

Validation process forRIOHACHA

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 133. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

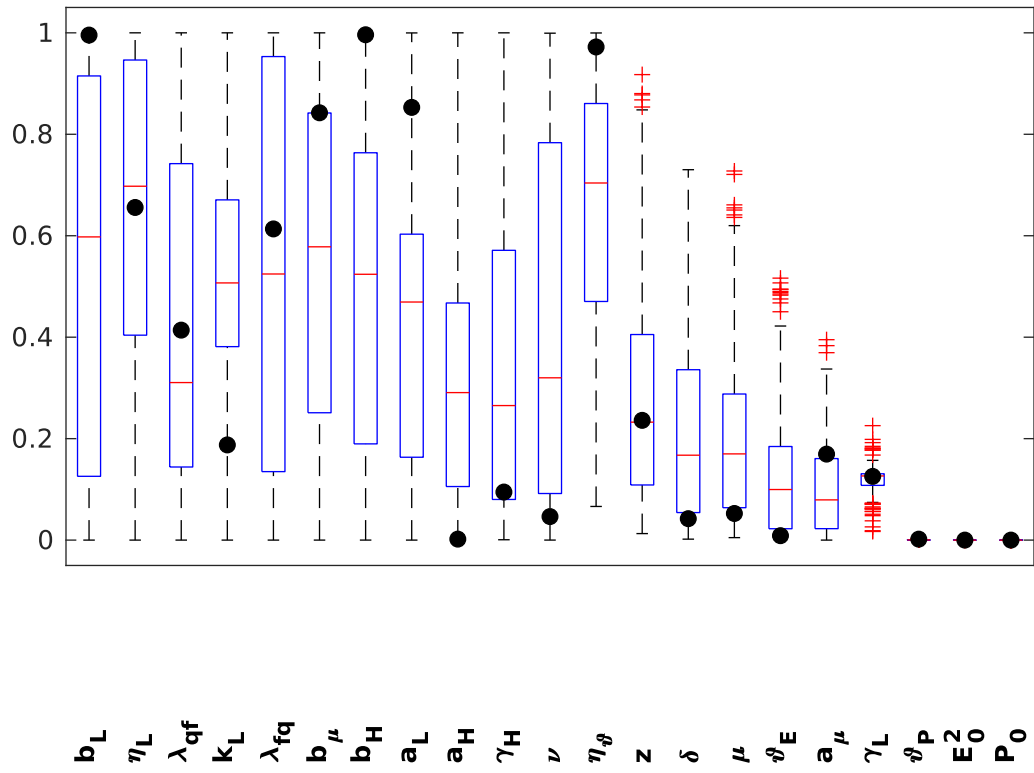
1.2. Estimated parameters with their intervals

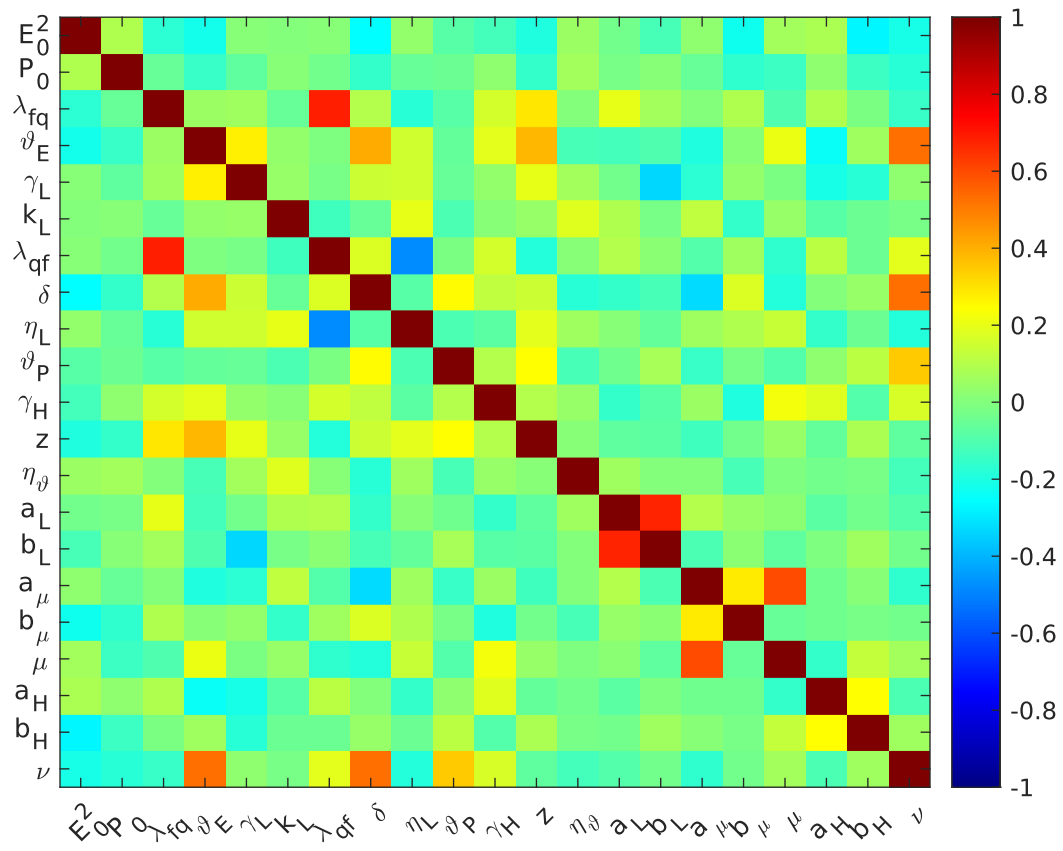
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

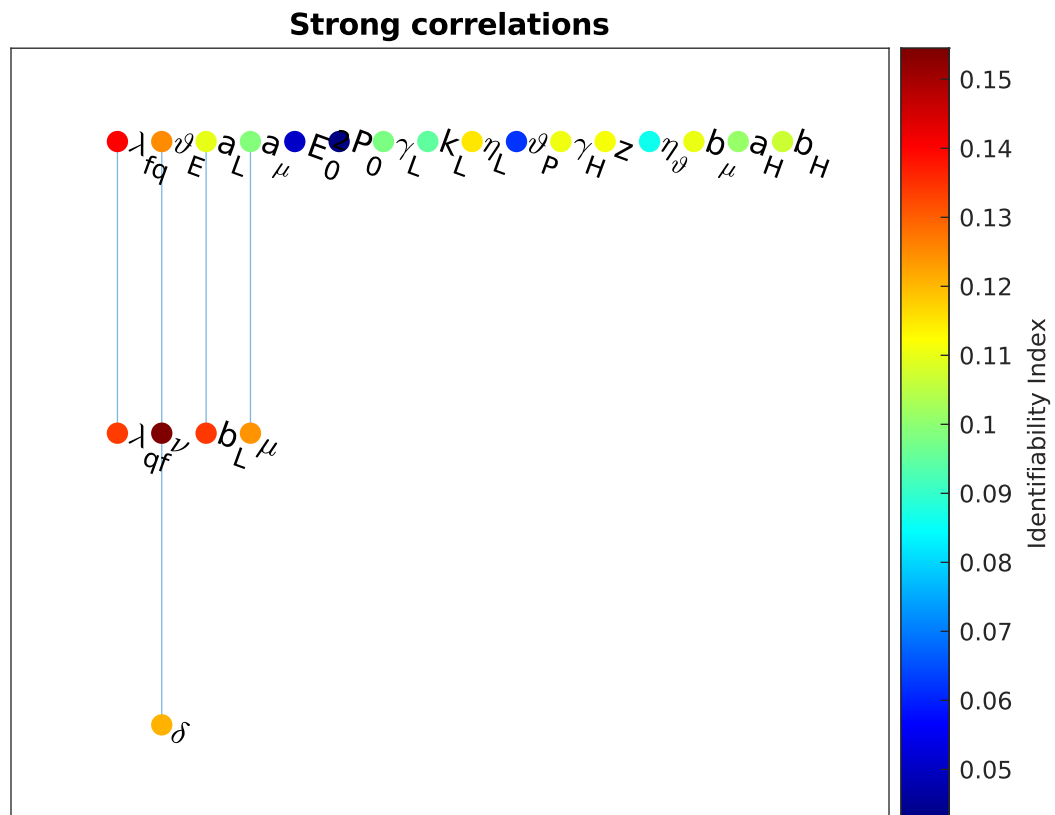
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
E^2_0	'0.0025'	'0.0052'	'0.0016'	'0.0027'	'0.0506'
P_0	'0'	'0.0003'	'0.0002'	'0.0002'	'0.0429'
\lambda_{fq}	'0.5992'	'0.6319'	'0.5246'	'0.6134'	'0.1403'
\vartheta_E	'0.0076'	'0.0171'	'0.0999'	'0.0087'	'0.1251'
\gamma_L	'0.1044'	'0.1675'	'0.1265'	'0.1256'	'0.0981'
k_L	'1.5974'	'9.1'	'5.5629'	'2.6886'	'0.0949'
\lambda_{qf}	'0.3989'	'0.415'	'0.3105'	'0.4139'	'0.1336'
\delta	'0.0061'	'0.0081'	'0.0252'	'0.0063'	'0.1209'
\eta_L	'0.6221'	'0.6783'	'0.6976'	'0.6557'	'0.1149'
\vartheta_P	'0.0017'	'0.0022'	'0.0004'	'0.0019'	'0.0622'
\gamma_H	'0.0296'	'0.0985'	'0.2652'	'0.0947'	'0.1109'
z	'6.7063'	'7.0873'	'6.9766'	'7.0823'	'0.1117'
\eta_{\vartheta}	'0.9269'	'0.9809'	'0.704'	'0.9721'	'0.0865'
a_L	'9.3974'	'14.3297'	'7.5707'	'12.9422'	'0.1098'
b_L	'10.5341'	'15'	'9.3678'	'14.9379'	'0.1341'
a_{\mu}	'1.4703'	'4.3057'	'2.1216'	'3.3731'	'0.099'
b_{\mu}	'7.1081'	'14.0364'	'9.0943'	'12.7931'	'0.1102'
\mu	'0.039'	'0.0565'	'0.1708'	'0.0525'	'0.1241'
a_H	'1'	'7.845'	'5.0708'	'1.0272'	'0.101'
b_H	'2.715'	'15'	'8.3363'	'14.9467'	'0.1068'
\nu	'22.8703'	'30.2379'	'159.9686'	'23.1866'	'0.1545'

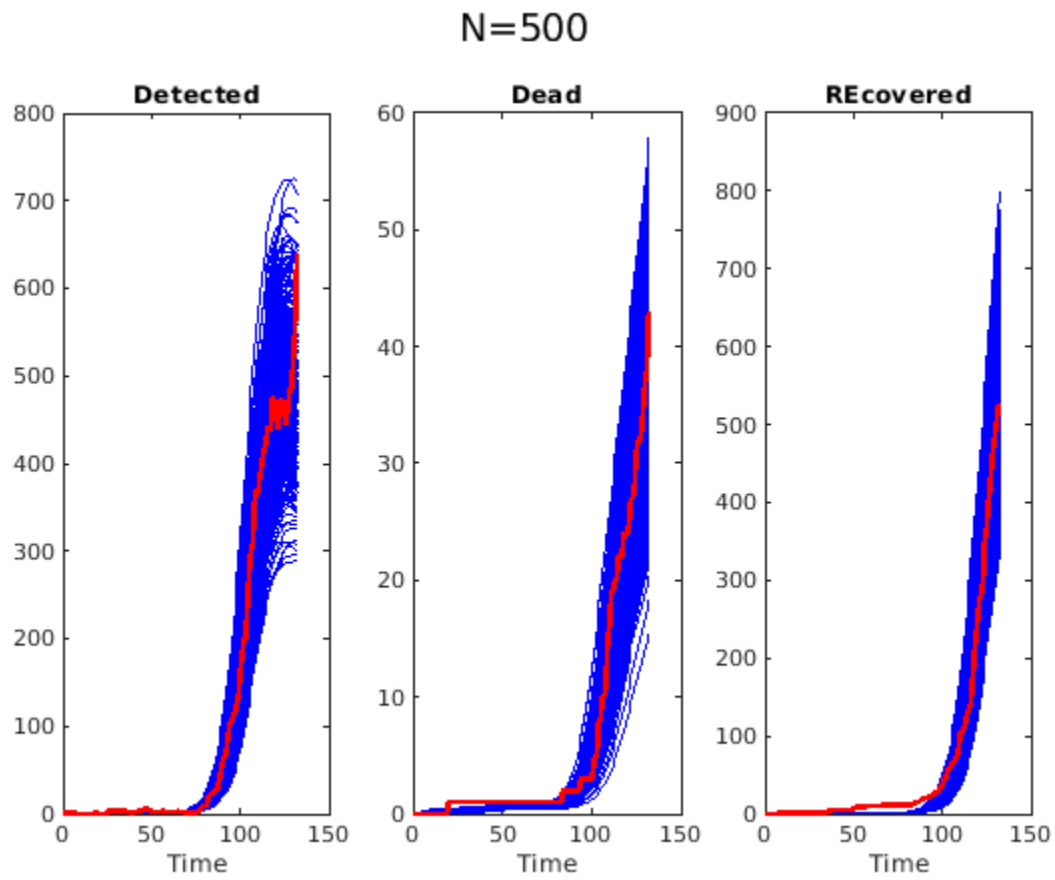
1.3. Identifiability analysis







1.4. Uncertainty analysis



Chapter 2. Extension number2

2.1. Basic information

The extension to be validated consists of the time series from the data133 to the 170. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

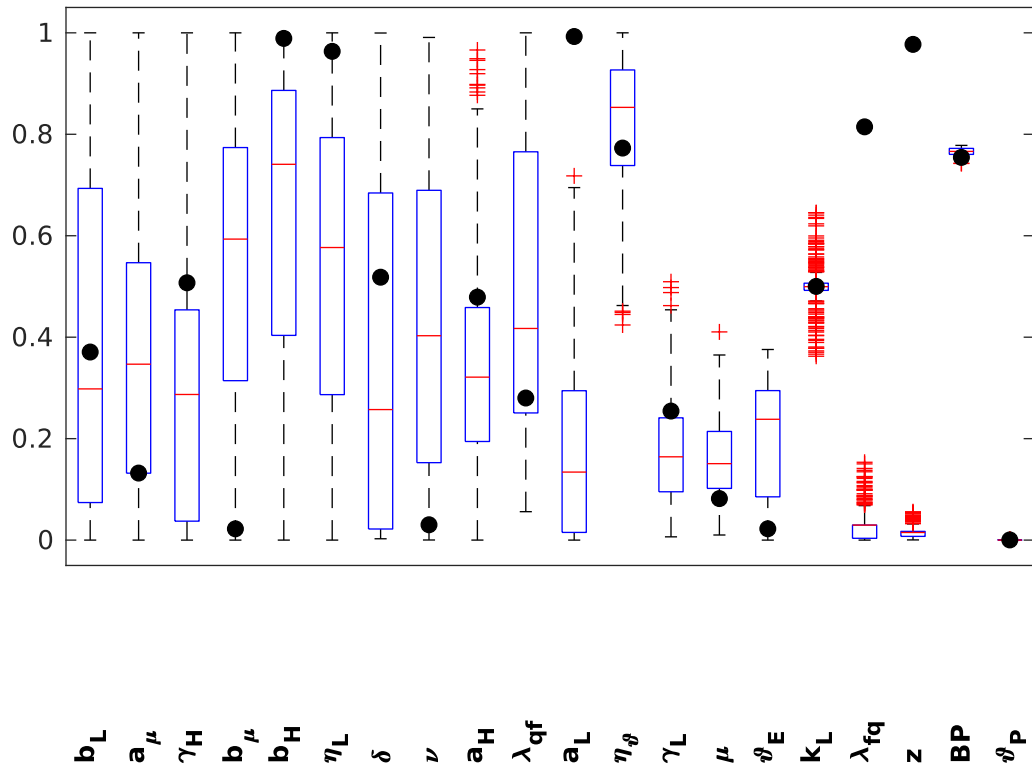
2.2. Estimated parameters with their intervals

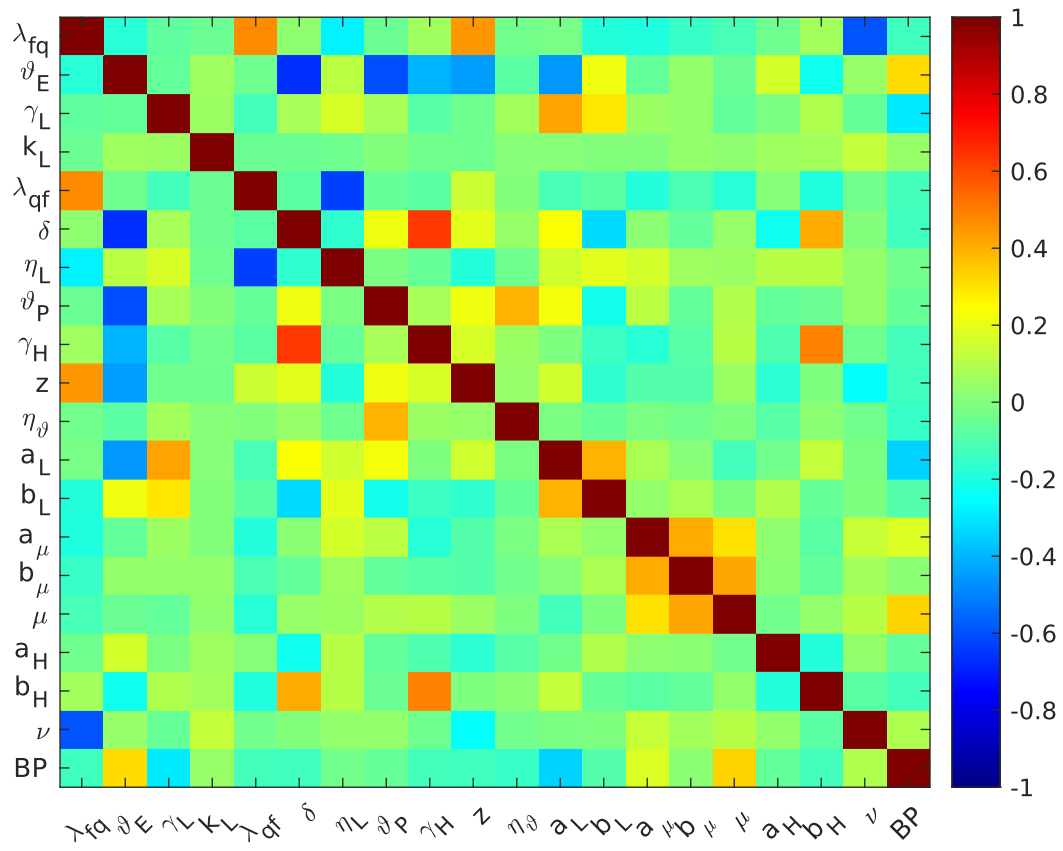
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

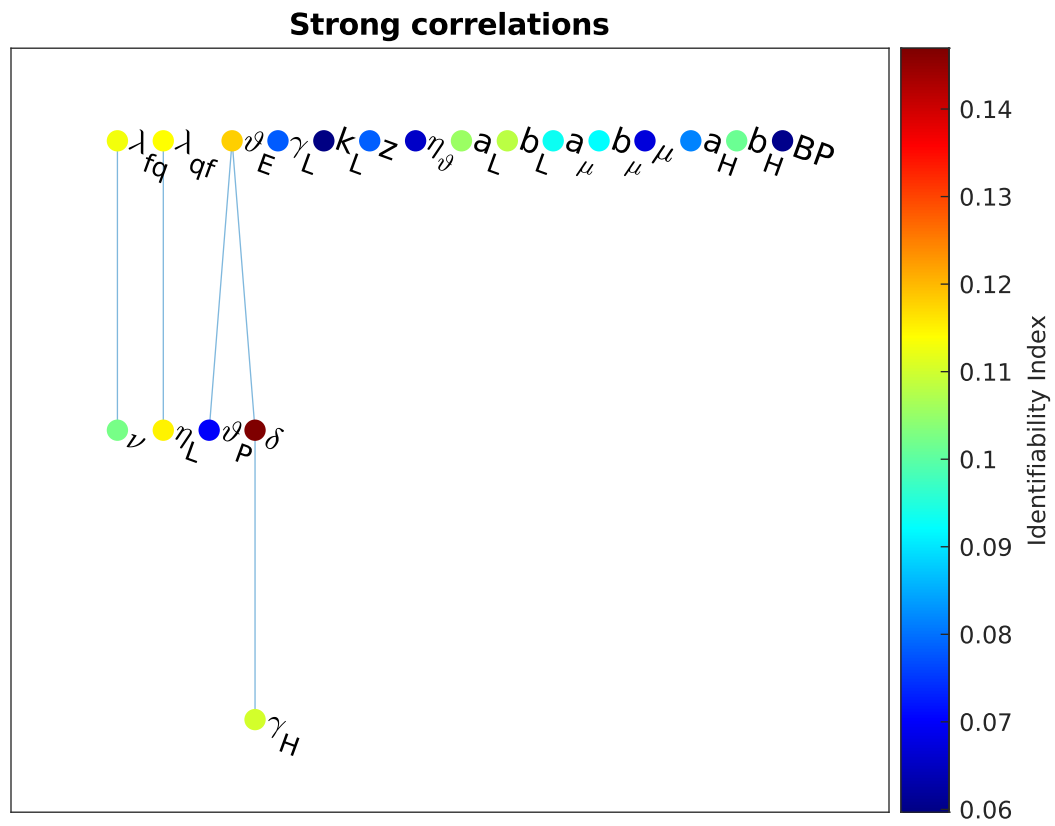
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.6842'	'0.9842'	'0.0297'	'0.8147'	'0.1131'
ϑ_E	'0.0134'	'0.0503'	'0.2382'	'0.0223'	'0.1183'
γ_L	'0.1787'	'0.2554'	'0.1643'	'0.2544'	'0.0784'
k_L	'1'	'8.695'	'5.4964'	'5.5012'	'0.0597'
λ_{qf}	'0.0228'	'0.2995'	'0.4172'	'0.2801'	'0.1141'
δ	'0.0425'	'0.1141'	'0.0386'	'0.0777'	'0.1469'
η_L	'0.1515'	'0.9647'	'0.5768'	'0.9635'	'0.1149'
ϑ_P	'0.0003'	'0.0006'	'0.0001'	'0.0003'	'0.0701'
γ_H	'0.2131'	'0.641'	'0.2871'	'0.5073'	'0.1101'
z	'15.0044'	'30'	'0.4501'	'29.3169'	'0.0785'
η_{ϑ}	'0.7102'	'0.7765'	'0.8529'	'0.7728'	'0.0656'
a_L	'11.0783'	'15'	'2.8854'	'14.8983'	'0.1056'
b_L	'3.968'	'6.3155'	'5.1729'	'6.1904'	'0.1084'
a_{μ}	'2.6048'	'13.7764'	'5.855'	'2.8499'	'0.0933'
b_{μ}	'1.0272'	'2.0895'	'9.3072'	'1.311'	'0.0921'
μ	'0.0092'	'0.1667'	'0.1509'	'0.0818'	'0.0675'
a_H	'5.6967'	'7.777'	'5.5036'	'7.7048'	'0.0816'
b_H	'11.1828'	'15'	'11.3713'	'14.8462'	'0.1015'
ν	'13.2272'	'20.5925'	'201.4506'	'15.116'	'0.1026'
BP	'128.4761'	'130.0648'	'130.5'	'128.4986'	'0.0604'

