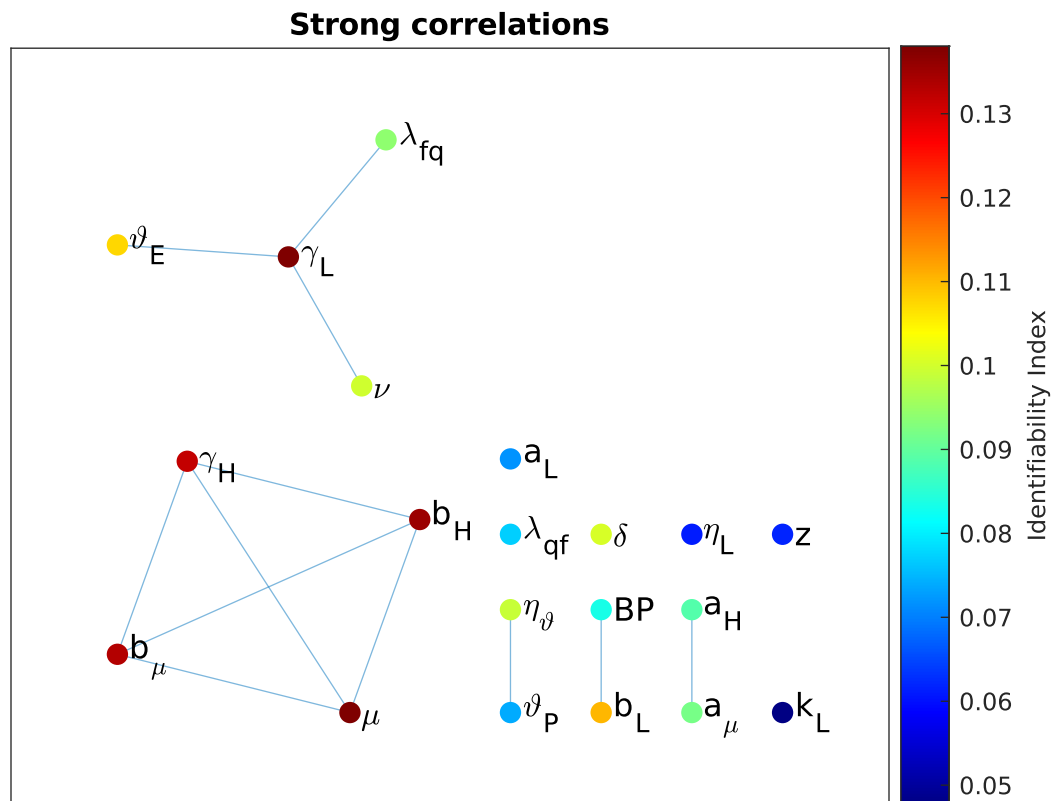
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0104'	'0.4811'	'0.0046'	'0.0941'
ϑ_E	'0'	'0.0325'	'0.121'	'0.0144'	'0.1074'
γ_L	'0.3258'	'0.5361'	'0.1568'	'0.3332'	'0.138'
k_L	'1'	'10'	'5.4978'	'2.8193'	'0.0477'
λ_{qf}	'0.0971'	'0.917'	'0.4992'	'0.639'	'0.077'
δ	'0.003'	'0.12'	'0.0689'	'0.0556'	'0.1004'
η_L	'0'	'1'	'0.4997'	'0.7293'	'0.0615'
ϑ_P	'0.0244'	'0.2841'	'0.0182'	'0.0349'	'0.0741'
γ_H	'0'	'1'	'0.6756'	'0.6679'	'0.1318'
z	'13.4053'	'29.1703'	'15.1544'	'28.3697'	'0.0621'
η_{ϑ}	'0.0116'	'0.579'	'0.7285'	'0.2574'	'0.0992'
a_L	'1.3633'	'3.2566'	'5.0201'	'2.574'	'0.0719'
b_L	'7.0466'	'15'	'10.309'	'9.6153'	'0.1103'
a_{μ}	'2.7921'	'15'	'7.8924'	'9.1342'	'0.092'
b_{μ}	'1'	'15'	'8.9305'	'12.5969'	'0.1334'
μ	'0'	'0.978'	'0.5859'	'0.4347'	'0.1379'
a_H	'1.5919'	'14.3'	'7.6128'	'6.65'	'0.0889'
b_H	'1'	'15'	'9.2985'	'10.4271'	'0.1353'
ν	'72.1263'	'106.8171'	'236.0616'	'96.5517'	'0.0997'
BP	'435.7125'	'443.337'	'433.5'	'441.5'	'0.0836'

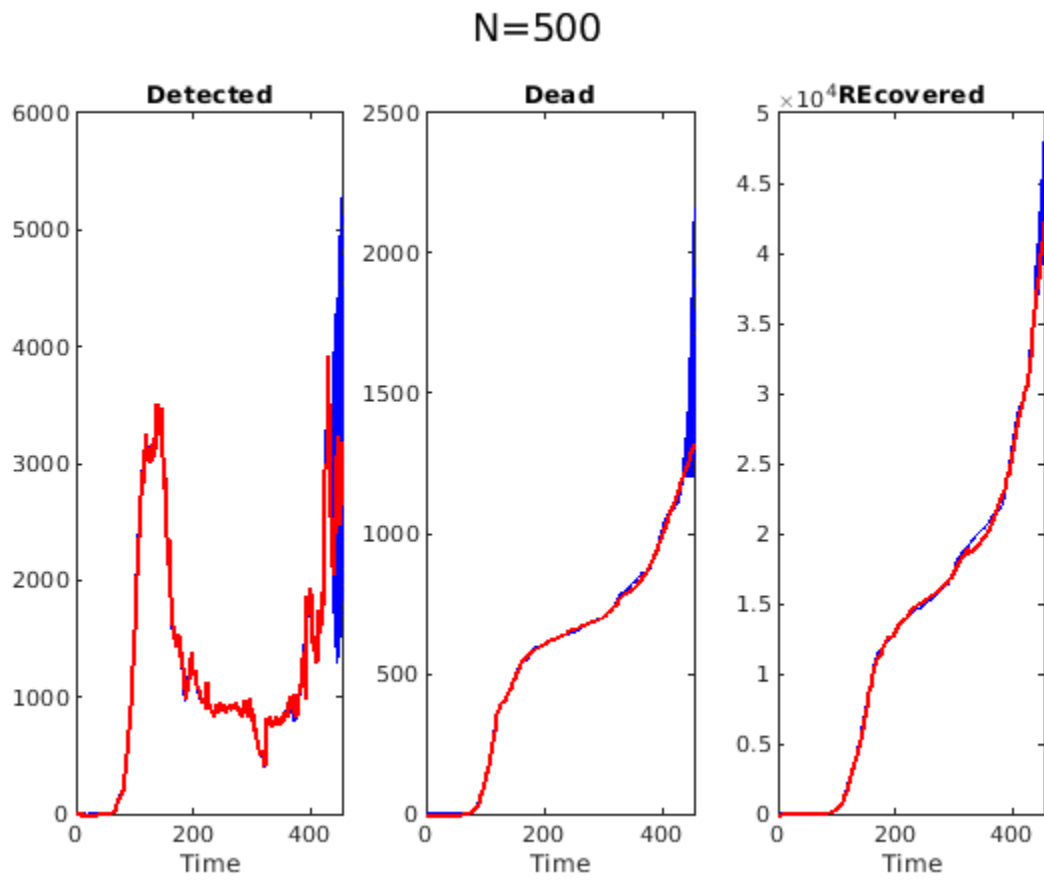
12.3. Identifiability analysis







12.4. Uncertainty analysys



Chapter 13. Extension number13

13.1. Basic information

The extension to be validated consists of the time series from the data454 to the 463. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

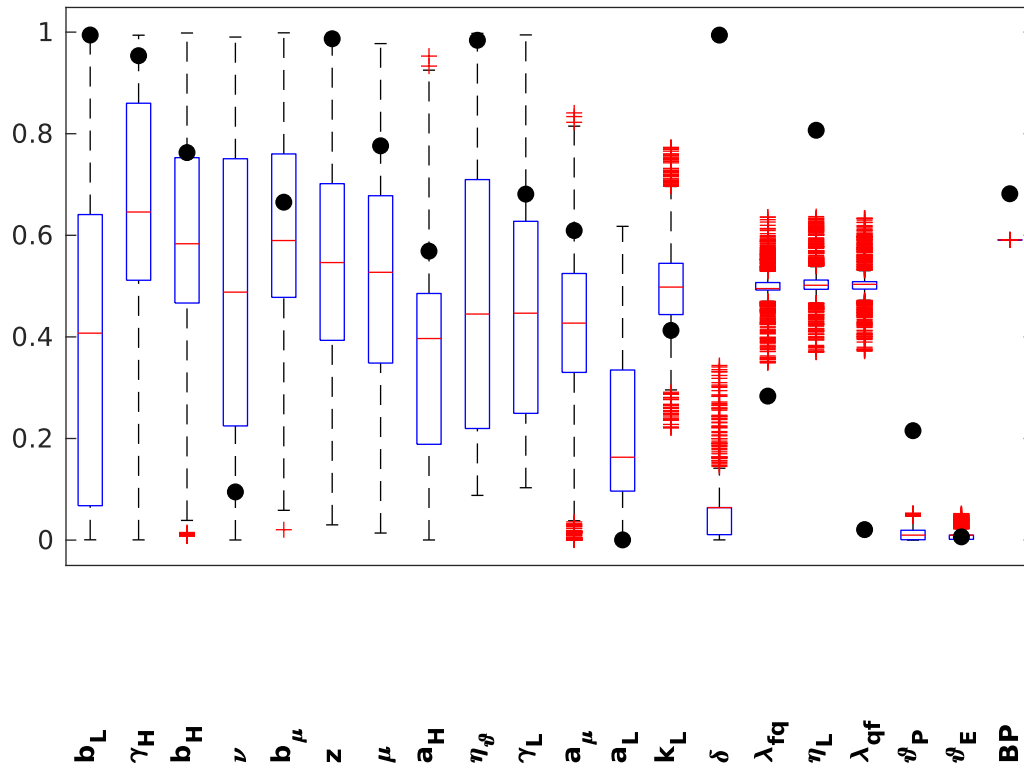
13.2. Estimated parameters with their intervals

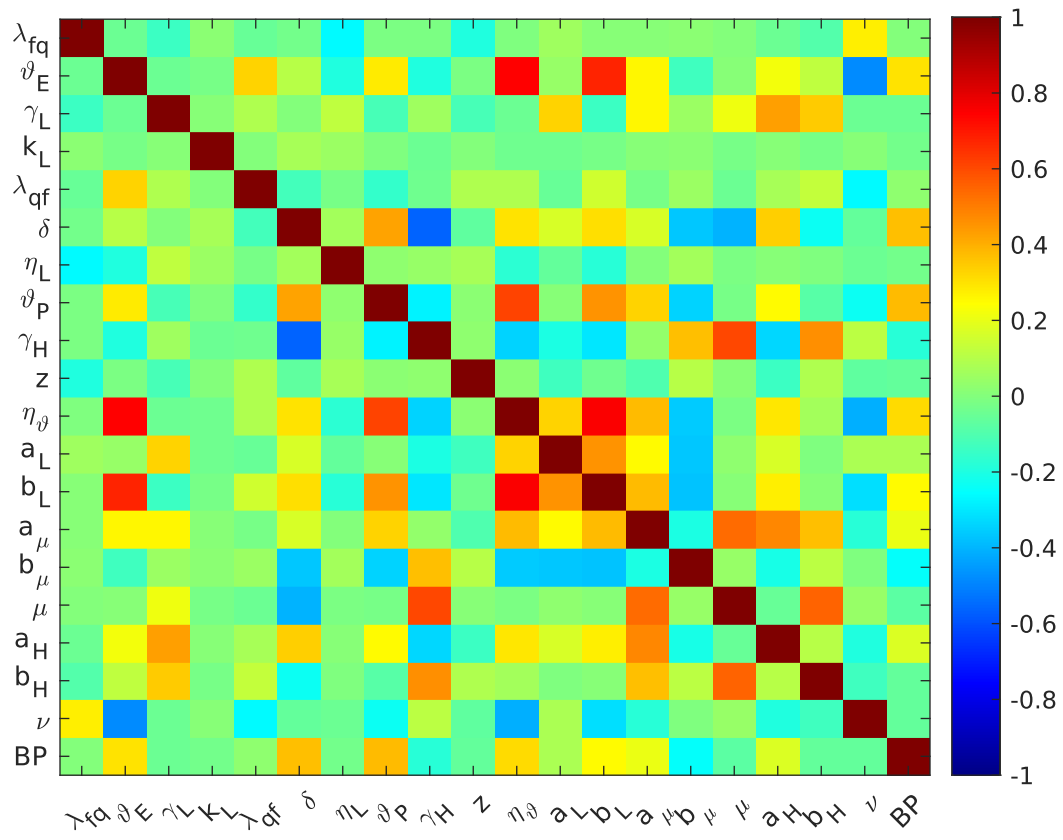
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

