

Validation process forCAUCA

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 99. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

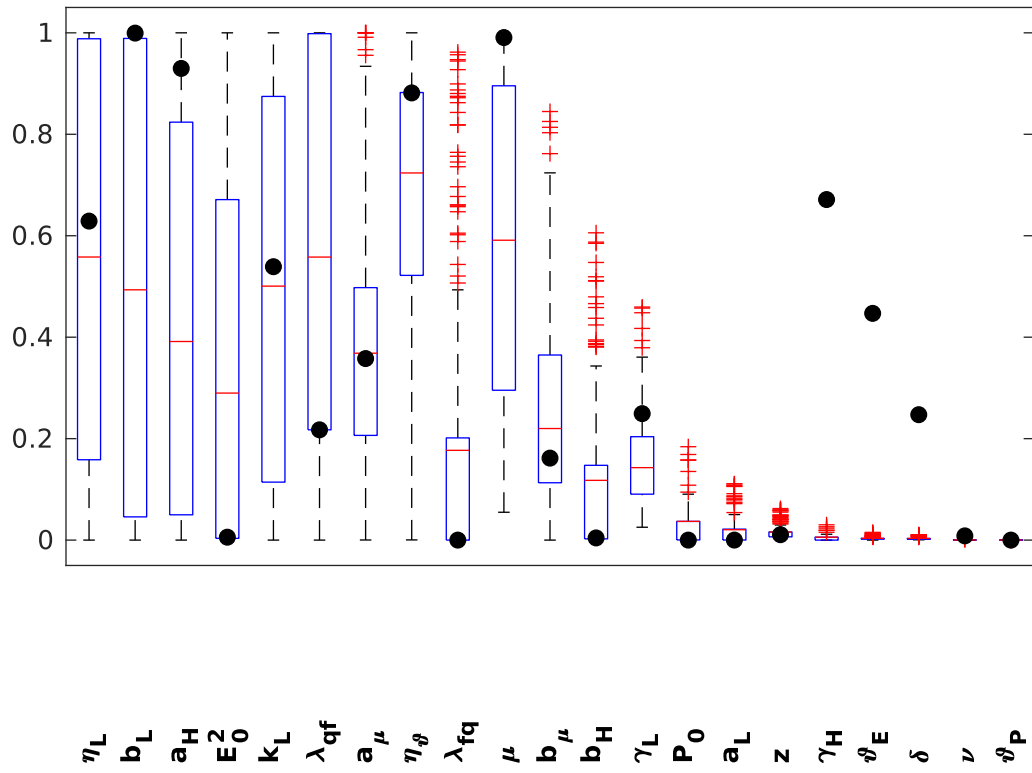
1.2. Estimated parameters with their intervals

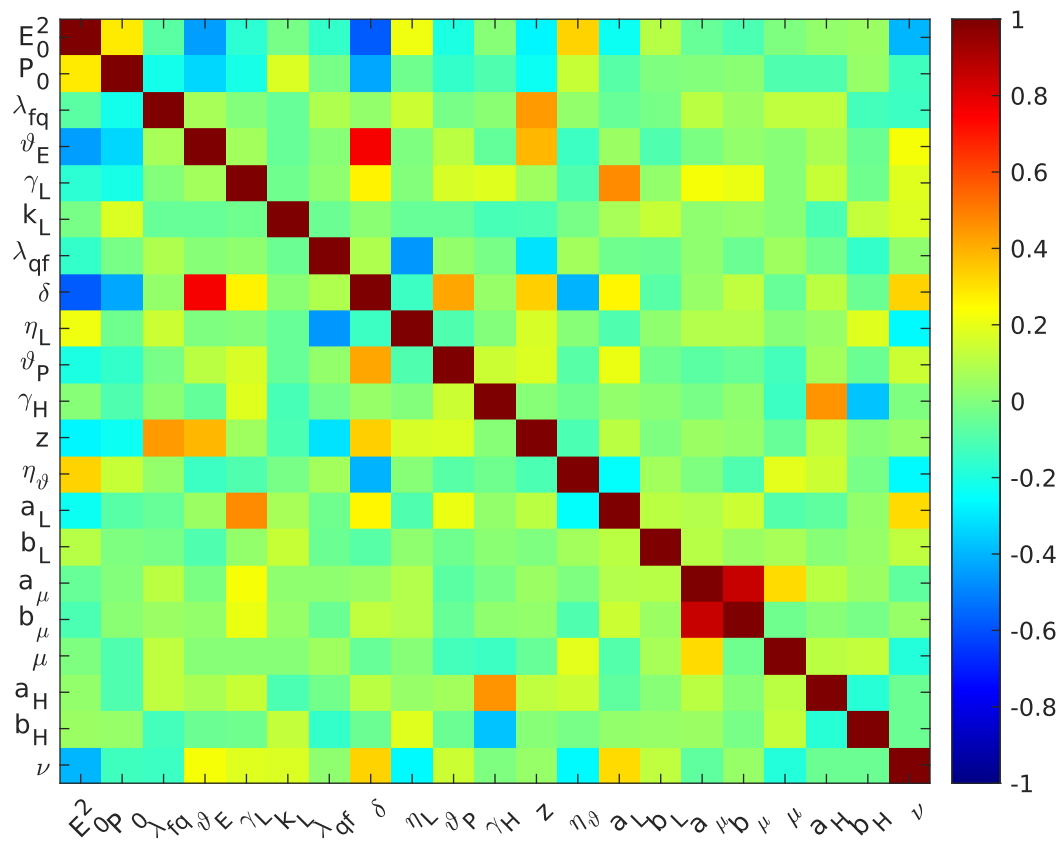
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

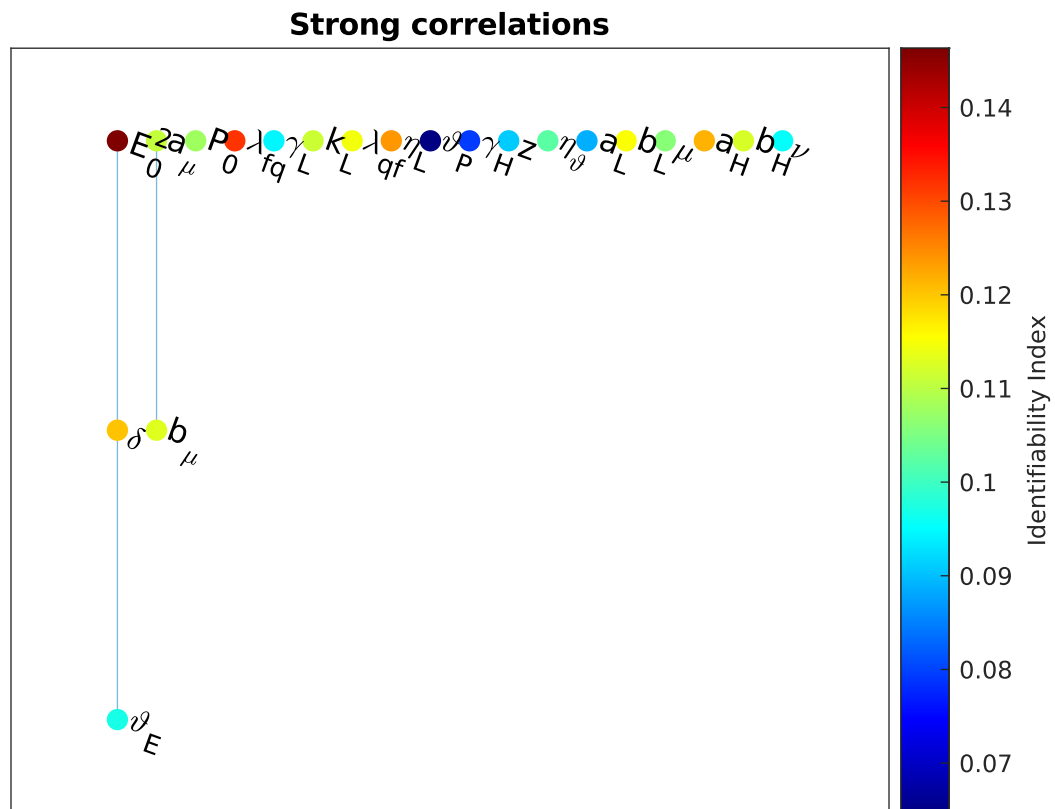
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
E^2_0	'9.8689'	'12.2086'	'579.6496'	'11.452'	'0.1463'
P_0	'0'	'0.0001'	'14.7514'	'0'	'0.1078'
\lambda_{fq}	'0'	'0'	'0.177'	'0'	'0.1318'
\vartheta_E	'0.4121'	'0.4718'	'0.0034'	'0.447'	'0.097'
\gamma_L	'0.2268'	'0.2494'	'0.1428'	'0.2493'	'0.0945'
k_L	'1.207'	'9.28'	'5.5061'	'5.8508'	'0.1116'
\lambda_{qf}	'0'	'0.4891'	'0.5579'	'0.2174'	'0.1145'
\delta	'0.0285'	'0.0371'	'0.0005'	'0.0371'	'0.1204'
\eta_L	'0.3333'	'1'	'0.558'	'0.6289'	'0.1237'
\vartheta_P	'0'	'0'	'0'	'0'	'0.0648'
\gamma_H	'0'	'0.8'	'0.0057'	'0.6713'	'0.0796'
z	'0.3086'	'0.3338'	'0.4788'	'0.32'	'0.091'
\eta_{\vartheta}	'0.3418'	'1'	'0.7238'	'0.8815'	'0.1026'
a_L	'1'	'1.0929'	'1.2865'	'1.0007'	'0.0887'
b_L	'12.9389'	'15'	'7.9077'	'14.9922'	'0.1154'
a_{\mu}	'3.4613'	'6.4179'	'6.1584'	'6.0098'	'0.1109'
b_{\mu}	'3.1832'	'11.1432'	'4.0794'	'3.2626'	'0.1132'
\mu	'0.227'	'1'	'0.5912'	'0.9907'	'0.1059'
a_H	'7.1477'	'15'	'6.481'	'14.0175'	'0.1216'
b_H	'1'	'12.4761'	'2.649'	'1.0599'	'0.1125'
\nu	'0'	'9.3932'	'0.1734'	'4.1748'	'0.0954'

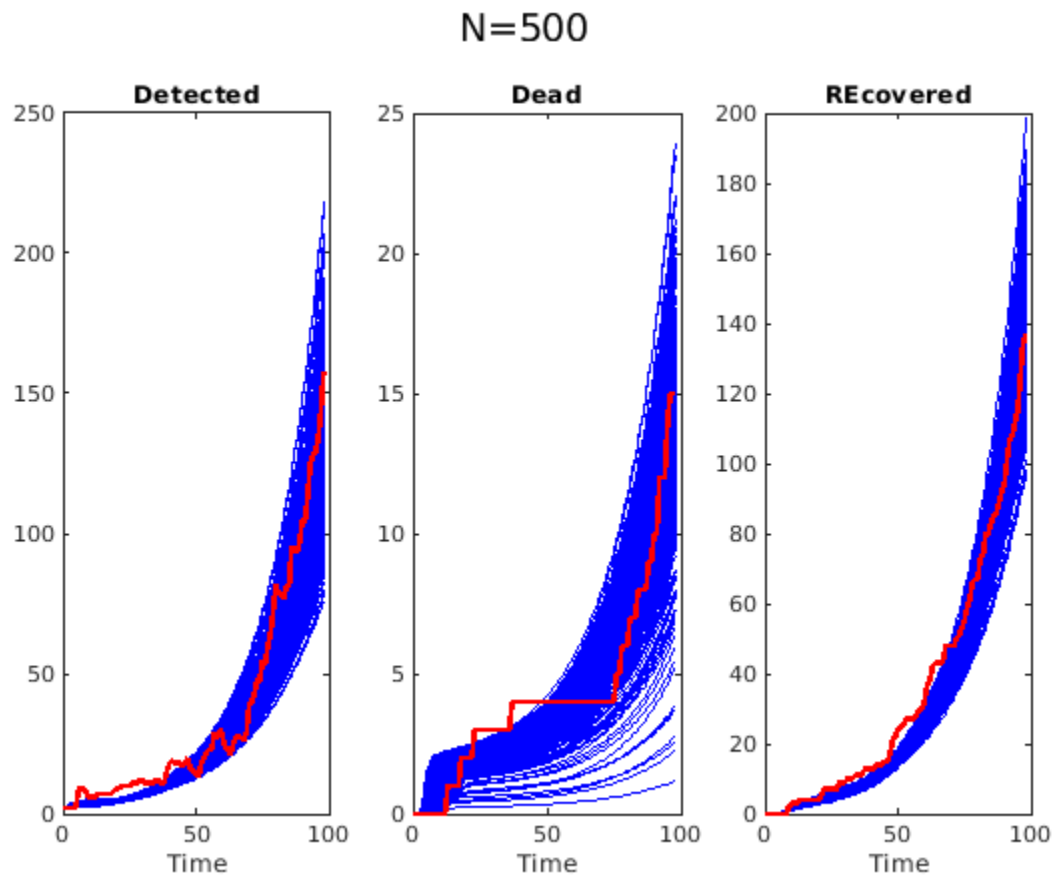
1.3. Identifiability analysys







1.4. Uncertainty analysis



Chapter 2. Extension number2

2.1. Basic information

The extension to be validated consists of the time series from the data99 to the 176. The status of the validation is: COMPLETED.

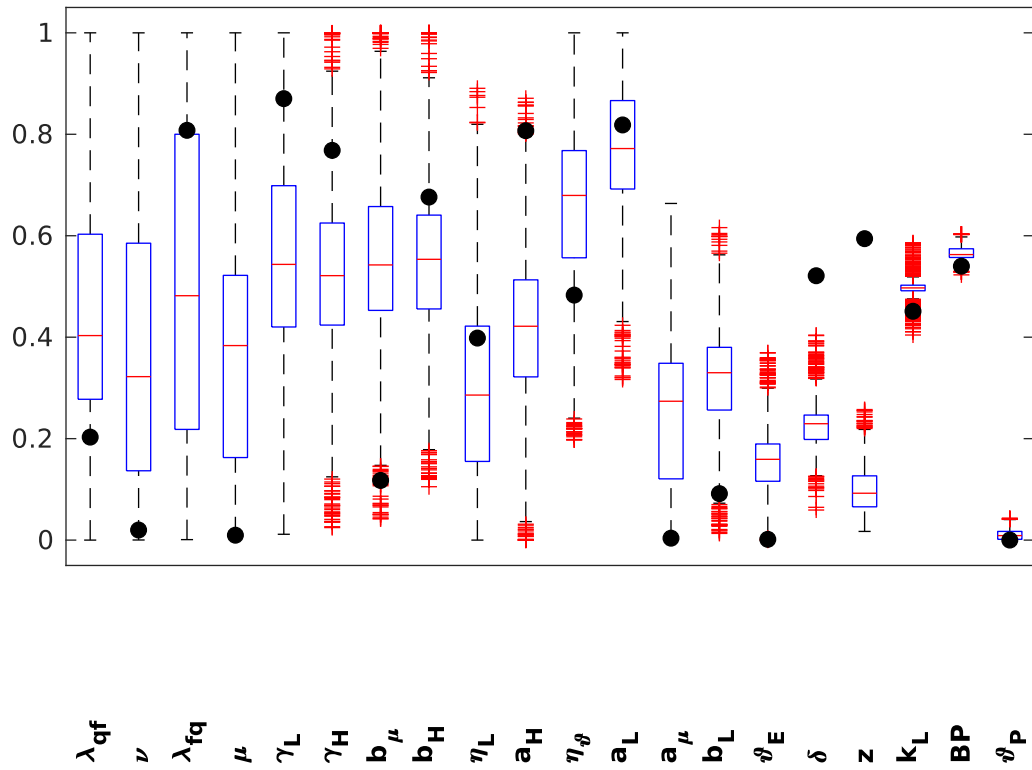
The number of estimations needed to perform the validation was1000.

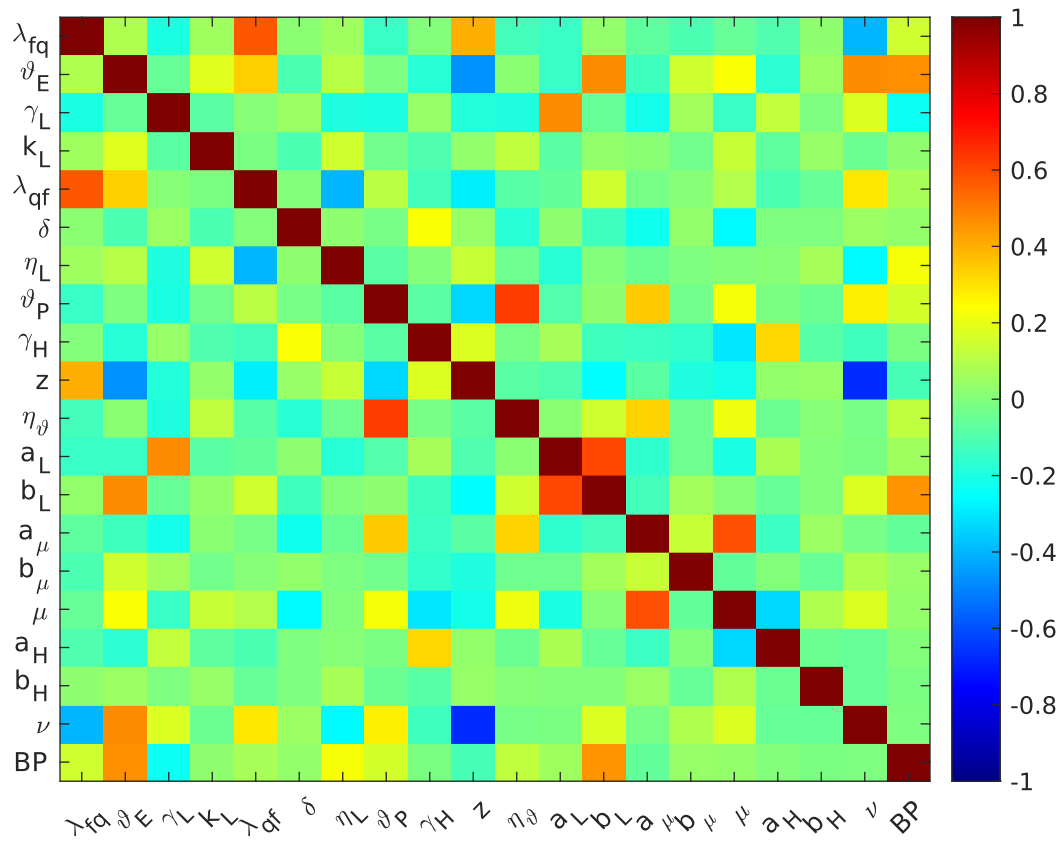
2.2. Estimated parameters with their intervals