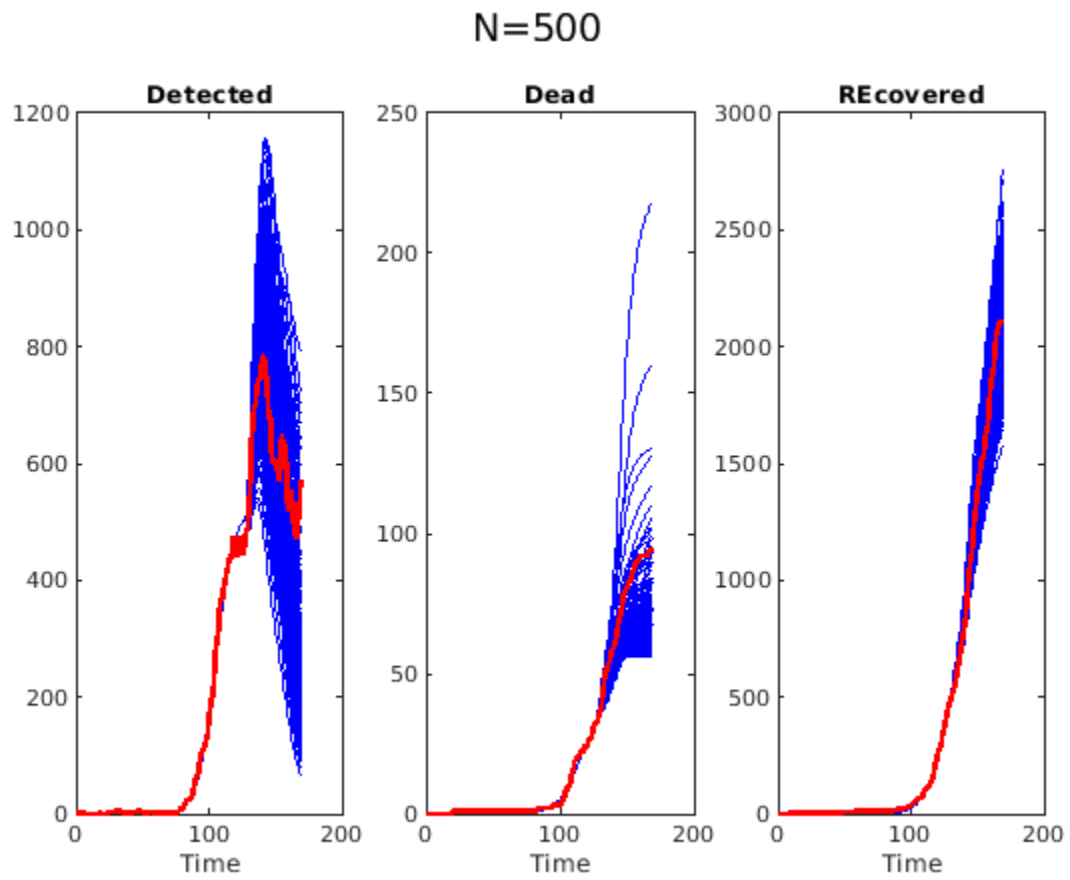
2.3. Identifiability analysis







2.4. Uncertainty analysis



Chapter 3. Extension number3

3.1. Basic information

The extension to be validated consists of the time series from the data170 to the 196. The status of the validation is: COMPLETED.

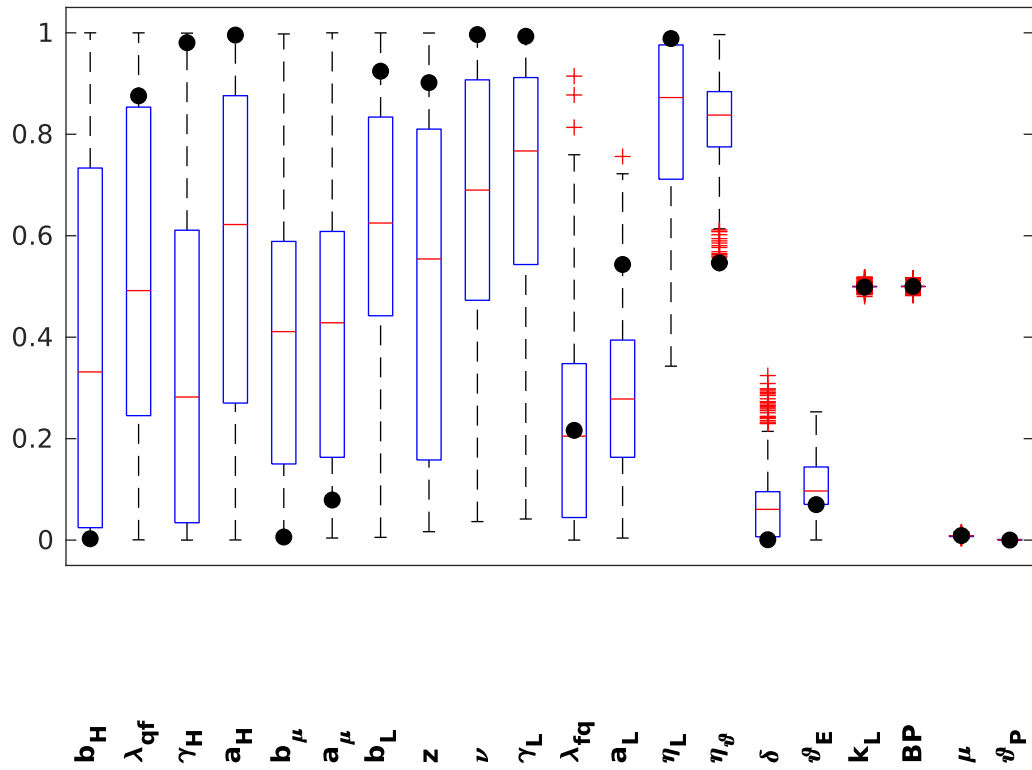
The number of estimations needed to perform the validation was1000.

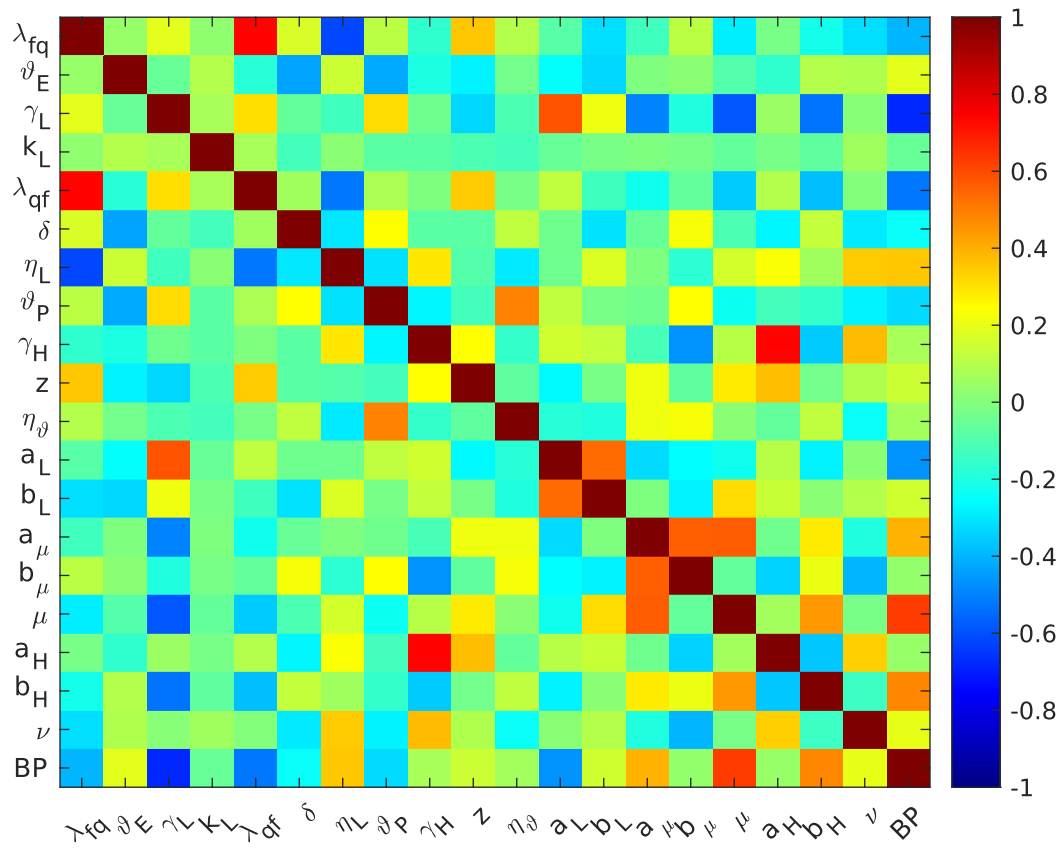
3.2. Estimated parameters with their intervals

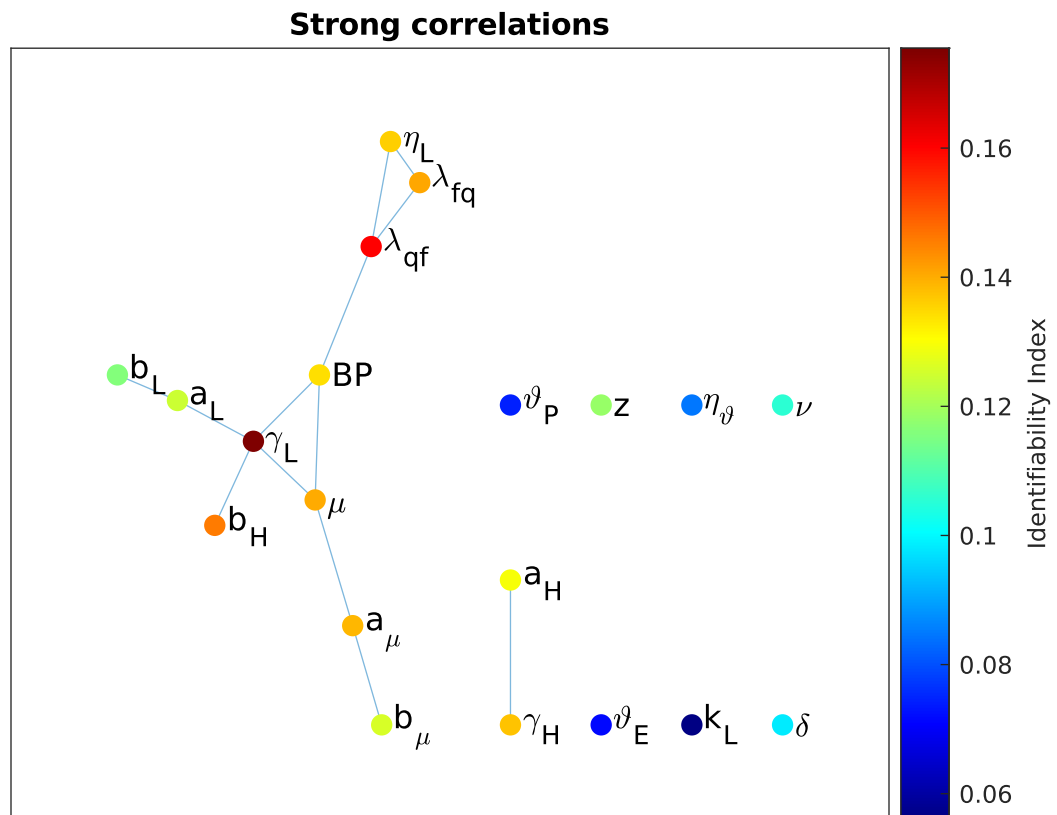
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.1687'	'0.2412'	'0.2049'	'0.2164'	'0.1409'
ϑ_E	'0.0888'	'0.1048'	'0.0968'	'0.0699'	'0.0718'
γ_L	'0.7283'	'0.8059'	'0.7671'	'0.9932'	'0.1755'
k_L	'5.3473'	'5.6522'	'5.4997'	'5.4887'	'0.0562'
λ_{qf}	'0.447'	'0.5367'	'0.4918'	'0.8758'	'0.1601'
δ	'0.0043'	'0.0139'	'0.0091'	'0.0001'	'0.0985'
η_L	'0.8394'	'0.9053'	'0.8724'	'0.9887'	'0.136'
ϑ_P	'0.0003'	'0.0007'	'0.0005'	'0.0001'	'0.0746'
γ_H	'0.2322'	'0.3321'	'0.2821'	'0.9805'	'0.1376'
z	'15.1385'	'18.1122'	'16.6254'	'27.0538'	'0.1182'
η_{ϑ}	'0.8126'	'0.863'	'0.8378'	'0.5465'	'0.085'
a_L	'4.5597'	'5.2288'	'4.8942'	'8.6066'	'0.1247'
b_L	'9.2449'	'10.2569'	'9.7509'	'13.941'	'0.1161'
a_{μ}	'6.427'	'7.5683'	'6.9976'	'2.1066'	'0.139'
b_{μ}	'6.2071'	'7.3006'	'6.7538'	'1.085'	'0.1258'
μ	'0'	'0.0404'	'0.0084'	'0.0089'	'0.1401'
a_H	'9.0446'	'10.374'	'9.7093'	'14.9376'	'0.1298'
b_H	'4.8822'	'6.4003'	'5.6412'	'1.0364'	'0.146'
ν	'326.5685'	'363.4248'	'344.9966'	'498.2595'	'0.1057'
BP	'164.2717'	'164.7283'	'164.5'	'164.5'	'0.1341'

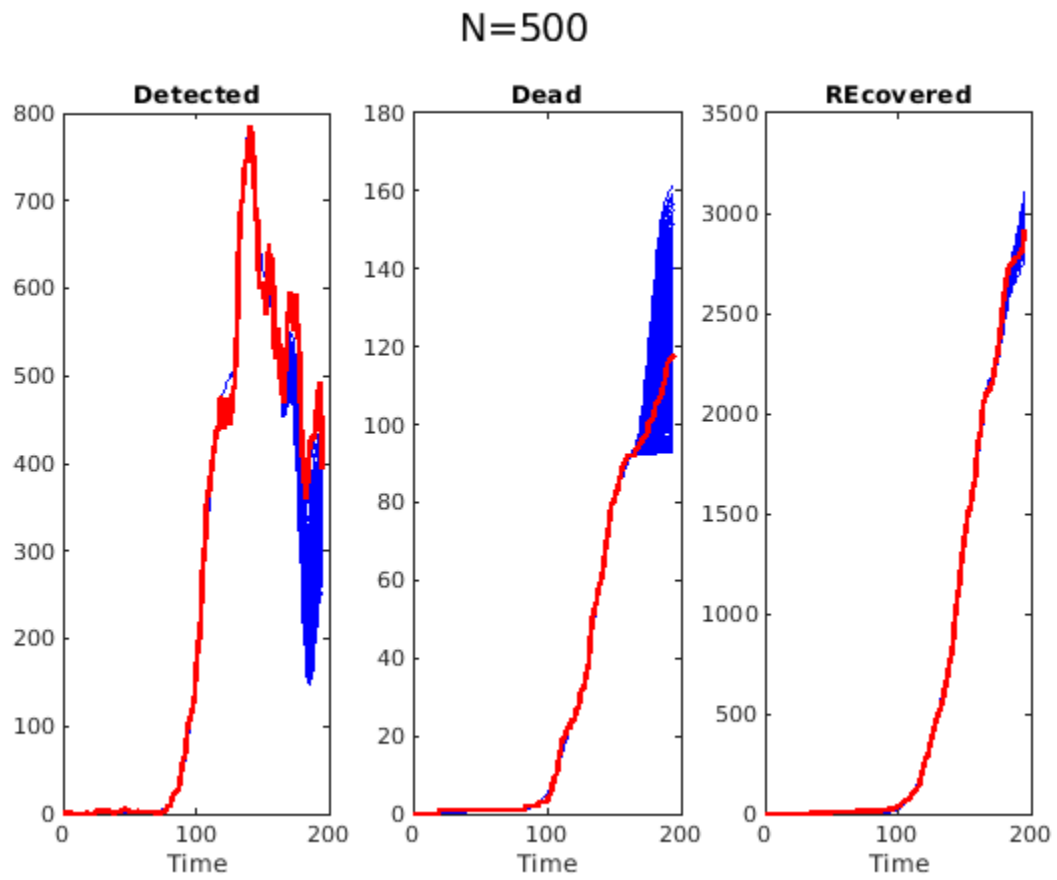
3.3. Identifiability analysis







3.4. Uncertainty analysis



Chapter 4. Extension number4

4.1. Basic information

The extension to be validated consists of the time series from the data196 to the 216. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

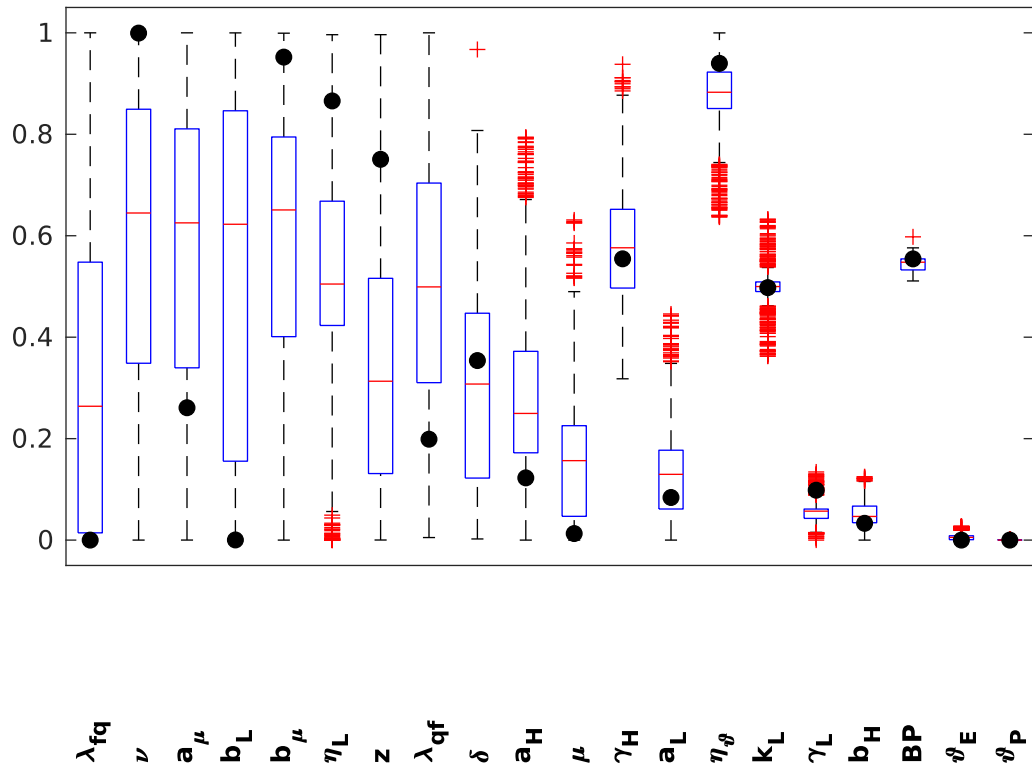
4.2. Estimated parameters with their intervals

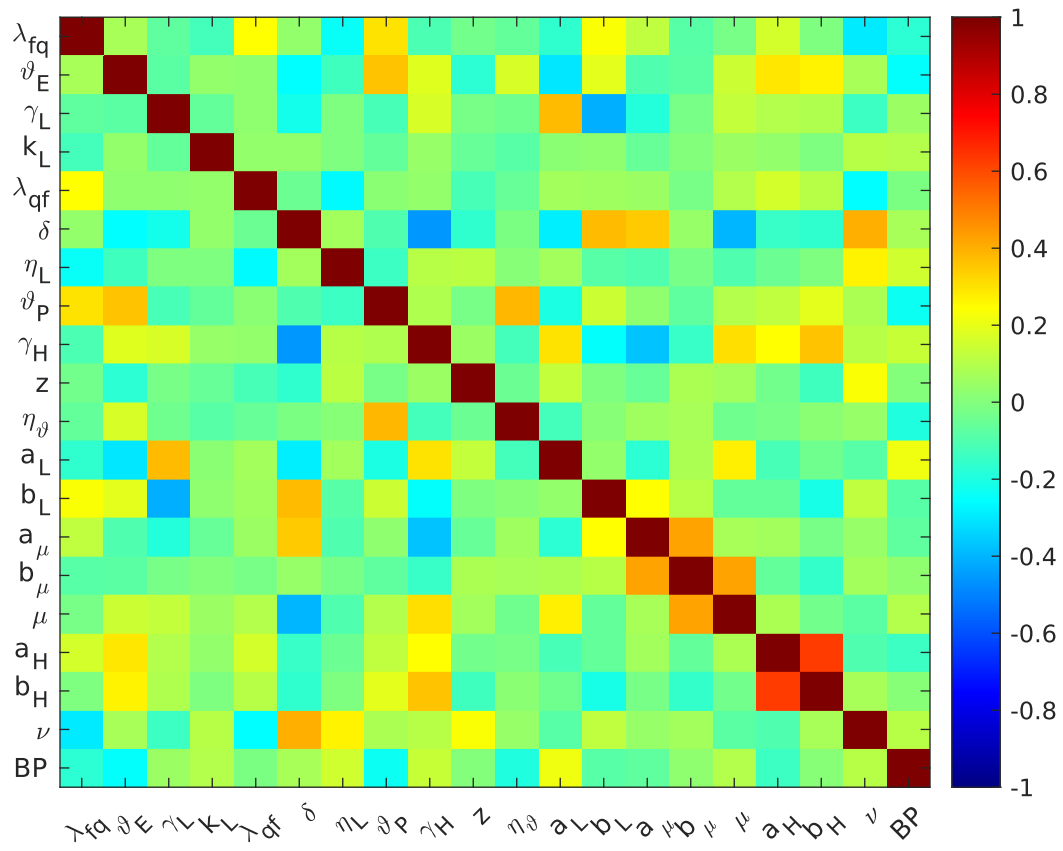
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