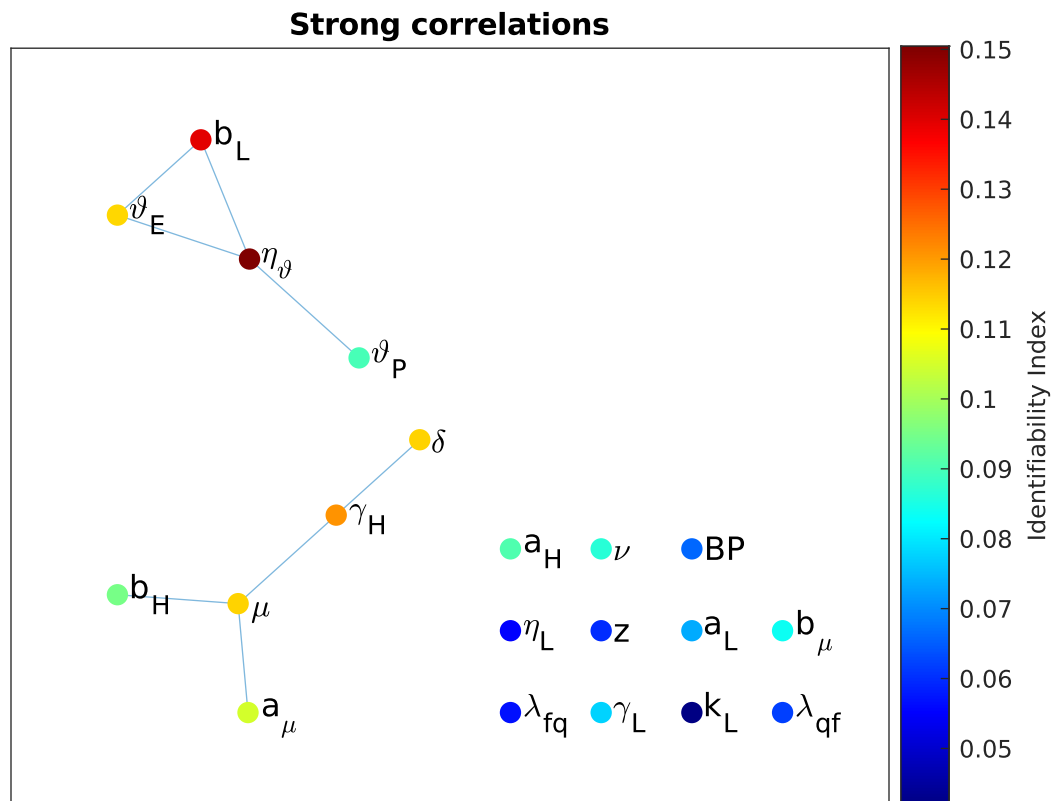
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0597'	'0.9263'	'0.4951'	'0.2835'	'0.0569'
ϑ_E	'0.0003'	'0.0133'	'0.0098'	'0.0064'	'0.1139'
γ_L	'0.5974'	'0.6823'	'0.4467'	'0.6811'	'0.0778'
k_L	'1.3564'	'10'	'5.4827'	'4.7153'	'0.042'
λ_{qf}	'0.0032'	'0.0426'	'0.5035'	'0.0206'	'0.0623'
δ	'0.1035'	'0.15'	'0.0096'	'0.1491'	'0.1141'
η_L	'0.025'	'1'	'0.5017'	'0.8068'	'0.0554'
ϑ_P	'0.2038'	'0.3184'	'0.0098'	'0.2154'	'0.0902'
γ_H	'0.1'	'1'	'0.6459'	'0.9536'	'0.1208'
z	'1.2'	'30'	'16.3903'	'29.6081'	'0.0601'
η_{ϑ}	'0.6513'	'1'	'0.445'	'0.984'	'0.1505'
a_L	'1'	'3.959'	'3.2841'	'1.0056'	'0.0737'
b_L	'9.1782'	'15'	'6.7032'	'14.9205'	'0.1395'
a_{μ}	'6.9761'	'15'	'6.9801'	'9.5312'	'0.1048'
b_{μ}	'1.2349'	'12.7466'	'9.2561'	'10.3128'	'0.084'
μ	'0.0184'	'0.8764'	'0.5272'	'0.7762'	'0.1144'
a_H	'7.2727'	'14.1644'	'6.5552'	'8.9642'	'0.0909'
b_H	'1'	'12.6444'	'9.1675'	'11.6797'	'0.0952'
ν	'23.5805'	'345.7756'	'244.0702'	'47.427'	'0.0865'
BP	'449.4975'	'449.9815'	'448.5'	'449.5'	'0.0662'

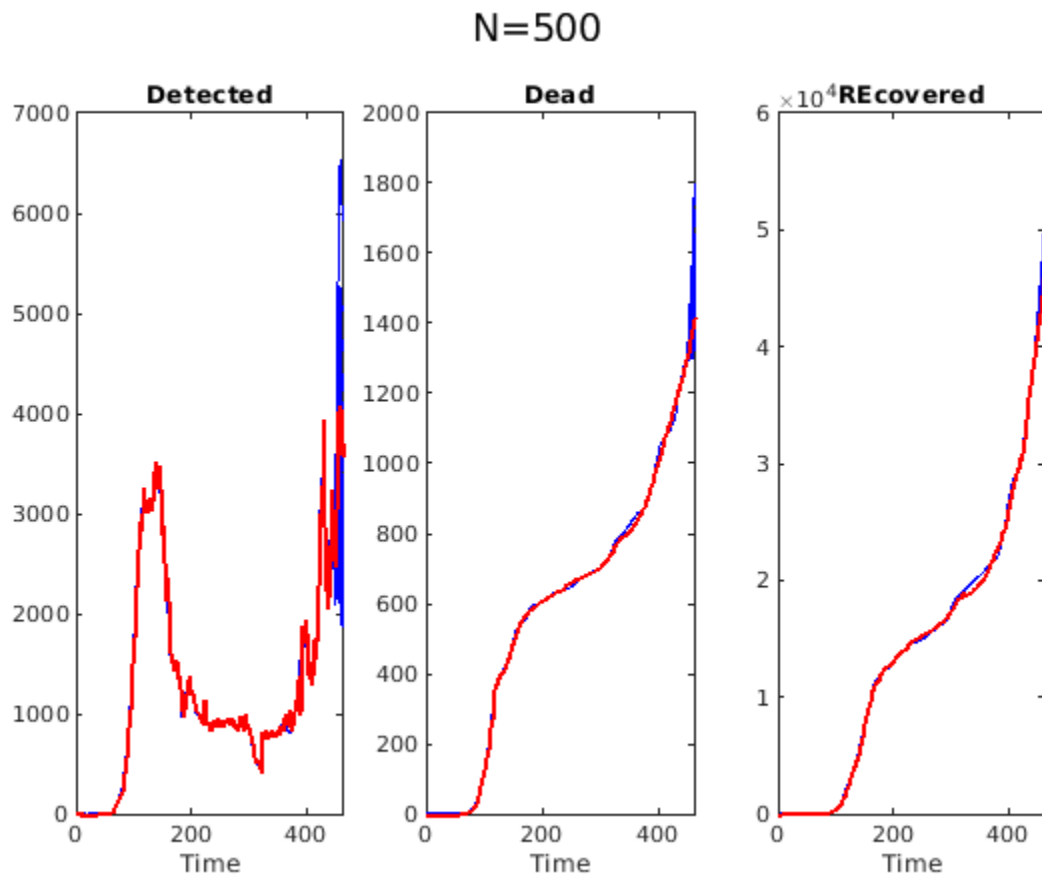
13.3. Identifiability analysis







13.4. Uncertainty analysys



Chapter 14. Extension number14

14.1. Basic information

The extension to be validated consists of the time series from the data463 to the 478. The status of the validation is: COMPLETED.

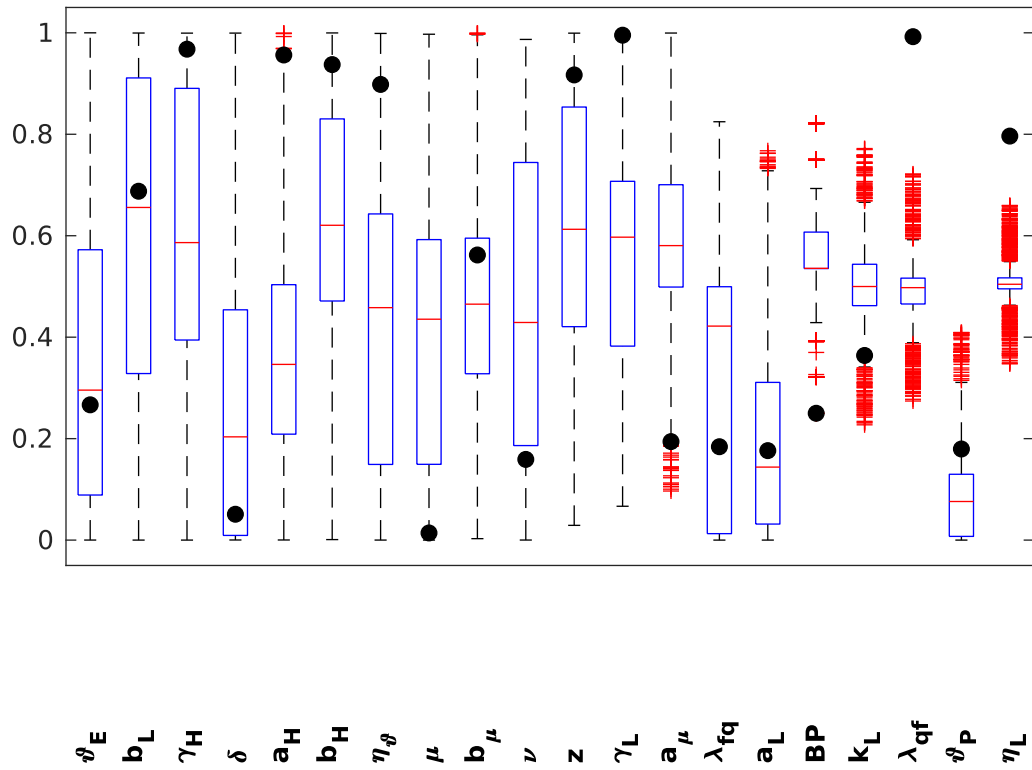
The number of estimations needed to perform the validation was1000.