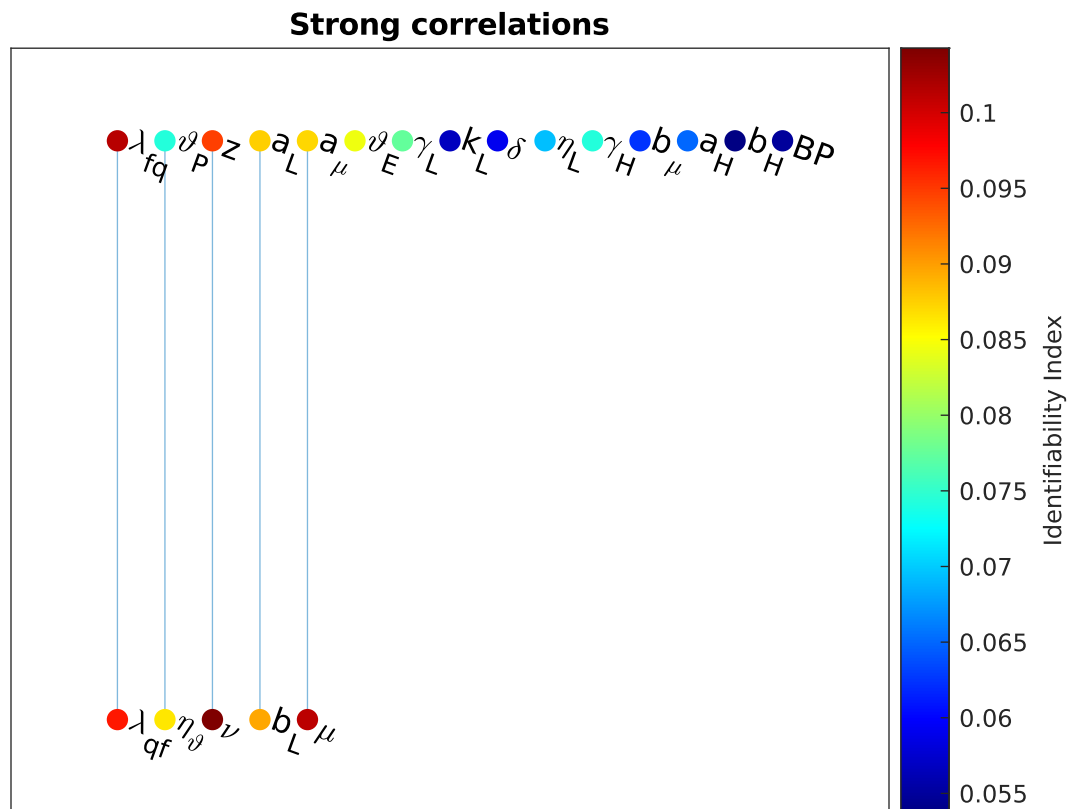
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.4523'	'0.5113'	'0.4818'	'0.8078'	'0.1014'
ϑ_E	'0.1478'	'0.1708'	'0.1593'	'0.0015'	'0.0844'
γ_L	'0.5244'	'0.5626'	'0.5435'	'0.8702'	'0.0774'
k_L	'5.339'	'5.6098'	'5.4744'	'5.0598'	'0.0567'
λ_{qf}	'0.3788'	'0.4276'	'0.4032'	'0.203'	'0.0966'
δ	'0.0322'	'0.0366'	'0.0344'	'0.0782'	'0.0592'
η_L	'0.2663'	'0.3058'	'0.2861'	'0.3983'	'0.0695'
ϑ_P	'0.0076'	'0.0101'	'0.0089'	'0.0001'	'0.0743'
γ_H	'0.5002'	'0.5419'	'0.521'	'0.7683'	'0.0743'
z	'2.4848'	'3.0593'	'2.7721'	'17.8269'	'0.0948'
η_{ϑ}	'0.6607'	'0.6978'	'0.6793'	'0.483'	'0.0864'
a_L	'11.5483'	'12.0638'	'11.8061'	'12.4577'	'0.0876'
b_L	'5.4051'	'5.8336'	'5.6194'	'2.2822'	'0.0895'
a_{μ}	'4.6453'	'5.0258'	'4.8355'	'1.0531'	'0.0871'
b_{μ}	'8.2926'	'8.8942'	'8.5934'	'2.6468'	'0.0625'
μ	'0.3621'	'0.4049'	'0.3835'	'0.0096'	'0.1013'
a_H	'6.6394'	'7.1715'	'6.9054'	'12.2987'	'0.0651'
b_H	'8.4709'	'9.022'	'8.7465'	'10.4675'	'0.0538'
ν	'148.7085'	'173.5253'	'161.1169'	'9.9374'	'0.1043'
BP	'99.2241'	'99.7759'	'99.5'	'95.5'	'0.055'

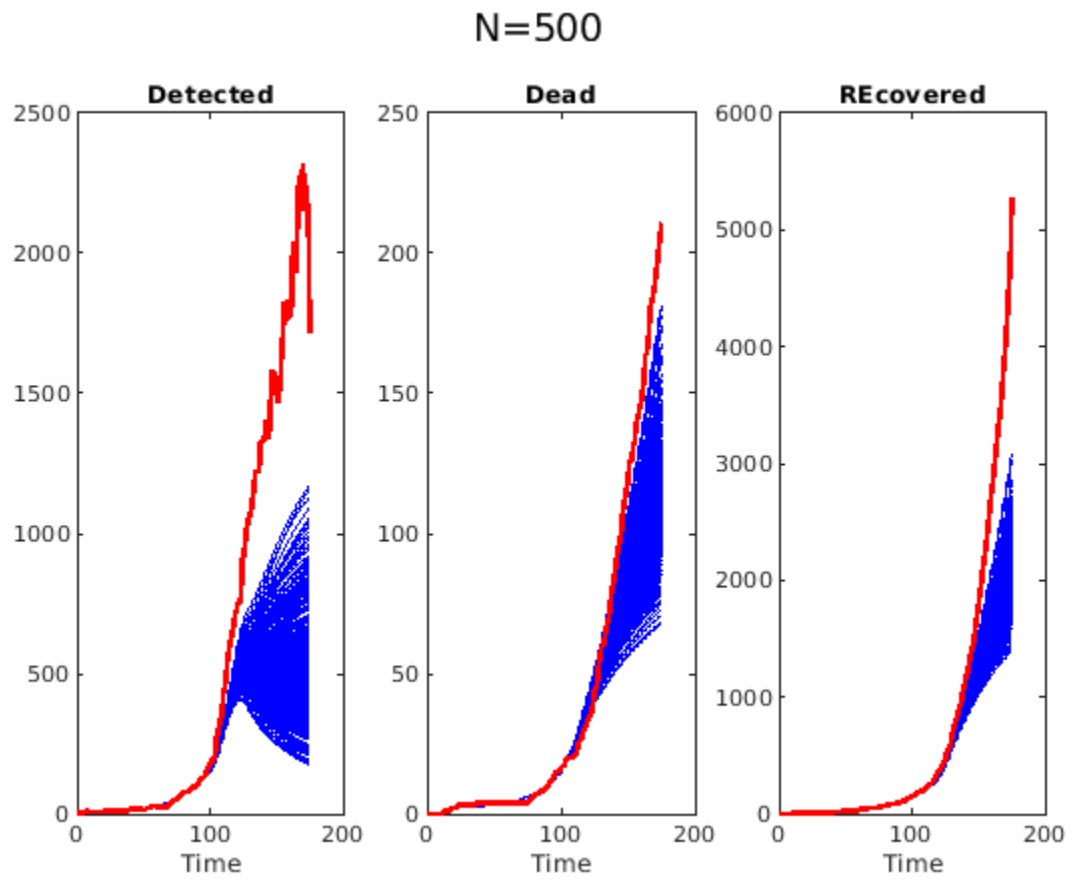
2.3. Identifiability analysis







2.4. Uncertainty analysis



Chapter 3. Extension number3

3.1. Basic information

The extension to be validated consists of the time series from the data176 to the 206. The status of the validation is: COMPLETED.

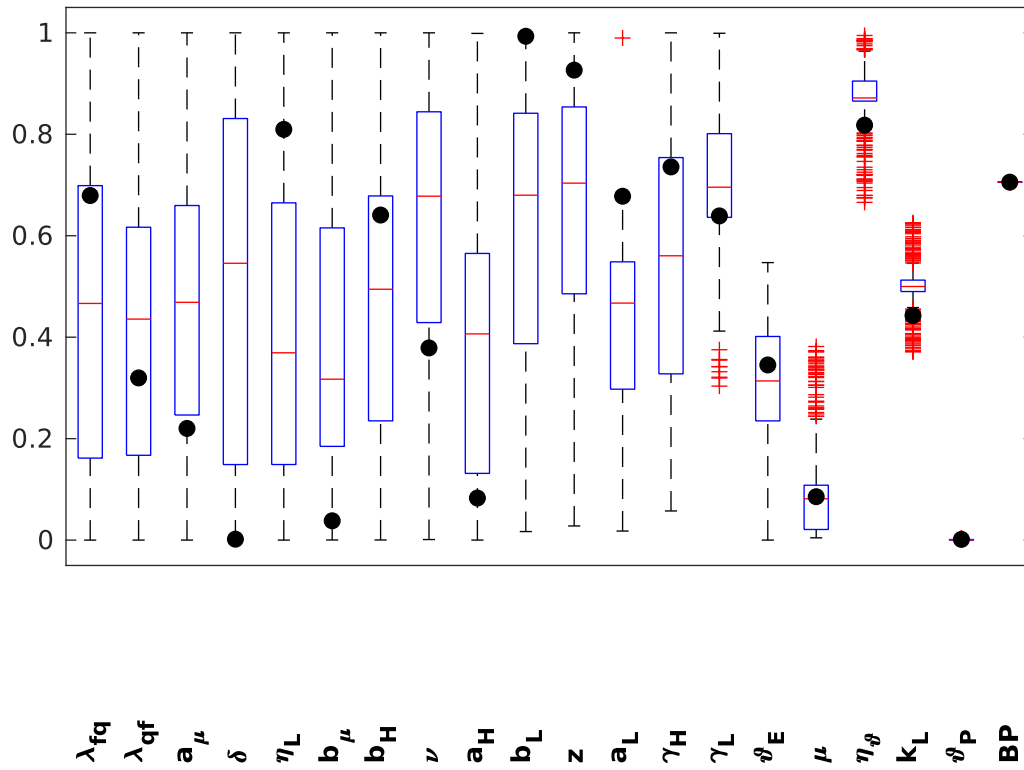
The number of estimations needed to perform the validation was1000.

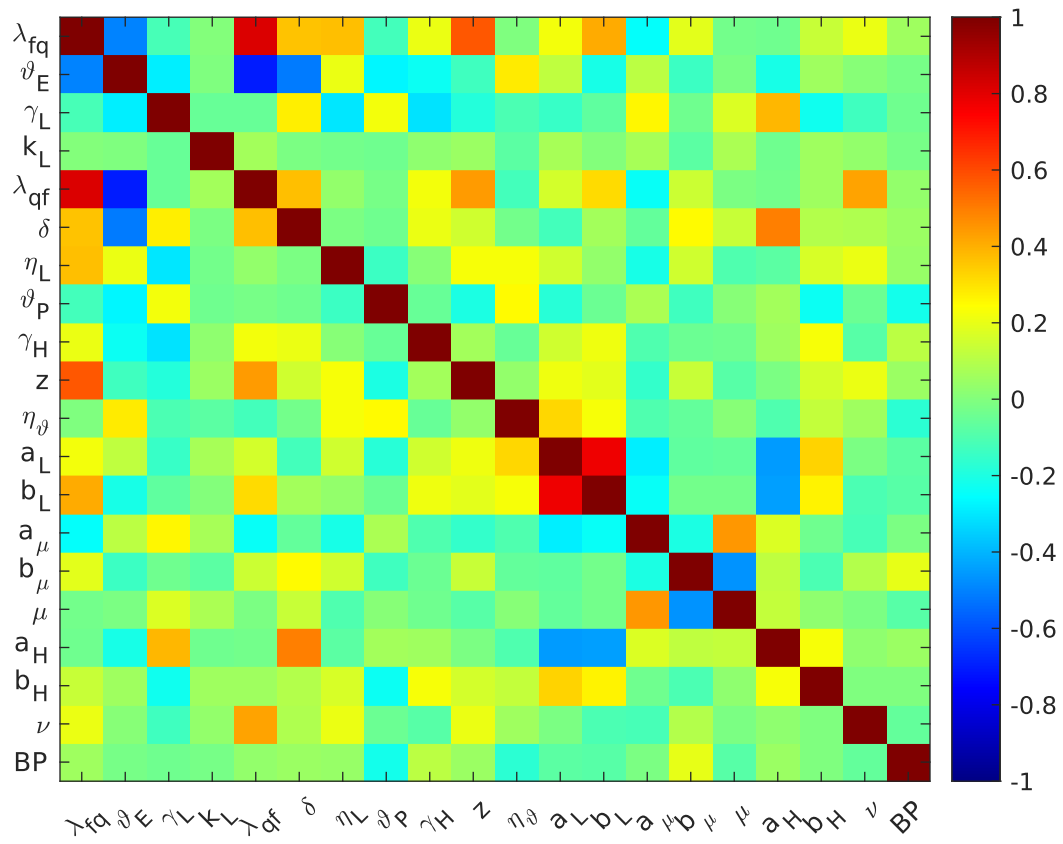
3.2. Estimated parameters with their intervals

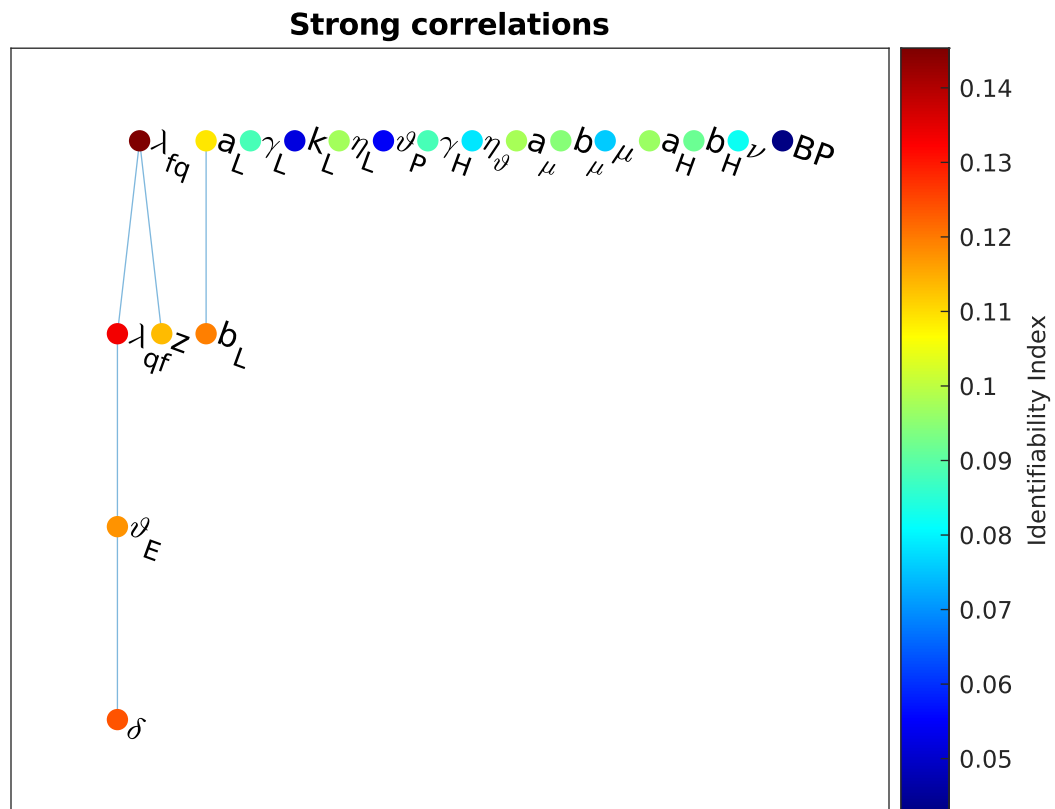
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.4291'	'0.5039'	'0.4665'	'0.6792'	'0.1453'
ϑ_E	'0.2963'	'0.3312'	'0.3137'	'0.3453'	'0.1176'
γ_L	'0.6743'	'0.717'	'0.6957'	'0.6391'	'0.0884'
k_L	'5.3462'	'5.653'	'5.4996'	'4.9839'	'0.0521'
λ_{qf}	'0.4053'	'0.466'	'0.4357'	'0.3197'	'0.1337'
δ	'0.0752'	'0.0885'	'0.0819'	'0.0003'	'0.1239'
η_L	'0.3304'	'0.4081'	'0.3693'	'0.8097'	'0.0974'
ϑ_P	'0.0005'	'0.0008'	'0.0006'	'0.0014'	'0.0546'
γ_H	'0.5274'	'0.5936'	'0.5605'	'0.7357'	'0.0882'
z	'20.0654'	'22.1565'	'21.1109'	'27.7947'	'0.1133'
η_{ϑ}	'0.8476'	'0.8956'	'0.8716'	'0.818'	'0.0786'
a_L	'7.2227'	'7.8593'	'7.541'	'10.4898'	'0.1091'
b_L	'10.0272'	'11.0094'	'10.5183'	'14.9047'	'0.1195'
a_{μ}	'7.0934'	'8.0315'	'7.5625'	'4.0823'	'0.0978'
b_{μ}	'4.926'	'5.9552'	'5.4406'	'1.5326'	'0.0946'
μ	'0.0549'	'0.1081'	'0.0815'	'0.0855'	'0.0758'
a_H	'6.235'	'7.1472'	'6.6911'	'2.1612'	'0.0965'
b_H	'7.4394'	'8.4075'	'7.9235'	'9.9711'	'0.0917'
ν	'322.248'	'355.7495'	'338.9987'	'189.4271'	'0.0824'
BP	'174.436'	'174.564'	'174.5'	'174.5'	'0.0428'

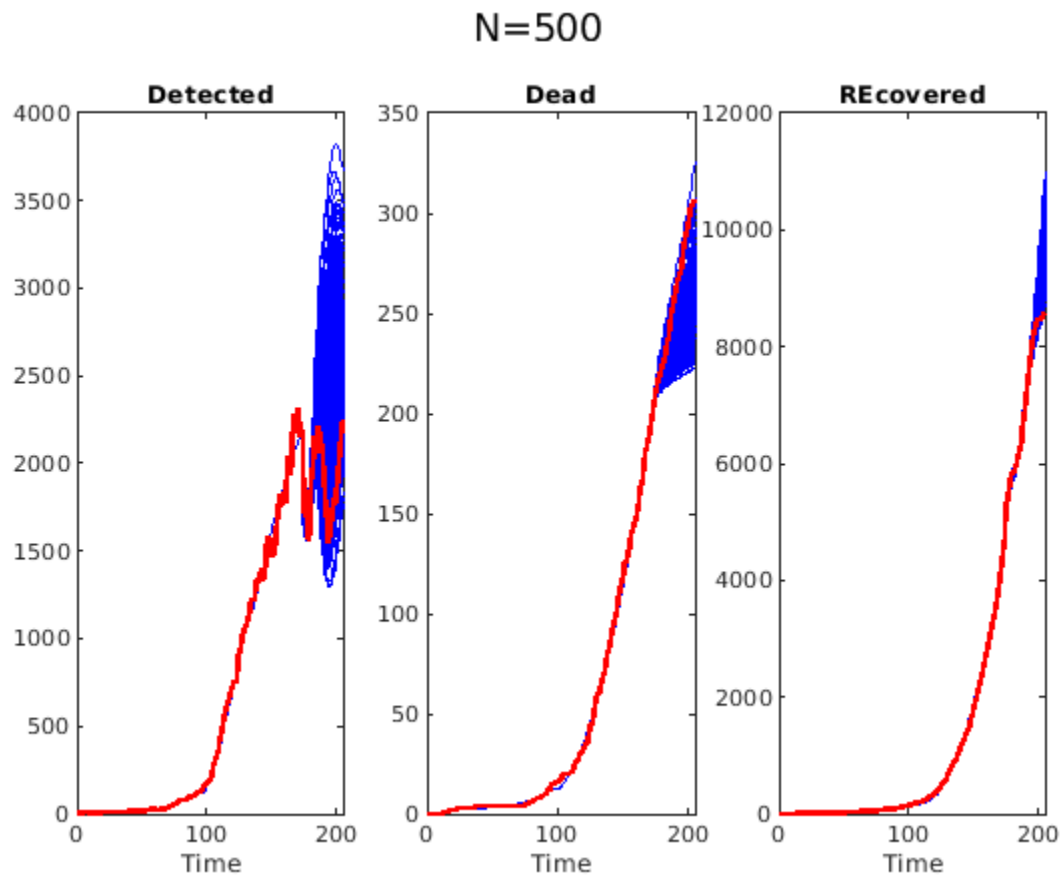
3.3. Identifiability analysis







3.4. Uncertainty analysys



Chapter 4. Extension number4

4.1. Basic information

The extension to be validated consists of the time series from the data206 to the 265. The status of the validation is: COMPLETED.