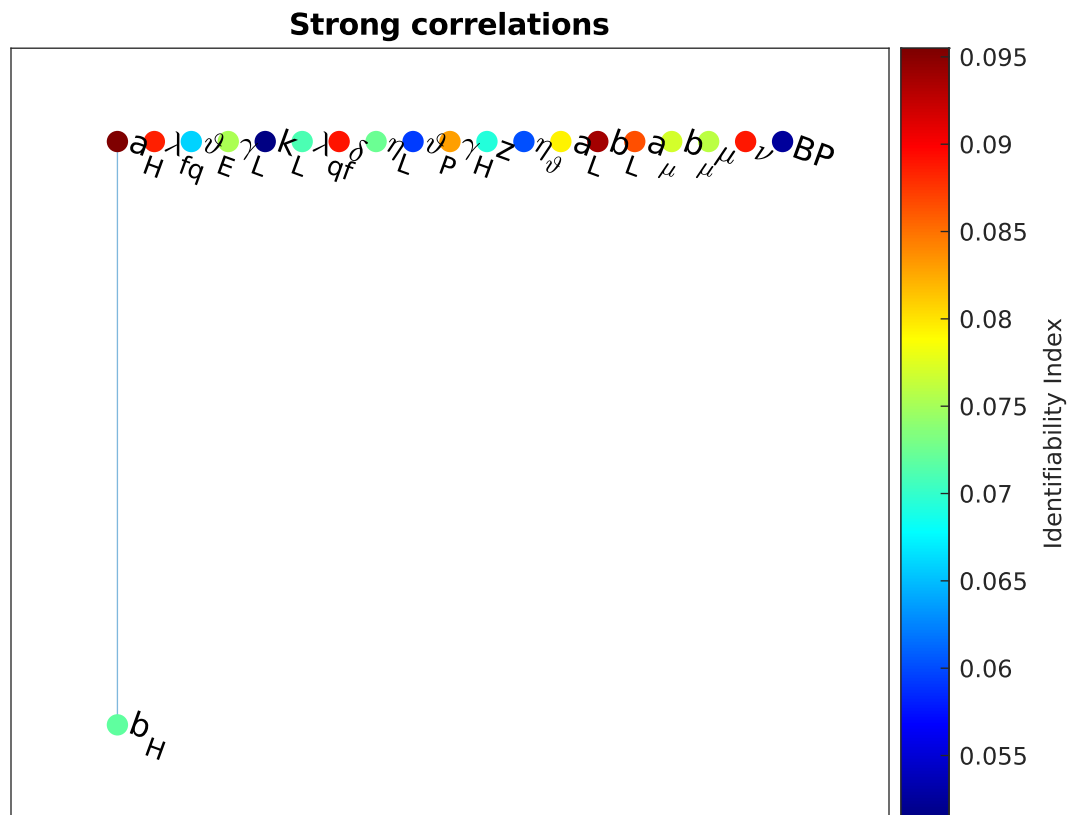
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0'	'0.2639'	'0'	'0.0886'
ϑ_E	'0'	'0.0001'	'0.0053'	'0'	'0.0659'
γ_L	'0.0042'	'0.1313'	'0.0571'	'0.0983'	'0.0753'
k_L	'1'	'10'	'5.4985'	'5.4791'	'0.0514'
λ_{qf}	'0.0859'	'0.4301'	'0.4991'	'0.1989'	'0.0712'
δ	'0.0366'	'0.055'	'0.0461'	'0.0531'	'0.0891'
η_L	'0.0638'	'0.8682'	'0.5048'	'0.8657'	'0.0725'
ϑ_P	'0'	'0'	'0.0001'	'0'	'0.0595'
γ_H	'0.2507'	'1'	'0.5763'	'0.5545'	'0.083'
z	'8.1961'	'24.1258'	'9.3957'	'22.5195'	'0.0694'
η_{ϑ}	'0.4935'	'1'	'0.8829'	'0.9398'	'0.0602'
a_L	'1'	'13.6'	'2.8148'	'2.1758'	'0.0794'
b_L	'1'	'11.206'	'9.7167'	'1.004'	'0.0938'
a_{μ}	'1'	'14.44'	'9.7551'	'4.6531'	'0.0864'
b_{μ}	'1'	'14.44'	'10.1119'	'14.3299'	'0.077'
μ	'0.0006'	'0.029'	'0.1566'	'0.0129'	'0.076'
a_H	'2.3268'	'13.7618'	'4.4958'	'2.7175'	'0.0955'
b_H	'1.0445'	'3.1367'	'1.6528'	'1.4633'	'0.072'
ν	'382.1425'	'500'	'322.4128'	'499.7306'	'0.0889'
BP	'192.7167'	'200.401'	'195.1997'	'195.4998'	'0.0526'

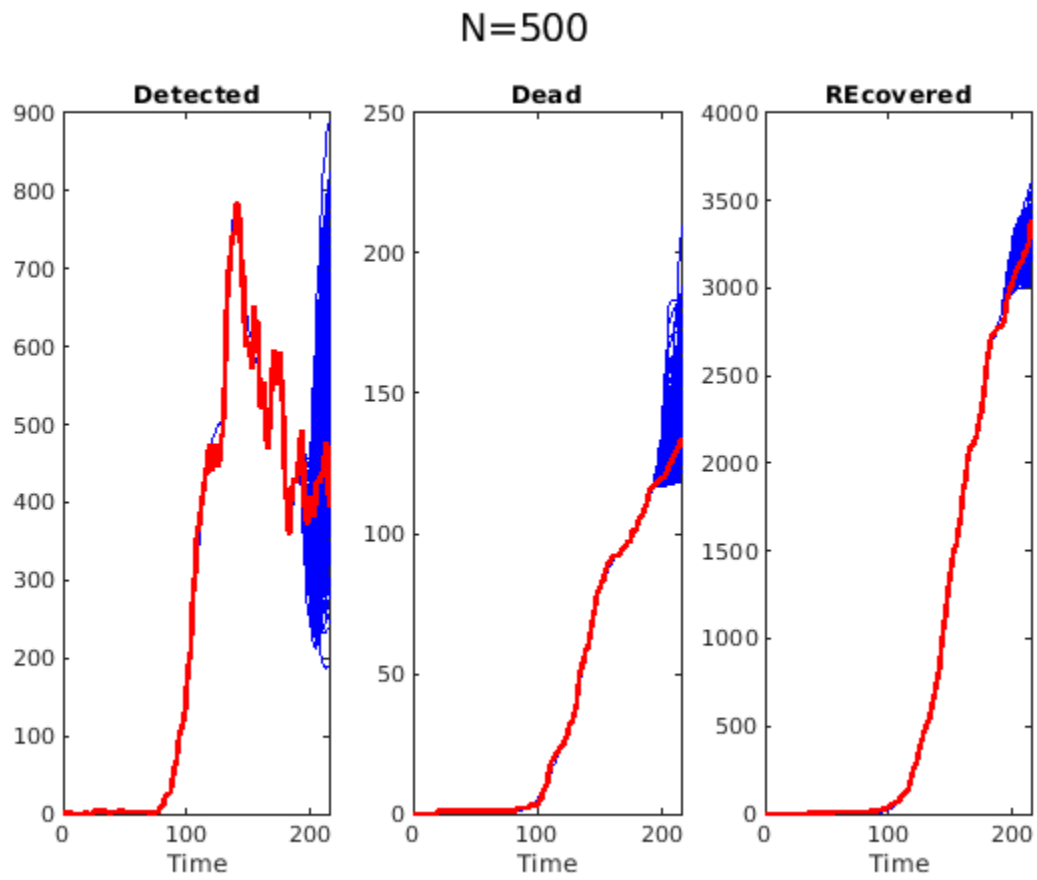
4.3. Identifiability analysis







4.4. Uncertainty analysys



Chapter 5. Extension number5

5.1. Basic information

The extension to be validated consists of the time series from the data216 to the 260. The status of the validation is: COMPLETED.

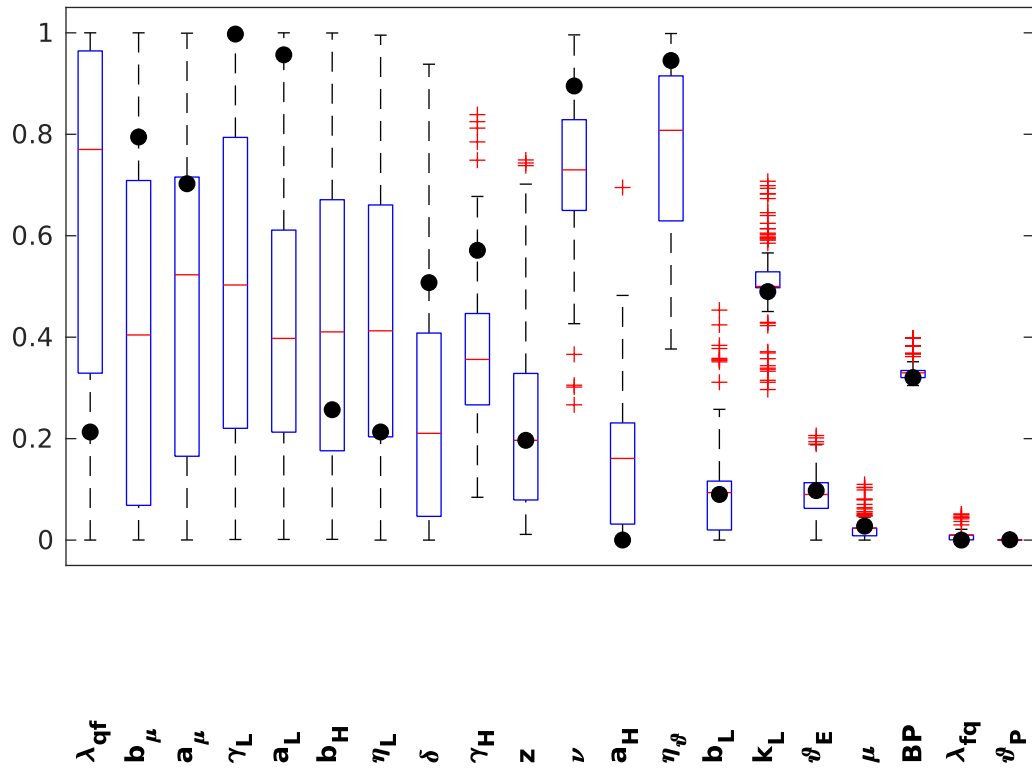
The number of estimations needed to perform the validation was1000.

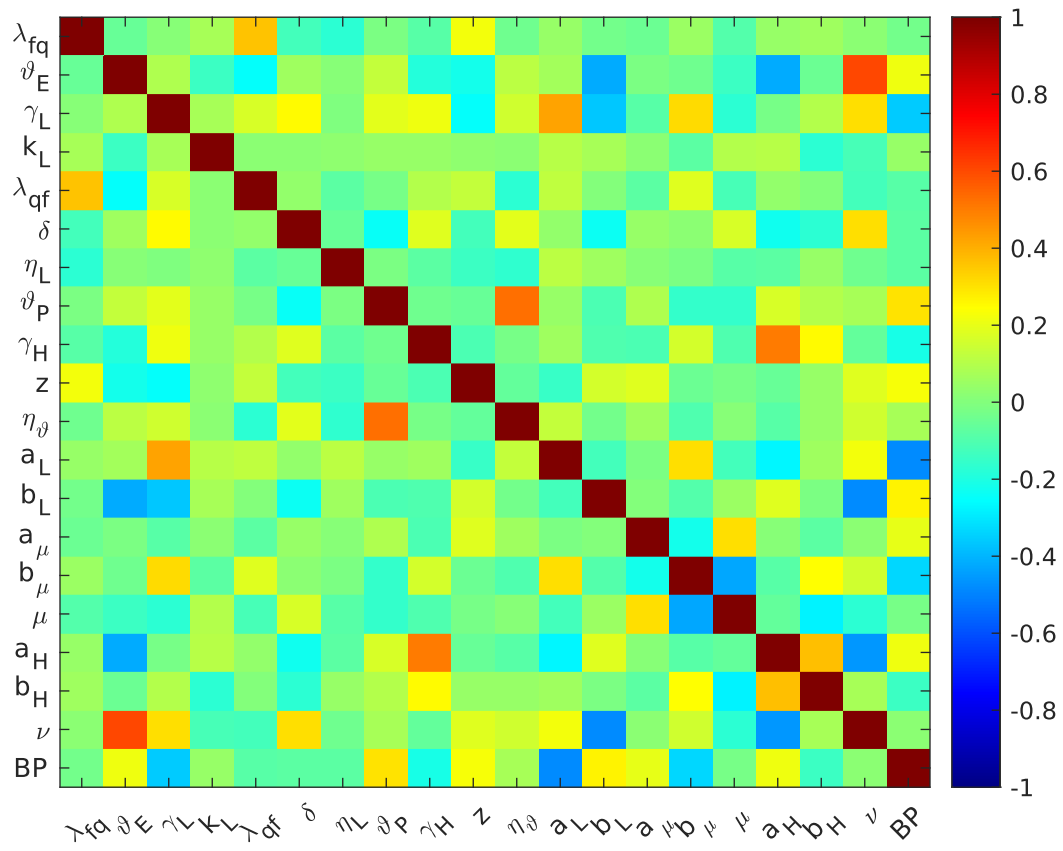
5.2. Estimated parameters with their intervals

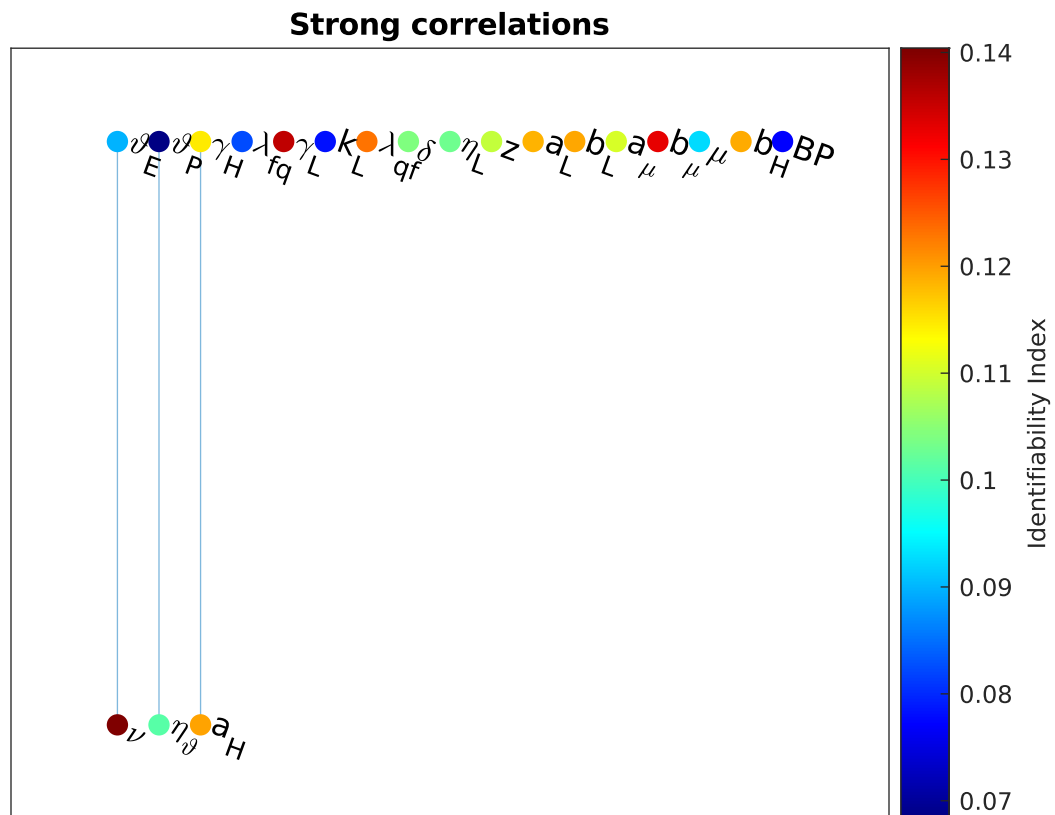
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0773'	'0.0099'	'0'	'0.0827'
ϑ_E	'0.0773'	'0.1026'	'0.0899'	'0.0975'	'0.0899'
γ_L	'0.4364'	'0.5694'	'0.5029'	'0.9975'	'0.1357'
k_L	'5.1643'	'5.8361'	'5.5002'	'5.409'	'0.0783'
λ_{qf}	'0.6978'	'0.8423'	'0.7701'	'0.2131'	'0.123'
δ	'0.0245'	'0.0387'	'0.0316'	'0.0761'	'0.1042'
η_L	'0.3498'	'0.4753'	'0.4125'	'0.2132'	'0.1031'
ϑ_P	'0'	'0.0003'	'0.0001'	'0.0007'	'0.0684'
γ_H	'0.3112'	'0.4011'	'0.3562'	'0.5713'	'0.1146'
z	'4.2751'	'7.5271'	'5.9011'	'5.9011'	'0.1089'
η_{ϑ}	'0.7702'	'0.8453'	'0.8078'	'0.9454'	'0.1014'
a_L	'5.7624'	'7.3709'	'6.5666'	'14.3931'	'0.1186'
b_L	'1.4744'	'3.1456'	'2.31'	'2.2605'	'0.1195'
a_{μ}	'7.3992'	'9.2454'	'8.3223'	'10.8345'	'0.1103'
b_{μ}	'5.6781'	'7.6451'	'6.6616'	'12.1243'	'0.1328'
μ	'0'	'0.0714'	'0.0234'	'0.0275'	'0.0928'
a_H	'2.696'	'3.8122'	'3.2541'	'1.0018'	'0.1196'
b_H	'5.827'	'7.6657'	'6.7464'	'4.5981'	'0.1191'
ν	'335.8586'	'394.0003'	'364.9295'	'447.6205'	'0.1404'
BP	'216.4507'	'217.7506'	'217.1006'	'216.5'	'0.0771'

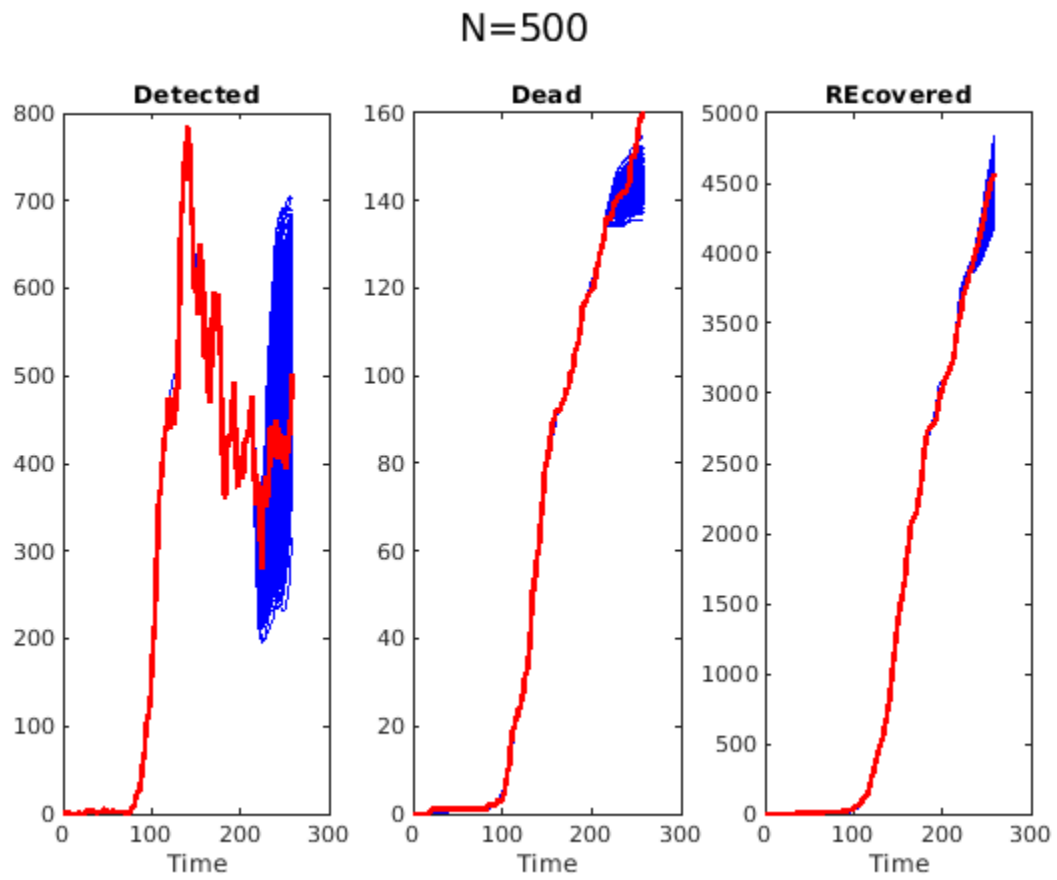
5.3. Identifiability analysys







5.4. Uncertainty analysys



Chapter 6. Extension number6

6.1. Basic information

The extension to be validated consists of the time series from the data260 to the 318. The status of the validation is: COMPLETED.

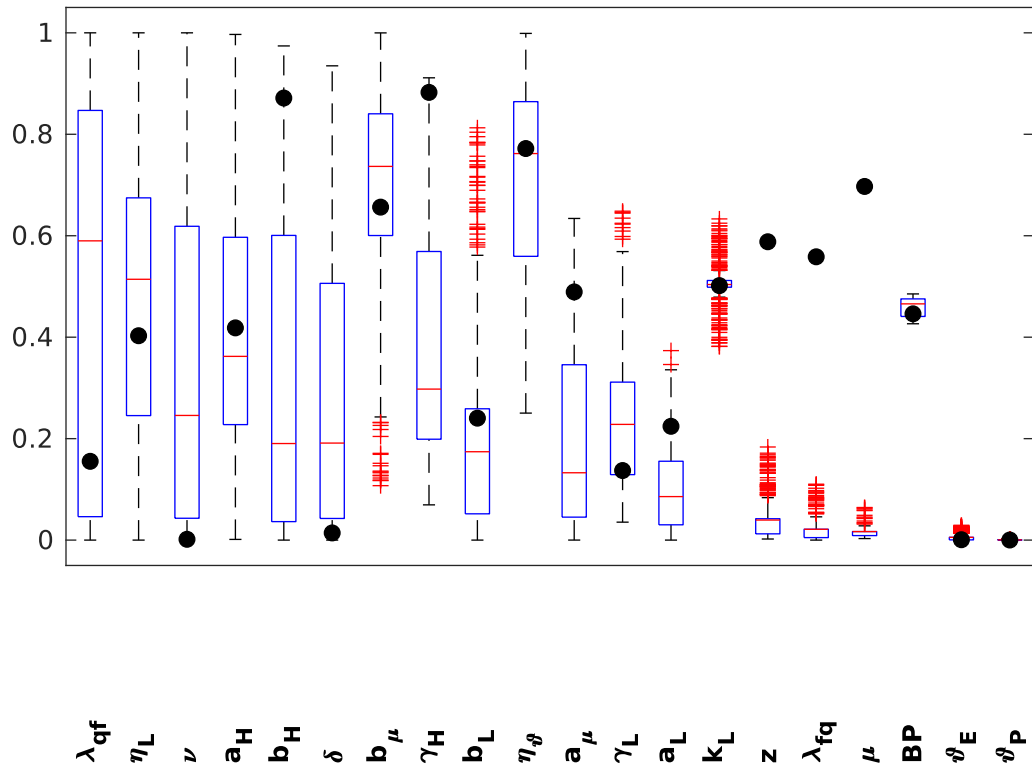
The number of estimations needed to perform the validation was1000.