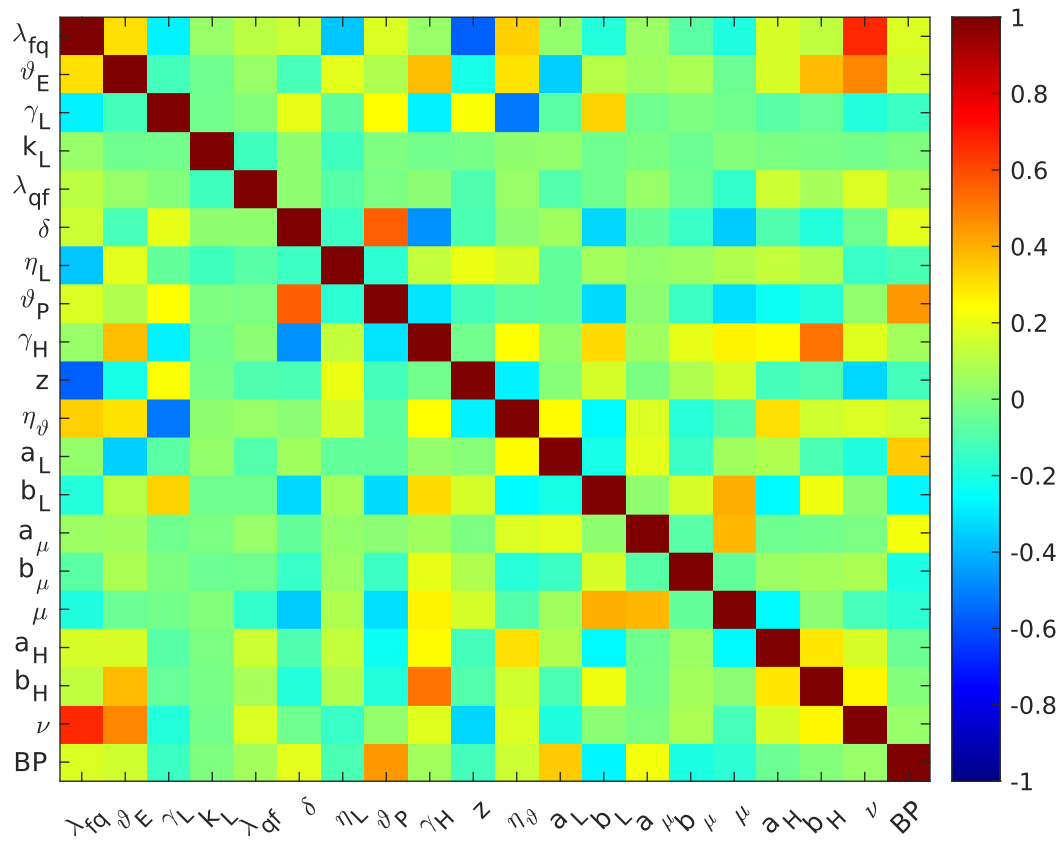
14.2. Estimated parameters with their intervals

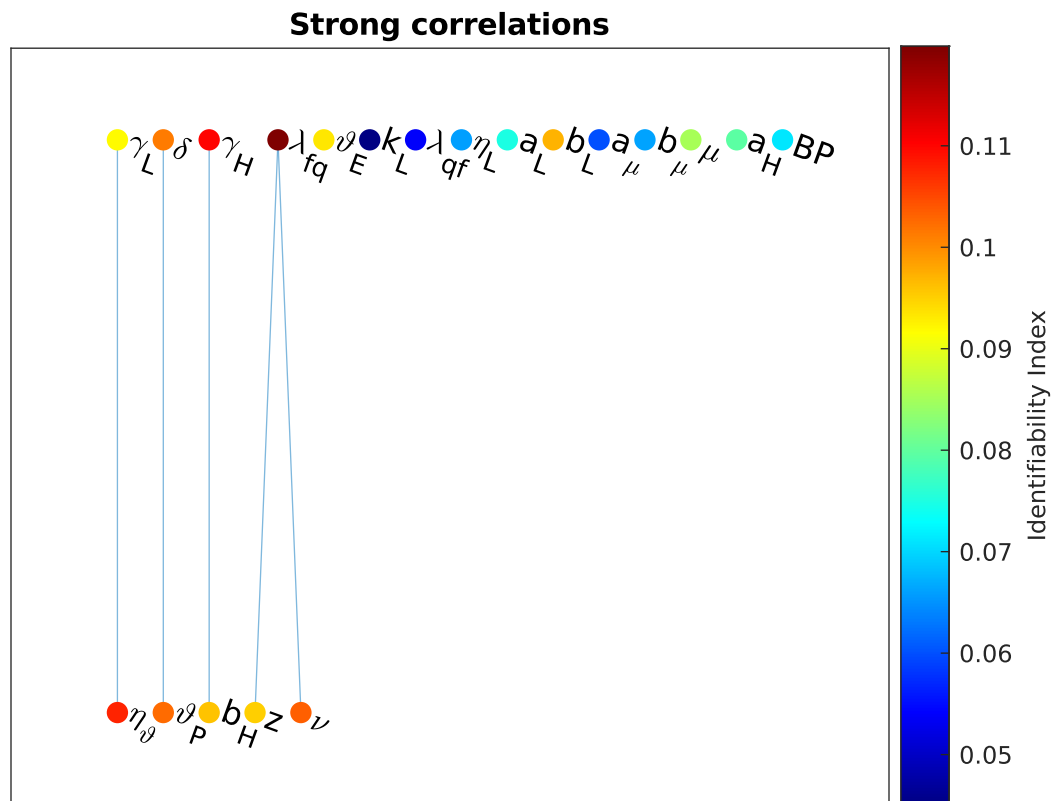
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4027'	'0.441'	'0.4218'	'0.1841'	'0.1198'
\vartheta_E	'0.2722'	'0.3192'	'0.2957'	'0.2667'	'0.0933'
\gamma_L	'0.5789'	'0.6153'	'0.5971'	'0.9953'	'0.092'
k_L	'5.3928'	'5.605'	'5.4989'	'4.2758'	'0.0451'
\lambda_{qf}	'0.4859'	'0.5094'	'0.4976'	'0.9924'	'0.0541'
\delta	'0.0271'	'0.034'	'0.0305'	'0.0076'	'0.1014'
\eta_L	'0.4936'	'0.5151'	'0.5043'	'0.7964'	'0.0659'
\vartheta_P	'0.0549'	'0.0973'	'0.0761'	'0.1796'	'0.1024'
\gamma_H	'0.562'	'0.611'	'0.5865'	'0.9677'	'0.1099'
z	'17.7674'	'18.9937'	'18.3806'	'27.5094'	'0.095'
\eta_{\vartheta}	'0.4348'	'0.4816'	'0.4582'	'0.8983'	'0.1078'
a_L	'2.7336'	'3.2958'	'3.0147'	'3.469'	'0.0749'
b_L	'9.8219'	'10.5381'	'10.18'	'10.6277'	'0.0971'
a_{\mu}	'8.905'	'9.3493'	'9.1271'	'3.7183'	'0.0602'
b_{\mu}	'7.2628'	'7.7598'	'7.5113'	'8.8685'	'0.0662'
\mu	'0.4145'	'0.4563'	'0.4354'	'0.0141'	'0.0852'
a_H	'5.5934'	'6.1044'	'5.8489'	'14.388'	'0.0797'
b_H	'9.3681'	'10.0083'	'9.6882'	'14.1228'	'0.0959'
\nu	'202.4326'	'226.5464'	'214.4895'	'79.5326'	'0.1032'
BP	'461.3633'	'461.6367'	'461.5'	'457.5'	'0.0712'

14.3. Identifiability analysis

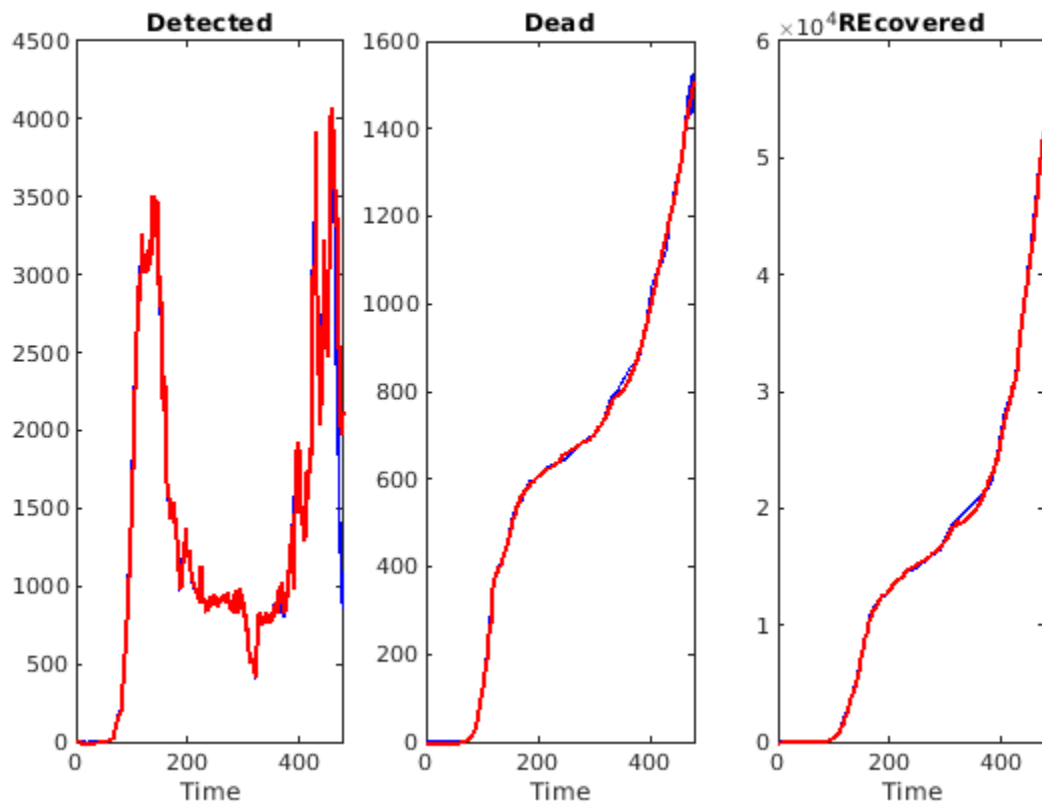






14.4. Uncertainty analysys

N=500



Chapter 15. Extension number15

15.1. Basic information

The extension to be validated consists of the time series from the data478 to the 485. The status of the validation is: COMPLETED.

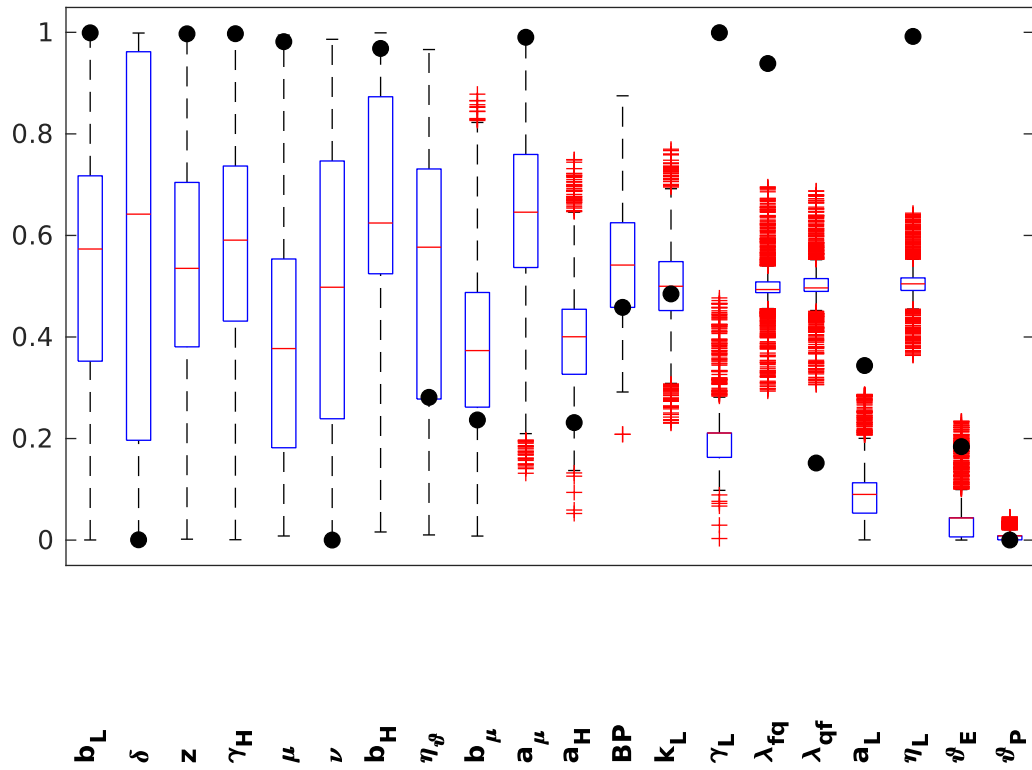
The number of estimations needed to perform the validation was1000.