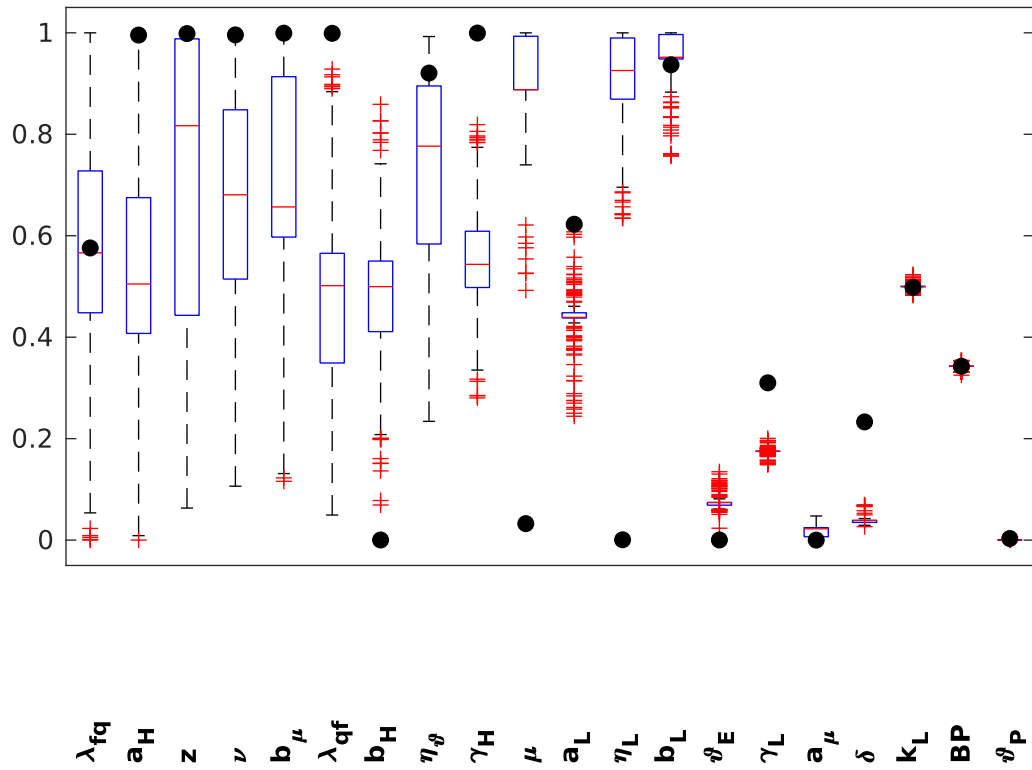
The number of estimations needed to perform the validation was1000.

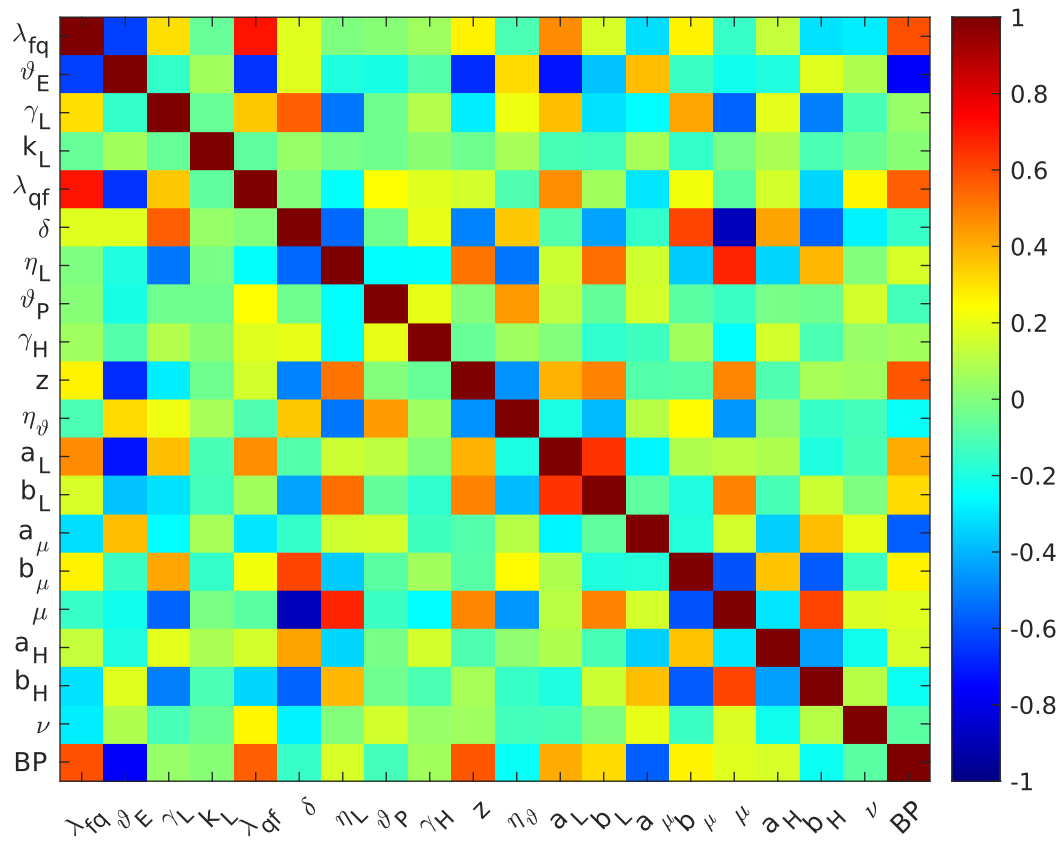
4.2. Estimated parameters with their intervals

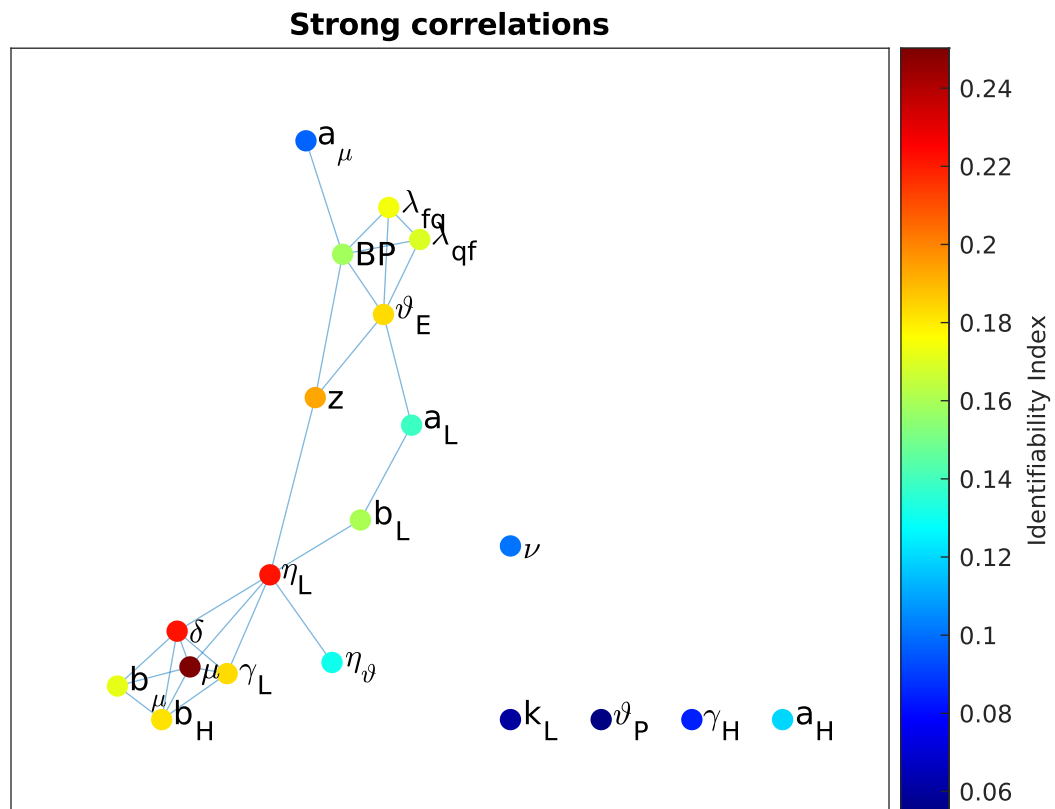
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.5172'	'0.6154'	'0.5663'	'0.5759'	'0.1742'
ϑ_E	'0.0555'	'0.0928'	'0.0741'	'0.0002'	'0.1835'
γ_L	'0.1334'	'0.2167'	'0.1751'	'0.3101'	'0.1834'
k_L	'5.3143'	'5.6859'	'5.5001'	'5.4846'	'0.0605'
λ_{qf}	'0.4589'	'0.5441'	'0.5015'	'0.999'	'0.1697'
δ	'0'	'0.0169'	'0.0058'	'0.0349'	'0.2215'
η_L	'0.8765'	'0.9749'	'0.9257'	'0.0007'	'0.2217'
ϑ_P	'0.0001'	'0.0005'	'0.0003'	'0.0031'	'0.0547'
γ_H	'0.5109'	'0.5762'	'0.5435'	'0.9995'	'0.085'
z	'22.582'	'26.4295'	'24.5058'	'29.9549'	'0.193'
η_{ϑ}	'0.7405'	'0.8127'	'0.7766'	'0.9207'	'0.1309'
a_L	'6.7721'	'7.5199'	'7.146'	'9.7174'	'0.1395'
b_L	'13.6679'	'14.9826'	'14.3253'	'14.118'	'0.1603'
a_{μ}	'1.2139'	'1.4086'	'1.3112'	'1.0009'	'0.0978'
b_{μ}	'9.545'	'10.8462'	'10.1956'	'14.9907'	'0.1719'
μ	'0.8067'	'0.9692'	'0.8879'	'0.0325'	'0.2502'
a_H	'7.4094'	'8.7257'	'8.0676'	'14.9385'	'0.1204'
b_H	'7.4472'	'8.5439'	'7.9955'	'1.0035'	'0.1819'
ν	'317.9806'	'362.7011'	'340.3409'	'497.9781'	'0.1009'
BP	'206.2509'	'206.7481'	'206.4995'	'206.5'	'0.1591'

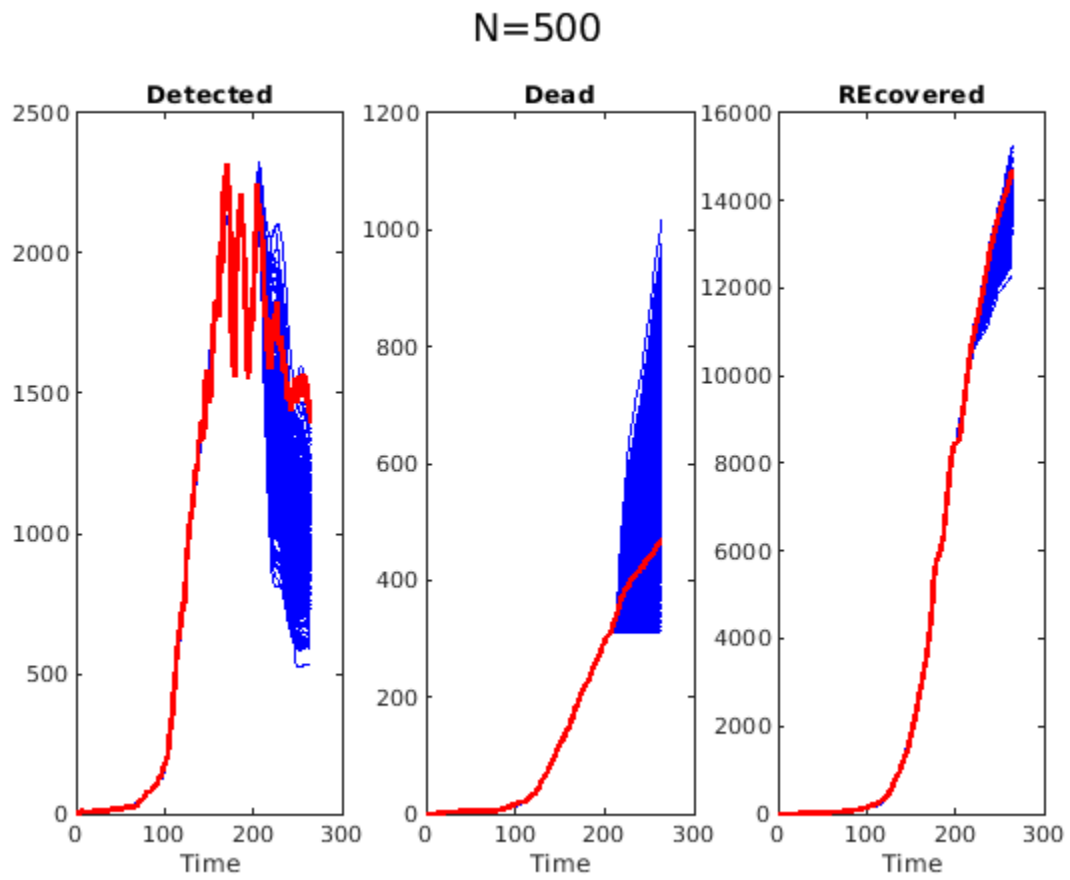
4.3. Identifiability analysis







4.4. Uncertainty analysys



Chapter 5. Extension number5

5.1. Basic information

The extension to be validated consists of the time series from the data265 to the 293. The status of the validation is: COMPLETED.

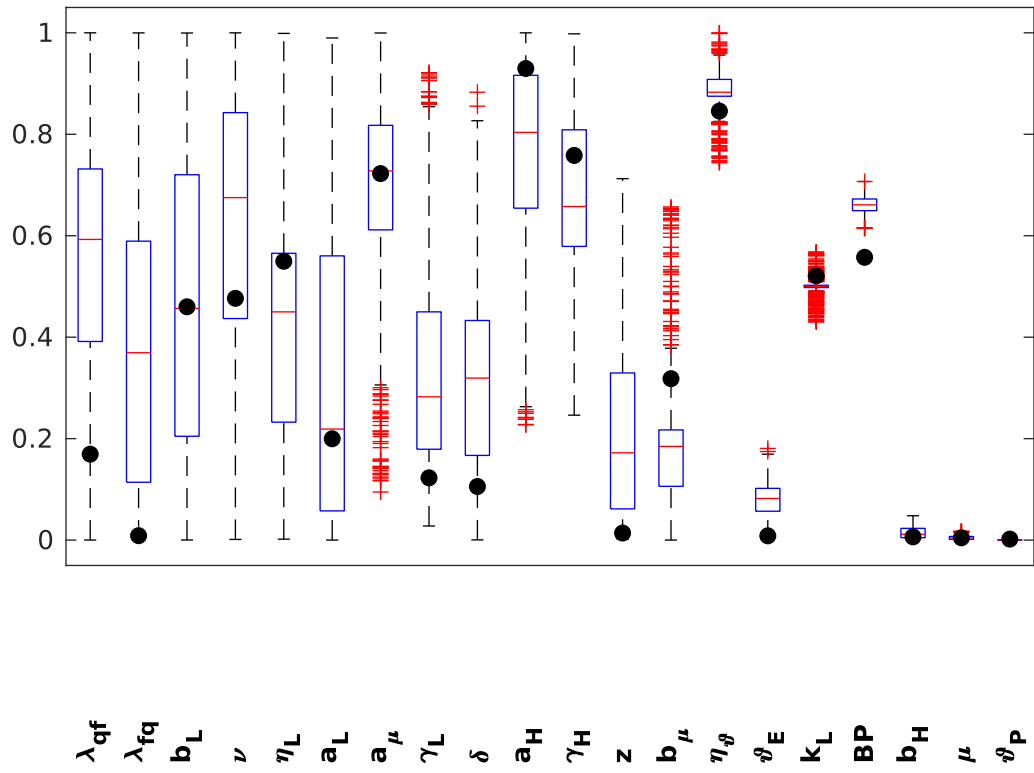
The number of estimations needed to perform the validation was1000.

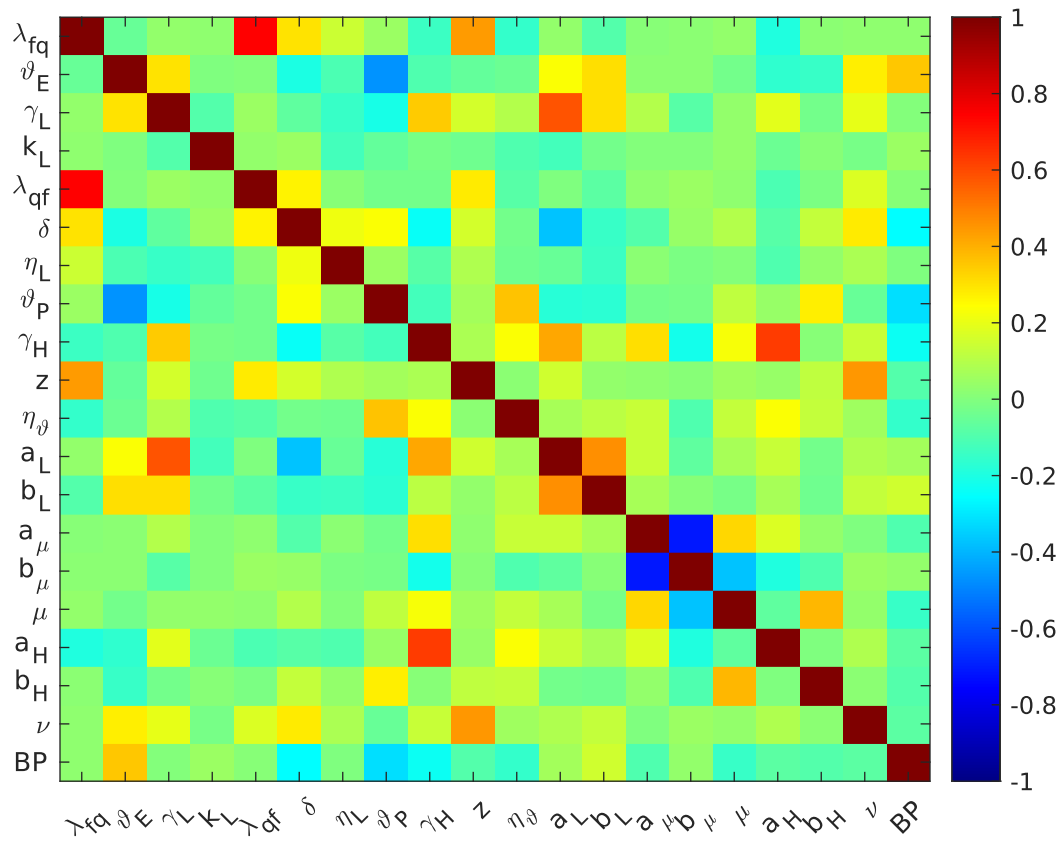
5.2. Estimated parameters with their intervals