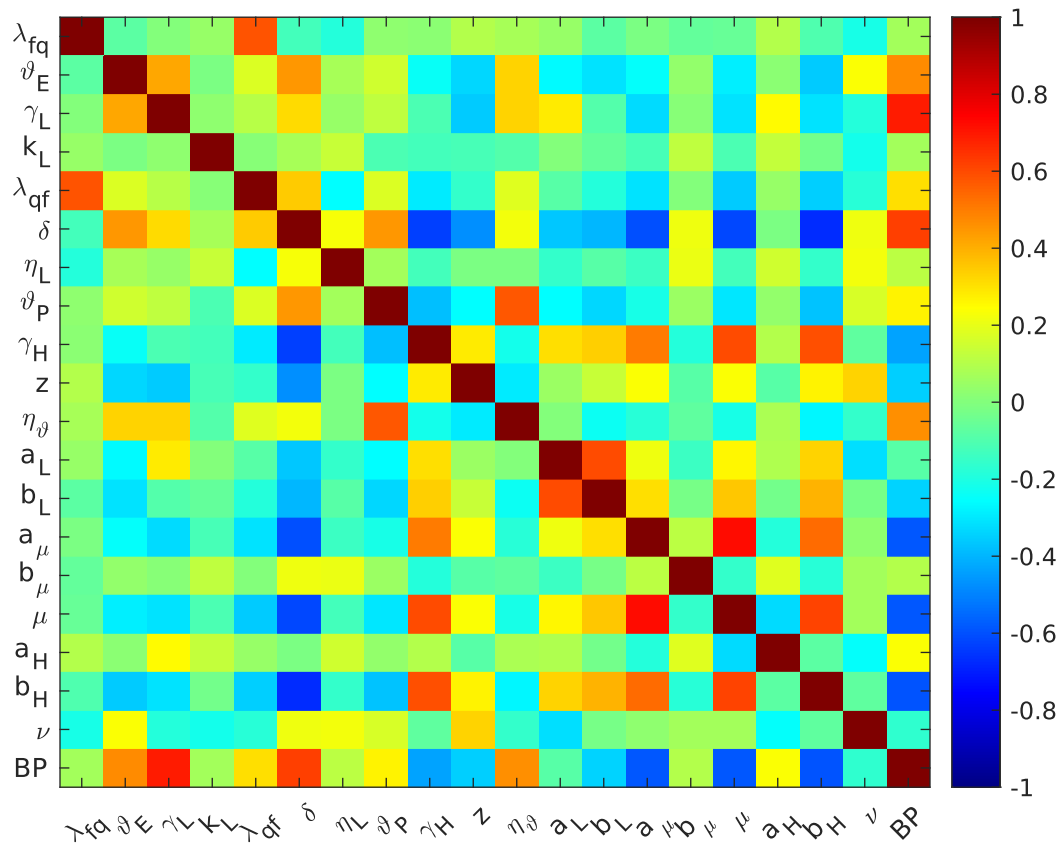
6.2. Estimated parameters with their intervals

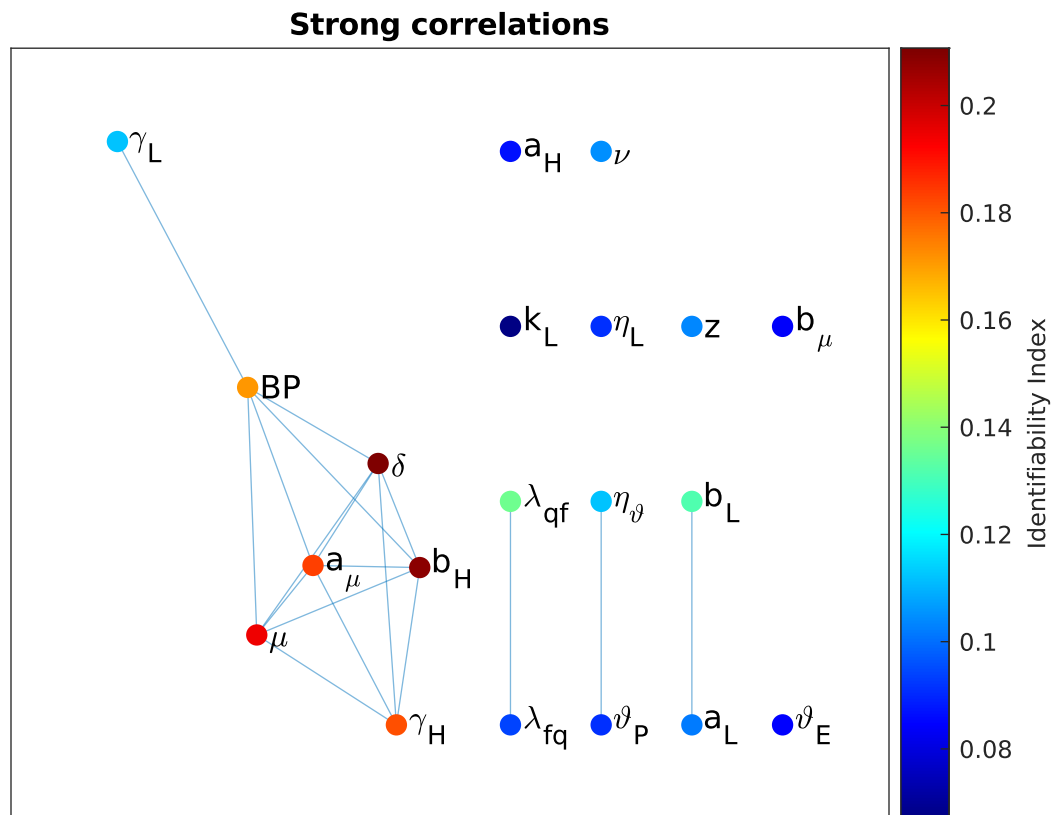
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0654'	'0.0214'	'0.5585'	'0.0943'
ϑ_E	'0.0016'	'0.0092'	'0.0054'	'0.0007'	'0.0848'
γ_L	'0.2075'	'0.2491'	'0.2283'	'0.1371'	'0.1121'
k_L	'5.3332'	'5.7361'	'5.5346'	'5.5148'	'0.0671'
λ_{qf}	'0.5424'	'0.6374'	'0.5899'	'0.1553'	'0.1361'
δ	'0.0234'	'0.0341'	'0.0287'	'0.0021'	'0.2107'
η_L	'0.4789'	'0.5494'	'0.5142'	'0.4029'	'0.0915'
ϑ_P	'0.0002'	'0.0006'	'0.0004'	'0.0002'	'0.0913'
γ_H	'0.2609'	'0.3351'	'0.298'	'0.8826'	'0.1813'
z	'0.3709'	'2.0019'	'1.1864'	'17.6441'	'0.1039'
η_{ϑ}	'0.737'	'0.787'	'0.762'	'0.7719'	'0.1123'
a_L	'1.9688'	'2.4339'	'2.2014'	'4.1407'	'0.1019'
b_L	'2.8709'	'4.0077'	'3.4393'	'4.3655'	'0.1318'
a_{μ}	'2.4931'	'3.2313'	'2.8622'	'7.8493'	'0.1833'
b_{μ}	'10.8272'	'11.7897'	'11.3085'	'10.1895'	'0.0839'
μ	'0'	'0.0578'	'0.0168'	'0.6972'	'0.1945'
a_H	'5.6206'	'6.5205'	'6.0706'	'6.8571'	'0.0869'
b_H	'3.0671'	'4.2802'	'3.6737'	'13.2004'	'0.2089'
ν	'102.4644'	'143.2717'	'122.8681'	'0.7937'	'0.1051'
BP	'263.2714'	'263.7286'	'263.5'	'261.5'	'0.1714'

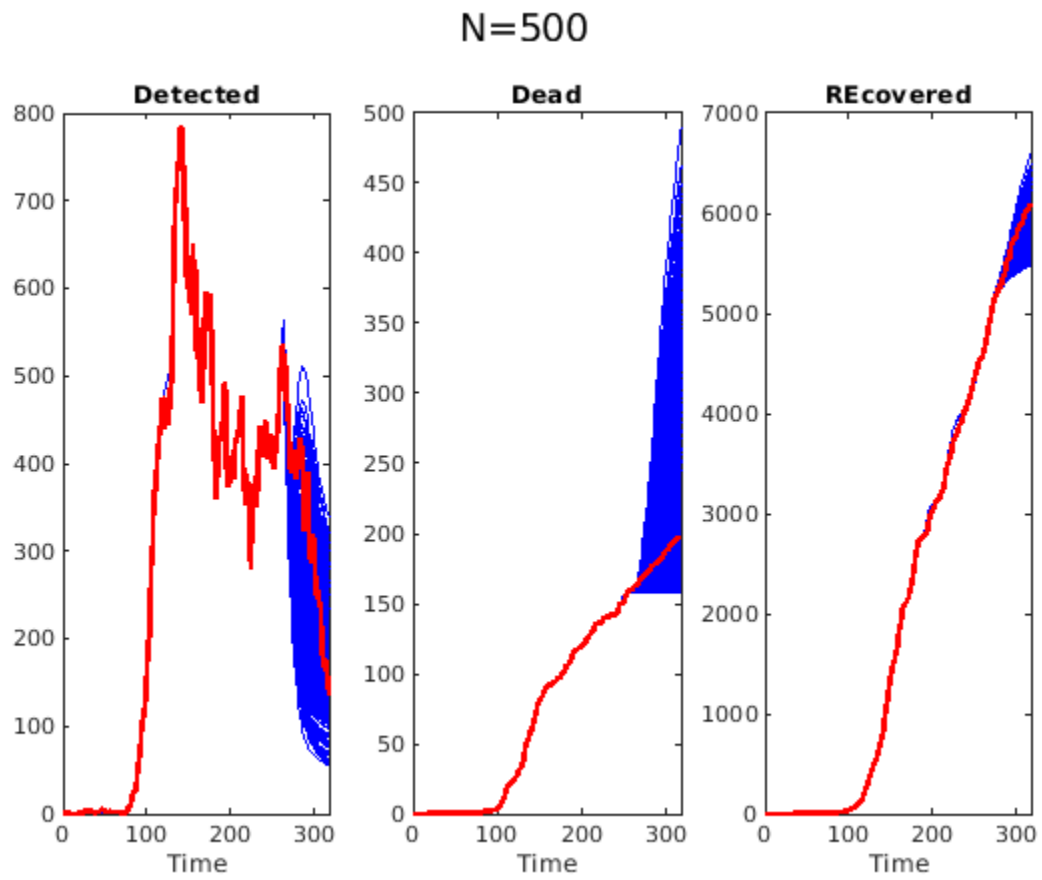
6.3. Identifiability analysis







6.4. Uncertainty analysys



Chapter 7. Extension number7

7.1. Basic information

The extension to be validated consists of the time series from the data318 to the 336. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

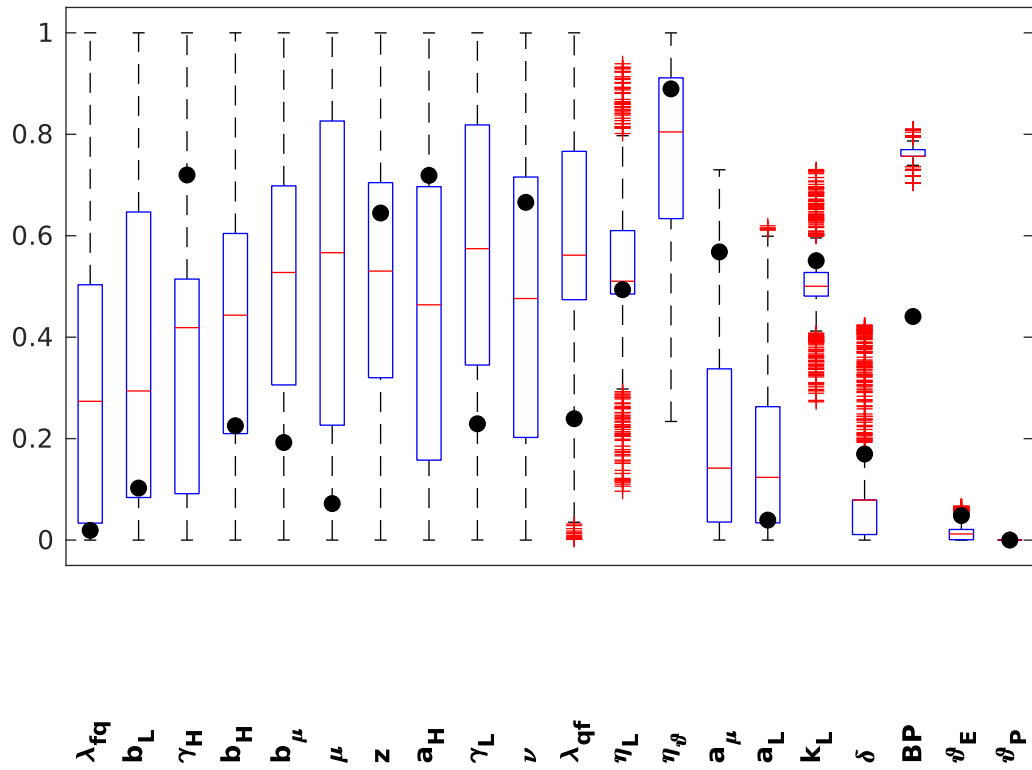
7.2. Estimated parameters with their intervals

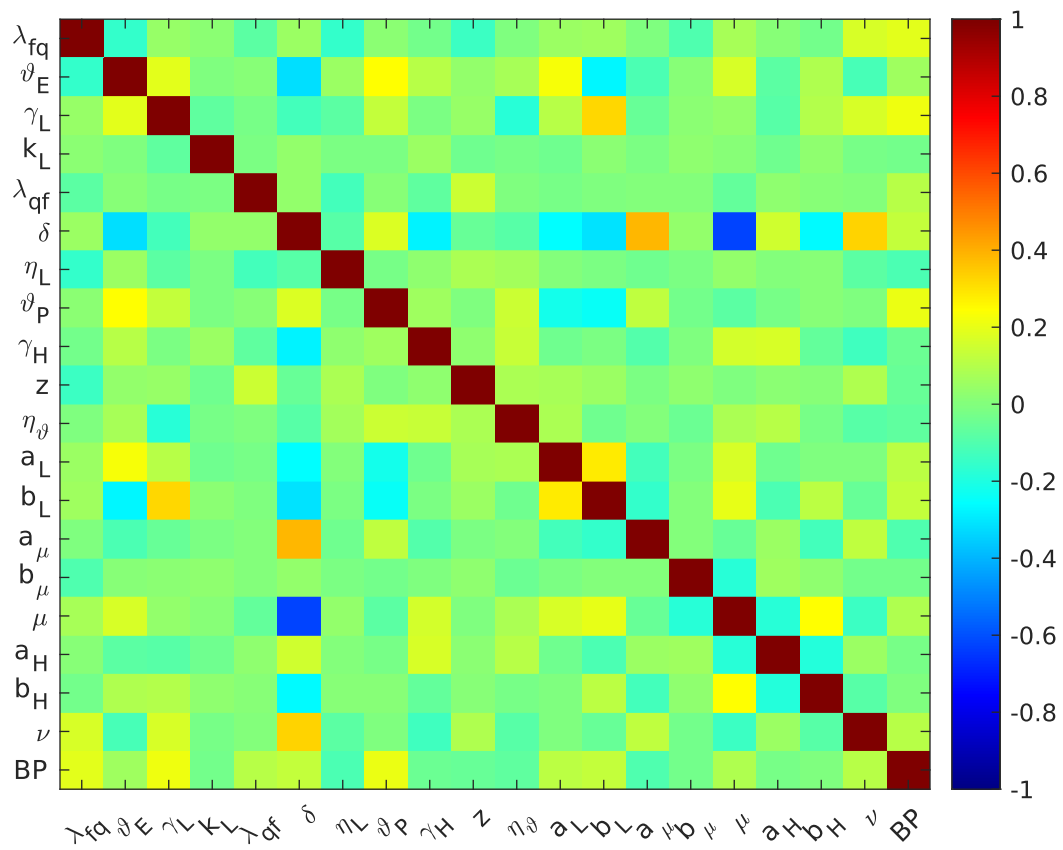
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

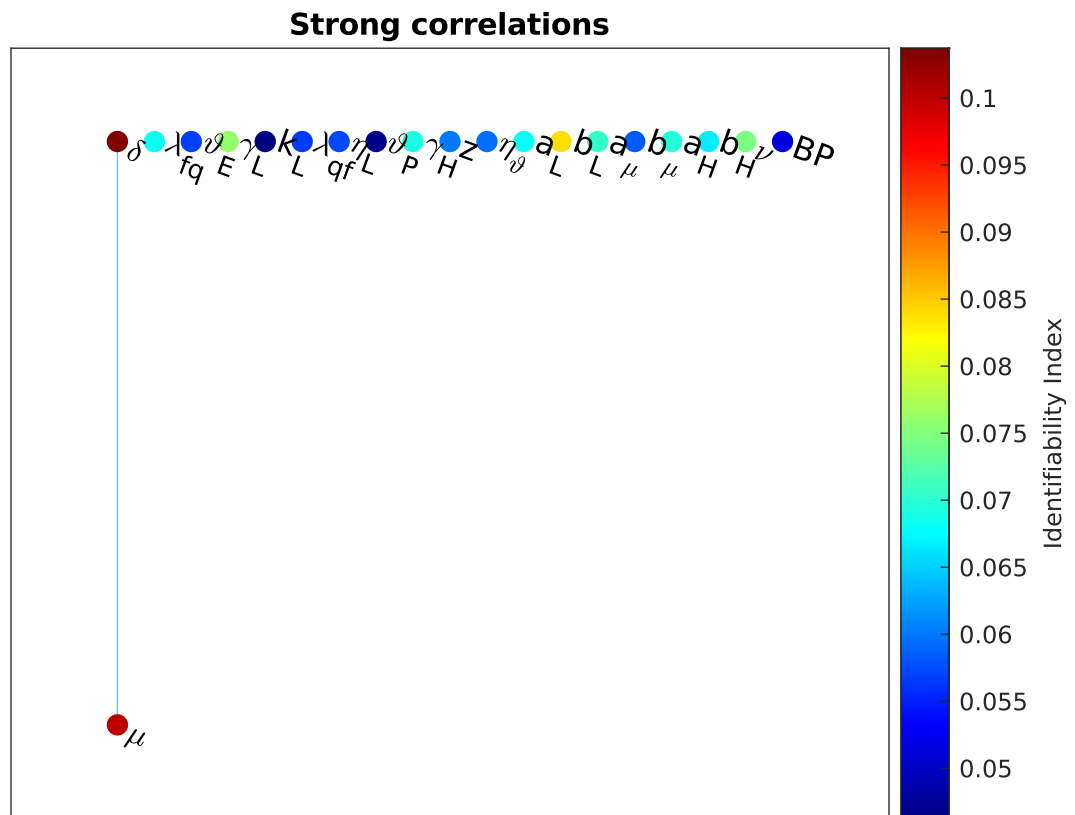
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0069'	'0.0354'	'0.2736'	'0.0192'	'0.0684'
ϑ_E	'0.0424'	'0.0655'	'0.0124'	'0.0483'	'0.057'
γ_L	'0.2251'	'0.3252'	'0.5745'	'0.2293'	'0.076'
k_L	'1.18'	'9.64'	'5.5033'	'5.9568'	'0.0463'
λ_{qf}	'0.2274'	'0.7022'	'0.5616'	'0.2393'	'0.0566'
δ	'0.0143'	'0.0277'	'0.0119'	'0.0255'	'0.1037'
η_L	'0.3983'	'0.9692'	'0.5104'	'0.4936'	'0.0574'
ϑ_P	'0'	'0.0001'	'0.0001'	'0.0001'	'0.0469'
γ_H	'0.0691'	'0.9181'	'0.4188'	'0.7198'	'0.0692'
z	'12.0026'	'23.8497'	'15.9093'	'19.3437'	'0.0604'
η_{ϑ}	'0.6038'	'0.9499'	'0.8046'	'0.8895'	'0.0597'
a_L	'1.3472'	'2.3804'	'2.734'	'1.5519'	'0.0681'
b_L	'1.4836'	'3.0814'	'5.1158'	'2.436'	'0.0839'
a_{μ}	'4.3144'	'15'	'2.9876'	'8.9539'	'0.0706'
b_{μ}	'1.6121'	'14.454'	'8.3858'	'3.6938'	'0.0585'
μ	'0'	'0.1277'	'0.5666'	'0.072'	'0.1002'
a_H	'5.8277'	'14.2075'	'7.4935'	'11.0652'	'0.0697'
b_H	'2.7672'	'12.2867'	'7.2076'	'4.1566'	'0.0668'
ν	'307.984'	'414.4462'	'238.096'	'332.9085'	'0.0746'
BP	'293.3547'	'300.6583'	'317.5'	'293.5'	'0.0514'