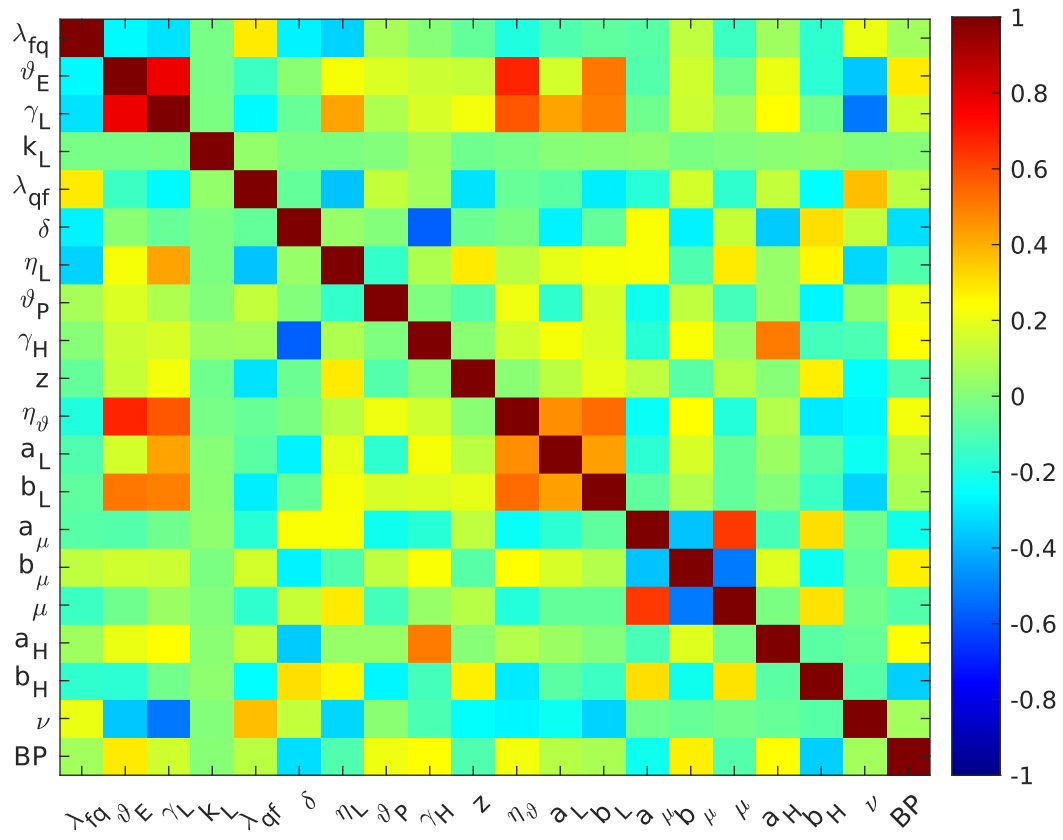
15.2. Estimated parameters with their intervals

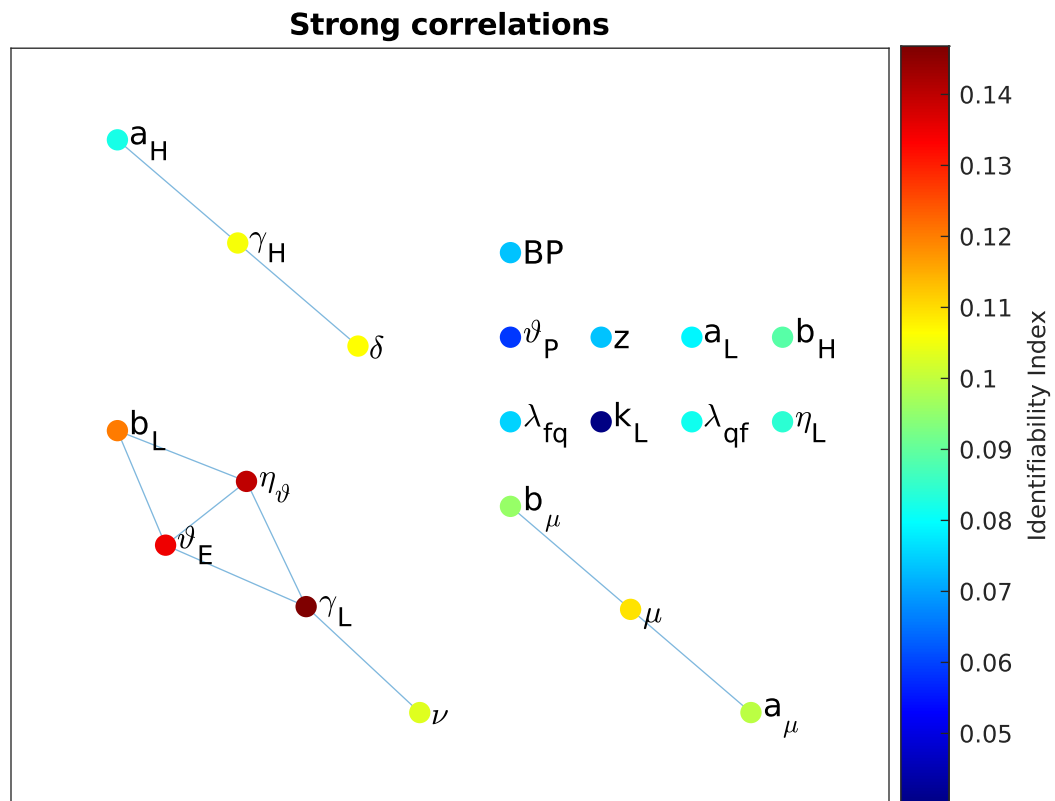
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.4785'	'0.5084'	'0.4935'	'0.9386'	'0.0752'
ϑ_E	'0.0287'	'0.0592'	'0.044'	'0.1841'	'0.1349'
γ_L	'0.189'	'0.2329'	'0.211'	'0.9993'	'0.1468'
k_L	'5.4037'	'5.5946'	'5.4991'	'5.3636'	'0.04'
λ_{qf}	'0.483'	'0.5102'	'0.4966'	'0.1518'	'0.0816'
δ	'0.092'	'0.1006'	'0.0963'	'0.0001'	'0.1066'
η_L	'0.4934'	'0.516'	'0.5047'	'0.9919'	'0.0845'
ϑ_P	'0.0031'	'0.0137'	'0.0084'	'0.0002'	'0.0589'
γ_H	'0.5743'	'0.6072'	'0.5907'	'0.9973'	'0.1057'
z	'15.5328'	'16.5769'	'16.0548'	'29.9128'	'0.0734'
η_{ϑ}	'0.5568'	'0.5968'	'0.5768'	'0.2811'	'0.1398'
a_L	'2.116'	'2.4032'	'2.2596'	'5.813'	'0.0791'
b_L	'8.7335'	'9.3183'	'9.0259'	'14.9864'	'0.1205'
a_{μ}	'9.7983'	'10.2815'	'10.0399'	'14.8634'	'0.0993'
b_{μ}	'6.0312'	'6.4219'	'6.2265'	'4.3129'	'0.0959'
μ	'0.3548'	'0.3996'	'0.3772'	'0.9816'	'0.1093'
a_H	'6.408'	'6.8044'	'6.6062'	'4.2394'	'0.0825'
b_H	'9.4979'	'9.9875'	'9.7427'	'14.5555'	'0.089'
ν	'237.5453'	'260.4483'	'248.9968'	'0.0372'	'0.1034'
BP	'469.4043'	'469.5957'	'469.5'	'468.4999'	'0.0738'

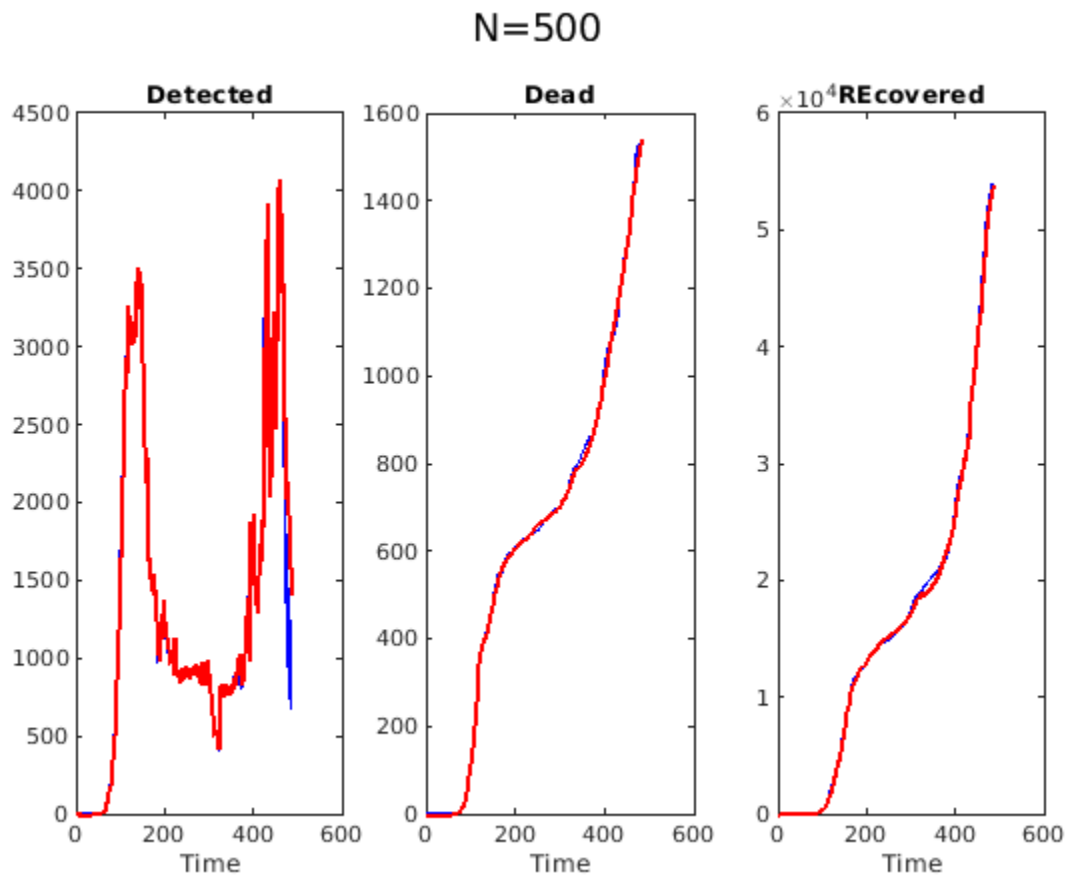
15.3. Identifiability analysis







15.4. Uncertainty analysis



Chapter 16. Extension number16

16.1. Basic information

The extension to be validated consists of the time series from the data485 to the 499. The status of the validation is: COMPLETED.