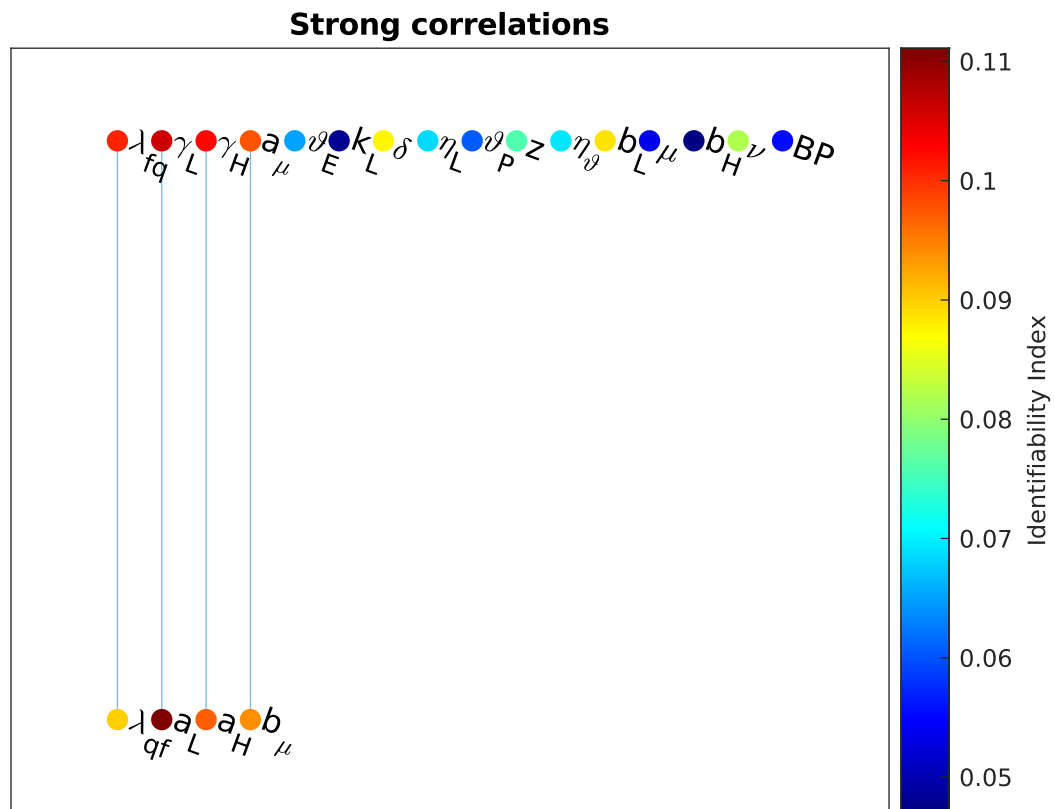
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.3379'	'0.4008'	'0.3693'	'0.0087'	'0.1008'
ϑ_E	'0.0777'	'0.0865'	'0.0821'	'0.0084'	'0.0653'
γ_L	'0.2517'	'0.3133'	'0.2825'	'0.1228'	'0.1062'
k_L	'5.3871'	'5.6147'	'5.5009'	'5.6894'	'0.0483'
λ_{qf}	'0.5654'	'0.6201'	'0.5927'	'0.1694'	'0.0901'
δ	'0.0447'	'0.0511'	'0.0479'	'0.0158'	'0.0873'
η_L	'0.4244'	'0.4754'	'0.4499'	'0.5497'	'0.0686'
ϑ_P	'0.0003'	'0.0005'	'0.0004'	'0.002'	'0.0608'
γ_H	'0.6389'	'0.6763'	'0.6576'	'0.7583'	'0.1024'
z	'4.5238'	'5.7962'	'5.16'	'0.4168'	'0.076'
η_{ϑ}	'0.8669'	'0.8989'	'0.8829'	'0.8457'	'0.0696'
a_L	'3.6079'	'4.5196'	'4.0638'	'3.7966'	'0.1111'
b_L	'6.9355'	'7.8534'	'7.3944'	'7.4389'	'0.0886'
a_{μ}	'10.7531'	'11.6253'	'11.1892'	'11.1155'	'0.0978'
b_{μ}	'3.167'	'4.0053'	'3.5862'	'5.4544'	'0.0939'
μ	'0.0035'	'0.0051'	'0.0043'	'0.0046'	'0.0536'
a_H	'11.8782'	'12.6259'	'12.2521'	'14.0147'	'0.0971'
b_H	'1.1339'	'1.1885'	'1.1612'	'1.0899'	'0.0471'
ν	'323.288'	'351.8538'	'337.5709'	'238.2992'	'0.082'
BP	'263.2602'	'263.7398'	'263.5'	'254.5'	'0.0557'

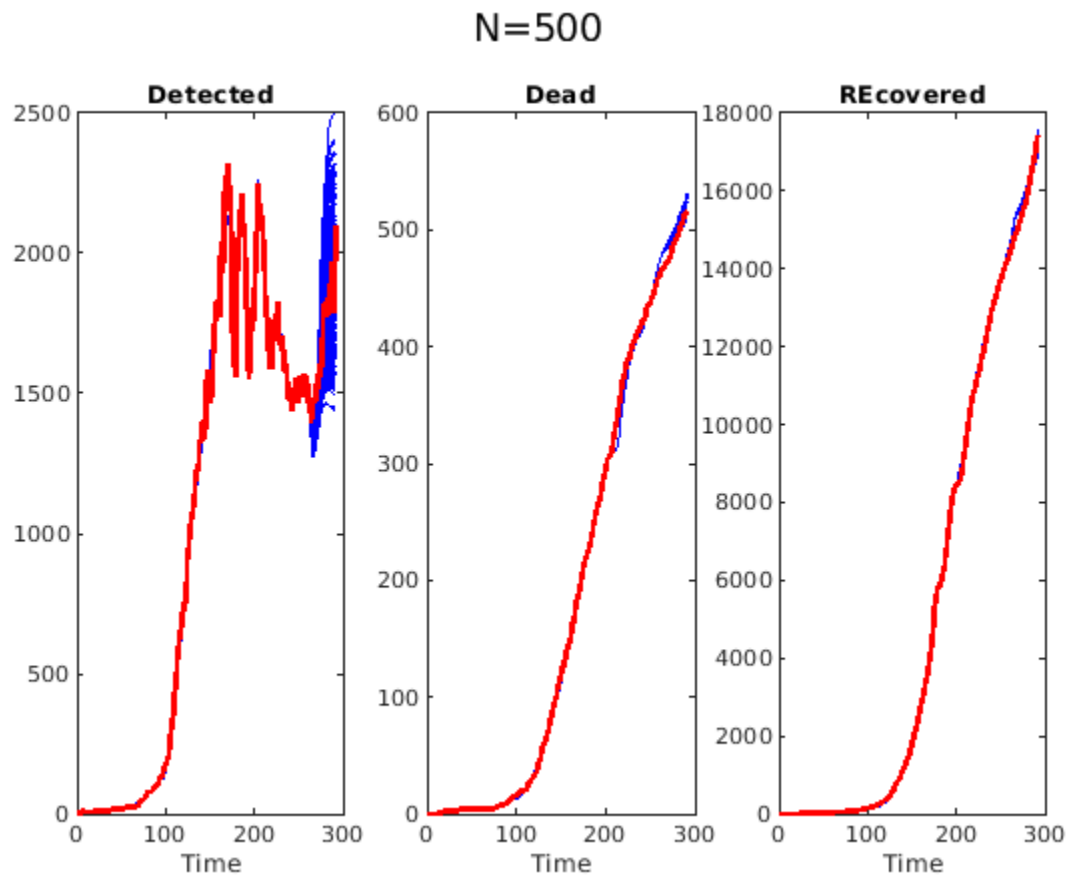
5.3. Identifiability analysis







5.4. Uncertainty analysys



Chapter 6. Extension number6

6.1. Basic information

The extension to be validated consists of the time series from the data293 to the 322. The status of the validation is: COMPLETED.

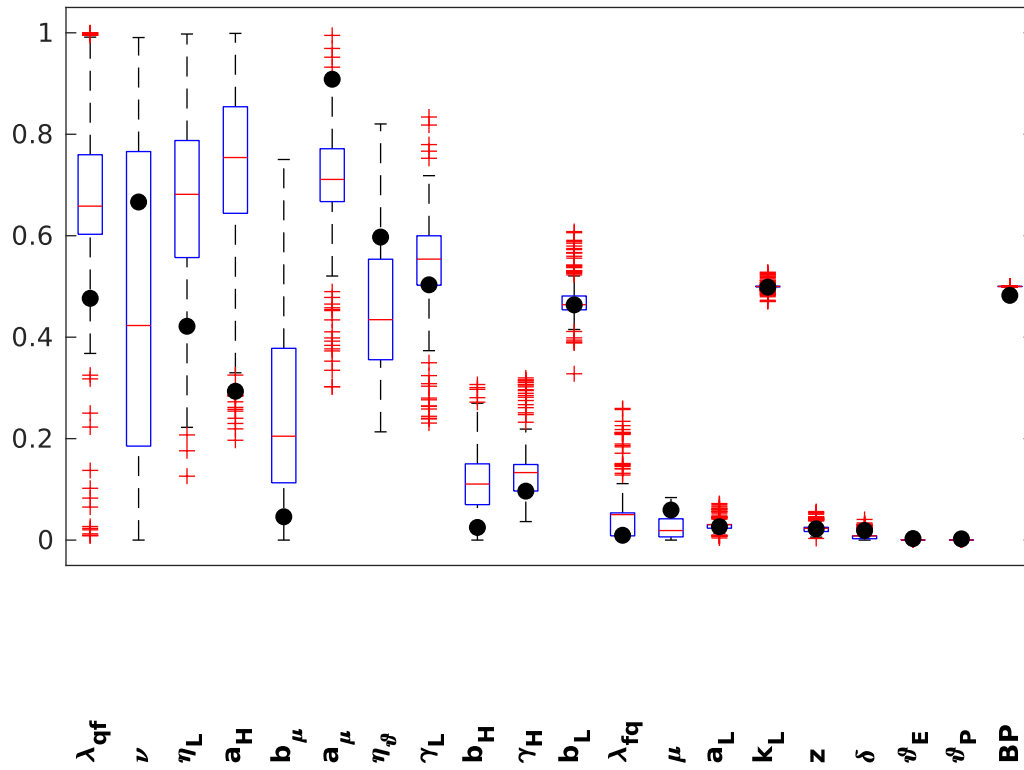
The number of estimations needed to perform the validation was1000.

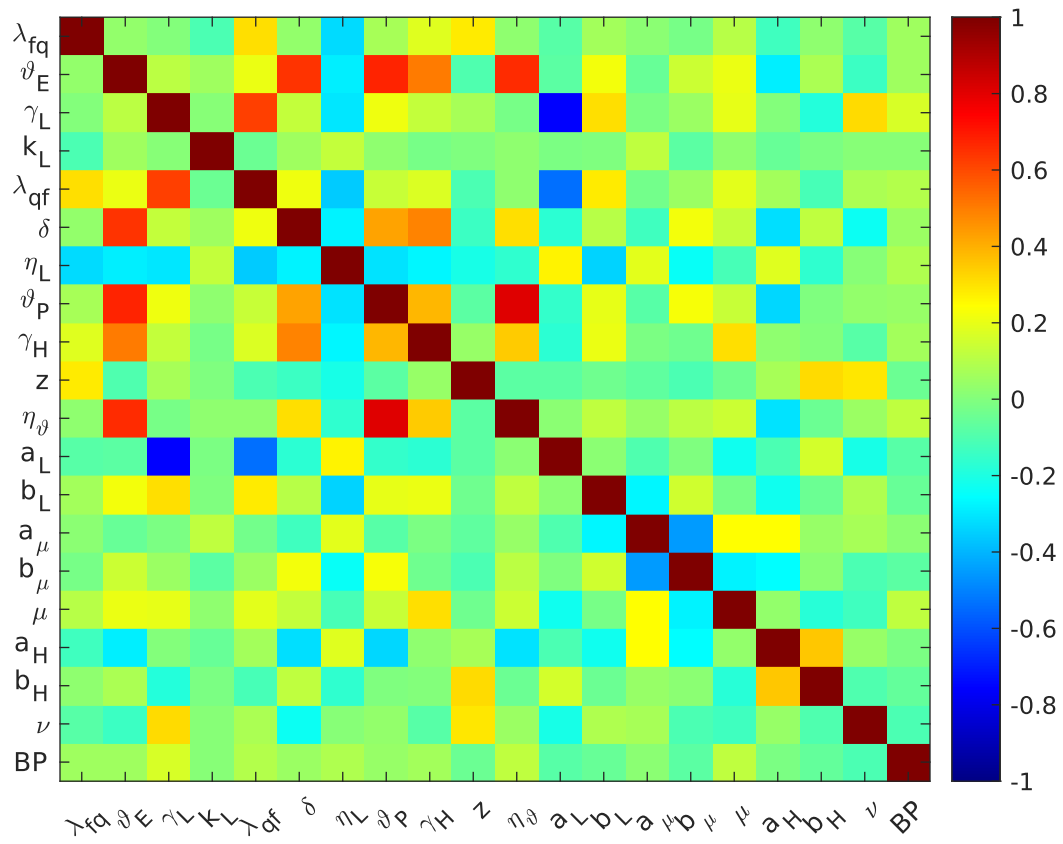
6.2. Estimated parameters with their intervals

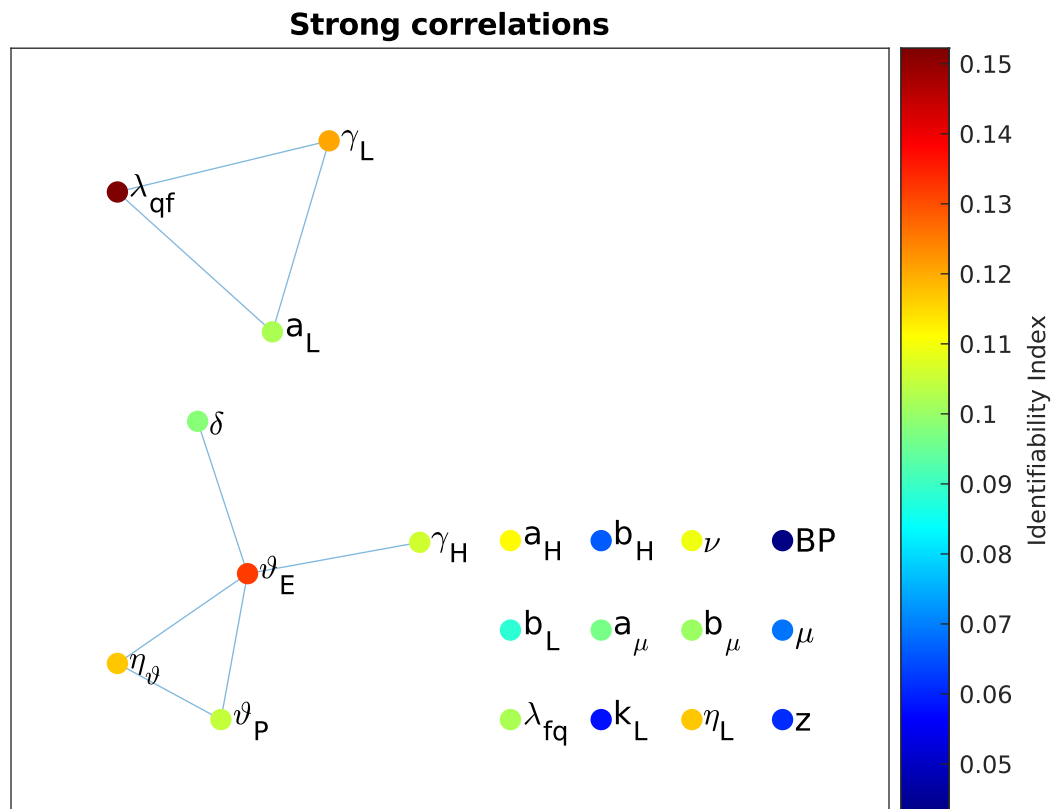
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.1046'	'0.0507'	'0.0095'	'0.102'
ϑ_E	'0.0001'	'0.0008'	'0.0004'	'0.003'	'0.1321'
γ_L	'0.5282'	'0.5794'	'0.5538'	'0.5032'	'0.1207'
k_L	'5.291'	'5.7083'	'5.4996'	'5.4875'	'0.0585'
λ_{qf}	'0.6015'	'0.7144'	'0.658'	'0.4766'	'0.1522'
δ	'0'	'0.0026'	'0.0012'	'0.0028'	'0.0985'
η_L	'0.6397'	'0.7187'	'0.6792'	'0.4215'	'0.1172'
ϑ_P	'0'	'0.0005'	'0.0002'	'0.0024'	'0.1045'
γ_H	'0.1079'	'0.1587'	'0.1333'	'0.0965'	'0.1059'
z	'0.4148'	'0.9801'	'0.6974'	'0.6662'	'0.0611'
η_{ϑ}	'0.4103'	'0.4587'	'0.4345'	'0.5973'	'0.117'
a_L	'1.2568'	'1.5992'	'1.428'	'1.369'	'0.1023'
b_L	'7.09'	'7.901'	'7.4955'	'7.4922'	'0.0886'
a_{μ}	'10.3172'	'11.5527'	'10.935'	'13.7184'	'0.0965'
b_{μ}	'3.2719'	'4.4746'	'3.8732'	'1.6438'	'0.1006'
μ	'0.0104'	'0.0275'	'0.0189'	'0.0593'	'0.069'
a_H	'10.8831'	'12.2297'	'11.5564'	'5.1076'	'0.1113'
b_H	'2.3275'	'2.7833'	'2.5554'	'1.349'	'0.0664'
ν	'182.9354'	'240.0663'	'211.5009'	'333.2285'	'0.1094'
BP	'293.4109'	'293.5891'	'293.5'	'292.5'	'0.0431'

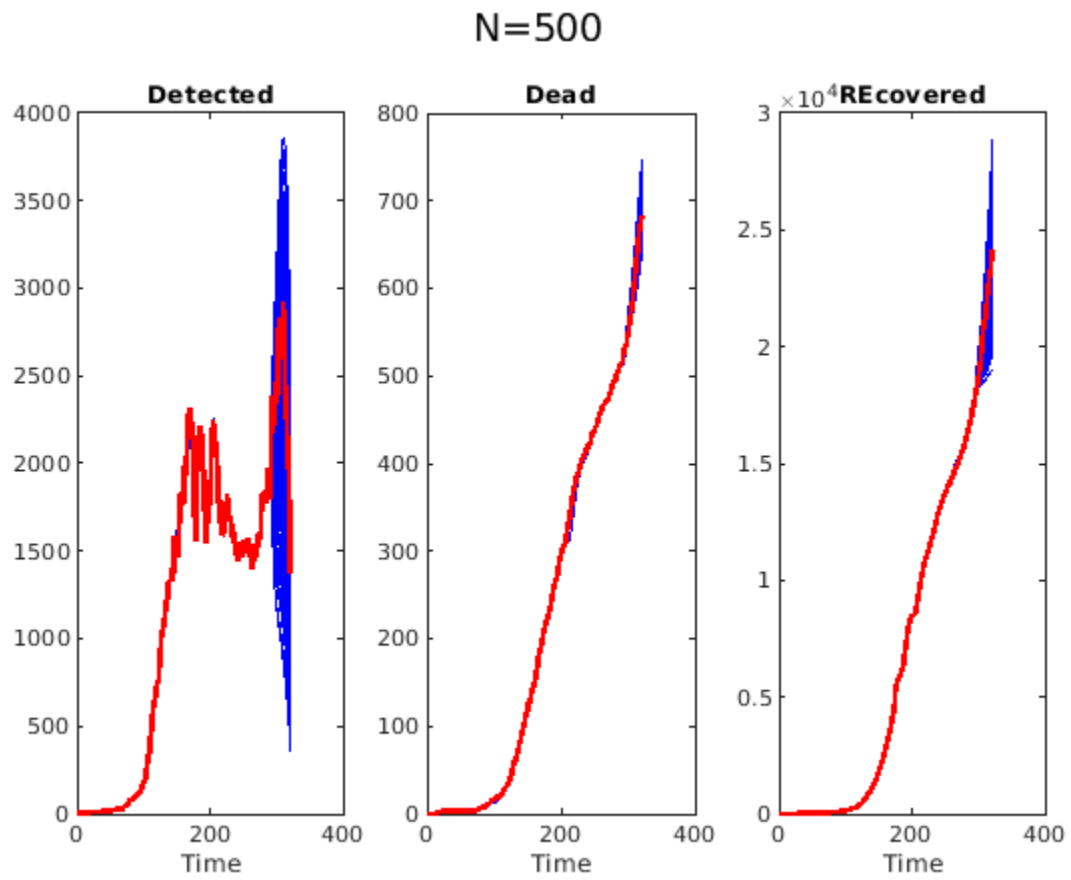
6.3. Identifiability analysis







6.4. Uncertainty analysis



Chapter 7. Extension number7

7.1. Basic information

The extension to be validated consists of the time series from the data322 to the 348. The status of the validation is: COMPLETED.