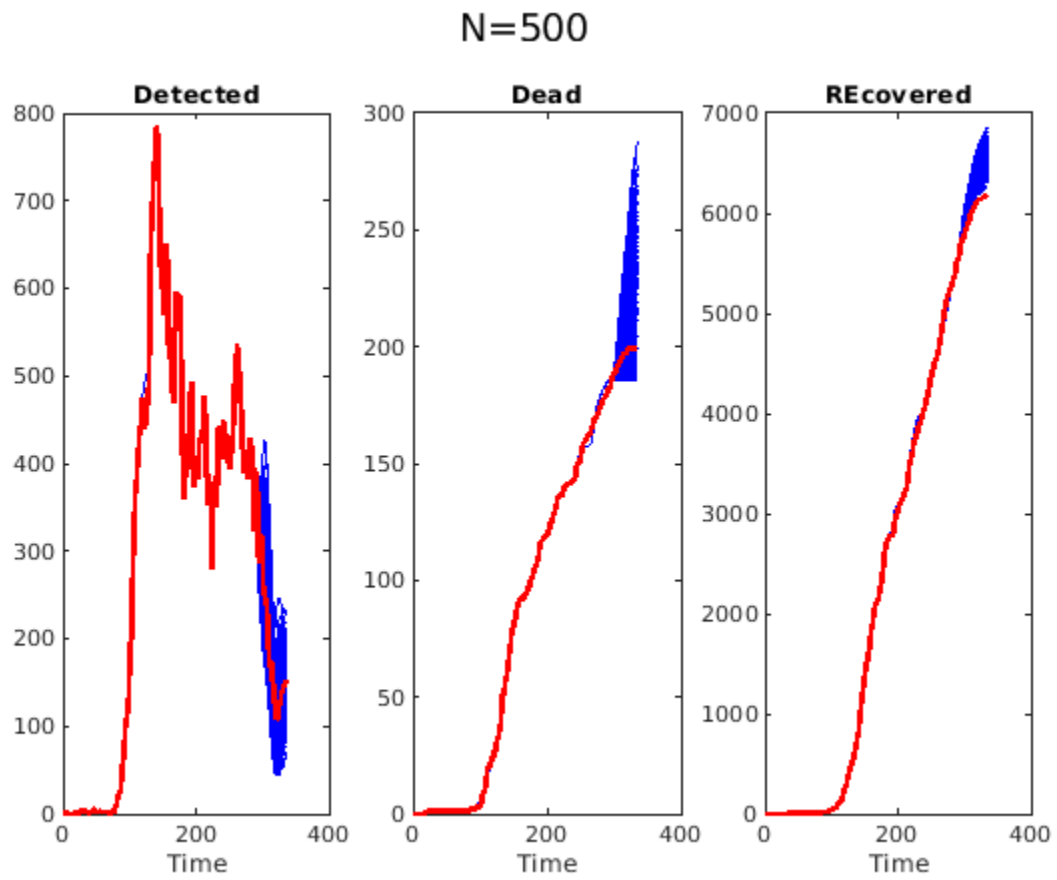
7.3. Identifiability analysis







7.4. Uncertainty analysys



Chapter 8. Extension number8

8.1. Basic information

The extension to be validated consists of the time series from the data336 to the 368. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

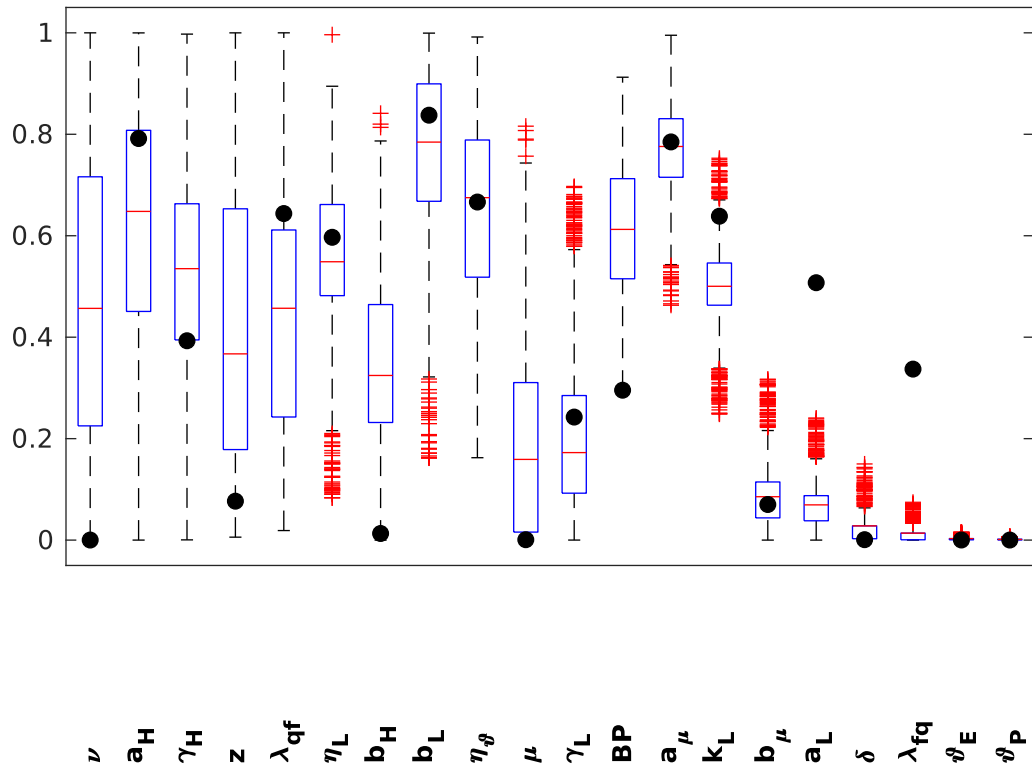
8.2. Estimated parameters with their intervals

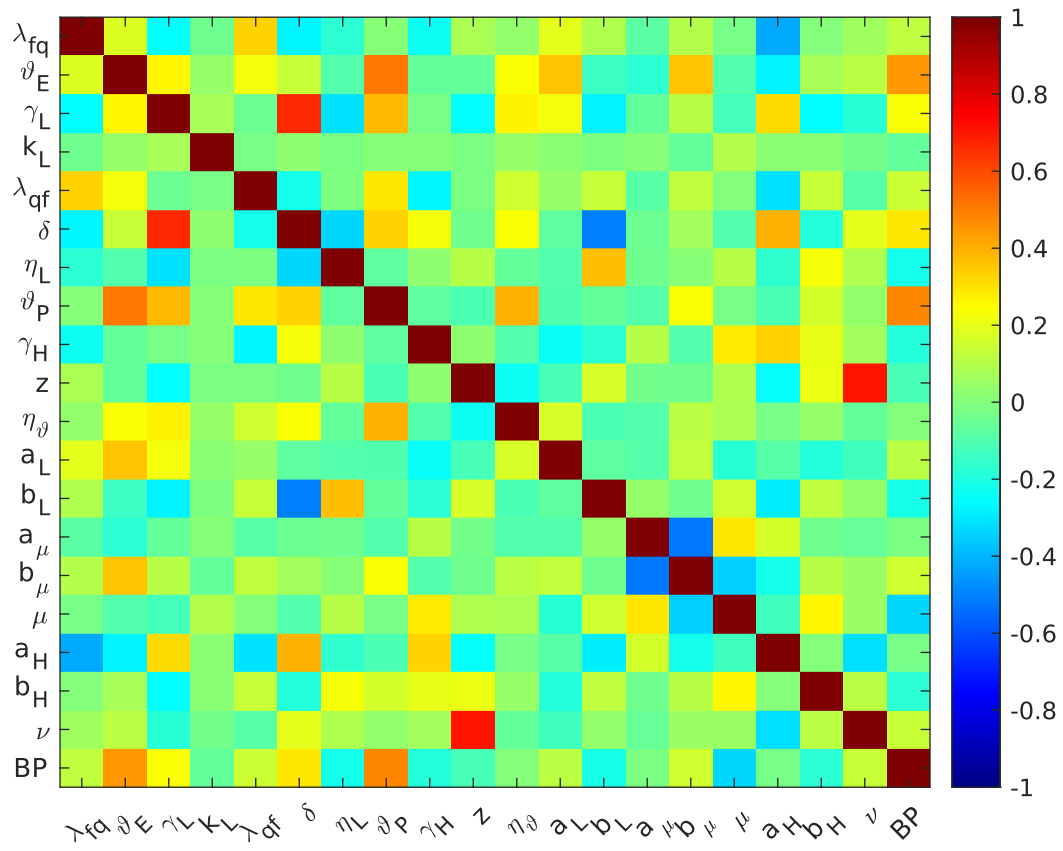
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

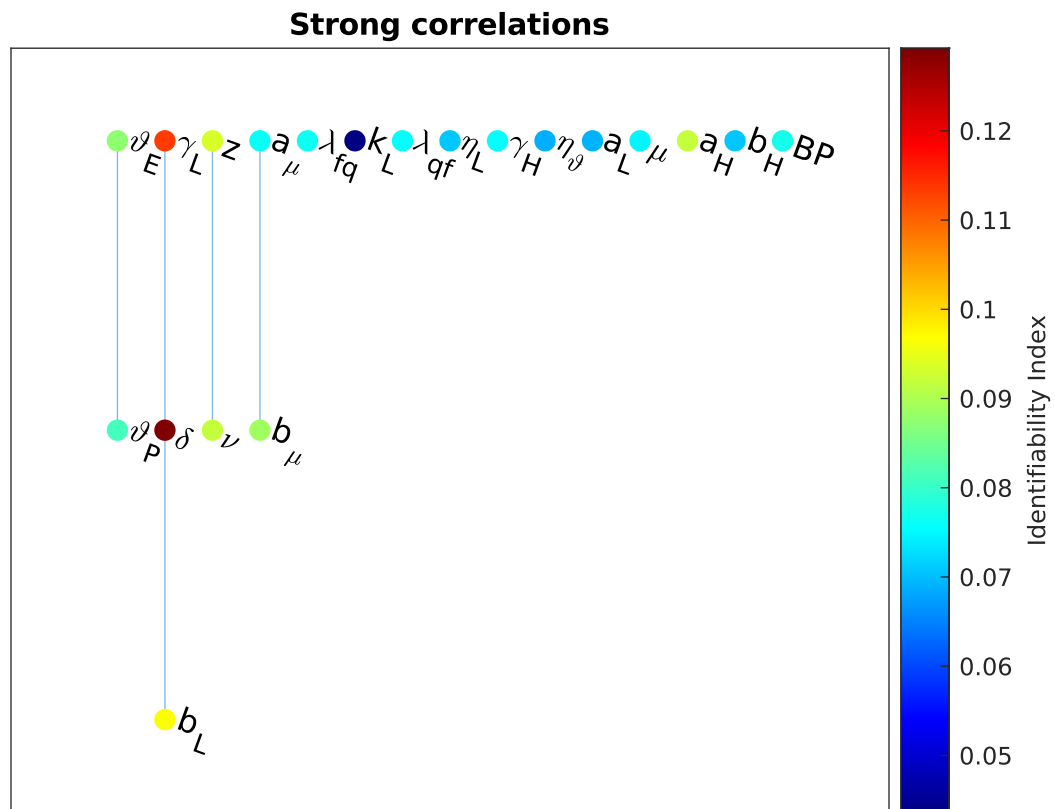
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.3283'	'0.4578'	'0.0137'	'0.3371'	'0.0766'
ϑ_E	'0'	'0.0004'	'0.003'	'0.0002'	'0.0876'
γ_L	'0.2329'	'0.449'	'0.1728'	'0.2425'	'0.1134'
k_L	'1.9614'	'9.5722'	'5.5032'	'6.7464'	'0.0436'
λ_{qf}	'0.632'	'0.7628'	'0.457'	'0.6437'	'0.0759'
δ	'0'	'0.0003'	'0.0042'	'0.0001'	'0.1293'
η_L	'0.5011'	'0.8009'	'0.5486'	'0.5969'	'0.0709'
ϑ_P	'0.0001'	'0.0002'	'0.0012'	'0.0001'	'0.0813'
γ_H	'0.0237'	'0.4527'	'0.5351'	'0.393'	'0.0755'
z	'1.8562'	'2.3837'	'11.0137'	'2.3019'	'0.0938'
η_{ϑ}	'0.6572'	'0.6972'	'0.6751'	'0.6664'	'0.0687'
a_L	'8.0073'	'9.6001'	'1.9725'	'8.1034'	'0.0693'
b_L	'9.553'	'12.8393'	'11.9836'	'12.7267'	'0.0966'
a_{μ}	'3.2197'	'13.0341'	'11.8631'	'11.9892'	'0.0763'
b_{μ}	'1.2478'	'10.9103'	'2.1985'	'1.9823'	'0.0889'
μ	'0.0004'	'0.0015'	'0.1592'	'0.0008'	'0.0748'
a_H	'1.2554'	'13.768'	'10.0715'	'12.0829'	'0.0918'
b_H	'1'	'15'	'5.5439'	'1.1825'	'0.0708'
ν	'0.005'	'0.112'	'228.3993'	'0.0582'	'0.0919'
BP	'325.6336'	'330.2842'	'342.5'	'329.8189'	'0.0773'

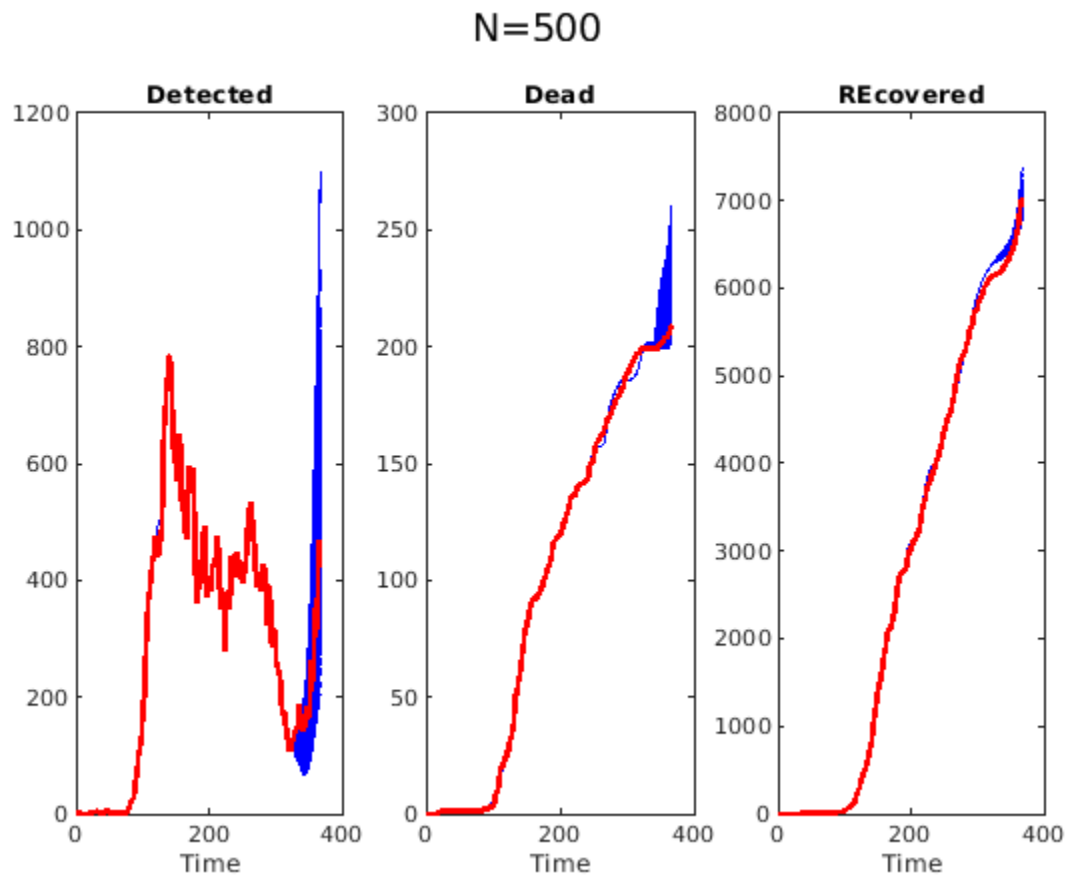
8.3. Identifiability analysis







8.4. Uncertainty analysis



Chapter 9. Extension number9

9.1. Basic information

The extension to be validated consists of the time series from the data368 to the 389. The status of the validation is: COMPLETED.

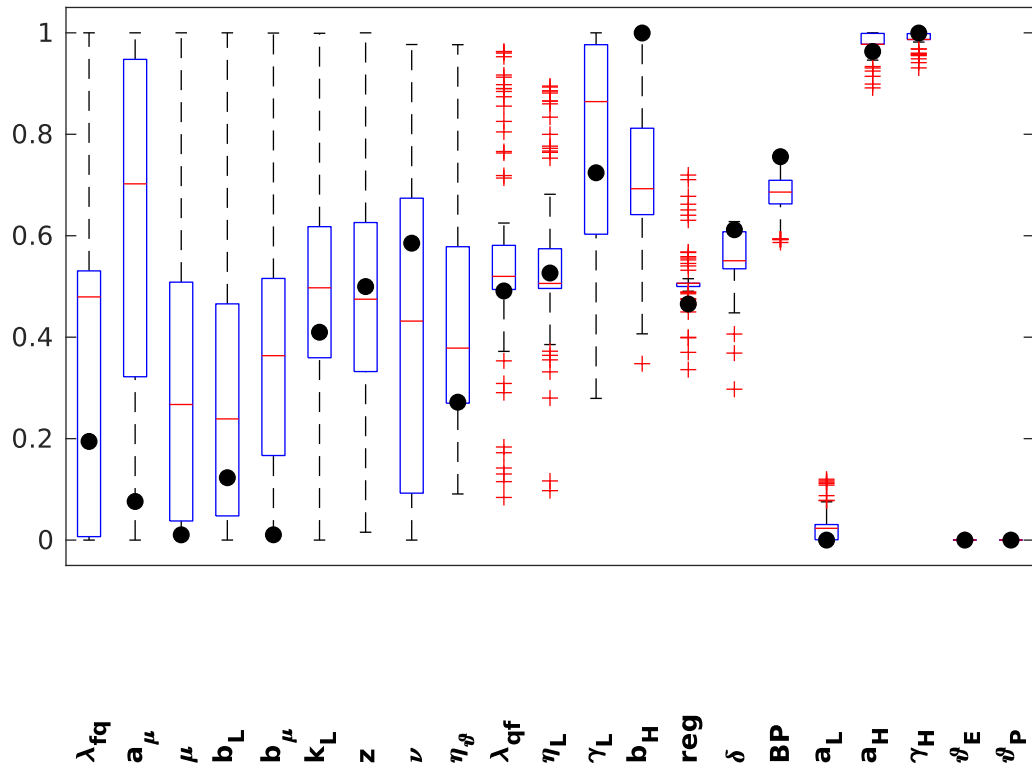
The number of estimations needed to perform the validation was1000.

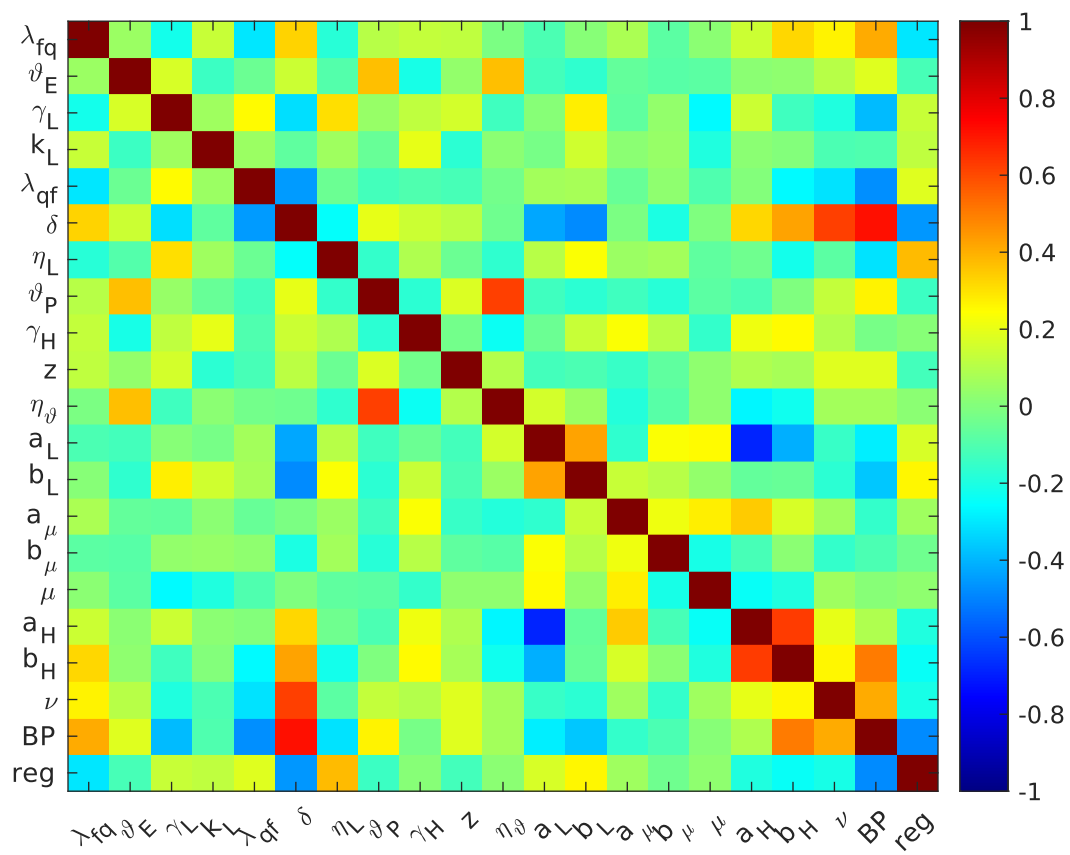
9.2. Estimated parameters with their intervals