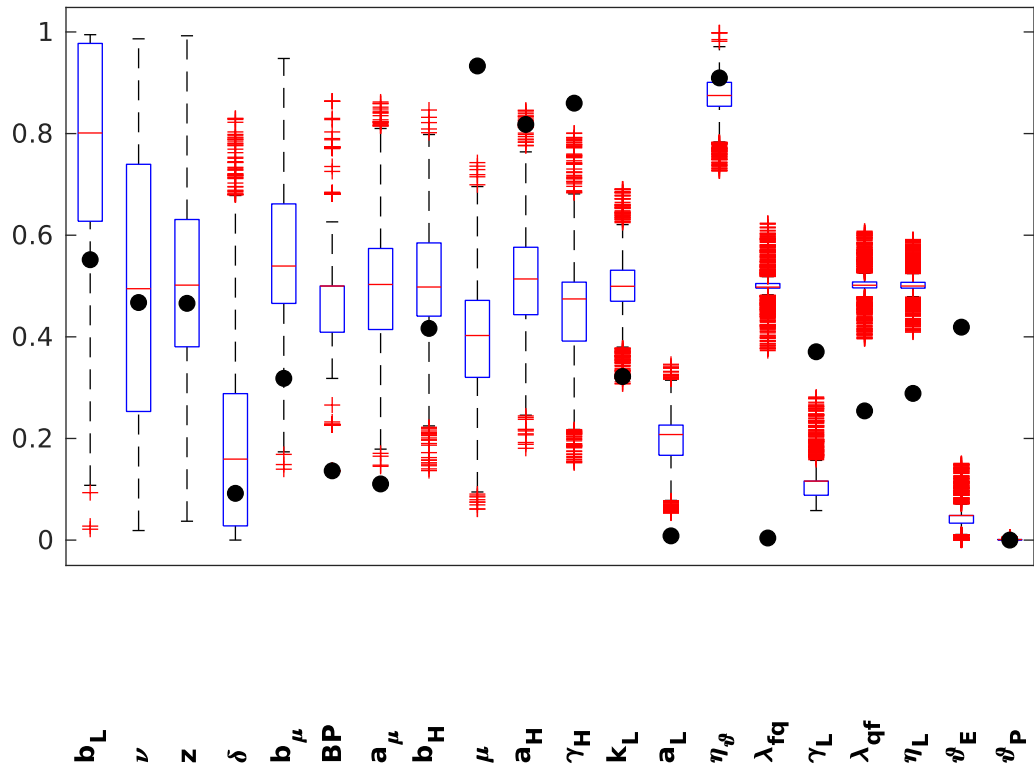
The number of estimations needed to perform the validation was1000.

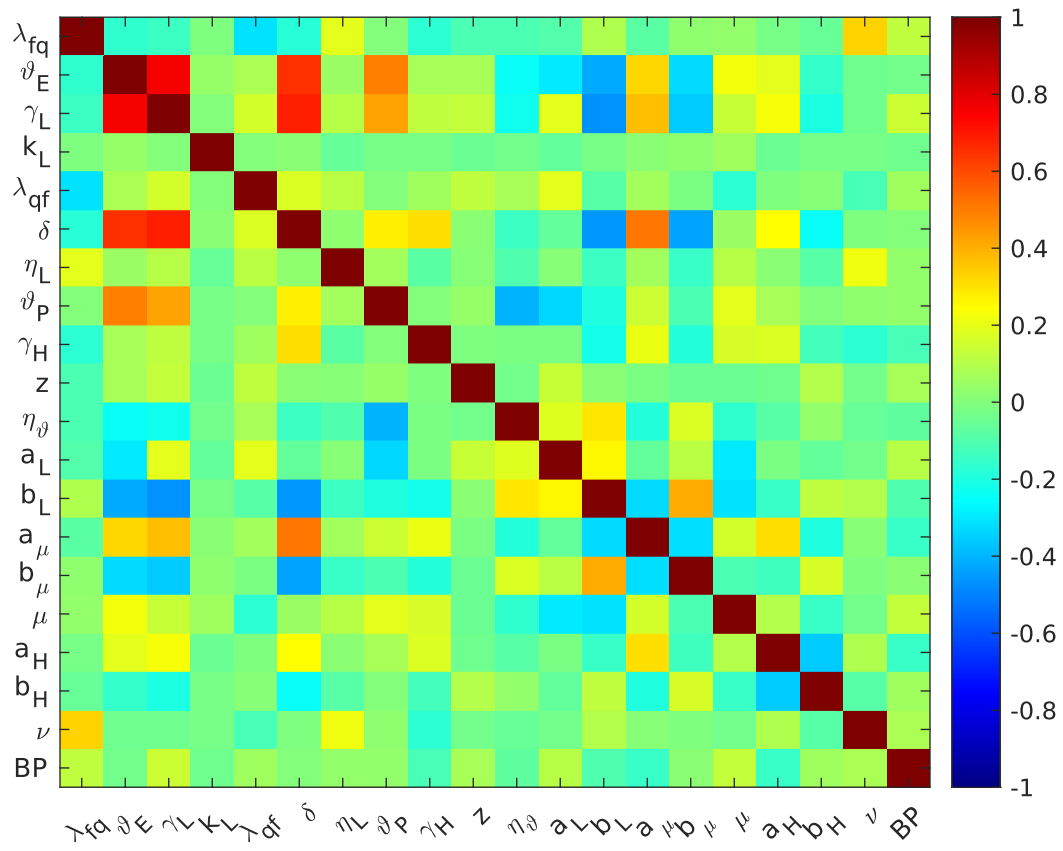
16.2. Estimated parameters with their intervals

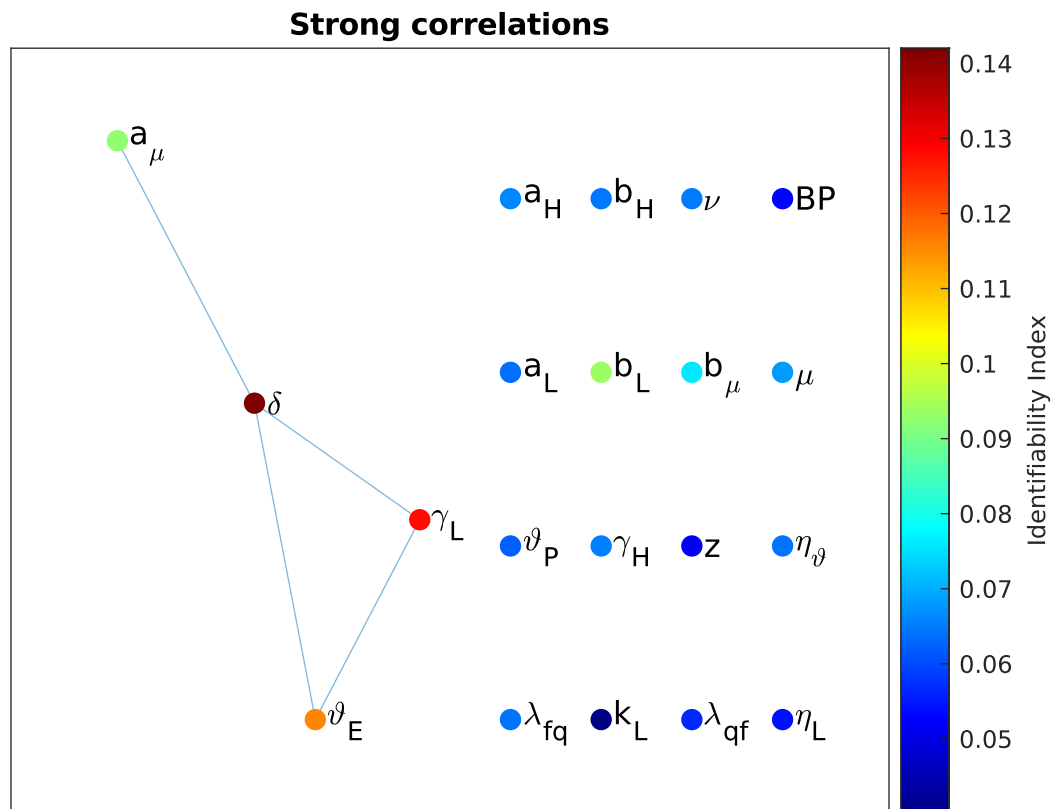
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4862'	'0.5095'	'0.4979'	'0.0041'	'0.0642'
\vartheta_E	'0.0407'	'0.0561'	'0.0484'	'0.419'	'0.1154'
\gamma_L	'0.0993'	'0.133'	'0.1161'	'0.3706'	'0.1278'
k_L	'5.4184'	'5.5723'	'5.4954'	'3.8971'	'0.0402'
\lambda_{qf}	'0.4926'	'0.5105'	'0.5016'	'0.2543'	'0.0566'
\delta	'0.0204'	'0.0274'	'0.0239'	'0.0138'	'0.142'
\eta_L	'0.4909'	'0.5091'	'0.5'	'0.2887'	'0.0544'
\vartheta_P	'0'	'0.0032'	'0.001'	'0'	'0.0622'
\gamma_H	'0.4615'	'0.4877'	'0.4746'	'0.8598'	'0.0656'
z	'14.6444'	'15.4615'	'15.0529'	'13.9776'	'0.052'
\eta_{\vartheta}	'0.8679'	'0.8819'	'0.8749'	'0.9096'	'0.0641'
a_L	'3.8001'	'4.0164'	'3.9083'	'1.1167'	'0.0638'
b_L	'11.9839'	'12.4493'	'12.2166'	'8.7251'	'0.0937'
a_{\mu}	'7.8837'	'8.202'	'8.0429'	'2.5473'	'0.0926'
b_{\mu}	'8.3749'	'8.7264'	'8.5507'	'5.456'	'0.0763'
\mu	'0.3918'	'0.4134'	'0.4026'	'0.9331'	'0.0682'
a_H	'8.0344'	'8.3546'	'8.1945'	'12.4518'	'0.0662'
b_H	'7.8024'	'8.1432'	'7.9728'	'6.8326'	'0.0647'
\nu	'236.363'	'258.3554'	'247.3592'	'233.7576'	'0.0651'
BP	'483.3955'	'483.6045'	'483.5'	'479.5'	'0.0533'

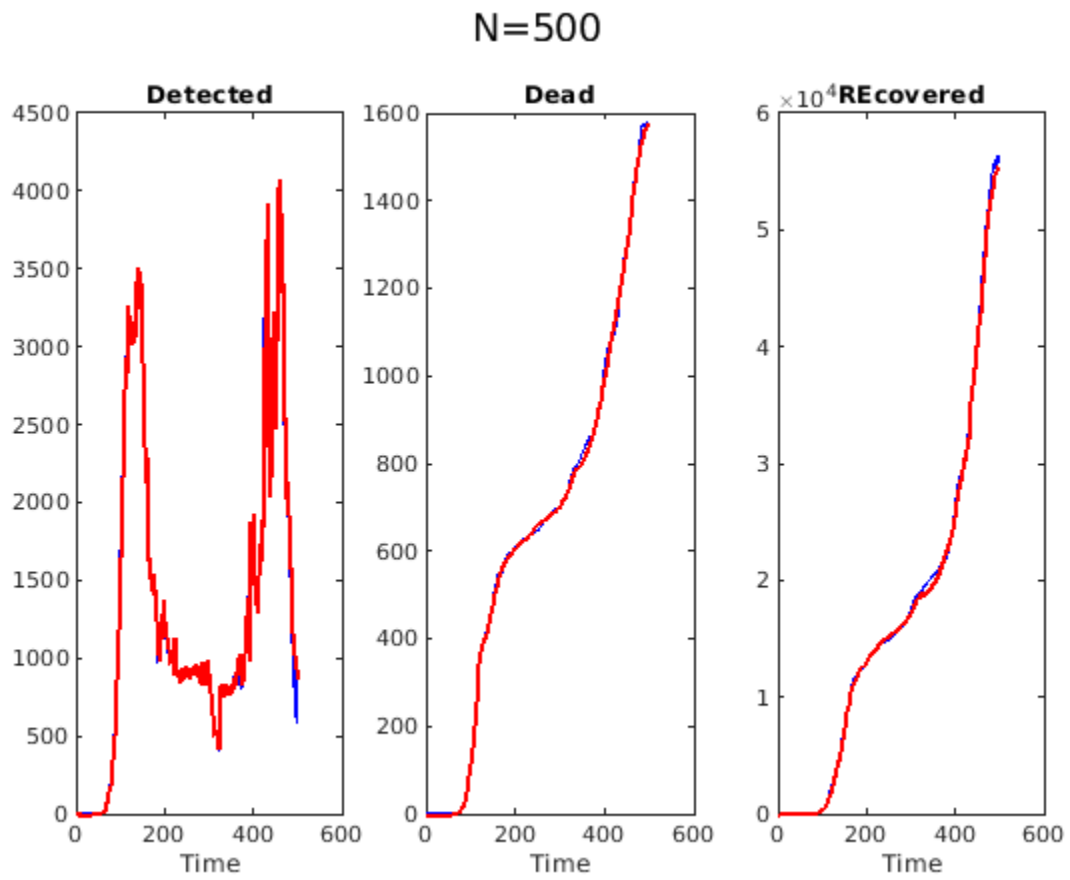
16.3. Identifiability analysys







16.4. Uncertainty analysis



Chapter 17. Extension number17

17.1. Basic information

The extension to be validated consists of the time series from the data499 to the 559. The status of the validation is: COMPLETED.