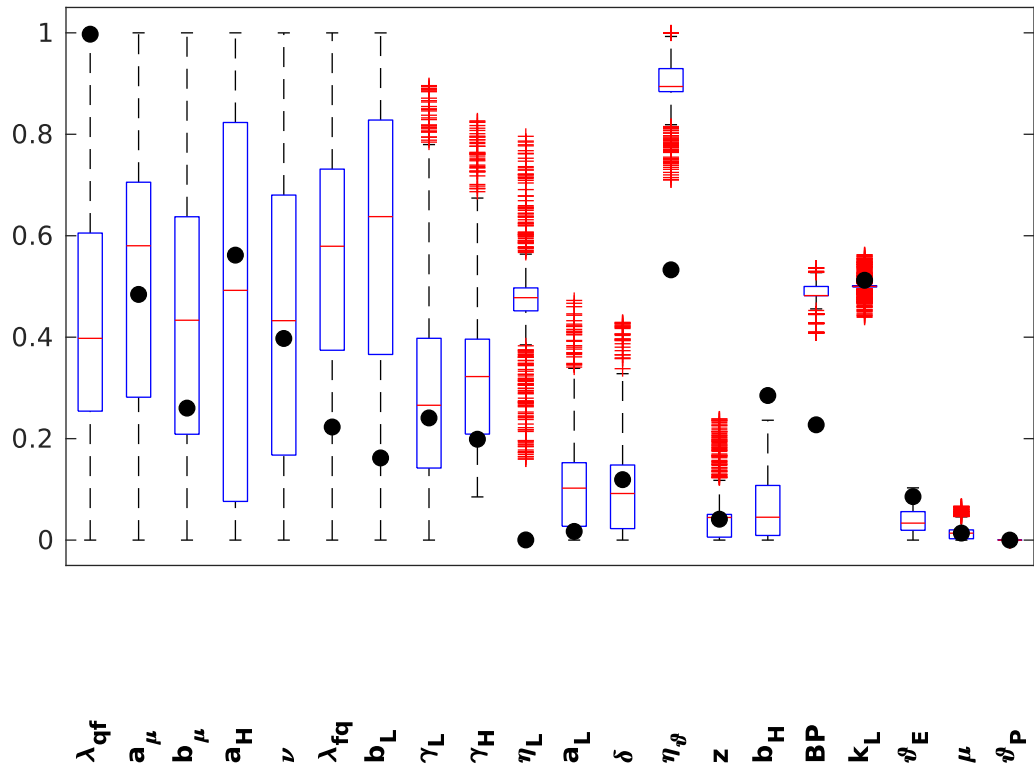
The number of estimations needed to perform the validation was1000.

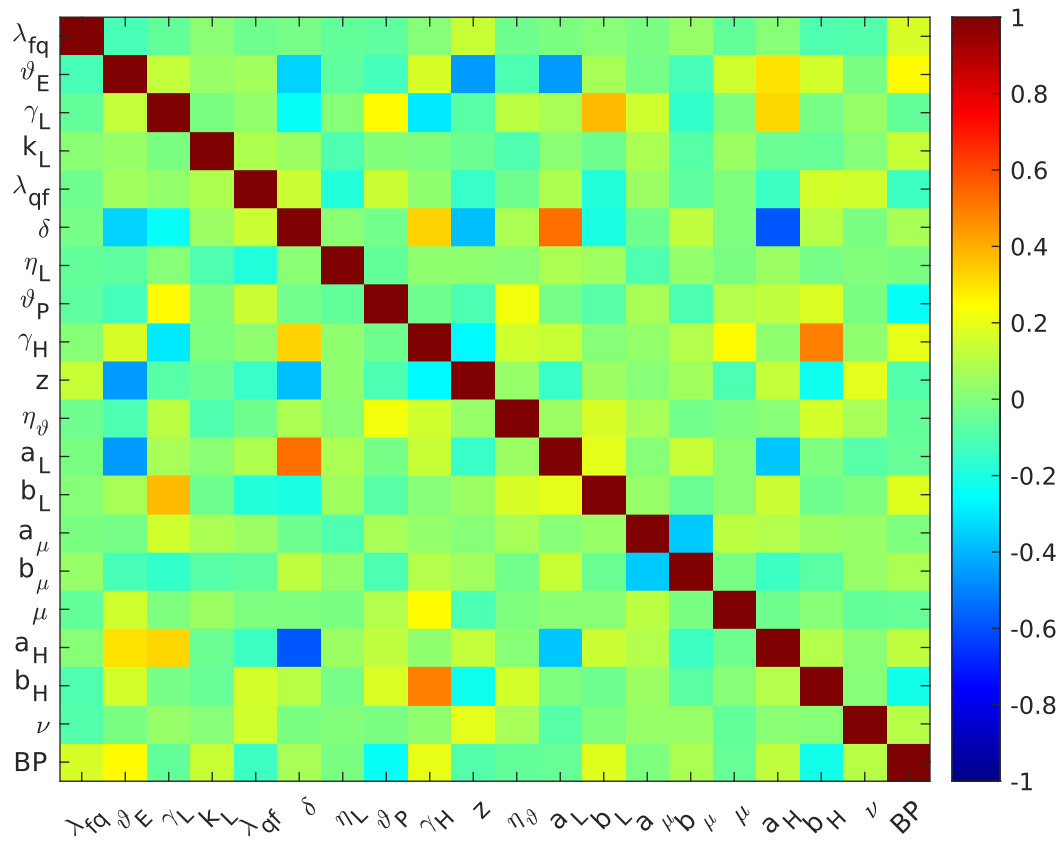
7.2. Estimated parameters with their intervals

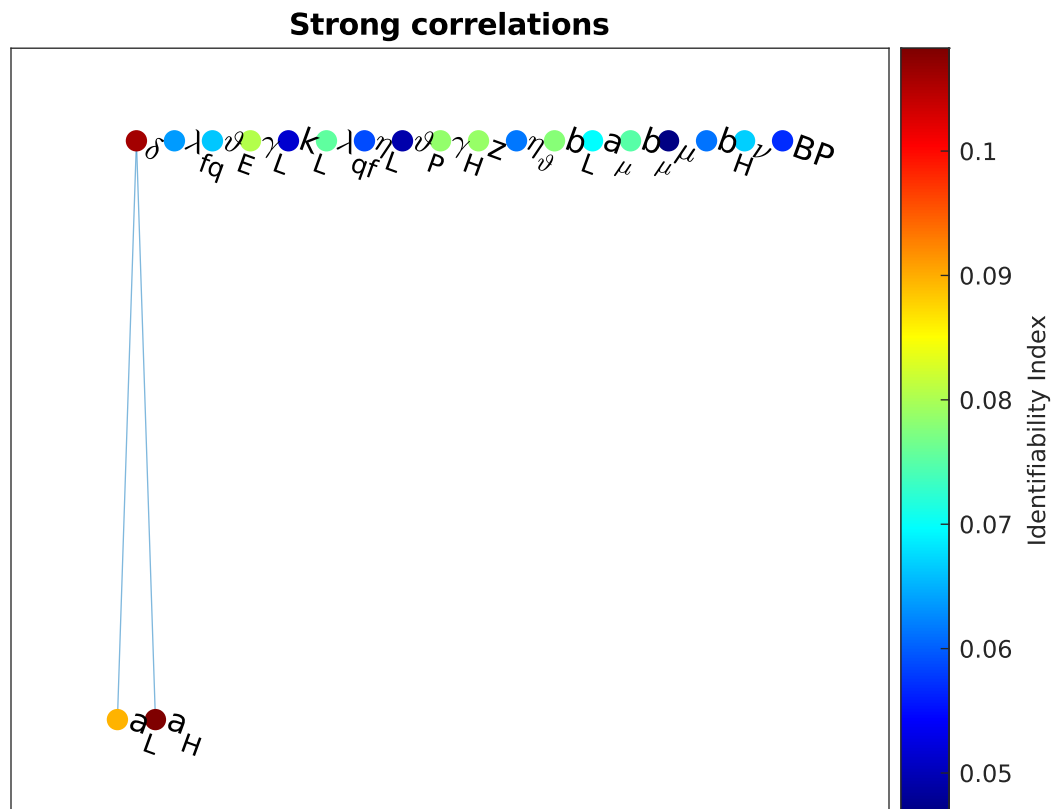
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.5537'	'0.6048'	'0.5793'	'0.223'	'0.0637'
\vartheta_E	'0.0312'	'0.0357'	'0.0335'	'0.0857'	'0.0664'
\gamma_L	'0.2409'	'0.2907'	'0.2658'	'0.2408'	'0.0805'
k_L	'5.3735'	'5.6274'	'5.5004'	'5.6097'	'0.0515'
\lambda_{qf}	'0.3708'	'0.4247'	'0.3977'	'0.9973'	'0.0756'
\delta	'0.0116'	'0.0161'	'0.0138'	'0.0179'	'0.106'
\eta_L	'0.4558'	'0.5'	'0.4779'	'0.0003'	'0.0589'
\vartheta_P	'0'	'0.0001'	'0'	'0'	'0.0495'
\gamma_H	'0.3012'	'0.3436'	'0.3224'	'0.1988'	'0.0786'
z	'0.7345'	'1.9444'	'1.3395'	'1.2356'	'0.0788'
\eta_{\vartheta}	'0.8765'	'0.9115'	'0.894'	'0.5328'	'0.0617'
a_L	'2.1336'	'2.7351'	'2.4343'	'1.2398'	'0.0896'
b_L	'9.5198'	'10.3353'	'9.9275'	'3.2675'	'0.078'
a_{\mu}	'8.7363'	'9.5107'	'9.1235'	'7.7806'	'0.0697'
b_{\mu}	'6.6857'	'7.4504'	'7.068'	'4.6426'	'0.075'
\mu	'0.0052'	'0.0221'	'0.0137'	'0.0138'	'0.0468'
a_H	'7.3852'	'8.4002'	'7.8927'	'8.8647'	'0.1083'
b_H	'1.5027'	'1.7612'	'1.6319'	'4.9907'	'0.0615'
\nu	'201.5966'	'230.9719'	'216.2843'	'198.7441'	'0.0669'
BP	'319.2793'	'319.7392'	'319.5092'	'305.5'	'0.057'

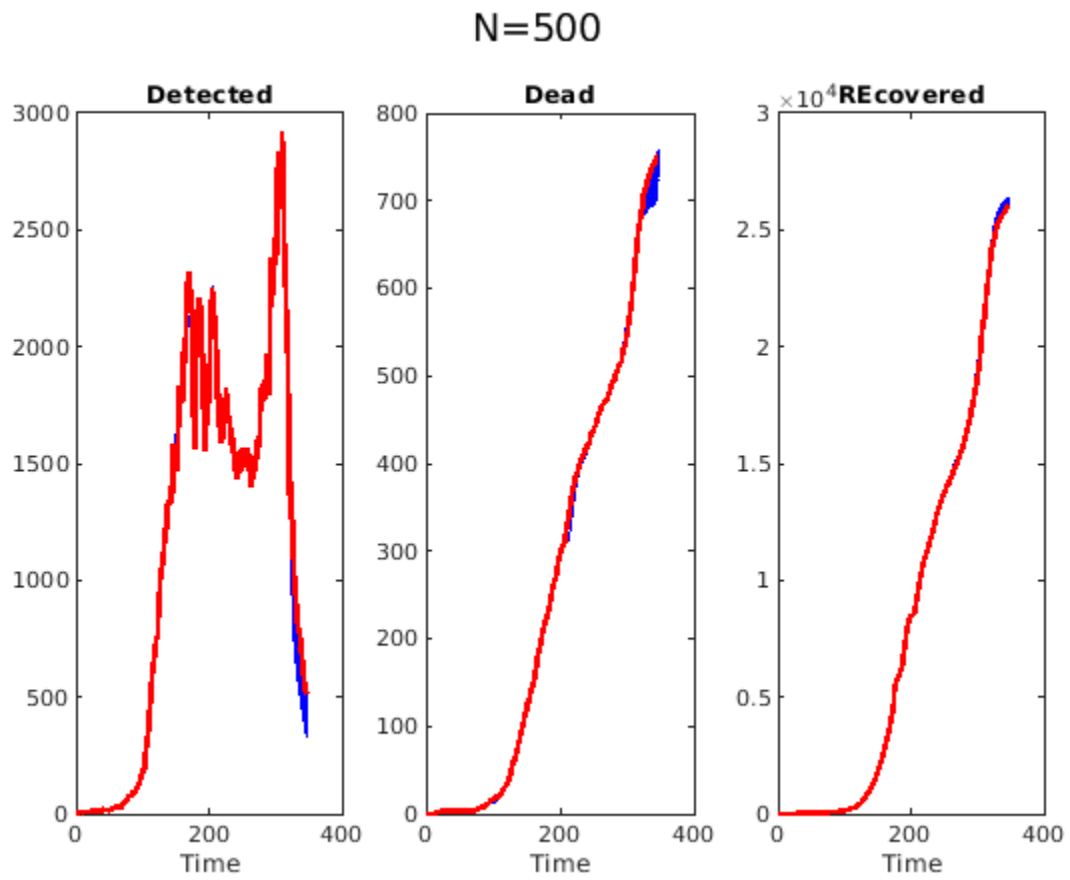
7.3. Identifiability analysis







7.4. Uncertainty analysys



Chapter 8. Extension number8

8.1. Basic information

The extension to be validated consists of the time series from the data348 to the 431. The status of the validation is: COMPLETED.

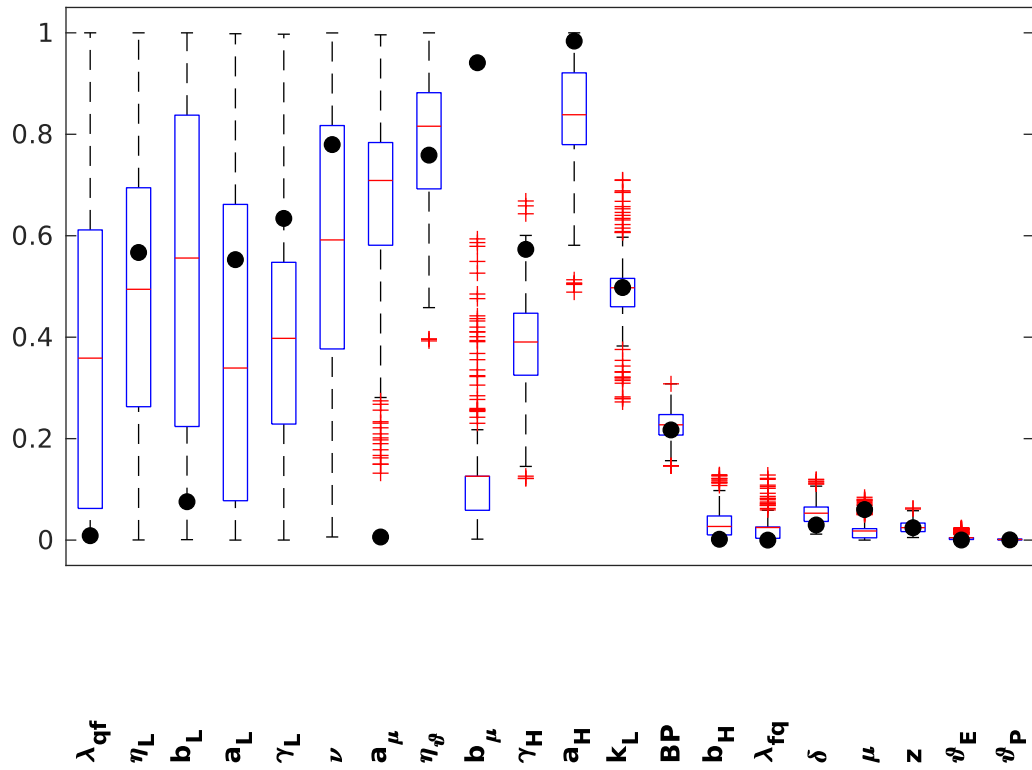
The number of estimations needed to perform the validation was1000.

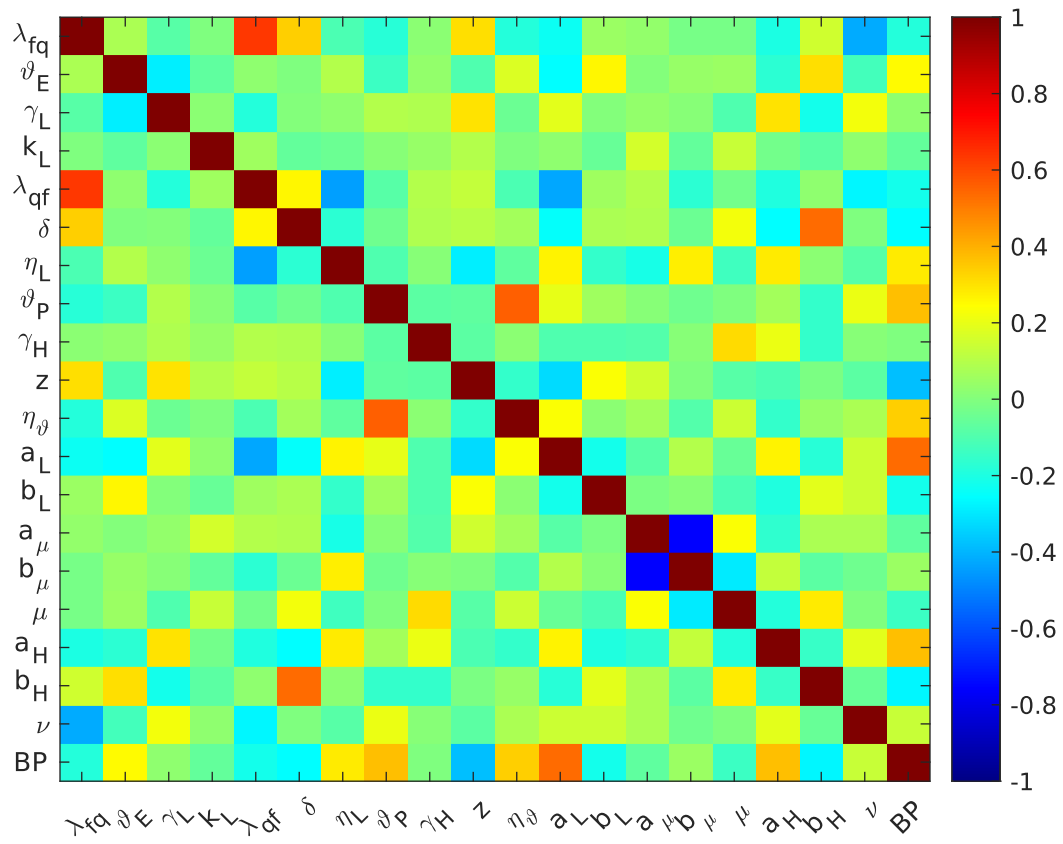
8.2. Estimated parameters with their intervals