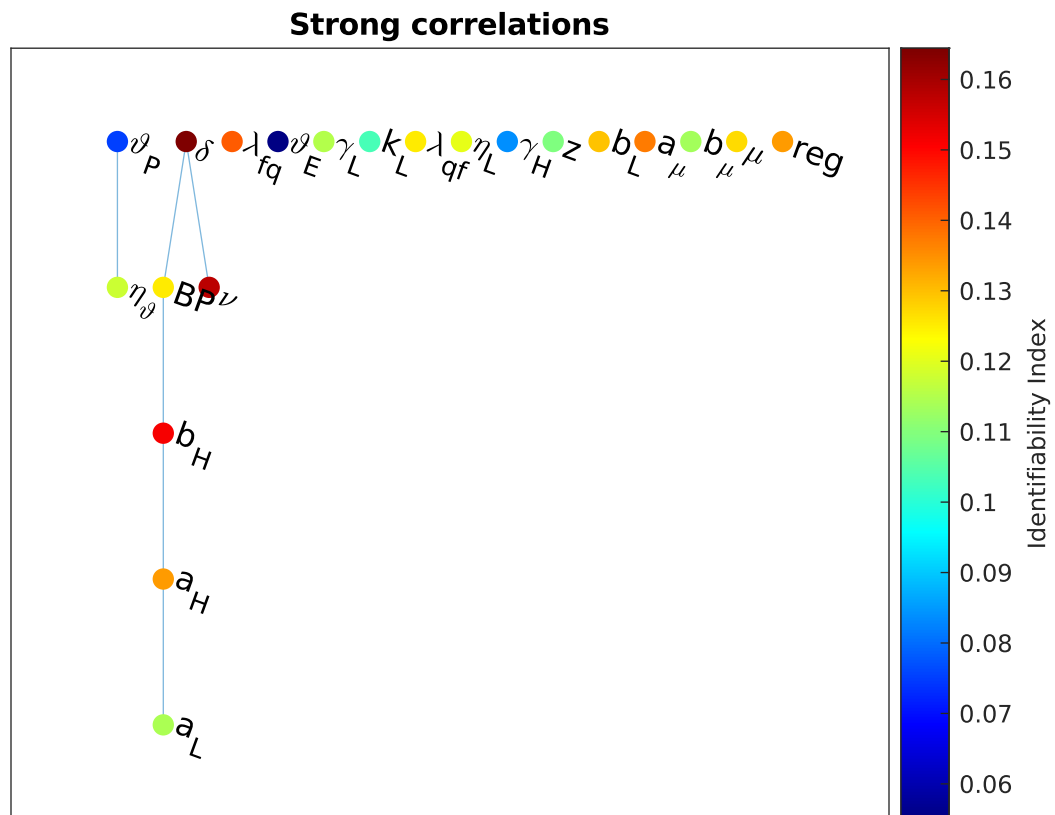
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4023'	'0.5565'	'0.4794'	'0.1945'	'0.1406'
\vartheta_E	'0'	'0.002'	'0.0001'	'0'	'0.0551'
\gamma_L	'0.8133'	'0.9155'	'0.8644'	'0.7241'	'0.1153'
k_L	'4.9448'	'6.0077'	'5.4762'	'4.6879'	'0.1035'
\lambda_{qf}	'0.4545'	'0.5852'	'0.5199'	'0.4912'	'0.1254'
\delta	'0.0753'	'0.0899'	'0.0826'	'0.0918'	'0.1644'
\eta_L	'0.4437'	'0.5683'	'0.506'	'0.5265'	'0.1208'
\vartheta_P	'0'	'0.0007'	'0.0001'	'0'	'0.0756'
\gamma_H	'0.9441'	'1'	'0.9869'	'0.9996'	'0.0839'
z	'12.4503'	'16.0424'	'14.2464'	'14.9933'	'0.1095'
\eta_{\vartheta}	'0.3305'	'0.4265'	'0.3785'	'0.2718'	'0.1178'
a_L	'1'	'1.8475'	'1.3256'	'1.0001'	'0.1144'
b_L	'3.4407'	'5.2492'	'4.3449'	'2.7217'	'0.1295'
a_{\mu}	'9.6788'	'11.9853'	'10.832'	'2.066'	'0.1373'
b_{\mu}	'5.192'	'6.987'	'6.0895'	'1.1465'	'0.1136'
\mu	'0.1915'	'0.3431'	'0.2673'	'0.0104'	'0.127'
a_H	'13.8983'	'15'	'14.6849'	'14.4854'	'0.1338'
b_H	'9.975'	'11.4199'	'10.6975'	'14.995'	'0.1516'
\nu	'177.6083'	'254.1353'	'215.8718'	'292.6482'	'0.1577'
BP	'364.9793'	'366.0207'	'365.5'	'368.5'	'0.1254'
reg	'0.1099'	'0.1433'	'0.1266'	'0.1163'	'0.134'

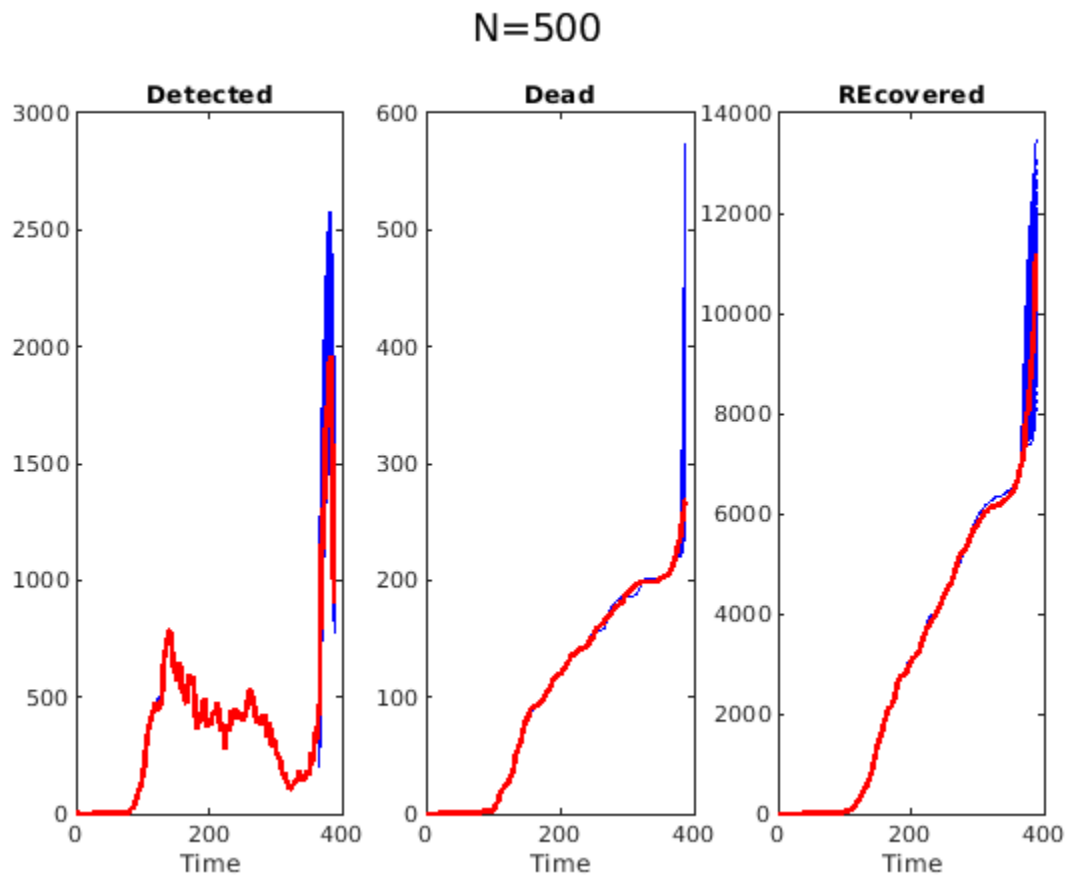
9.3. Identifiability analysis







9.4. Uncertainty analysis



Chapter 10. Extension number10

10.1. Basic information

The extension to be validated consists of the time series from the data389 to the 389. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

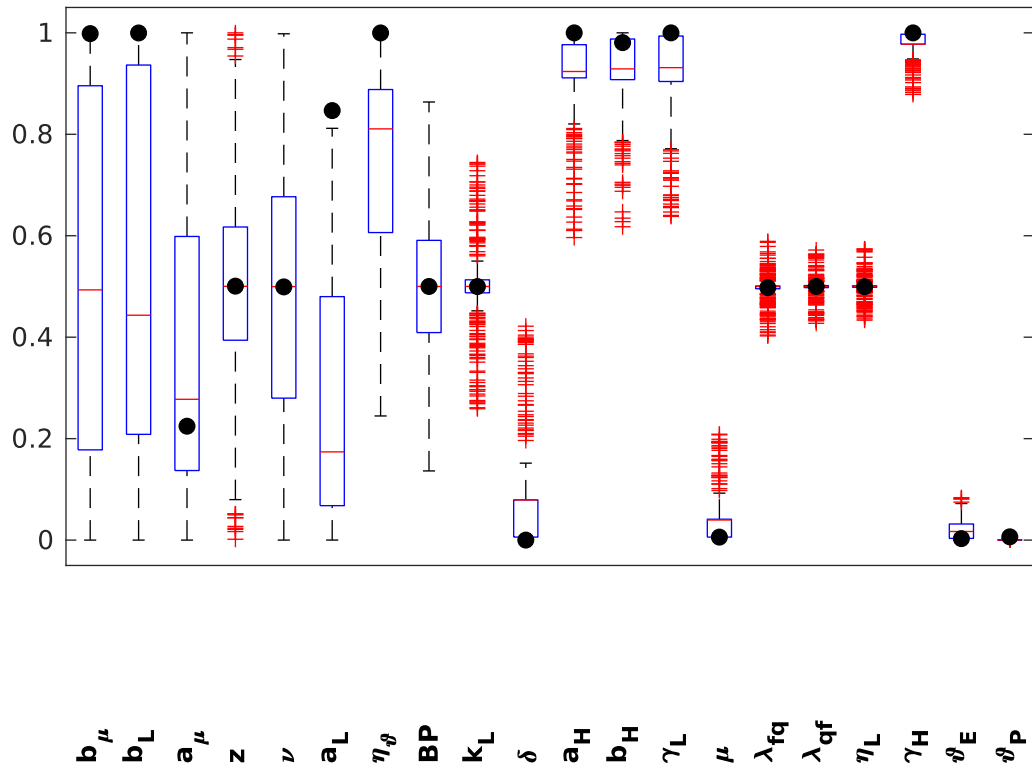
10.2. Estimated parameters with their intervals

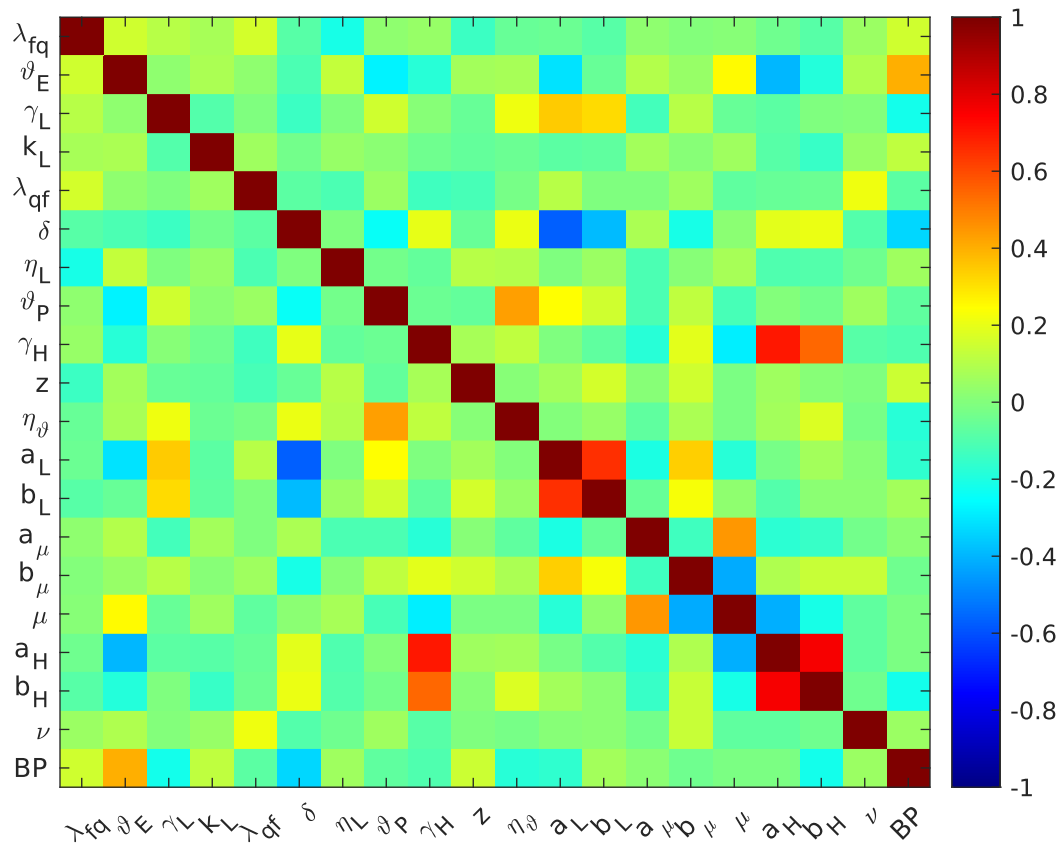
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

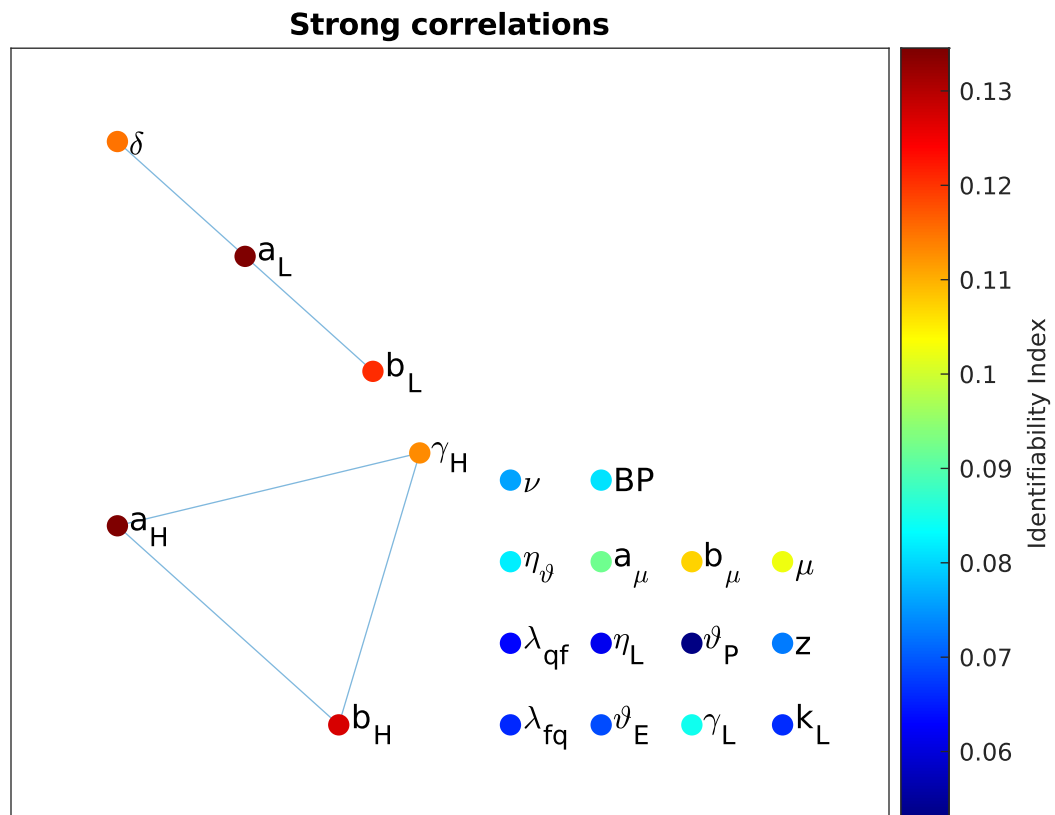
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.4977'	'0.4977'	'0.4999'	'0.4977'	'0.0663'
ϑ_E	'0.002'	'0.0043'	'0.017'	'0.0029'	'0.069'
γ_L	'0.7'	'1'	'0.9311'	'0.9999'	'0.0847'
k_L	'3.8488'	'8.2473'	'5.5005'	'5.4982'	'0.0664'
λ_{qf}	'0.35'	'0.7501'	'0.5'	'0.5'	'0.0632'
δ	'0'	'0'	'0.0119'	'0'	'0.1151'
η_L	'0.3496'	'0.7492'	'0.5'	'0.4995'	'0.0617'
ϑ_P	'0.0045'	'0.0097'	'0.0003'	'0.0065'	'0.0529'
γ_H	'0.6999'	'1'	'0.9775'	'0.9999'	'0.1129'
z	'10.5132'	'22.5283'	'15.0092'	'15.0189'	'0.0729'
η_{ϑ}	'0.6999'	'1'	'0.8103'	'0.9998'	'0.0822'
a_L	'8.9979'	'15'	'3.4429'	'12.8542'	'0.1345'
b_L	'10.4973'	'15'	'7.2064'	'14.9962'	'0.1206'
a_{μ}	'2.9004'	'6.2152'	'4.8861'	'4.1435'	'0.0922'
b_{μ}	'10.485'	'15'	'7.9054'	'14.9786'	'0.1072'
μ	'0.0041'	'0.0088'	'0.0412'	'0.0059'	'0.1024'
a_H	'10.4993'	'15'	'13.9284'	'14.999'	'0.1342'
b_H	'10.3105'	'15'	'14.0038'	'14.7293'	'0.1272'
ν	'174.6965'	'374.3496'	'249.851'	'249.5664'	'0.0759'
BP	'368'	'379'	'373.5'	'373.5'	'0.0812'

10.3. Identifiability analysis

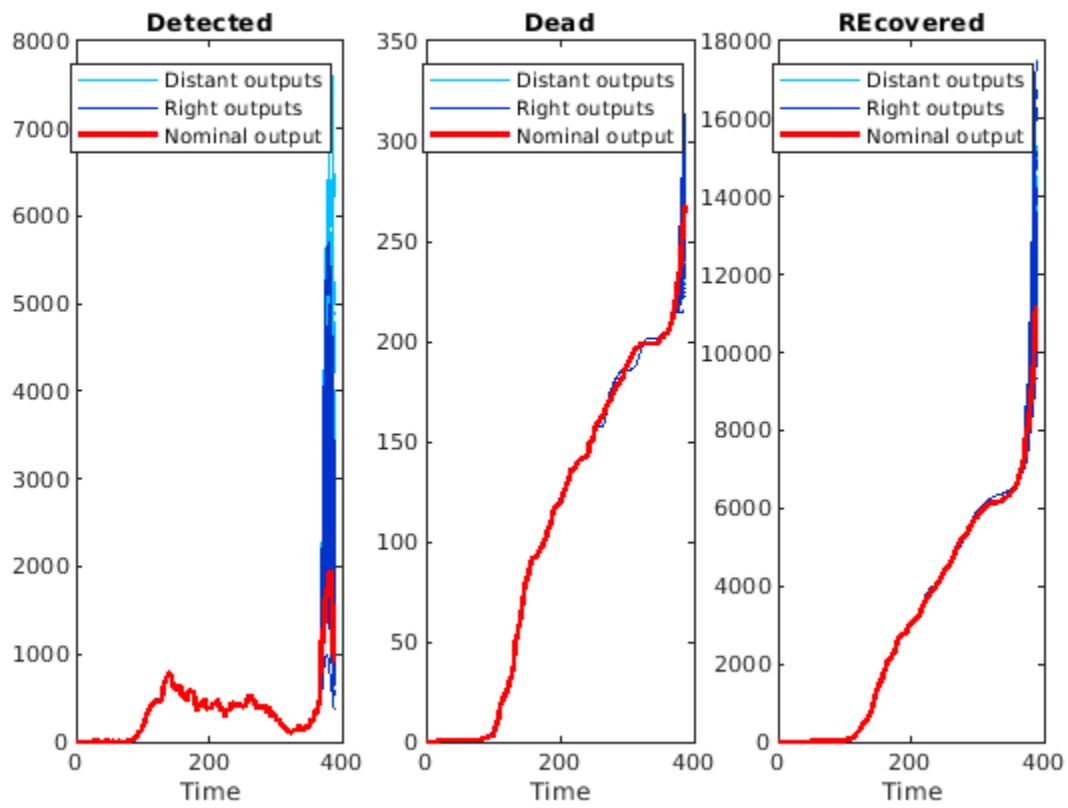






10.4. Uncertainty analysys

N=500



Chapter 11. Extension number11

11.1. Basic information

The extension to be validated consists of the time series from the data389 to the 419. The status of the validation is: COMPLETED.

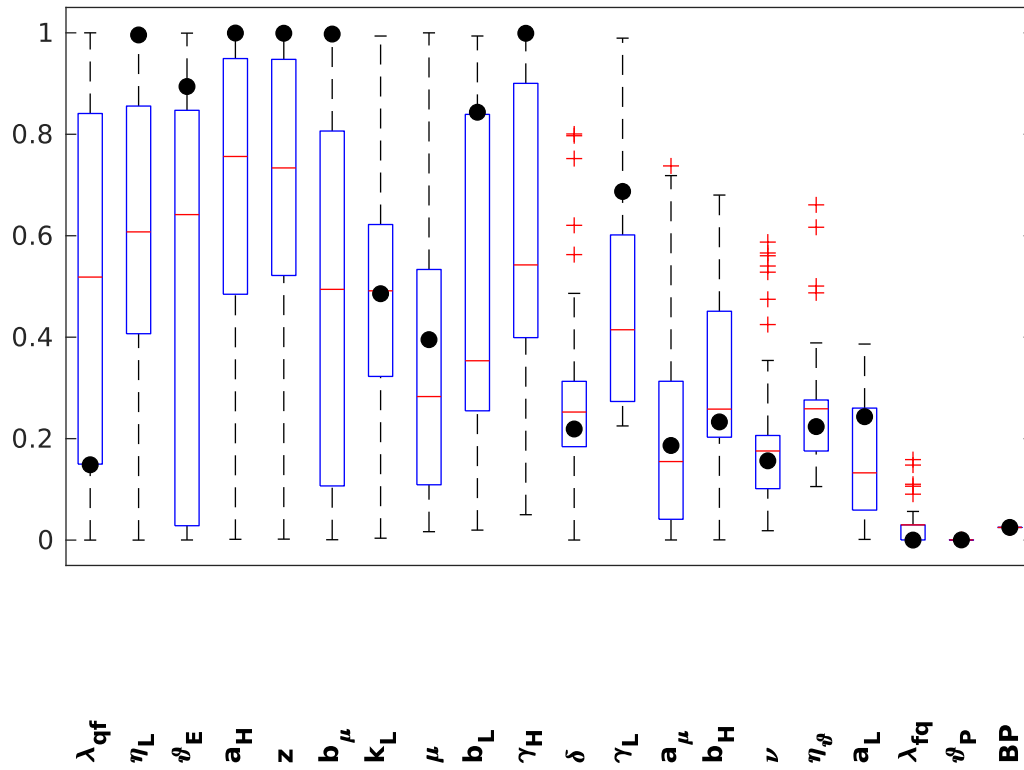
The number of estimations needed to perform the validation was5000.