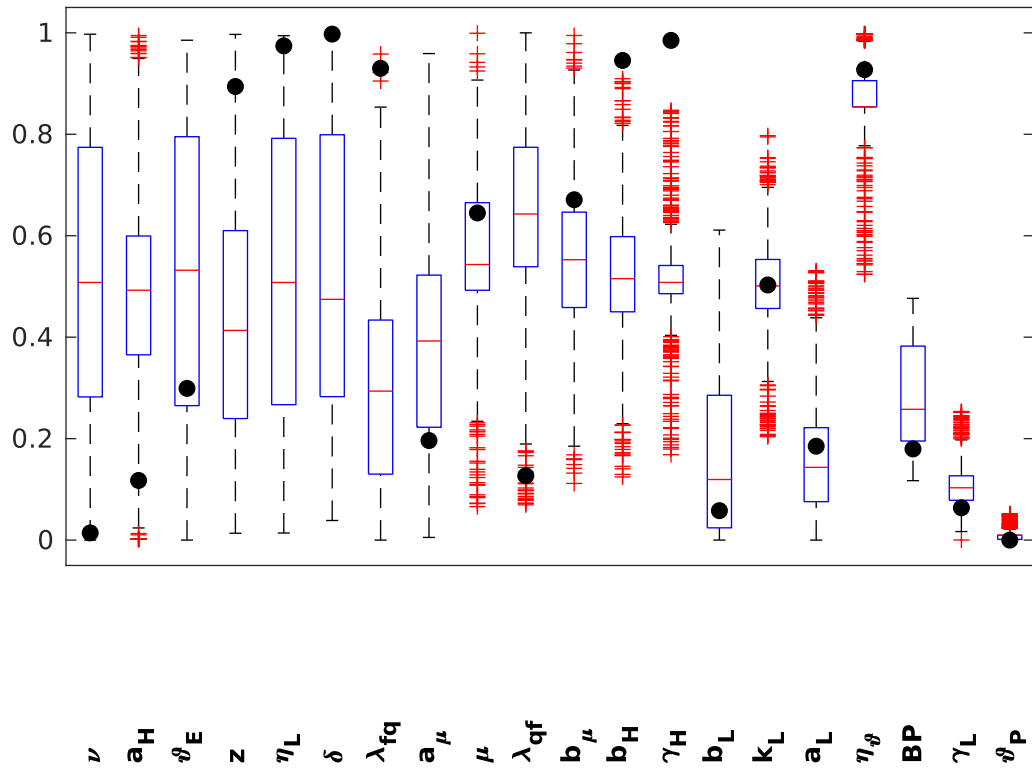
The number of estimations needed to perform the validation was1000.

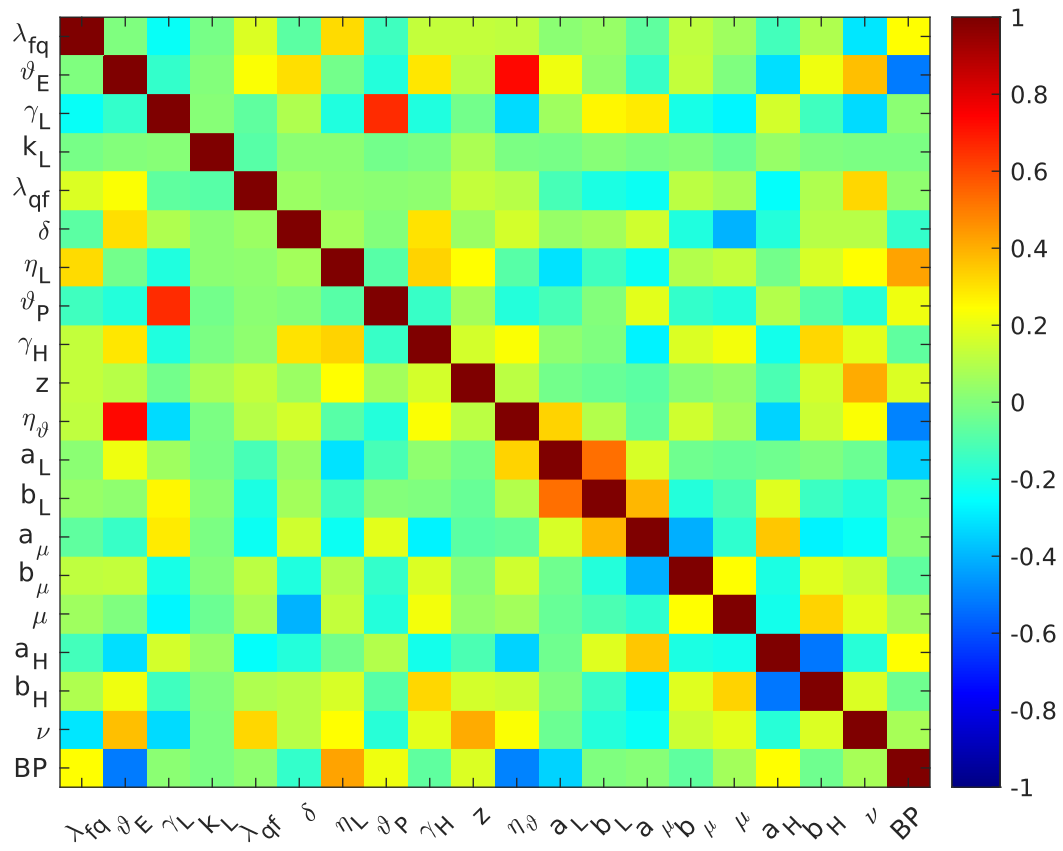
17.2. Estimated parameters with their intervals

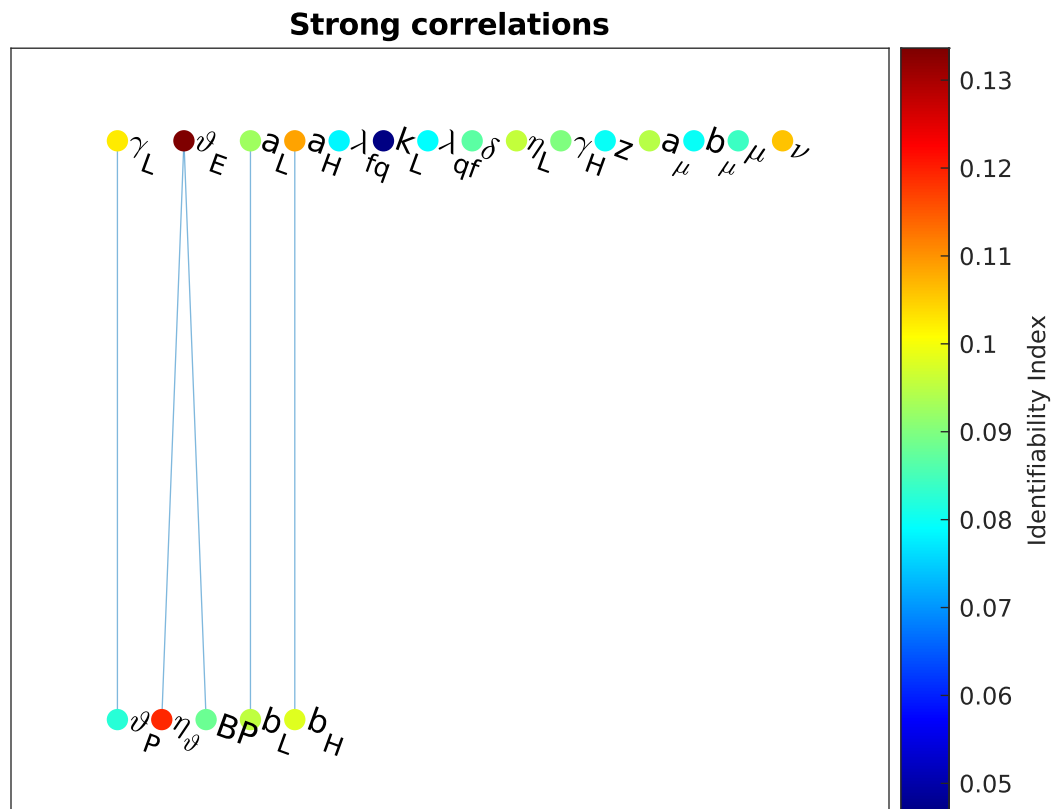
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.2702'	'0.3173'	'0.2937'	'0.93'	'0.0786'
\vartheta_E	'0.498'	'0.5661'	'0.532'	'0.2991'	'0.1336'
\gamma_L	'0.0839'	'0.1224'	'0.1031'	'0.0637'	'0.1026'
k_L	'5.3626'	'5.6573'	'5.5099'	'5.5265'	'0.0467'
\lambda_{qf}	'0.6178'	'0.6678'	'0.6428'	'0.1268'	'0.0793'
\delta	'0.0666'	'0.0758'	'0.0712'	'0.1496'	'0.0869'
\eta_L	'0.4764'	'0.5394'	'0.5079'	'0.9743'	'0.0958'
\vartheta_P	'0'	'0.0217'	'0.0097'	'0'	'0.0824'
\gamma_H	'0.4844'	'0.5316'	'0.508'	'0.9851'	'0.0901'
z	'11.5681'	'13.2344'	'12.4012'	'26.8264'	'0.0797'
\eta_{\vartheta}	'0.8222'	'0.8858'	'0.854'	'0.9274'	'0.1192'
a_L	'2.6693'	'3.3468'	'3.0081'	'3.5914'	'0.0926'
b_L	'2.3174'	'3.0271'	'2.6723'	'1.8124'	'0.0954'
a_{\mu}	'6.1714'	'6.8189'	'6.4952'	'3.7476'	'0.0949'
b_{\mu}	'8.4662'	'9.0099'	'8.738'	'10.3939'	'0.0797'
\mu	'0.5197'	'0.5668'	'0.5433'	'0.6449'	'0.0841'
a_H	'7.5629'	'8.2309'	'7.8969'	'2.6463'	'0.1085'
b_H	'7.9212'	'8.5093'	'8.2153'	'14.2369'	'0.0981'
\nu	'238.1561'	'269.7831'	'253.9696'	'7.0917'	'0.1058'
BP	'500.7875'	'502.2125'	'501.5'	'496.4995'	'0.0885'

17.3. Identifiability analysis

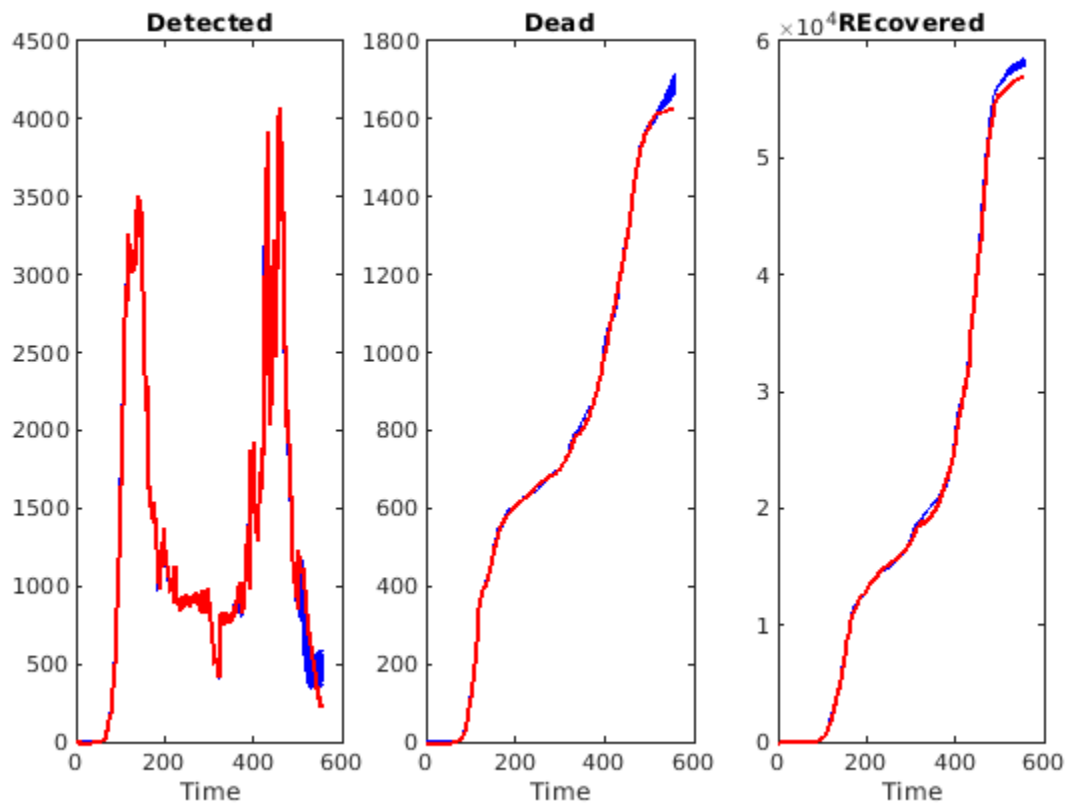






17.4. Uncertainty analysis

N=500



Chapter 18. Extension number18

18.1. Basic information

The extension to be validated consists of the time series from the data559 to the 705. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