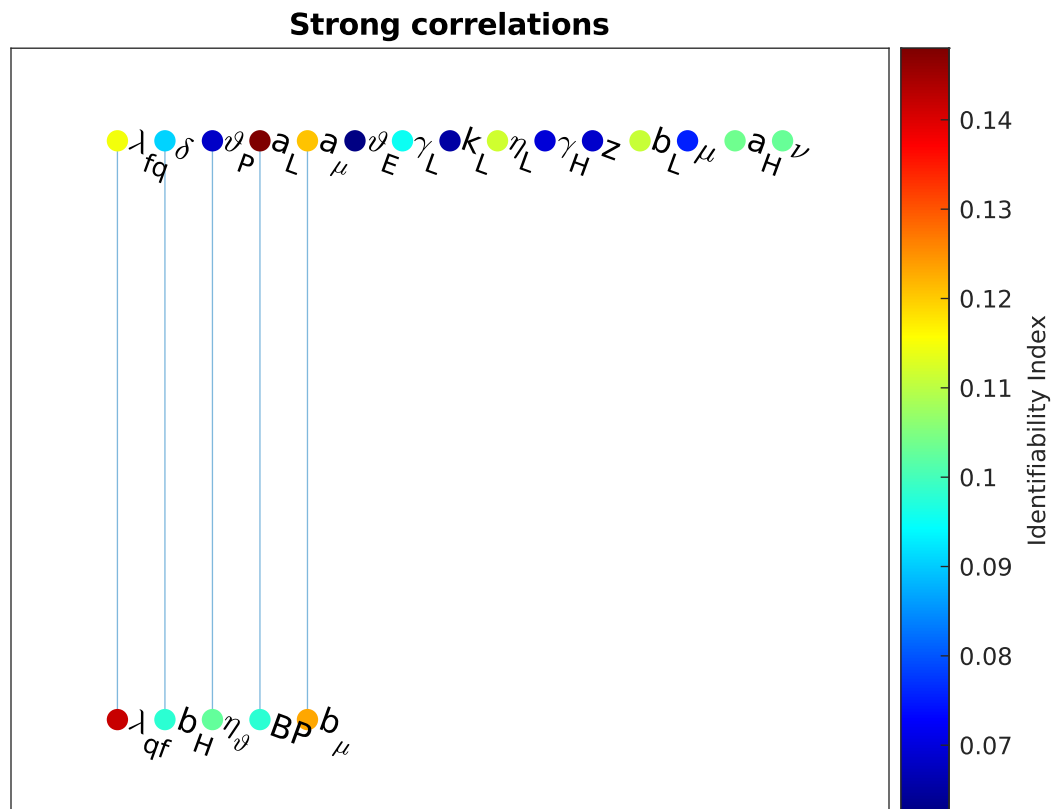
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0735'	'0.0248'	'0'	'0.1149'
ϑ_E	'0'	'0.0131'	'0.0047'	'0.0001'	'0.0625'
γ_L	'0.3552'	'0.4402'	'0.3977'	'0.6341'	'0.0954'
k_L	'5.2288'	'5.7249'	'5.4768'	'5.4809'	'0.0654'
λ_{qf}	'0.2984'	'0.419'	'0.3587'	'0.0087'	'0.1419'
δ	'0.0053'	'0.0106'	'0.008'	'0.0045'	'0.0908'
η_L	'0.4455'	'0.5433'	'0.4944'	'0.567'	'0.1118'
ϑ_P	'0.0009'	'0.0015'	'0.0012'	'0.0005'	'0.0683'
γ_H	'0.365'	'0.416'	'0.3905'	'0.5731'	'0.0697'
z	'0.5433'	'0.9278'	'0.7355'	'0.7309'	'0.0688'
η_{ϑ}	'0.7823'	'0.8494'	'0.8159'	'0.7589'	'0.1028'
a_L	'4.9147'	'6.5829'	'5.7488'	'8.7402'	'0.148'
b_L	'7.96'	'9.609'	'8.7845'	'2.0595'	'0.111'
a_{μ}	'10.1852'	'11.6648'	'10.925'	'1.0855'	'0.1207'
b_{μ}	'1.9539'	'3.5709'	'2.7624'	'14.1745'	'0.123'
μ	'0'	'0.038'	'0.018'	'0.0602'	'0.0758'
a_H	'12.2668'	'13.212'	'12.7394'	'14.7724'	'0.1037'
b_H	'1.0451'	'1.7079'	'1.3765'	'1.0232'	'0.0982'
ν	'271.197'	'320.5325'	'295.8647'	'389.8488'	'0.1032'
BP	'343.6377'	'345.3618'	'344.4997'	'343.5'	'0.0981'

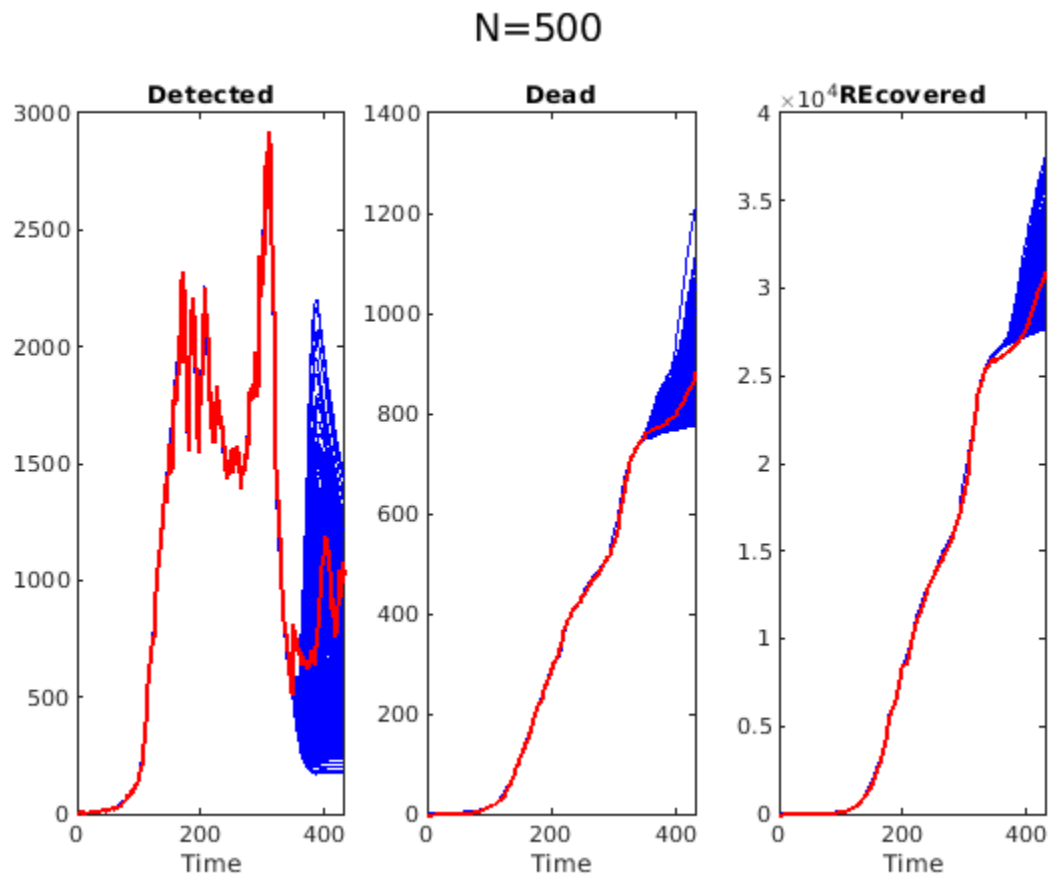
8.3. Identifiability analysis







8.4. Uncertainty analysis



Chapter 9. Extension number9

9.1. Basic information

The extension to be validated consists of the time series from the data431 to the 452. The status of the validation is: COMPLETED.

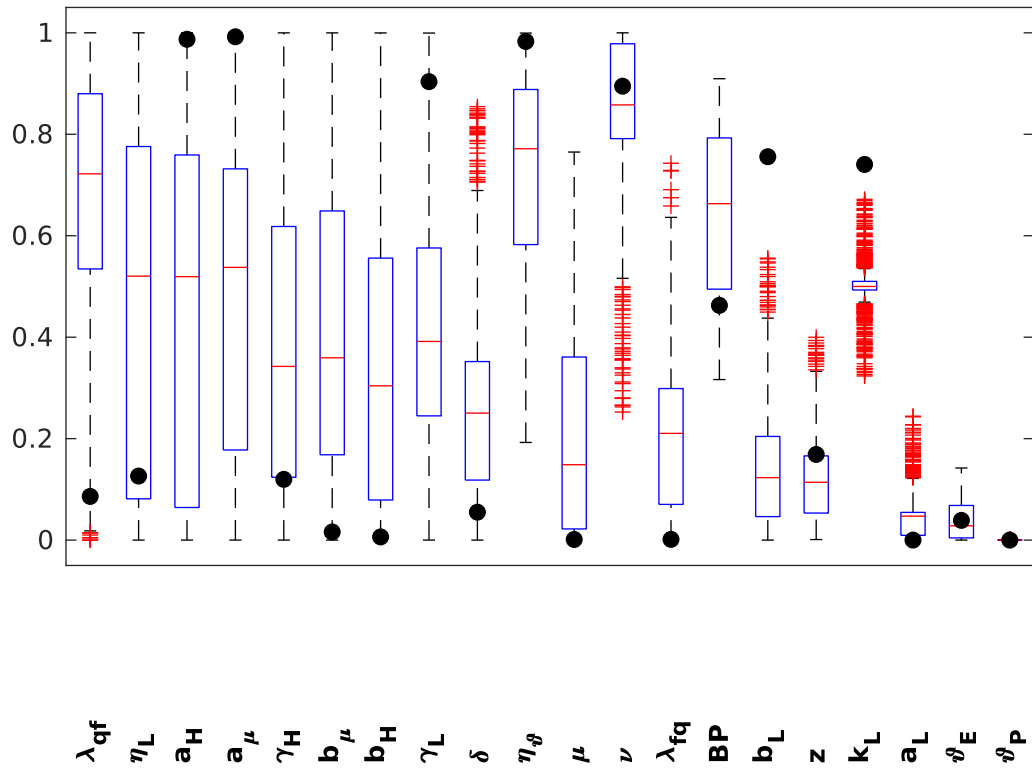
The number of estimations needed to perform the validation was1000.

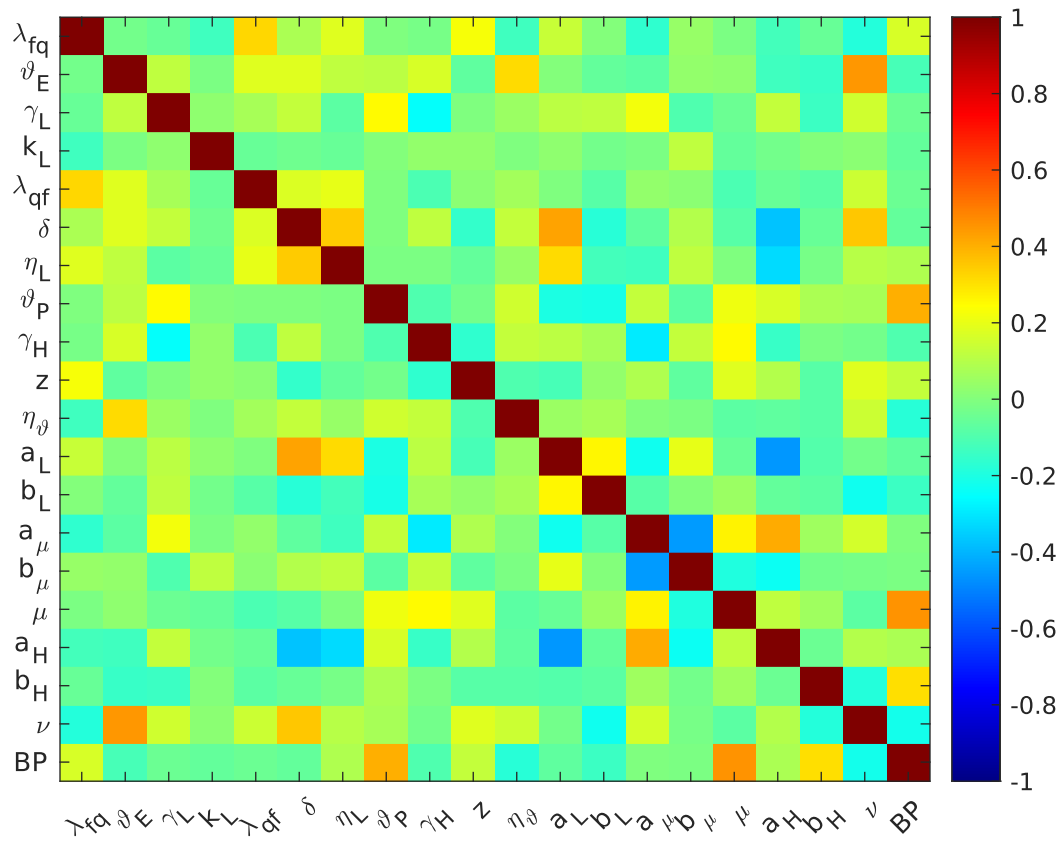
9.2. Estimated parameters with their intervals

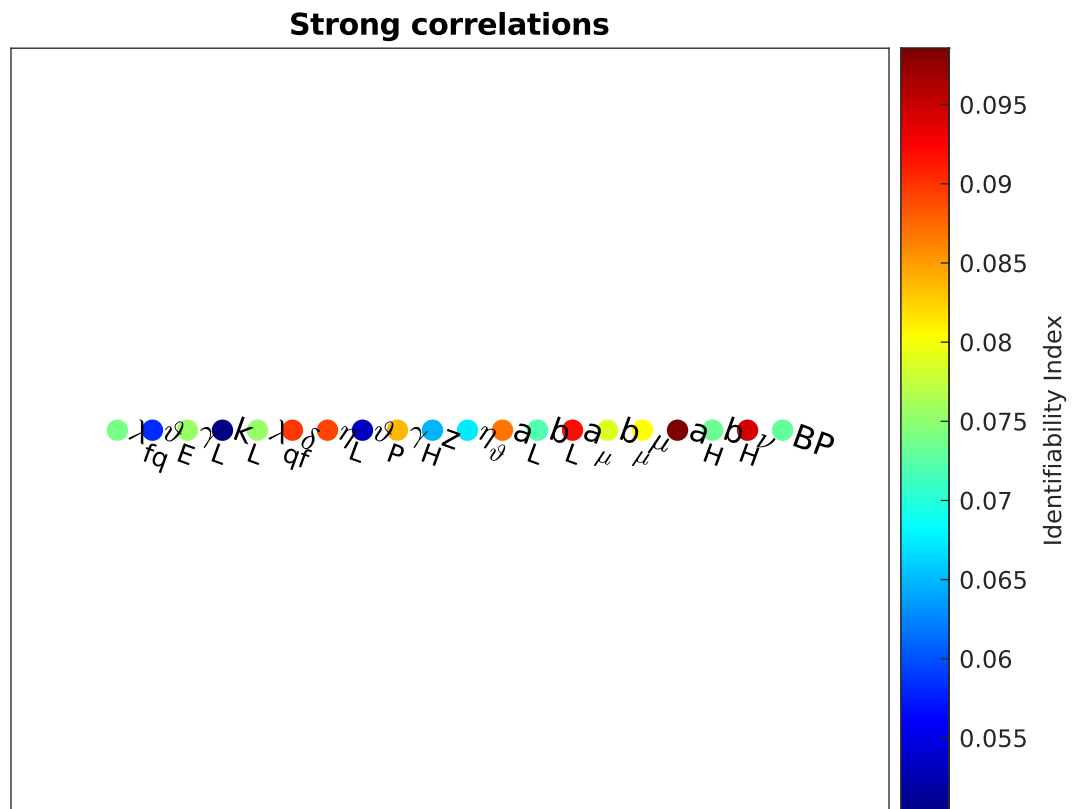
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.1869'	'0.2338'	'0.2104'	'0.0015'	'0.0739'
ϑ_E	'0.0243'	'0.0322'	'0.0282'	'0.0389'	'0.0584'
γ_L	'0.367'	'0.4162'	'0.3916'	'0.9038'	'0.0755'
k_L	'5.3537'	'5.6466'	'5.5002'	'7.6647'	'0.0503'
λ_{qf}	'0.6936'	'0.7505'	'0.722'	'0.0861'	'0.0755'
δ	'0.0336'	'0.0416'	'0.0376'	'0.0083'	'0.0898'
η_L	'0.4853'	'0.5554'	'0.5203'	'0.1263'	'0.0893'
ϑ_P	'0'	'0.0008'	'0.0003'	'0'	'0.0533'
γ_H	'0.3117'	'0.3731'	'0.3424'	'0.1197'	'0.0837'
z	'2.9159'	'3.9234'	'3.4197'	'5.0659'	'0.0647'
η_{ϑ}	'0.7516'	'0.7914'	'0.7715'	'0.983'	'0.0674'
a_L	'1.3034'	'2.0214'	'1.6624'	'1.0007'	'0.0869'
b_L	'2.3965'	'3.0574'	'2.727'	'11.5811'	'0.072'
a_{μ}	'8.0943'	'8.9594'	'8.5269'	'14.8907'	'0.0919'
b_{μ}	'5.6169'	'6.4457'	'6.0313'	'1.2241'	'0.0789'
μ	'0.1223'	'0.175'	'0.1487'	'0.0012'	'0.0804'
a_H	'7.7886'	'8.7527'	'8.2707'	'14.8219'	'0.0986'
b_H	'4.8579'	'5.6571'	'5.2575'	'1.088'	'0.0734'
ν	'411.9198'	'445.7151'	'428.8174'	'447.3961'	'0.0943'
BP	'408.9613'	'411.7258'	'410.3435'	'391.5'	'0.0731'

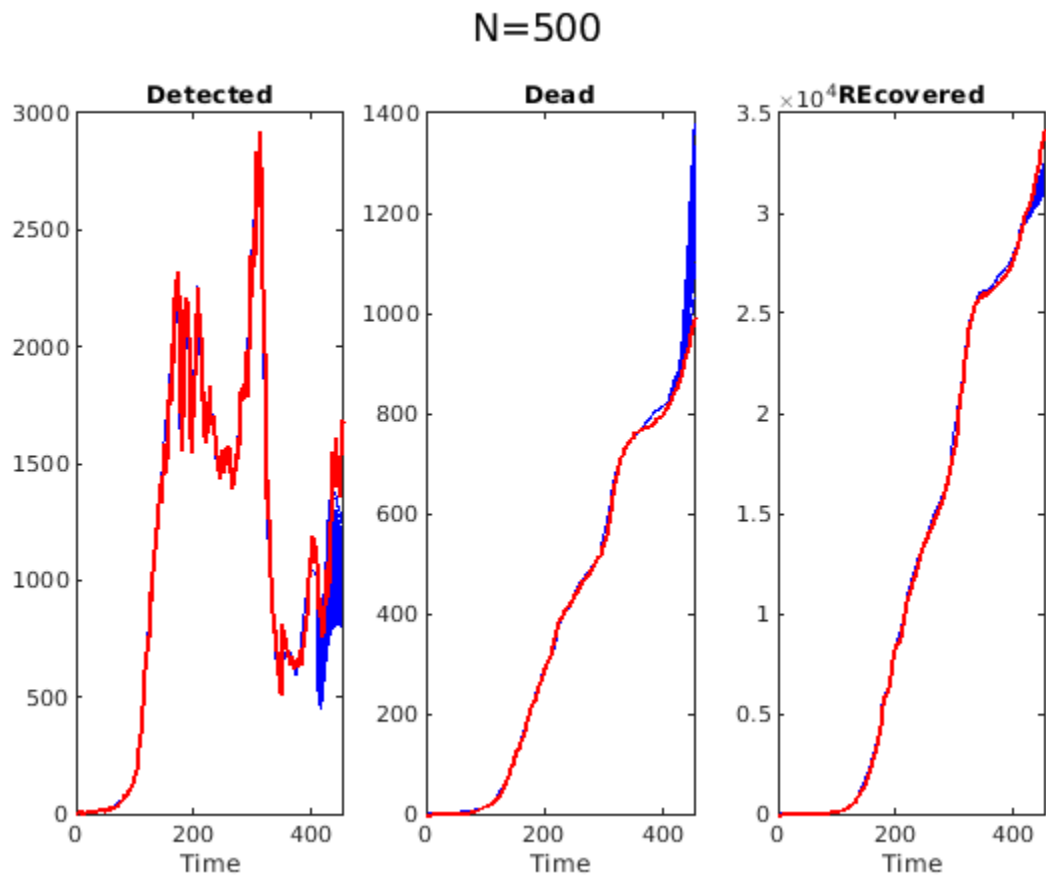
9.3. Identifiability analysis







9.4. Uncertainty analysis



Chapter 10. Extension number10

10.1. Basic information

The extension to be validated consists of the time series from the data452 to the 473. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

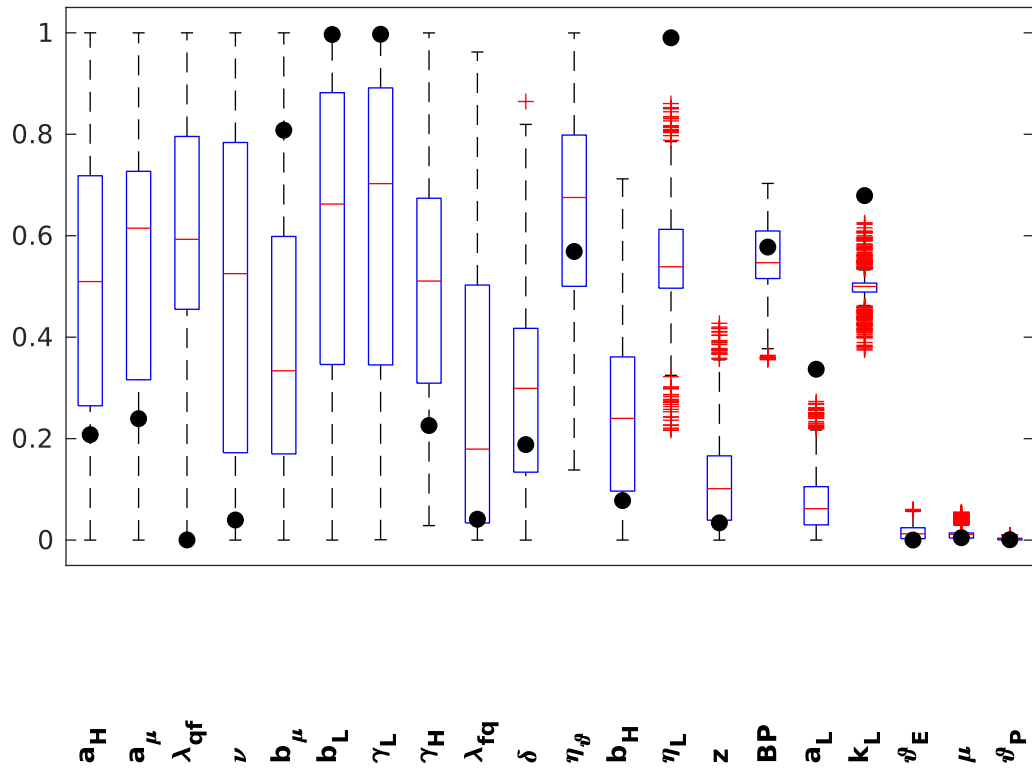
10.2. Estimated parameters with their intervals