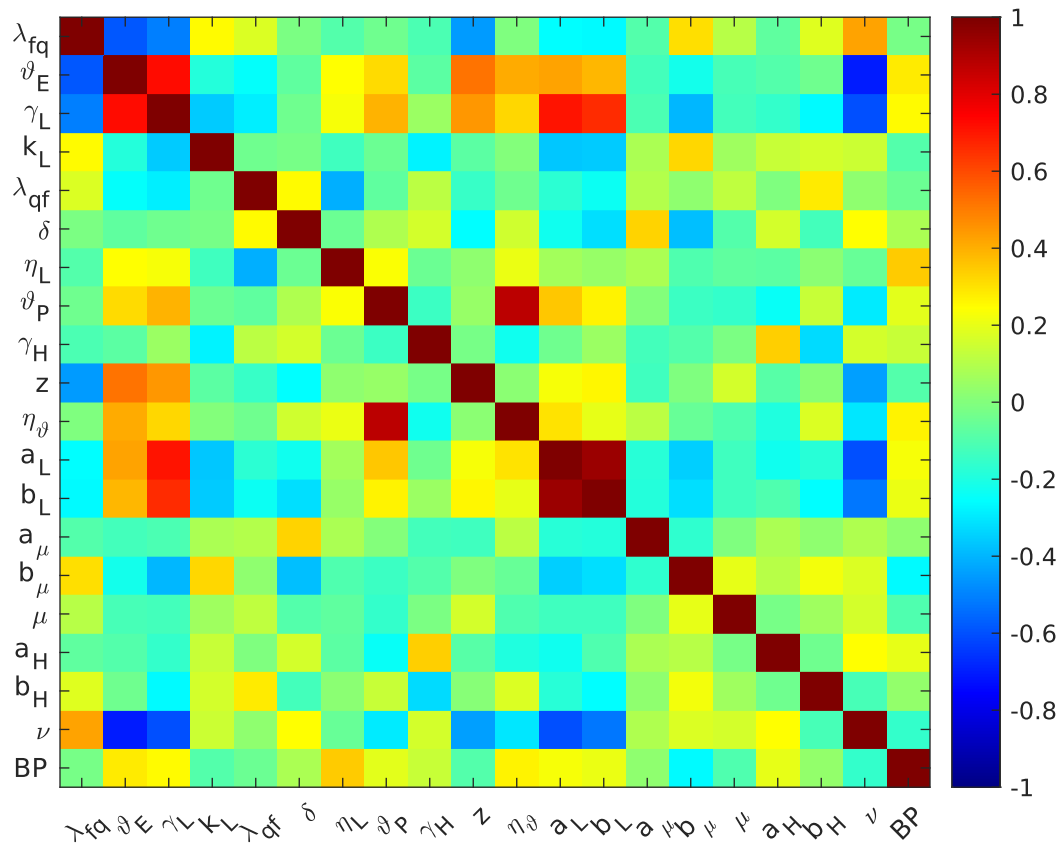
11.2. Estimated parameters with their intervals

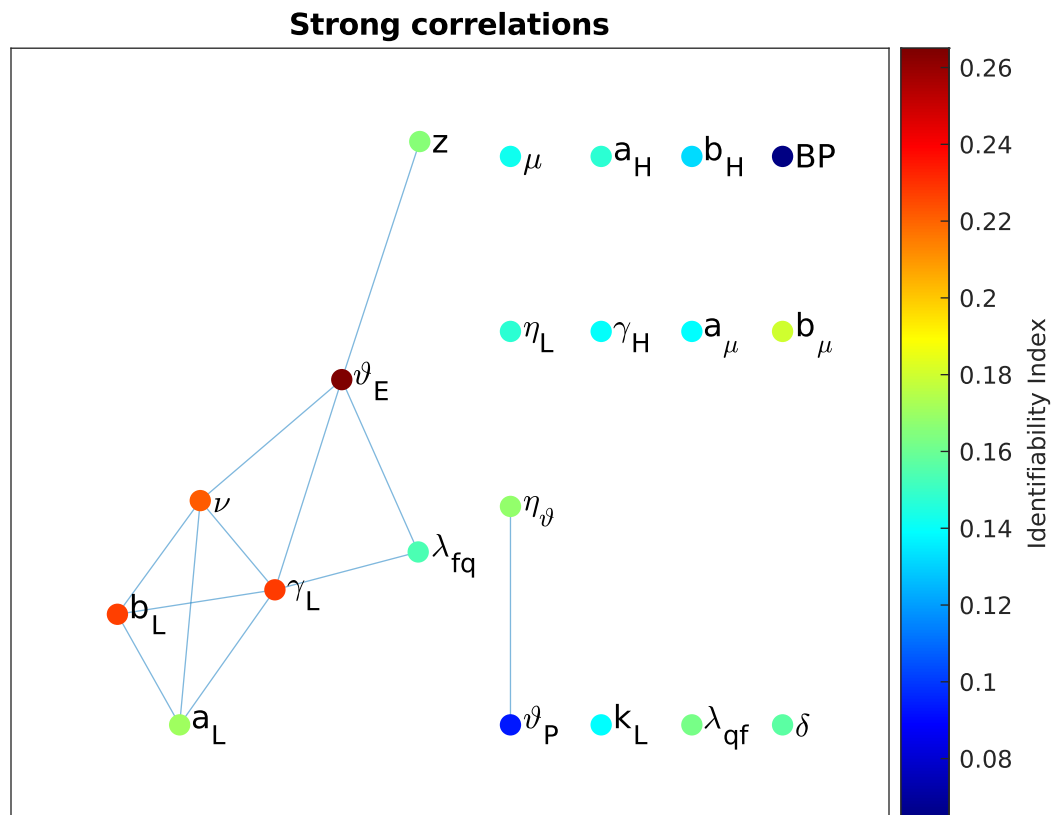
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0.1105'	'0.03'	'0'	'0.1543'
\vartheta_E	'0.5233'	'0.76'	'0.6417'	'0.8942'	'0.265'
\gamma_L	'0.3566'	'0.4727'	'0.4146'	'0.6873'	'0.2277'
k_L	'4.7458'	'6.0995'	'5.4226'	'5.3714'	'0.1389'
\lambda_{qf}	'0.4153'	'0.6217'	'0.5185'	'0.1485'	'0.1627'
\delta	'0.0237'	'0.052'	'0.0379'	'0.0329'	'0.1576'
\eta_L	'0.5163'	'0.6988'	'0.6076'	'0.9958'	'0.1476'
\vartheta_P	'0'	'0.0128'	'0.0004'	'0.0004'	'0.0942'
\gamma_H	'0.4583'	'0.6267'	'0.5425'	'0.9991'	'0.14'
z	'19.429'	'24.591'	'22.01'	'29.9753'	'0.1662'
\eta_{\vartheta}	'0.1773'	'0.3404'	'0.2588'	'0.2238'	'0.1683'
a_L	'2.3845'	'3.3275'	'2.856'	'4.406'	'0.1704'
b_L	'4.6344'	'7.2645'	'5.9495'	'12.8083'	'0.2272'
a_{\mu}	'1.923'	'4.4123'	'3.1676'	'3.6111'	'0.1393'
b_{\mu}	'6.4181'	'9.4225'	'7.9203'	'14.9661'	'0.18'
\mu	'0.1895'	'0.3764'	'0.283'	'0.3952'	'0.1421'
a_H	'10.3073'	'12.8676'	'11.5875'	'14.9942'	'0.1481'
b_H	'3.5747'	'5.6554'	'4.6151'	'4.2621'	'0.1324'
\nu	'48.3793'	'127.307'	'87.8431'	'78.1493'	'0.2218'
BP	'389.4628'	'389.5372'	'389.5'	'389.5'	'0.0645'

11.3. Identifiability analysis

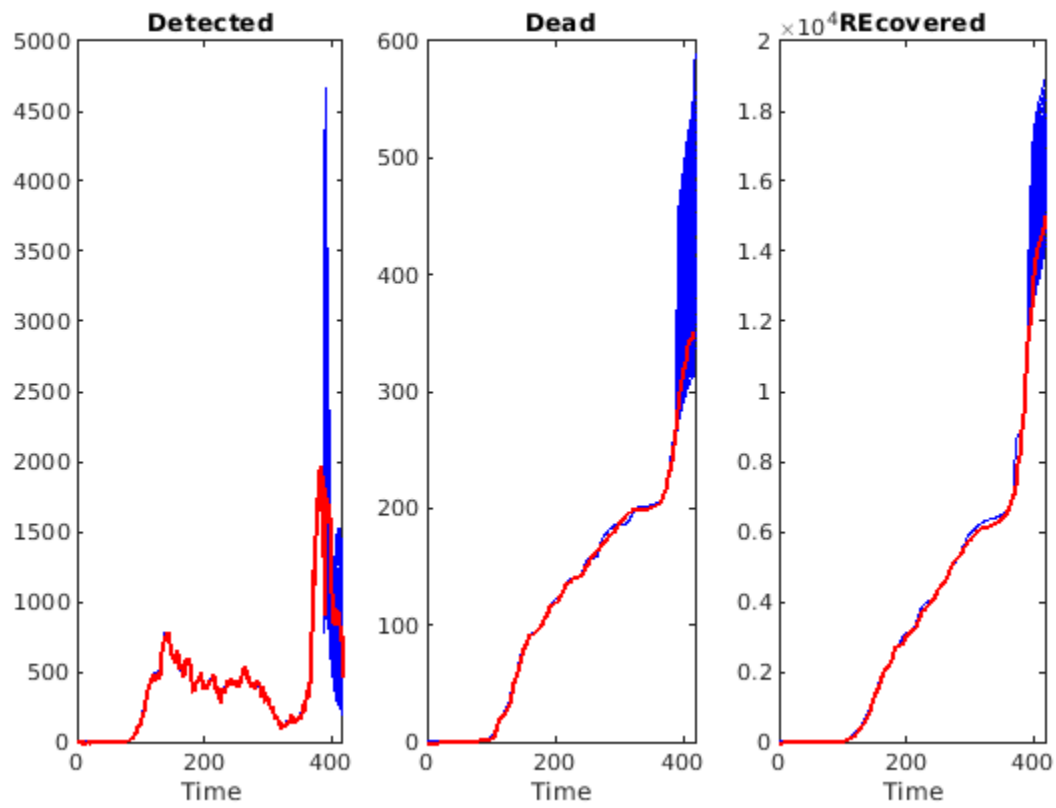






11.4. Uncertainty analysis

N=500



Chapter 12. Extension number12

12.1. Basic information

The extension to be validated consists of the time series from the data419 to the 440. The status of the validation is: COMPLETED.

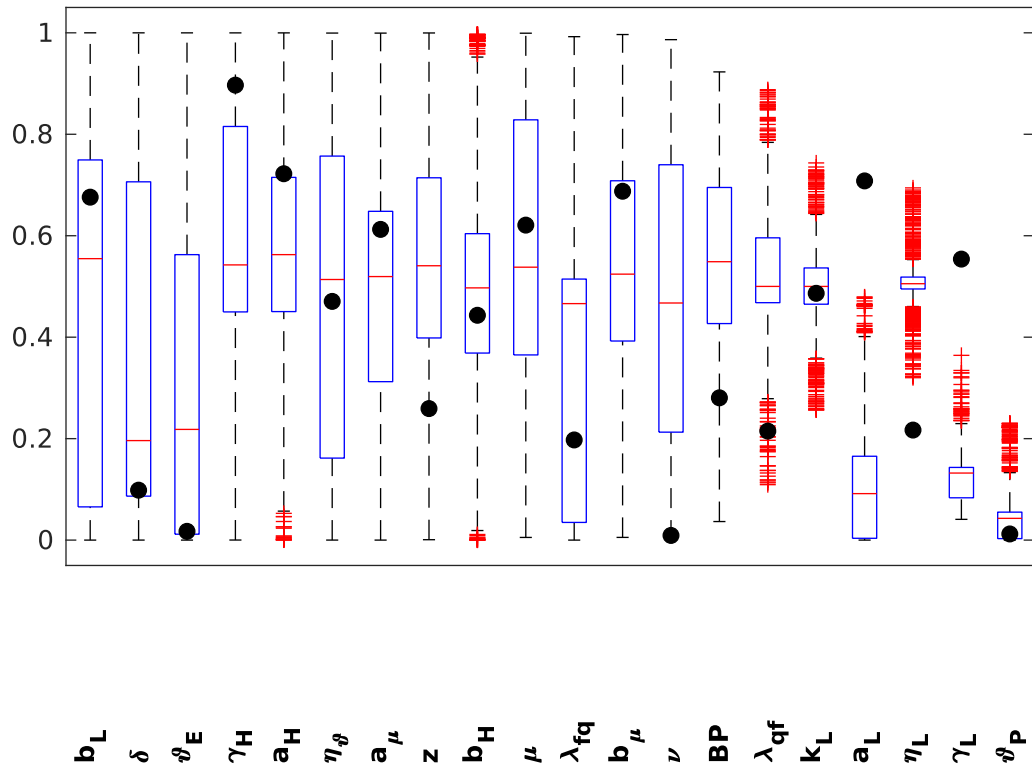
The number of estimations needed to perform the validation was1000.

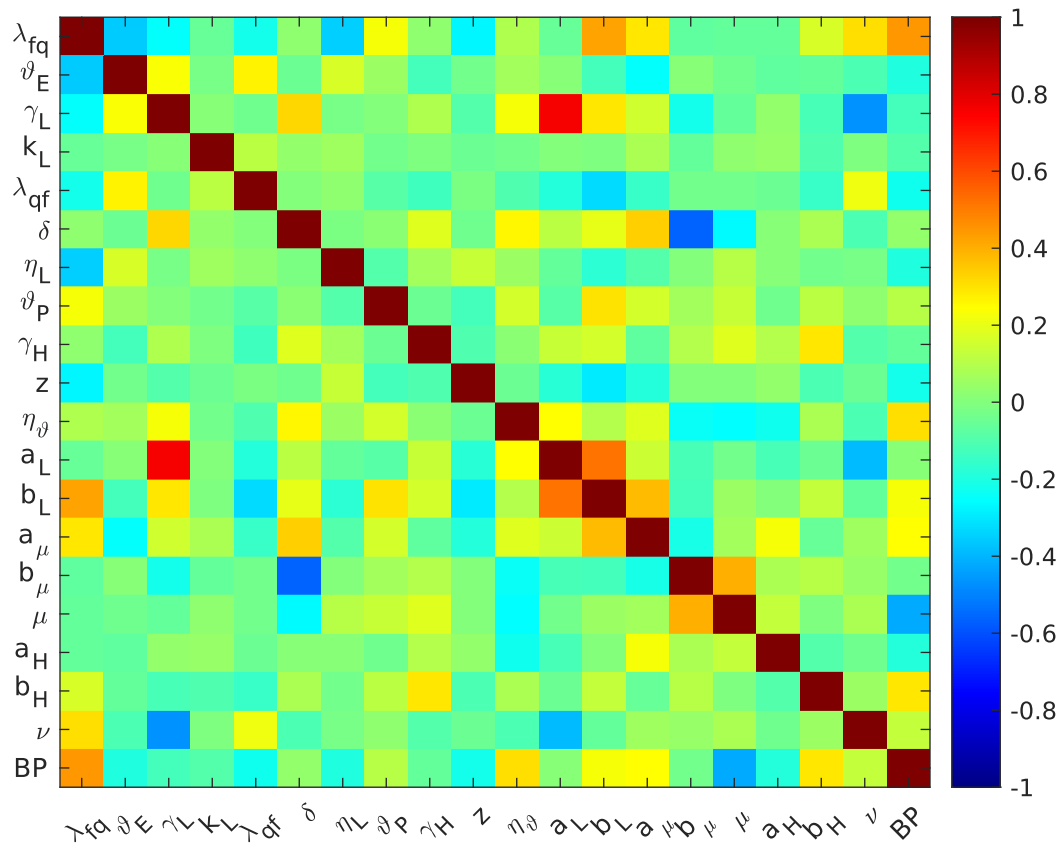
12.2. Estimated parameters with their intervals

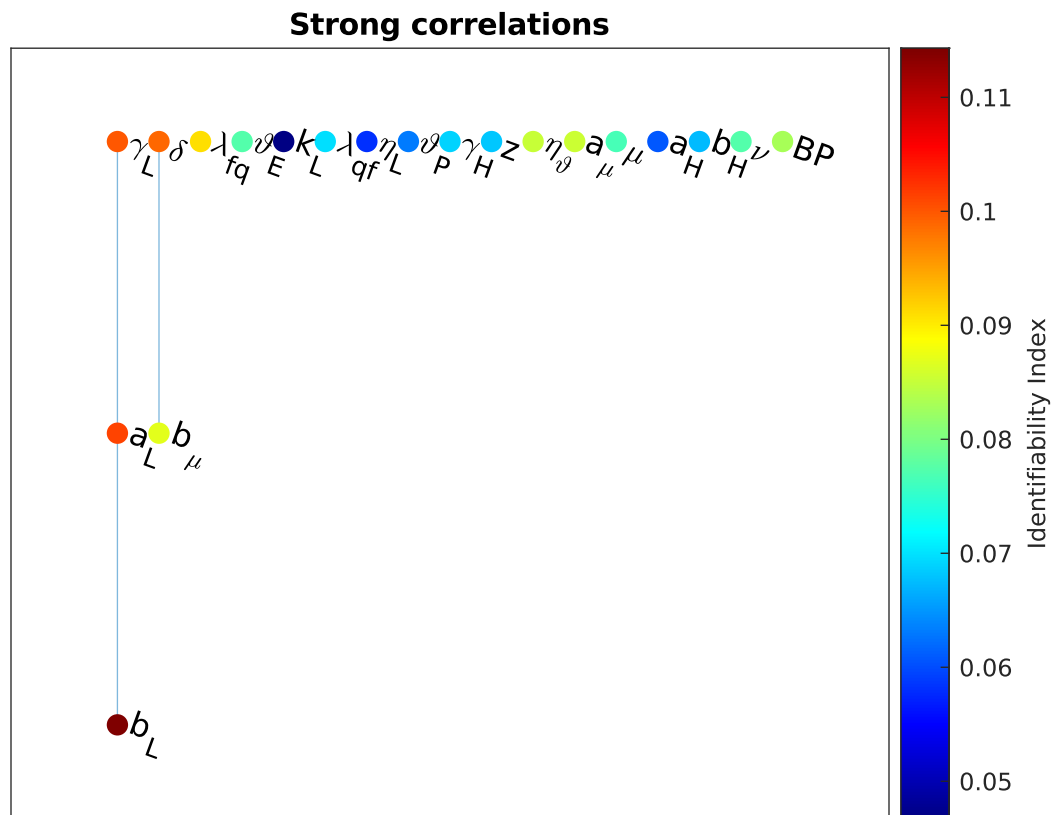
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.447'	'0.4853'	'0.4662'	'0.1974'	'0.0908'
\vartheta_E	'0.1933'	'0.2431'	'0.2182'	'0.0173'	'0.0775'
\gamma_L	'0.1136'	'0.1507'	'0.1322'	'0.5539'	'0.1'
k_L	'5.3968'	'5.6045'	'5.5007'	'5.3782'	'0.0468'
\lambda_{qf}	'0.4841'	'0.516'	'0.5001'	'0.2149'	'0.0698'
\delta	'0.0252'	'0.0337'	'0.0294'	'0.0148'	'0.0989'
\eta_L	'0.4927'	'0.5181'	'0.5054'	'0.2169'	'0.0583'
\vartheta_P	'0.0281'	'0.0576'	'0.0429'	'0.0121'	'0.0631'
\gamma_H	'0.5232'	'0.5618'	'0.5425'	'0.8969'	'0.0689'
z	'15.6554'	'16.7942'	'16.2248'	'7.7777'	'0.0683'
\eta_{\vartheta}	'0.4884'	'0.539'	'0.5137'	'0.4706'	'0.0851'
a_L	'2.1246'	'2.4407'	'2.2827'	'10.913'	'0.1012'
b_L	'8.3726'	'9.1621'	'8.7673'	'10.4643'	'0.1143'
a_{\mu}	'8.014'	'8.5317'	'8.2729'	'9.5751'	'0.0853'
b_{\mu}	'8.0765'	'8.6032'	'8.3399'	'10.6276'	'0.0869'
\mu	'0.5156'	'0.5604'	'0.538'	'0.6209'	'0.0766'
a_H	'8.6458'	'9.111'	'8.8784'	'11.1109'	'0.061'
b_H	'7.7269'	'8.1945'	'7.9607'	'7.2046'	'0.0675'
\nu	'222.083'	'245.3117'	'233.6974'	'4.5987'	'0.0775'
BP	'410.9399'	'412.0601'	'411.5'	'400.5'	'0.083'

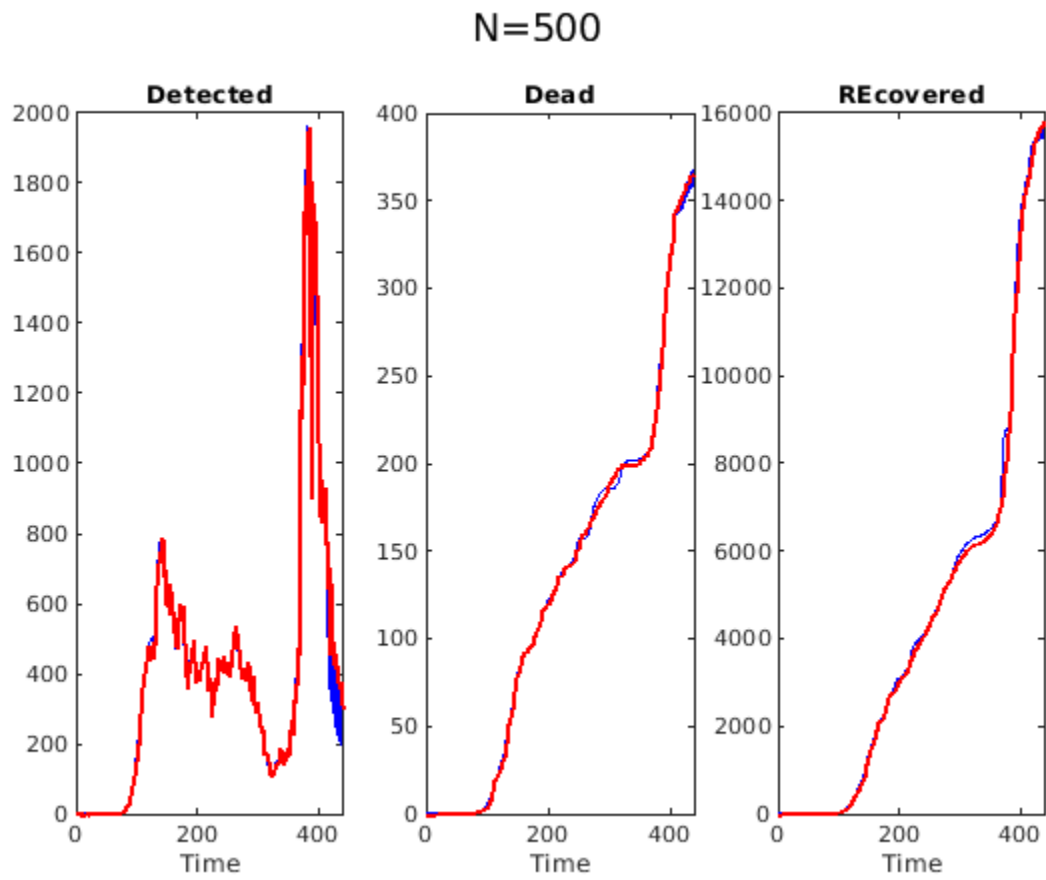
12.3. Identifiability analysis







12.4. Uncertainty analysys



Chapter 13. Extension number13

13.1. Basic information

The extension to be validated consists of the time series from the data440 to the 703. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