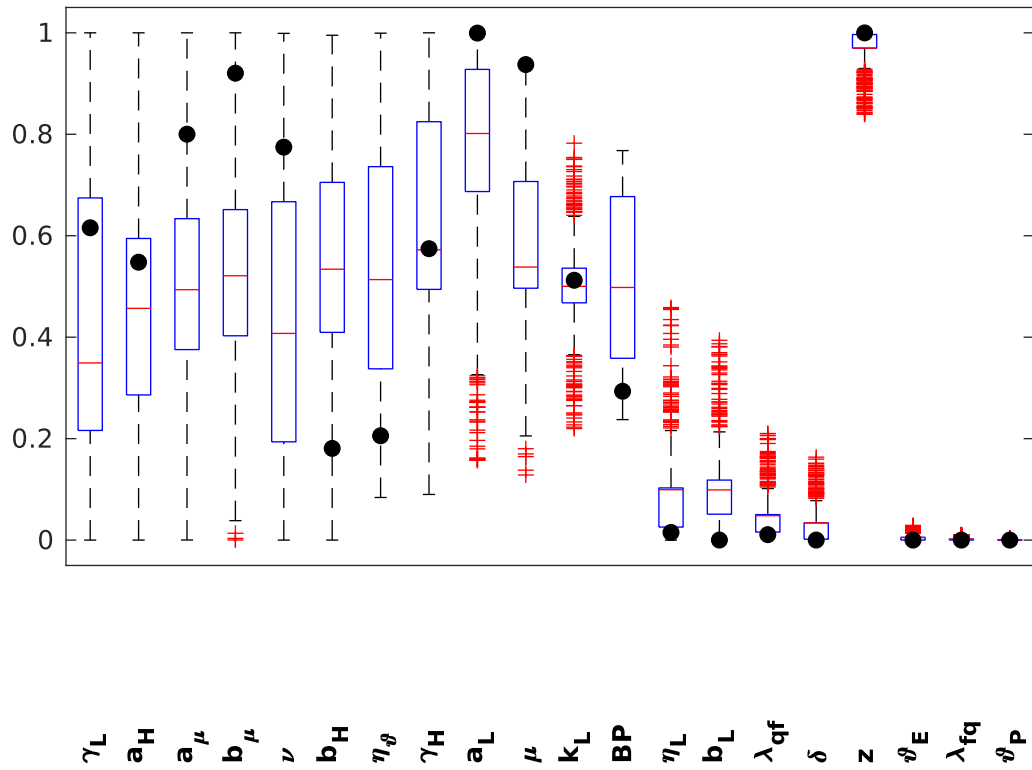
18.2. Estimated parameters with their intervals

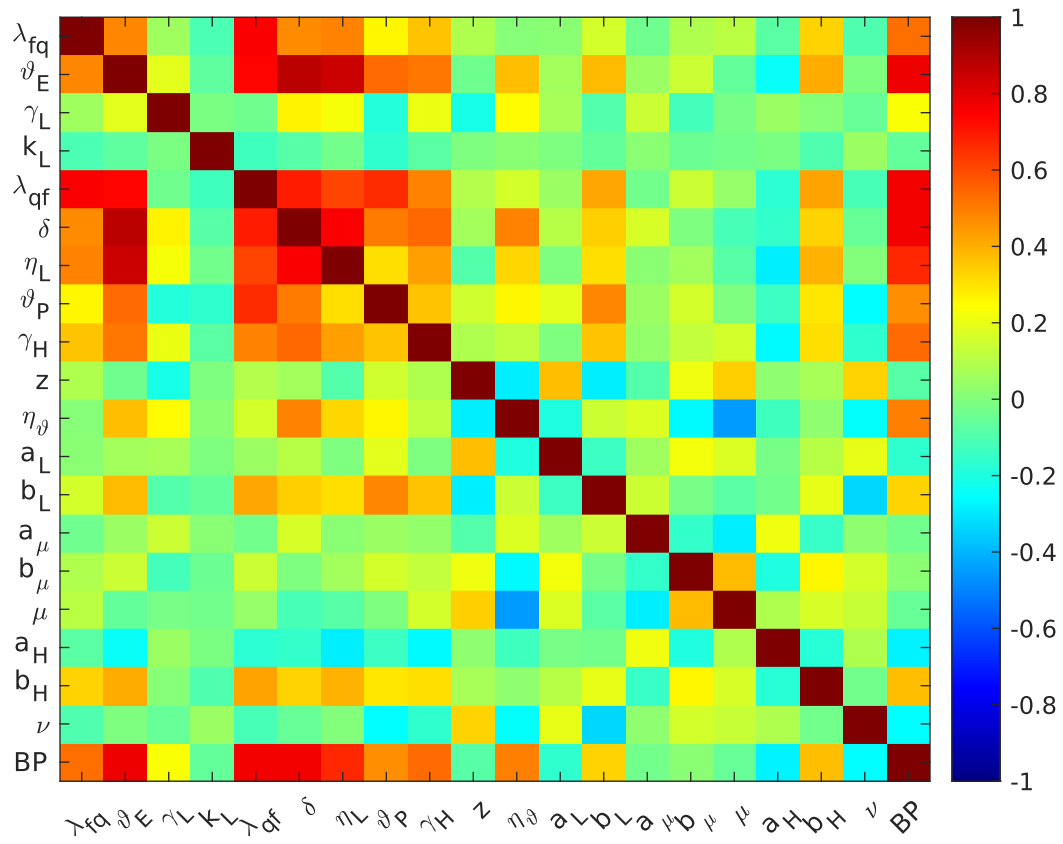
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

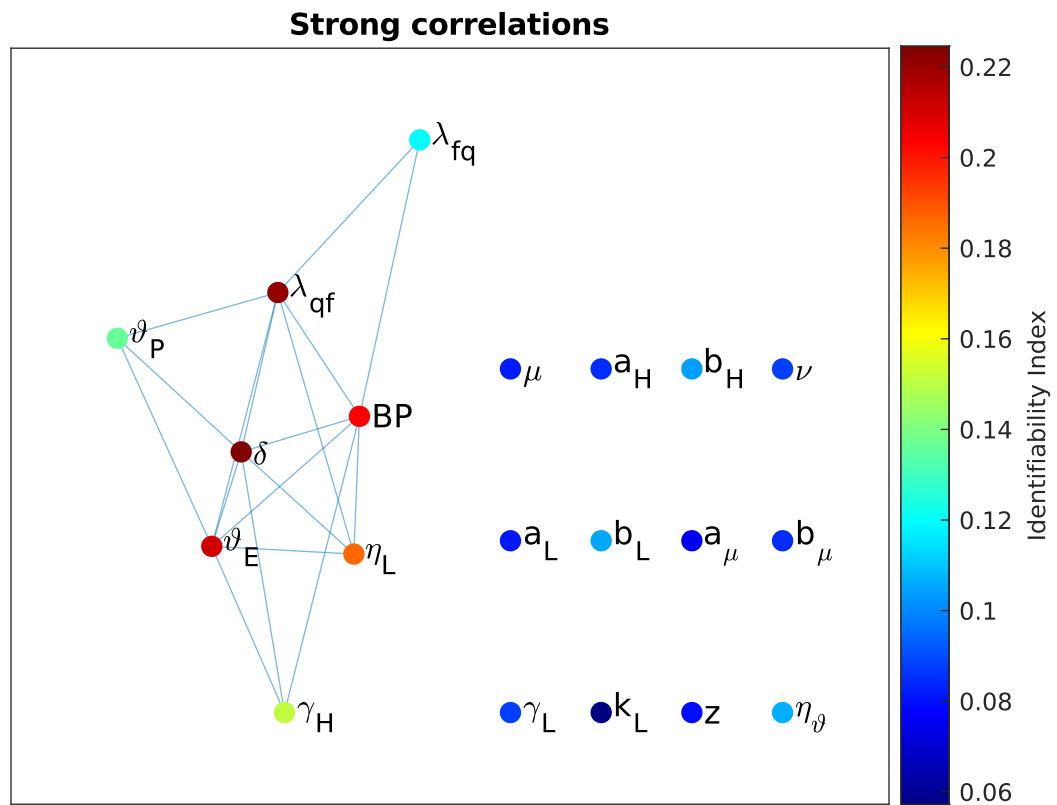
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0.0011'	'0.0019'	'0'	'0.1198'
\vartheta_E	'0'	'0'	'0.0054'	'0'	'0.2107'
\gamma_L	'0.4049'	'0.7479'	'0.3493'	'0.6157'	'0.0881'
k_L	'2.6491'	'7.2483'	'5.5022'	'5.6102'	'0.0573'
\lambda_{qf}	'0.0107'	'0.0118'	'0.0481'	'0.0107'	'0.2208'
\delta	'0'	'0'	'0.0051'	'0'	'0.2246'
\eta_L	'0.0089'	'0.0207'	'0.0994'	'0.0151'	'0.1861'
\vartheta_P	'0'	'0.1116'	'0.0006'	'0'	'0.1367'
\gamma_H	'0.3206'	'0.7958'	'0.5722'	'0.5744'	'0.1508'
z	'26.0292'	'30'	'29.0953'	'29.9961'	'0.0798'
\eta_{\vartheta}	'0.1011'	'0.2124'	'0.5135'	'0.2057'	'0.1065'
a_L	'12.6009'	'15'	'12.2215'	'14.9927'	'0.0819'
b_L	'1'	'1.3835'	'2.3848'	'1.0016'	'0.1051'
a_{\mu}	'6.036'	'12.9771'	'7.9111'	'12.2022'	'0.0753'
b_{\mu}	'5.8342'	'14.025'	'8.2957'	'13.8862'	'0.0852'
\mu	'0.2199'	'0.9532'	'0.5383'	'0.9374'	'0.0825'
a_H	'5.302'	'9.3098'	'7.3957'	'8.67'	'0.0849'
b_H	'2.6561'	'7.5169'	'8.4765'	'3.5304'	'0.1041'
\nu	'356.3867'	'395.9473'	'203.7345'	'387.321'	'0.0882'
BP	'552.22'	'559.3'	'596.6141'	'556.4999'	'0.2039'