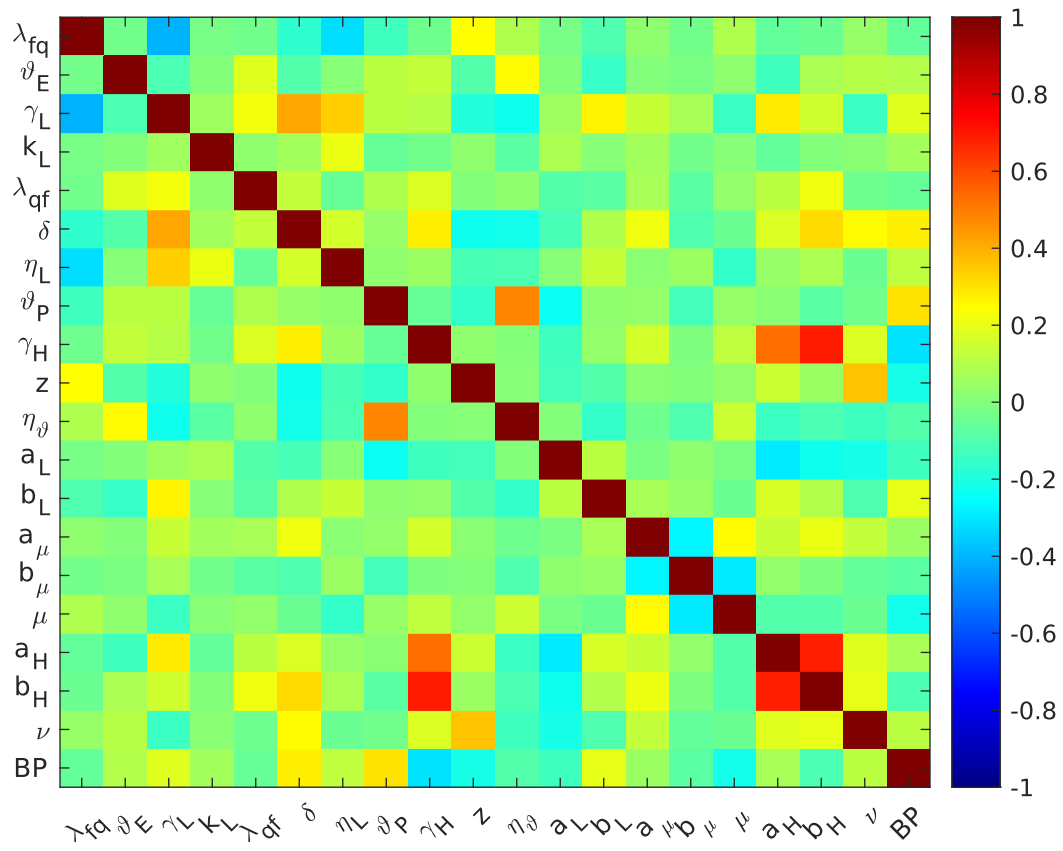
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

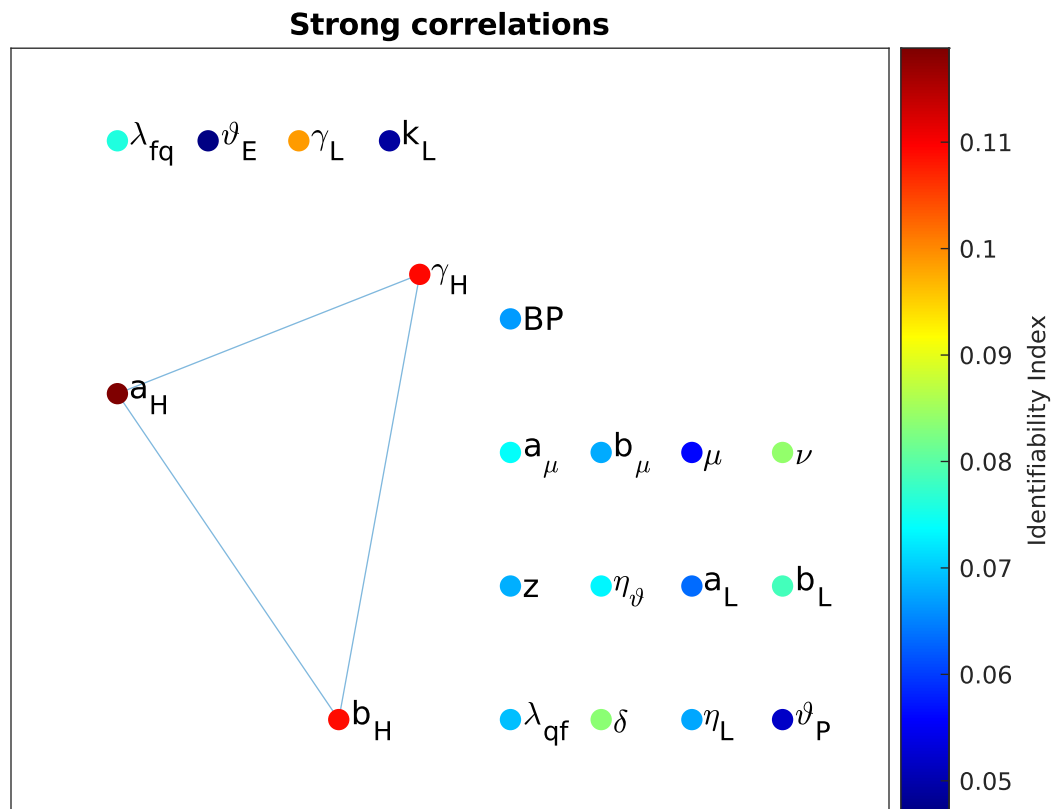
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0338'	'0.066'	'0.1794'	'0.0411'	'0.0762'
ϑ_E	'0'	'0.0002'	'0.0124'	'0.0001'	'0.0471'
γ_L	'0.4306'	'1'	'0.7027'	'0.9972'	'0.0987'
k_L	'1'	'9.55'	'5.5003'	'7.112'	'0.0491'
λ_{qf}	'0'	'0.0007'	'0.5929'	'0.0003'	'0.0693'
δ	'0.028'	'0.0433'	'0.0449'	'0.0282'	'0.0838'
η_L	'0.3063'	'1'	'0.5388'	'0.9902'	'0.0677'
ϑ_P	'0.0003'	'0.0015'	'0.0019'	'0.0007'	'0.052'
γ_H	'0.0986'	'0.2282'	'0.5107'	'0.2259'	'0.109'
z	'0.9331'	'1.6638'	'3.0402'	'1.021'	'0.0683'
η_{ϑ}	'0.5632'	'0.6904'	'0.6754'	'0.569'	'0.0733'
a_L	'4.0258'	'5.816'	'1.866'	'5.716'	'0.0634'
b_L	'9.8621'	'15'	'10.2747'	'14.9531'	'0.0787'
a_{μ}	'1.28'	'15'	'9.6092'	'4.351'	'0.074'
b_{μ}	'1.8037'	'13.635'	'5.6721'	'12.3134'	'0.0678'
μ	'0.0004'	'0.0087'	'0.0113'	'0.0047'	'0.0561'
a_H	'3.6729'	'9.4943'	'8.1348'	'3.9097'	'0.1188'
b_H	'1.3097'	'13.3863'	'4.3598'	'2.0905'	'0.1089'
ν	'12.7923'	'42.1104'	'262.6075'	'19.8187'	'0.0841'
BP	'449.4442'	'453.1322'	'448.5'	'449.4858'	'0.0669'

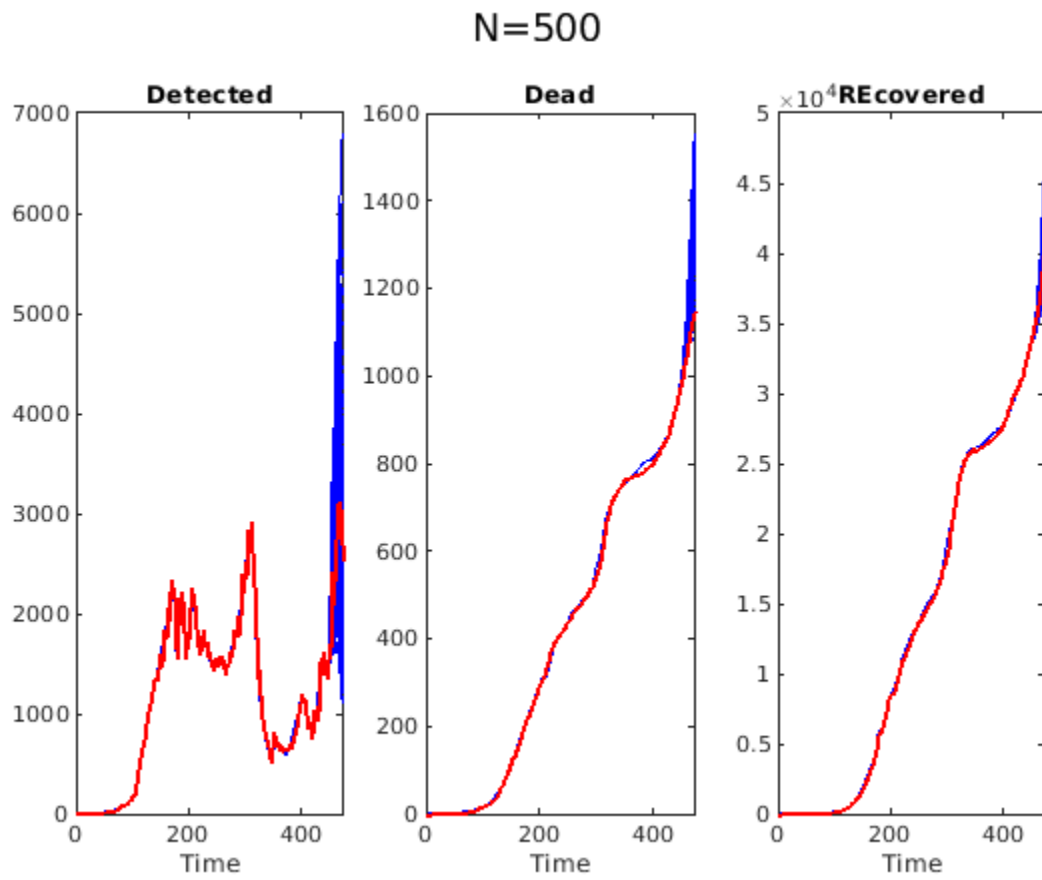
10.3. Identifiability analysis







10.4. Uncertainty analysis



Chapter 11. Extension number11

11.1. Basic information

The extension to be validated consists of the time series from the data473 to the 495. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

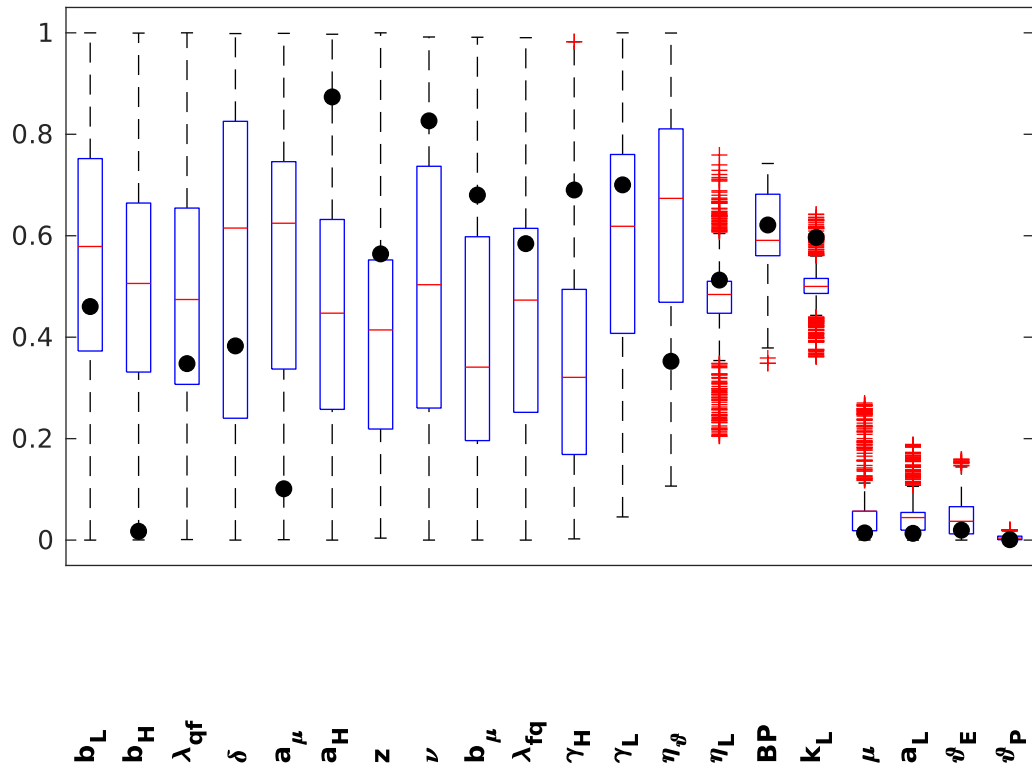
11.2. Estimated parameters with their intervals

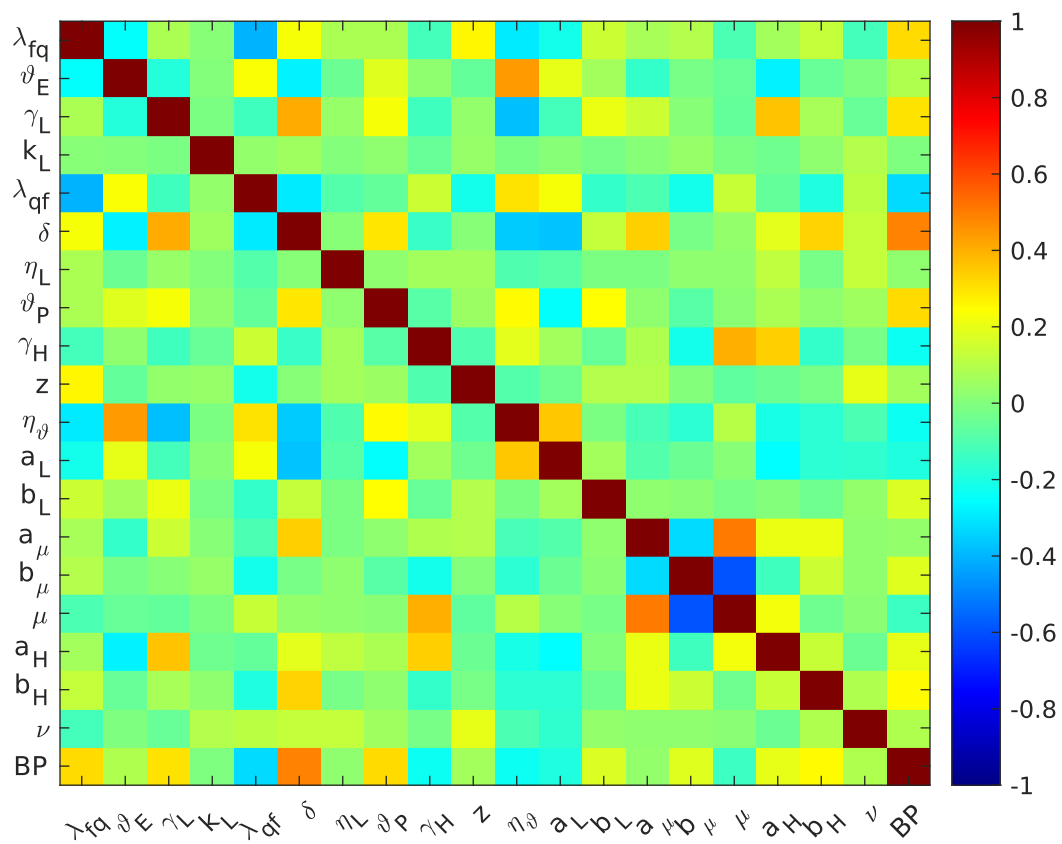
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

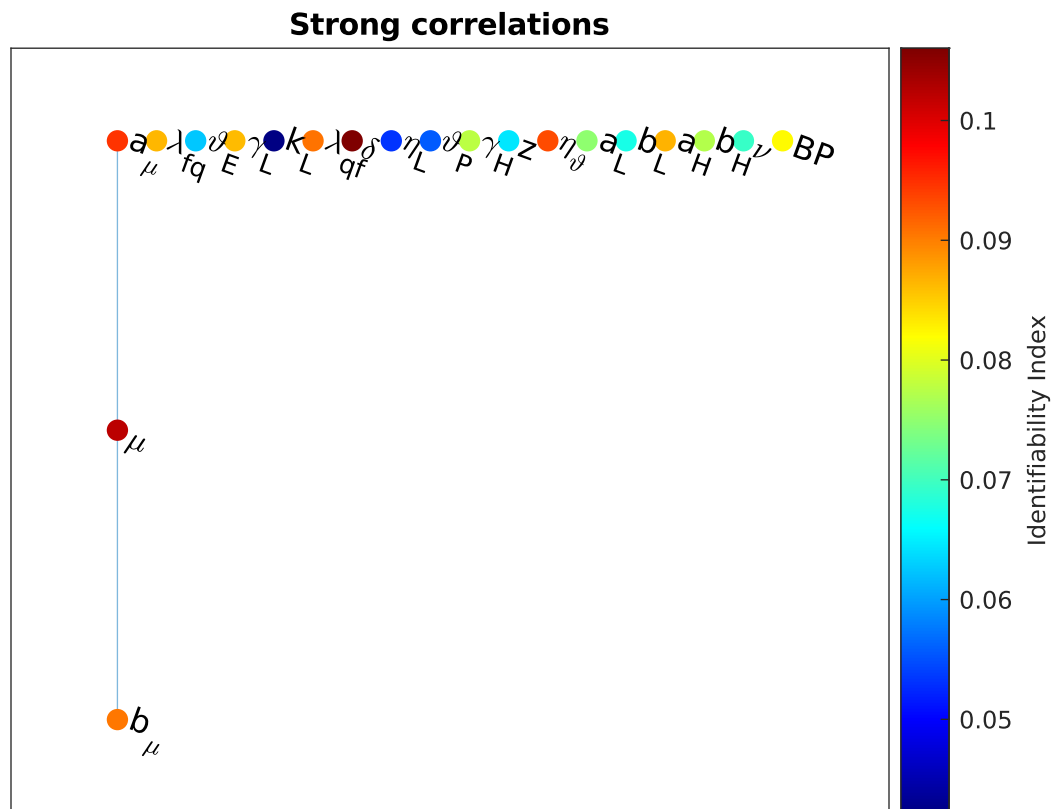
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.2337'	'1'	'0.4731'	'0.5844'	'0.0864'
ϑ_E	'0'	'0.0442'	'0.037'	'0.0196'	'0.0625'
γ_L	'0.4846'	'1'	'0.6186'	'0.7003'	'0.0862'
k_L	'1'	'10'	'5.5008'	'6.3692'	'0.0422'
λ_{qf}	'0'	'0.6493'	'0.4743'	'0.3479'	'0.0907'
δ	'0.0438'	'0.1187'	'0.0923'	'0.0574'	'0.106'
η_L	'0'	'1'	'0.4842'	'0.5126'	'0.0534'
ϑ_P	'0'	'0.0018'	'0.0039'	'0.0008'	'0.0558'
γ_H	'0.0348'	'0.7686'	'0.3208'	'0.6902'	'0.0777'
z	'0'	'28.8'	'12.4292'	'16.9271'	'0.0646'
η_{ϑ}	'0.3311'	'0.8129'	'0.6737'	'0.3525'	'0.0932'
a_L	'1.0881'	'3.1172'	'1.6217'	'1.1864'	'0.075'
b_L	'2.3115'	'9.7435'	'9.1034'	'7.4457'	'0.0675'
a_{μ}	'1'	'15'	'9.7451'	'2.4164'	'0.0947'
b_{μ}	'1'	'15'	'5.7734'	'10.5232'	'0.0905'
μ	'0'	'0.0262'	'0.0569'	'0.0142'	'0.1021'
a_H	'8.2773'	'15'	'7.2627'	'13.2308'	'0.0866'
b_H	'1'	'4.5908'	'8.0831'	'1.2432'	'0.0773'
ν	'95.4242'	'500'	'251.7269'	'413.2593'	'0.0694'
BP	'466.745'	'475.1728'	'471.5'	'472.5'	'0.0822'