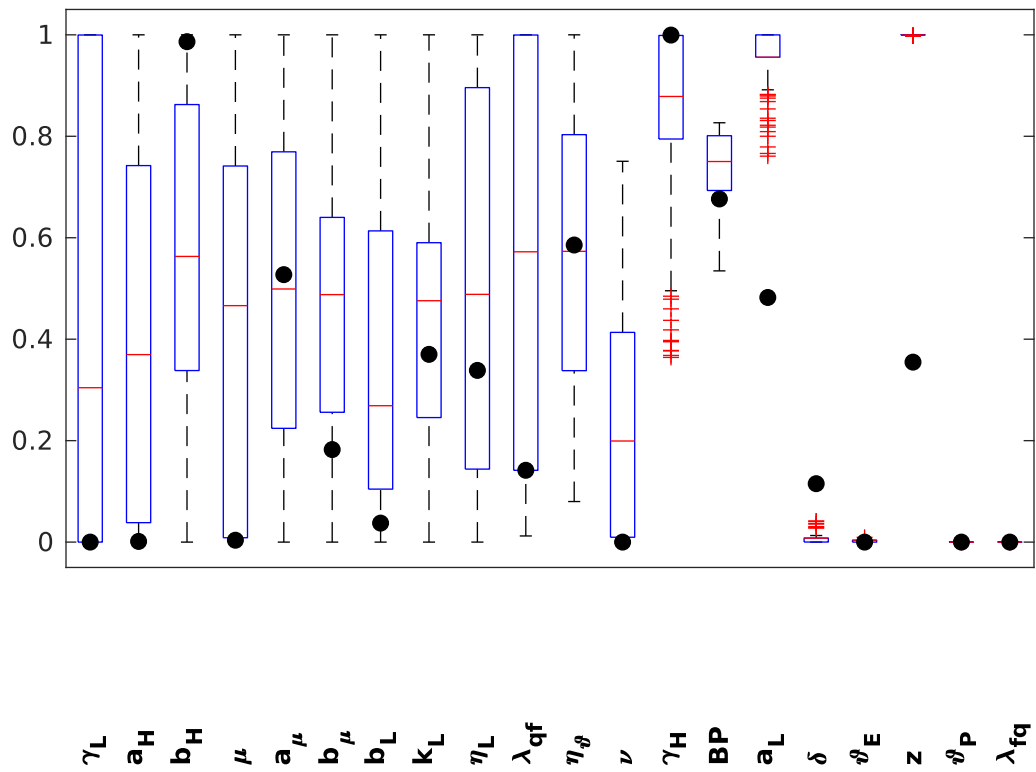
13.2. Estimated parameters with their intervals

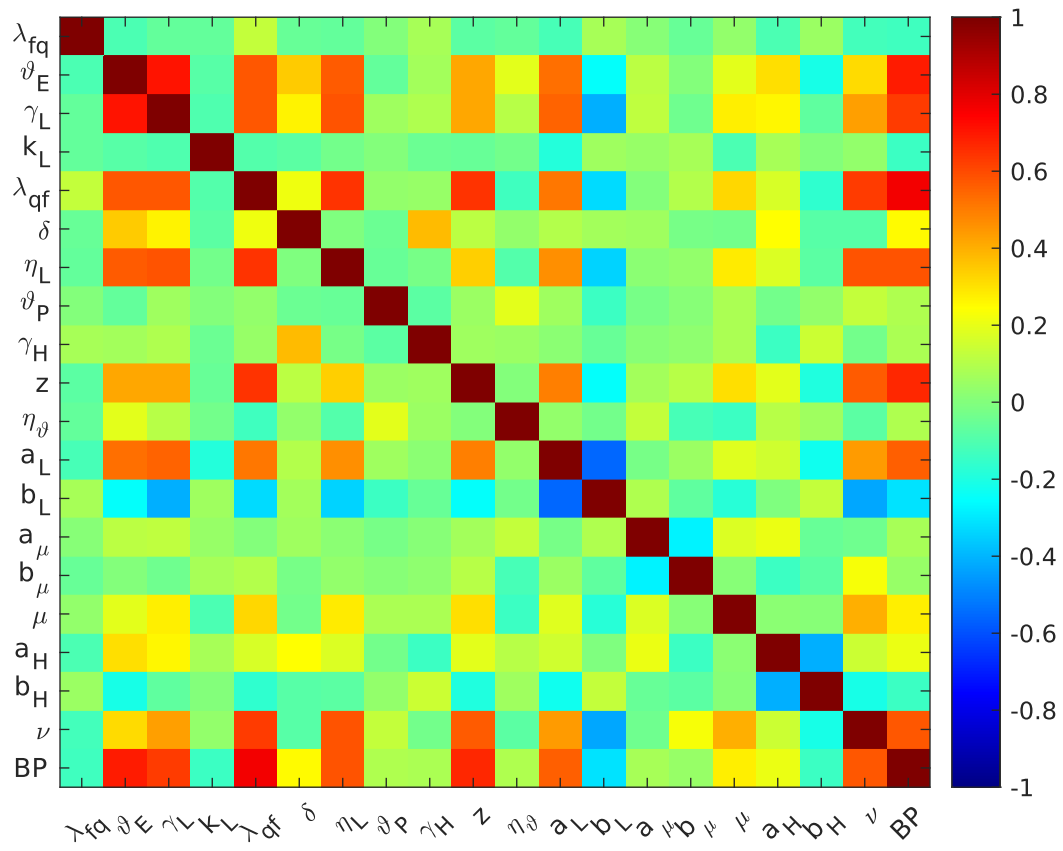
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

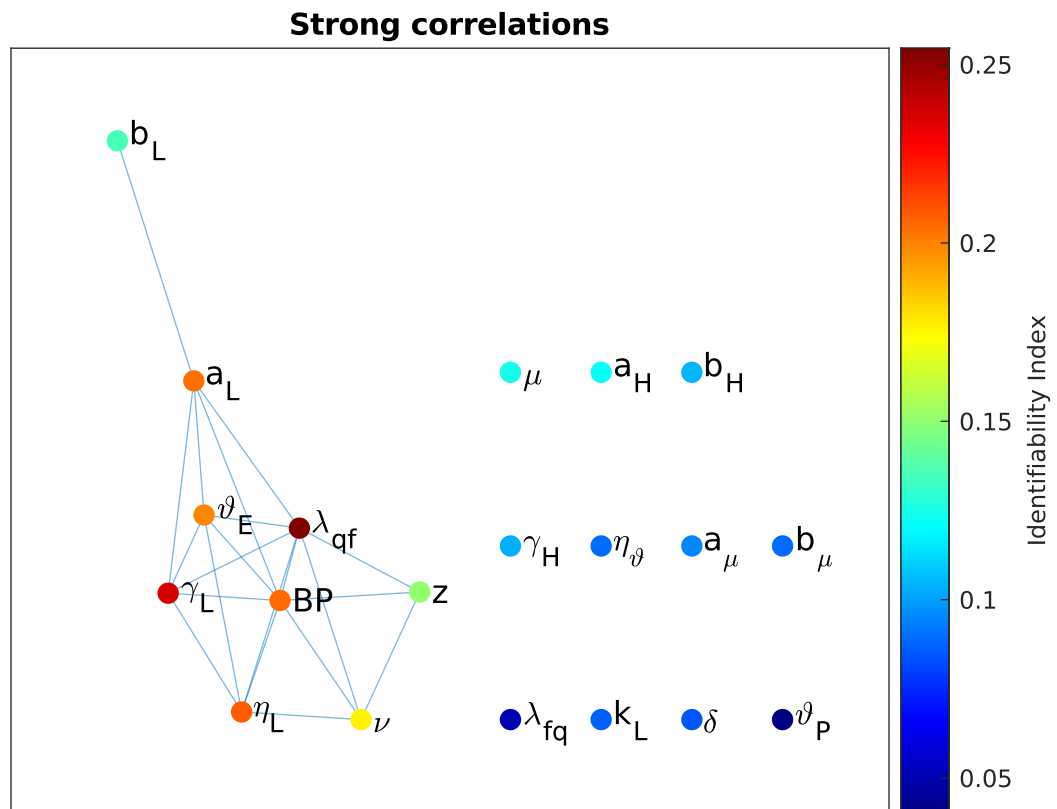
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0'	'0'	'0'	'0.0511'
ϑ_E	'0'	'0'	'0.0037'	'0'	'0.1986'
γ_L	'0'	'0'	'0.3043'	'0'	'0.2357'
k_L	'1'	'10'	'5.2827'	'4.331'	'0.087'
λ_{qf}	'0.048'	'1'	'0.5723'	'0.1416'	'0.2546'
δ	'0.0066'	'0.0182'	'0.0012'	'0.0173'	'0.0848'
η_L	'0.1157'	'1'	'0.4884'	'0.3385'	'0.2084'
ϑ_P	'0'	'0'	'0'	'0'	'0.0404'
γ_H	'0.2804'	'1'	'0.8785'	'0.9995'	'0.1034'
z	'7.7301'	'13.8146'	'29.987'	'10.6431'	'0.1516'
η_{ϑ}	'0.5776'	'0.6089'	'0.5732'	'0.5857'	'0.0892'
a_L	'1'	'15'	'14.3809'	'7.7514'	'0.204'
b_L	'1'	'15'	'4.7641'	'1.5244'	'0.1354'
a_{μ}	'1'	'15'	'7.9854'	'8.3813'	'0.095'
b_{μ}	'1'	'13.88'	'7.83'	'3.5537'	'0.0894'
μ	'0'	'0.0083'	'0.4661'	'0.0037'	'0.1241'
a_H	'1'	'7.0768'	'6.1742'	'1.0188'	'0.1223'
b_H	'3.0221'	'15'	'8.8845'	'14.8108'	'0.1054'
ν	'0'	'0.0002'	'99.6525'	'0.0001'	'0.176'
BP	'603.9954'	'609.6646'	'624.5648'	'604.3462'	'0.2046'

13.3. Identifiability analysis

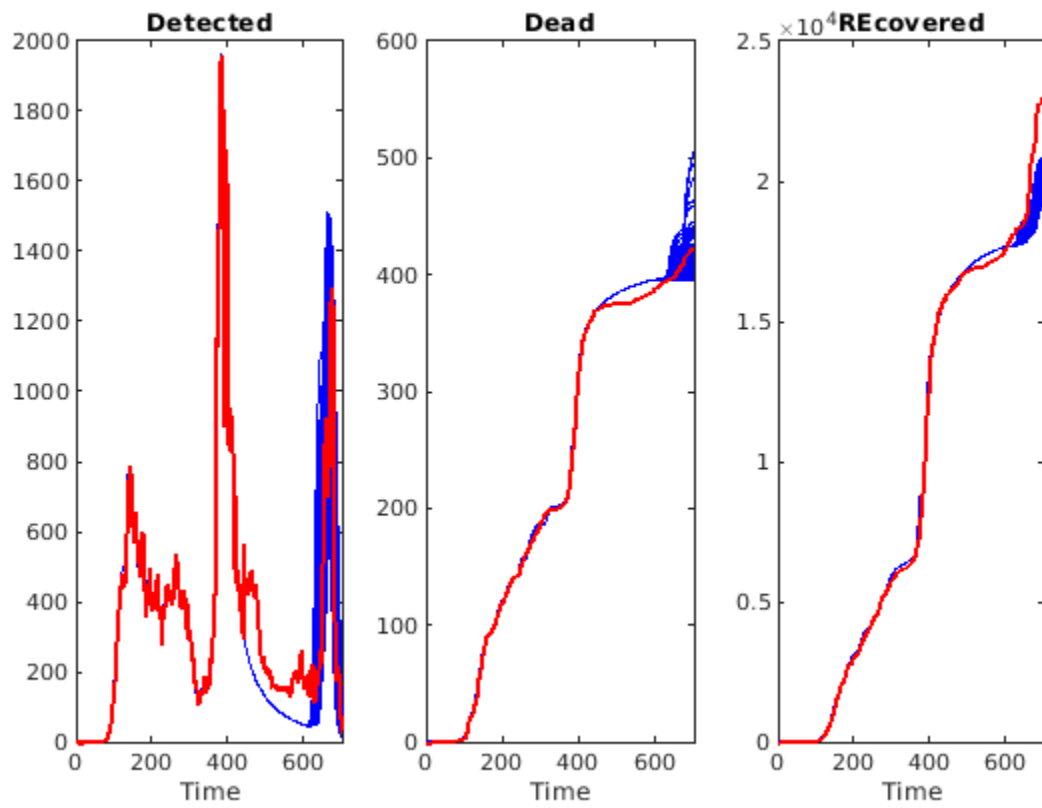






13.4. Uncertainty analysis

N=500



Chapter 14. Extension number14

14.1. Basic information

The extension to be validated consists of the time series from the data703 to the 719. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

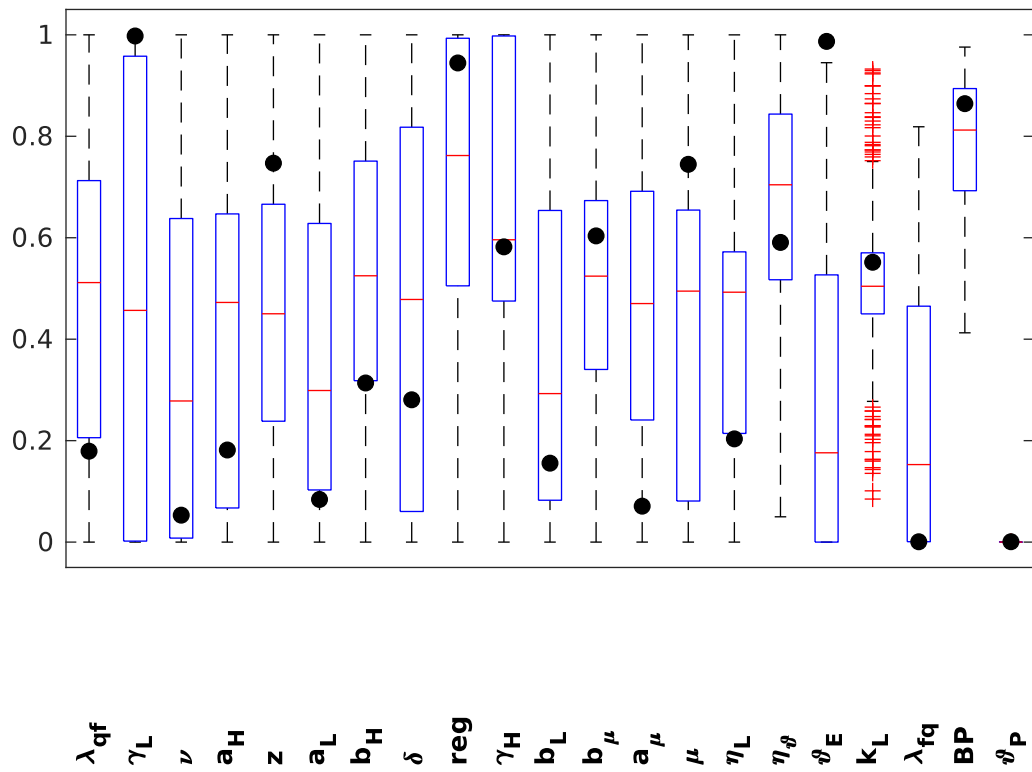
14.2. Estimated parameters with their intervals

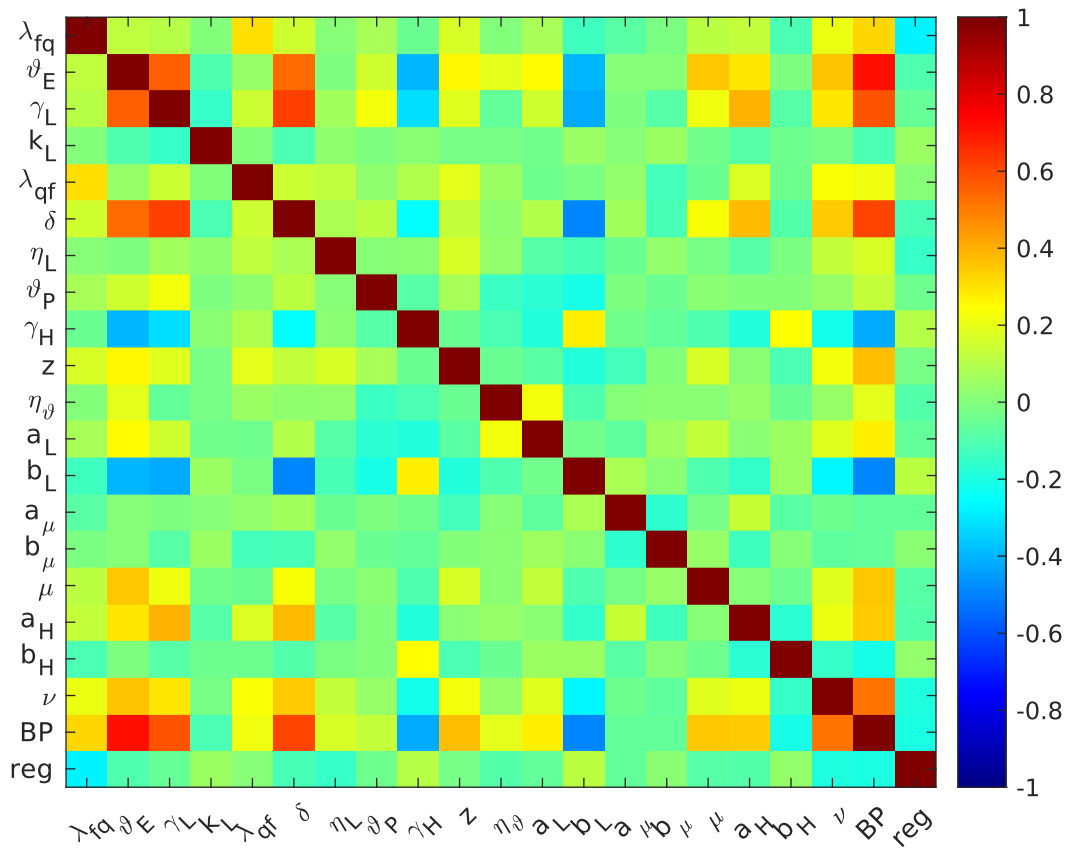
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

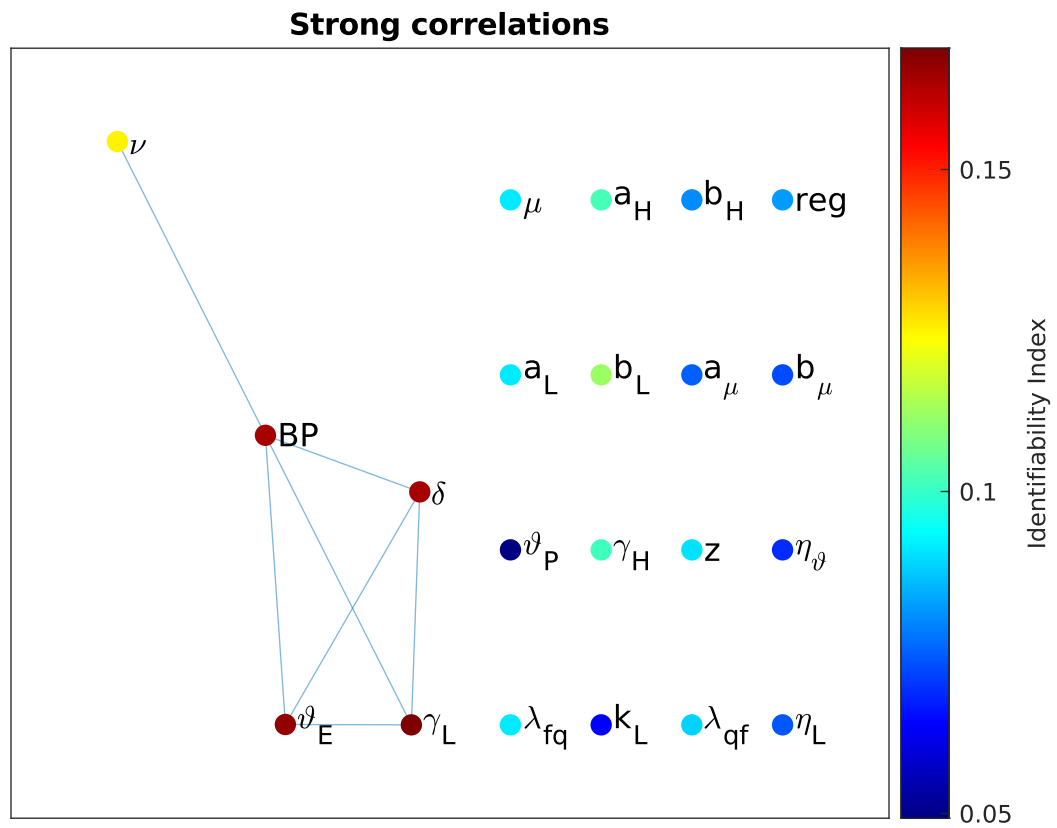
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0006'	'0.0012'	'0.1528'	'0.0007'	'0.0913'
\vartheta_E	'0.9819'	'0.9877'	'0.176'	'0.9871'	'0.1662'
\gamma_L	'0.6931'	'1'	'0.4568'	'0.9977'	'0.1688'
k_L	'1.277'	'7.5931'	'5.539'	'5.9649'	'0.0638'
\lambda_{qf}	'0.0453'	'0.2857'	'0.5116'	'0.1792'	'0.0887'
\delta	'0.0053'	'0.0695'	'0.0717'	'0.0421'	'0.1639'
\eta_L	'0.1926'	'0.2108'	'0.4926'	'0.2035'	'0.0744'
\vartheta_P	'0'	'0.0015'	'0.0001'	'0.0007'	'0.0493'
\gamma_H	'0.0713'	'0.6524'	'0.596'	'0.5821'	'0.1015'
z	'20.8788'	'26.3636'	'13.503'	'22.41'	'0.0907'
\eta_{\vartheta}	'0.5011'	'0.8182'	'0.7044'	'0.5908'	'0.0689'
a_L	'2.1561'	'2.3843'	'5.1837'	'2.1775'	'0.0915'
b_L	'2.8921'	'3.2103'	'5.0985'	'3.1784'	'0.112'
a_{\mu}	'1'	'12.5029'	'7.5833'	'1.9918'	'0.0754'
b_{\mu}	'2.3266'	'12.7535'	'8.3402'	'9.4509'	'0.0727'
\mu	'0.036'	'0.7911'	'0.4948'	'0.7447'	'0.0915'
a_H	'2.7405'	'12.5029'	'7.6141'	'3.5417'	'0.1024'
b_H	'3.2285'	'13.635'	'8.3502'	'5.3914'	'0.0801'
\nu	'24.5156'	'31.0602'	'139.1041'	'26.5512'	'0.1251'
BP	'665.9467'	'672.5245'	'658.5'	'672.5'	'0.1641'
reg	'0.2163'	'0.2374'	'0.1905'	'0.2361'	'0.0821'

14.3. Identifiability analysis







14.4. Uncertainty analysis

N=500