18.3. Identifiability analysis

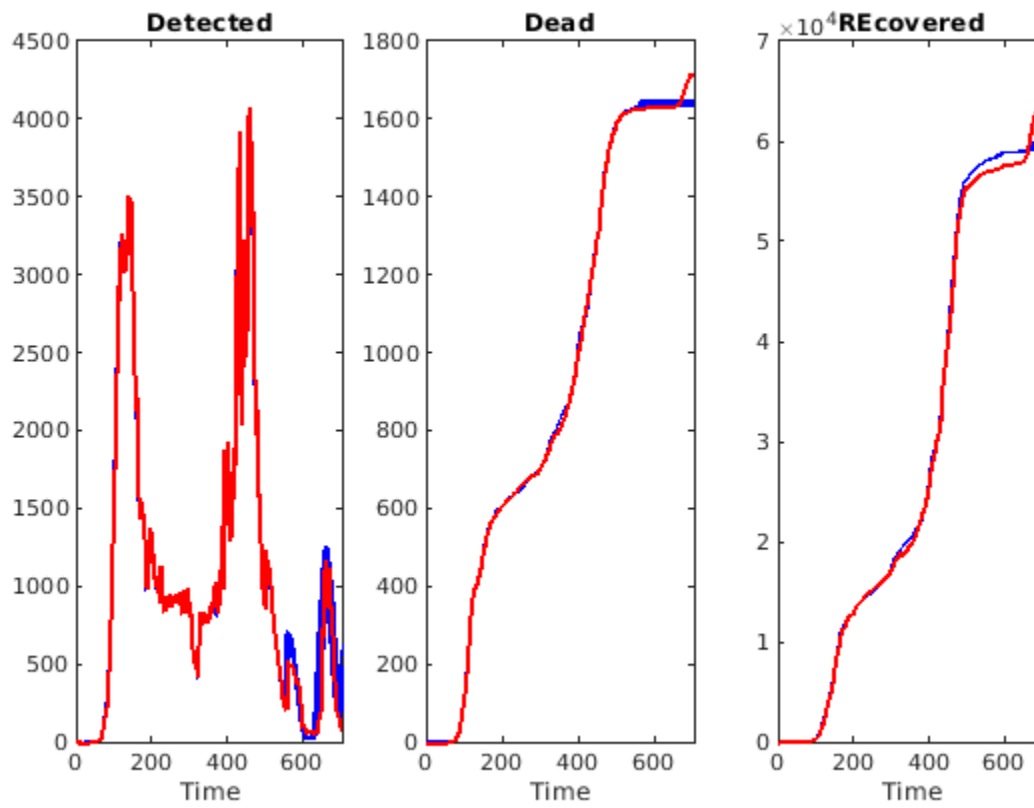






18.4. Uncertainty analysis

N=500



Chapter 19. Extension number19

19.1. Basic information

The extension to be validated consists of the time series from the data705 to the 721. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

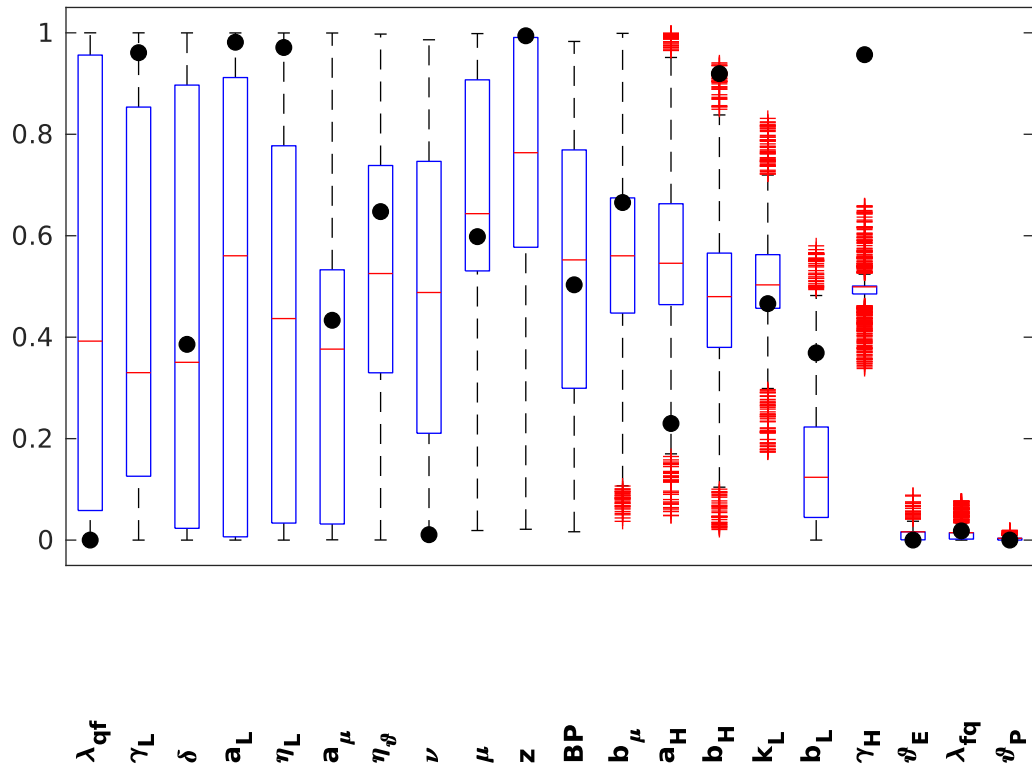
19.2. Estimated parameters with their intervals

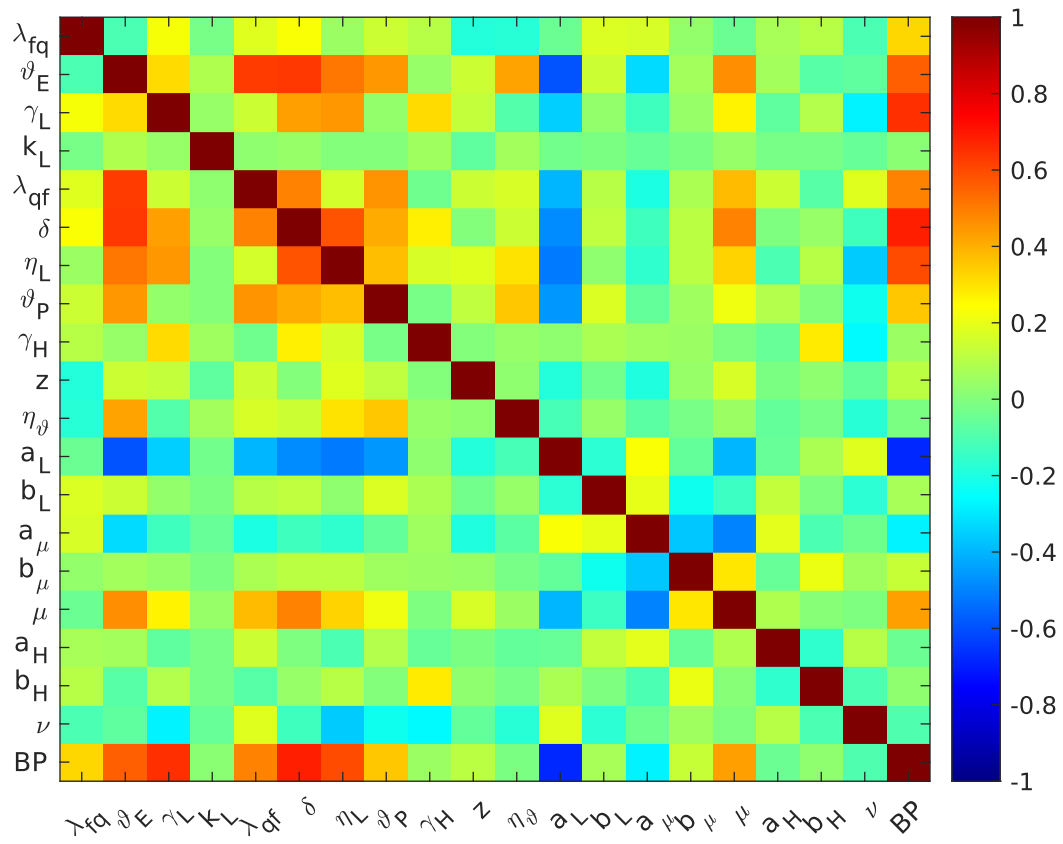
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

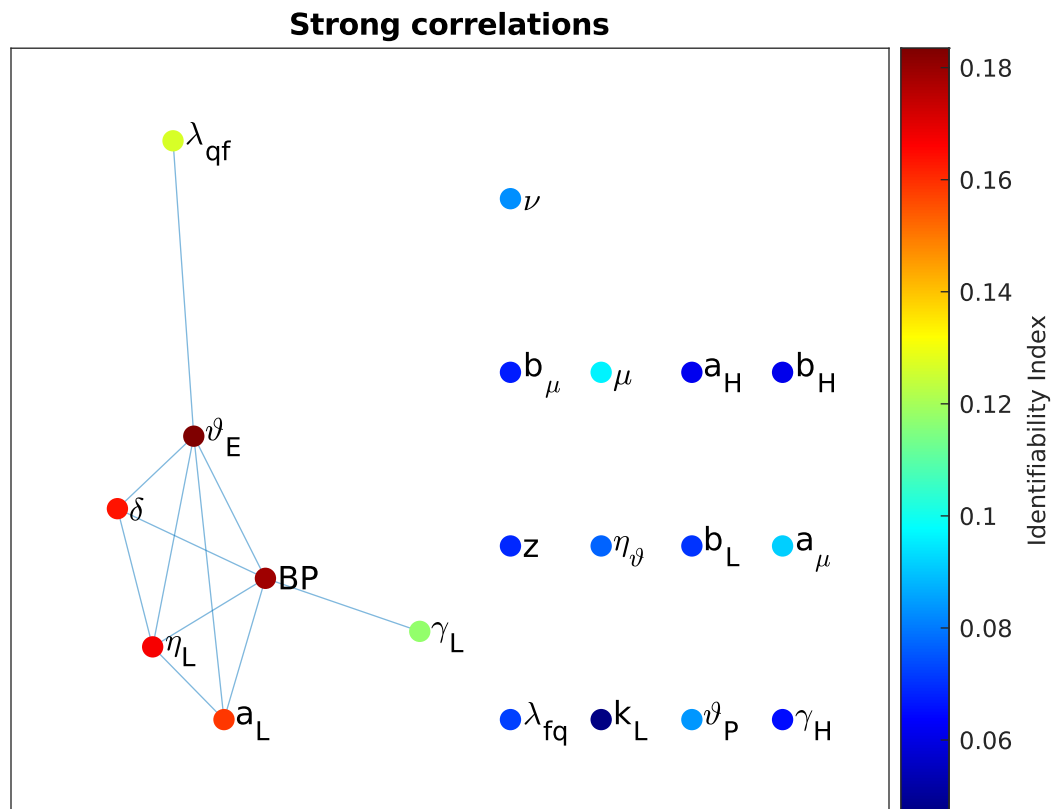
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0168'	'0.0194'	'0.0146'	'0.0181'	'0.0725'
ϑ_E	'0'	'0.0001'	'0.0163'	'0.0001'	'0.1835'
γ_L	'0.3799'	'1'	'0.3301'	'0.9608'	'0.1179'
k_L	'1.162'	'8.7825'	'5.5281'	'5.1953'	'0.0471'
λ_{qf}	'0'	'0.0001'	'0.3922'	'0.0001'	'0.1267'
δ	'0.0539'	'0.0839'	'0.0526'	'0.0579'	'0.1633'
η_L	'0.6754'	'0.983'	'0.4367'	'0.9711'	'0.1672'
ϑ_P	'0'	'0.0001'	'0.0036'	'0'	'0.0841'
γ_H	'0.5253'	'0.981'	'0.4992'	'0.9569'	'0.0656'
z	'20.4044'	'30'	'22.9104'	'29.825'	'0.0691'
η_{ϑ}	'0.6269'	'0.6977'	'0.5255'	'0.6475'	'0.0771'
a_L	'8.7793'	'15'	'8.8469'	'14.7401'	'0.1589'
b_L	'5.2397'	'11.2588'	'2.7336'	'6.1674'	'0.0706'
a_{μ}	'7.0591'	'14.6824'	'6.2707'	'7.0663'	'0.0915'
b_{μ}	'1.5445'	'12.6514'	'8.8458'	'10.316'	'0.0678'
μ	'0.1011'	'0.8336'	'0.6435'	'0.5982'	'0.0963'
a_H	'3.0676'	'4.6486'	'8.6401'	'4.2184'	'0.0619'
b_H	'7.8923'	'14.3625'	'7.7193'	'13.8728'	'0.0613'
ν	'4.6857'	'10.1746'	'244.0464'	'5.3453'	'0.0832'
BP	'632.744'	'640.4781'	'642.9606'	'635.4998'	'0.1792'

19.3. Identifiability analysis







19.4. Uncertainty analysys

N=500