11.3. Identifiability analysis

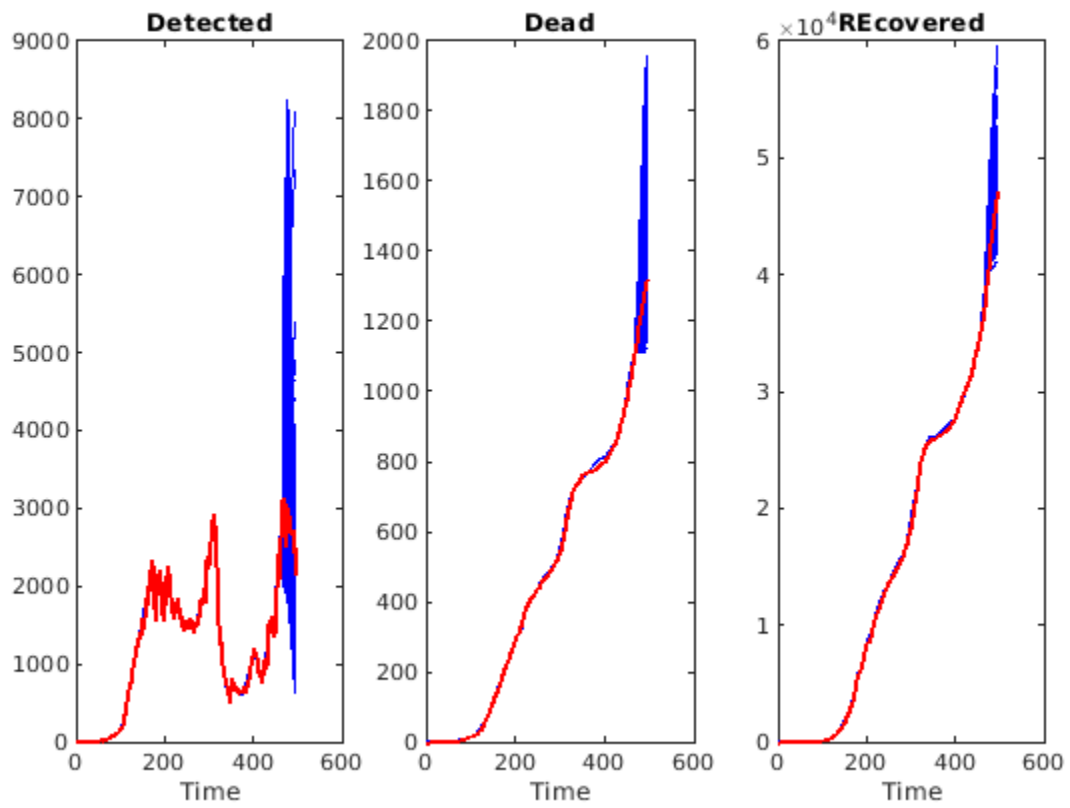






11.4. Uncertainty analysis

N=500



Chapter 12. Extension number12

12.1. Basic information

The extension to be validated consists of the time series from the data495 to the 509. The status of the validation is: COMPLETED.

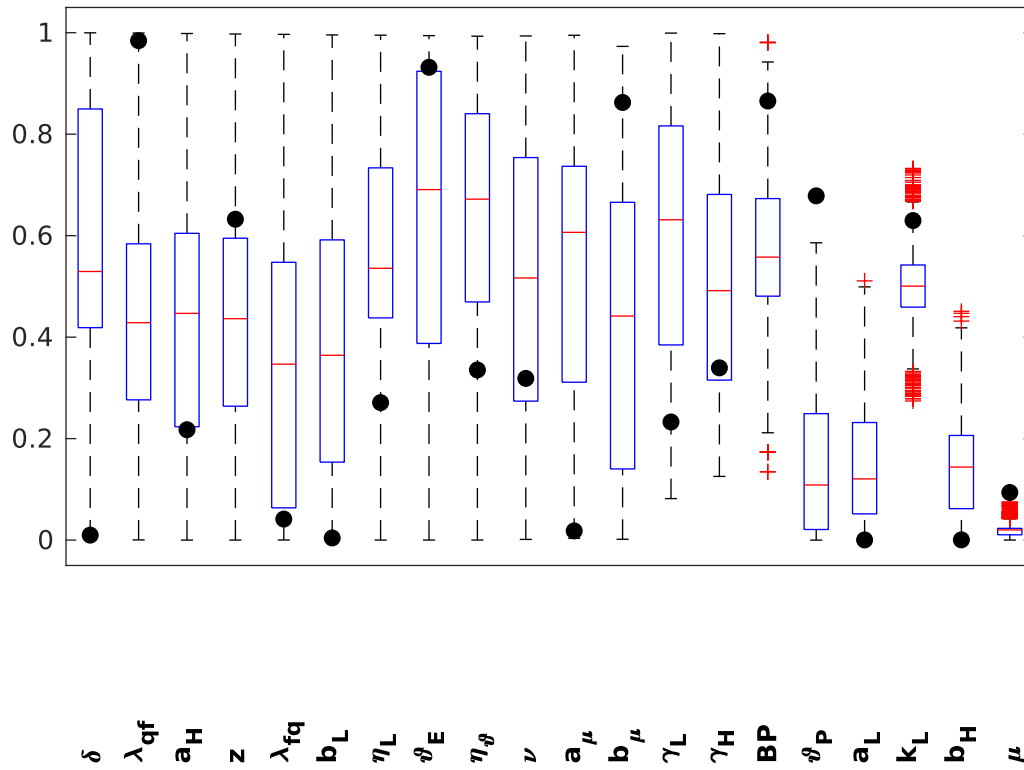
The number of estimations needed to perform the validation was1000.

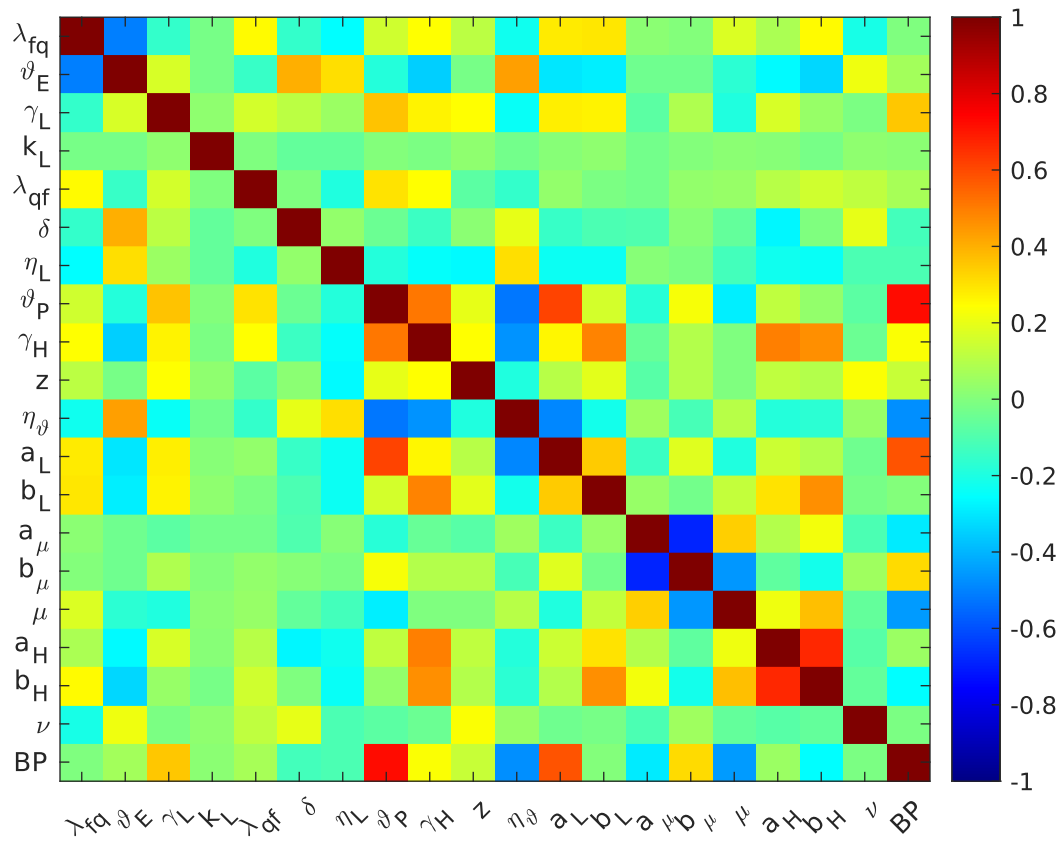
12.2. Estimated parameters with their intervals

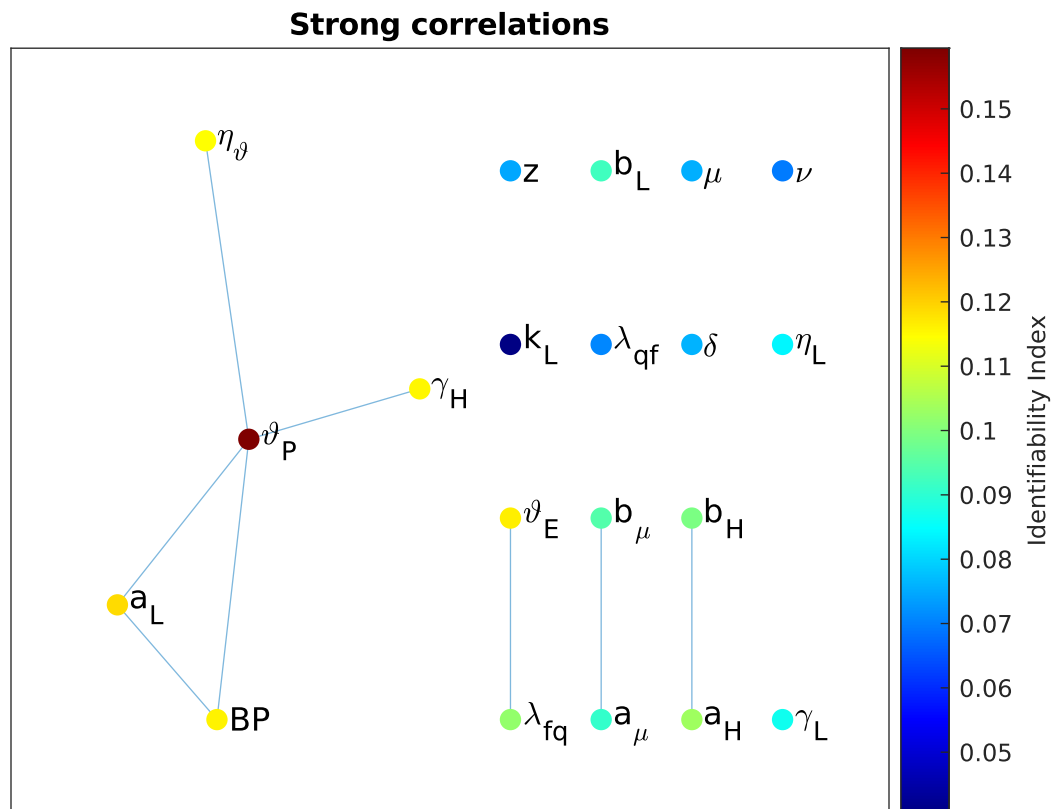
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.3244'	'0.3691'	'0.3467'	'0.0415'	'0.1022'
ϑ_E	'0.665'	'0.7166'	'0.6908'	'0.9319'	'0.1163'
γ_L	'0.6102'	'0.6525'	'0.6314'	'0.2328'	'0.087'
k_L	'5.4111'	'5.5986'	'5.5048'	'6.668'	'0.0407'
λ_{qf}	'0.4089'	'0.4481'	'0.4285'	'0.9844'	'0.0712'
δ	'0.0758'	'0.083'	'0.0794'	'0.0015'	'0.0764'
η_L	'0.5163'	'0.5552'	'0.5358'	'0.271'	'0.0841'
ϑ_P	'0.0854'	'0.1318'	'0.1086'	'0.6785'	'0.1594'
γ_H	'0.4742'	'0.5091'	'0.4916'	'0.3395'	'0.1157'
z	'12.524'	'13.6575'	'13.0907'	'18.9718'	'0.0749'
η_{ϑ}	'0.6524'	'0.6916'	'0.672'	'0.3353'	'0.1148'
a_L	'2.5064'	'2.8718'	'2.6891'	'1.0049'	'0.1189'
b_L	'5.7878'	'6.4114'	'6.0996'	'1.0599'	'0.0924'
a_{μ}	'9.1918'	'9.7915'	'9.4916'	'1.2533'	'0.0912'
b_{μ}	'6.8598'	'7.5046'	'7.1822'	'13.0756'	'0.0948'
μ	'0.0119'	'0.0282'	'0.02'	'0.0938'	'0.0755'
a_H	'6.9741'	'7.5373'	'7.2557'	'4.0458'	'0.1036'
b_H	'2.8763'	'3.1538'	'3.015'	'1.007'	'0.0993'
ν	'246.764'	'269.8722'	'258.3181'	'159.349'	'0.0696'
BP	'487.1743'	'487.8257'	'487.5'	'495.4998'	'0.1161'

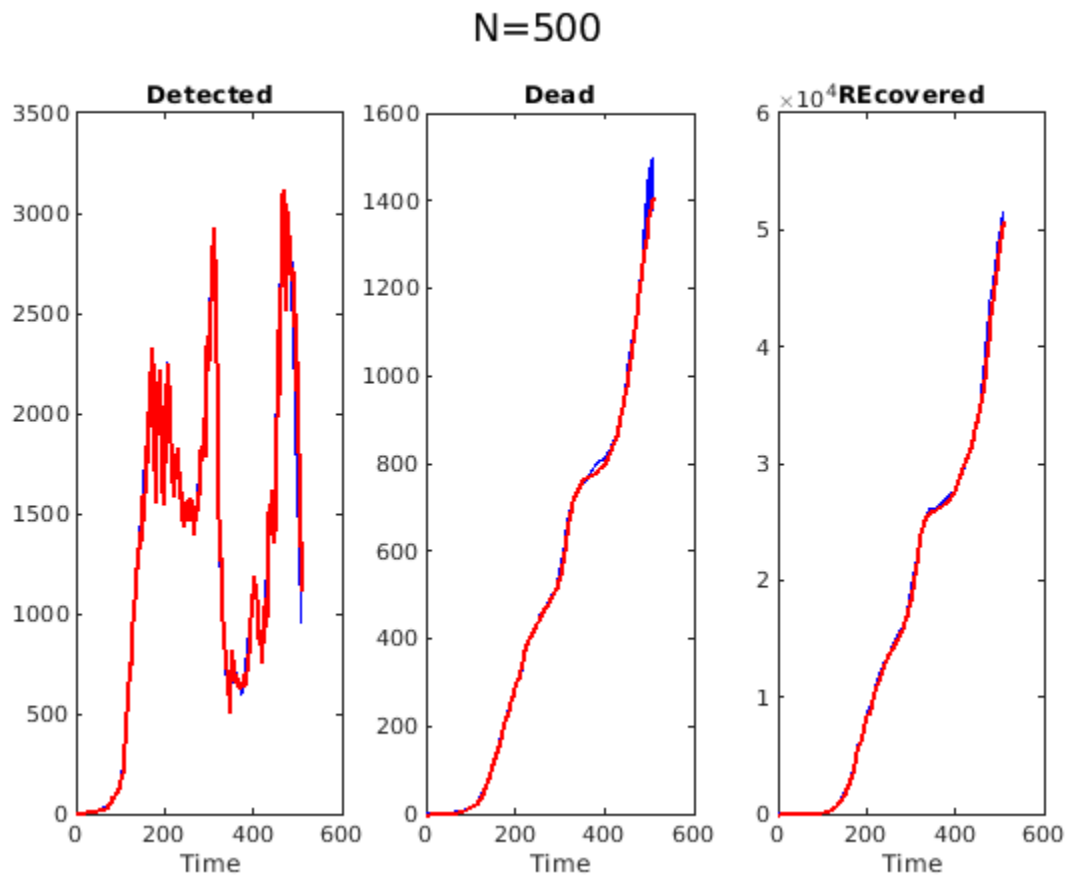
12.3. Identifiability analysis







12.4. Uncertainty analysis



Chapter 13. Extension number13

13.1. Basic information

The extension to be validated consists of the time series from the data509 to the 569. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

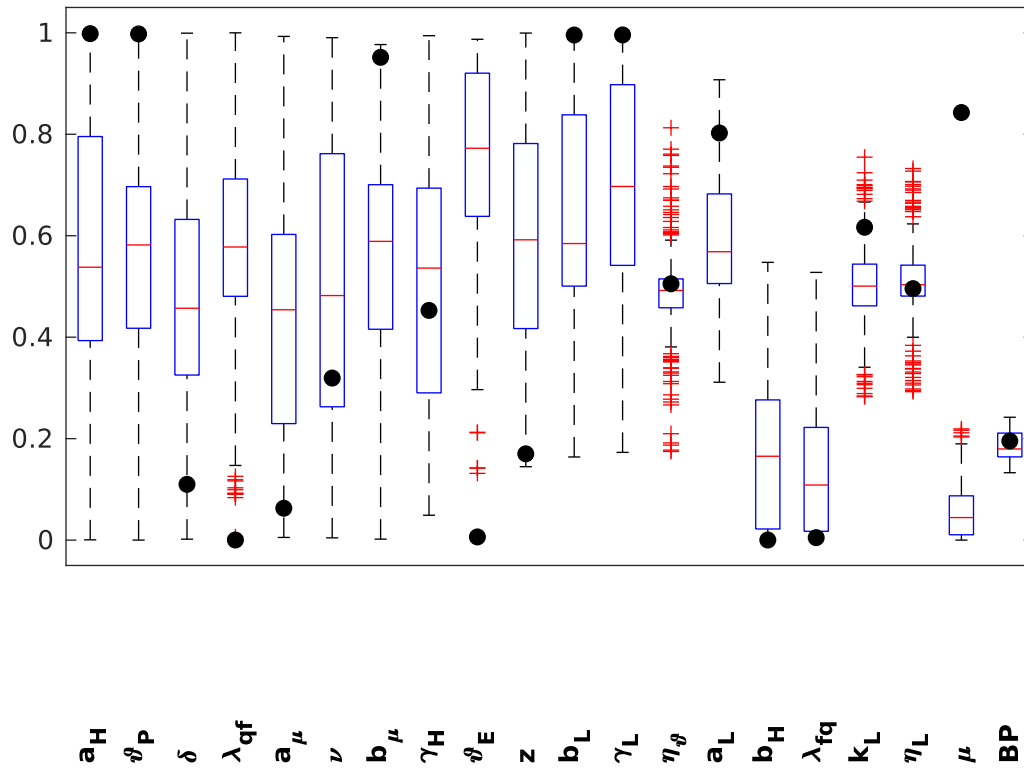
13.2. Estimated parameters with their intervals

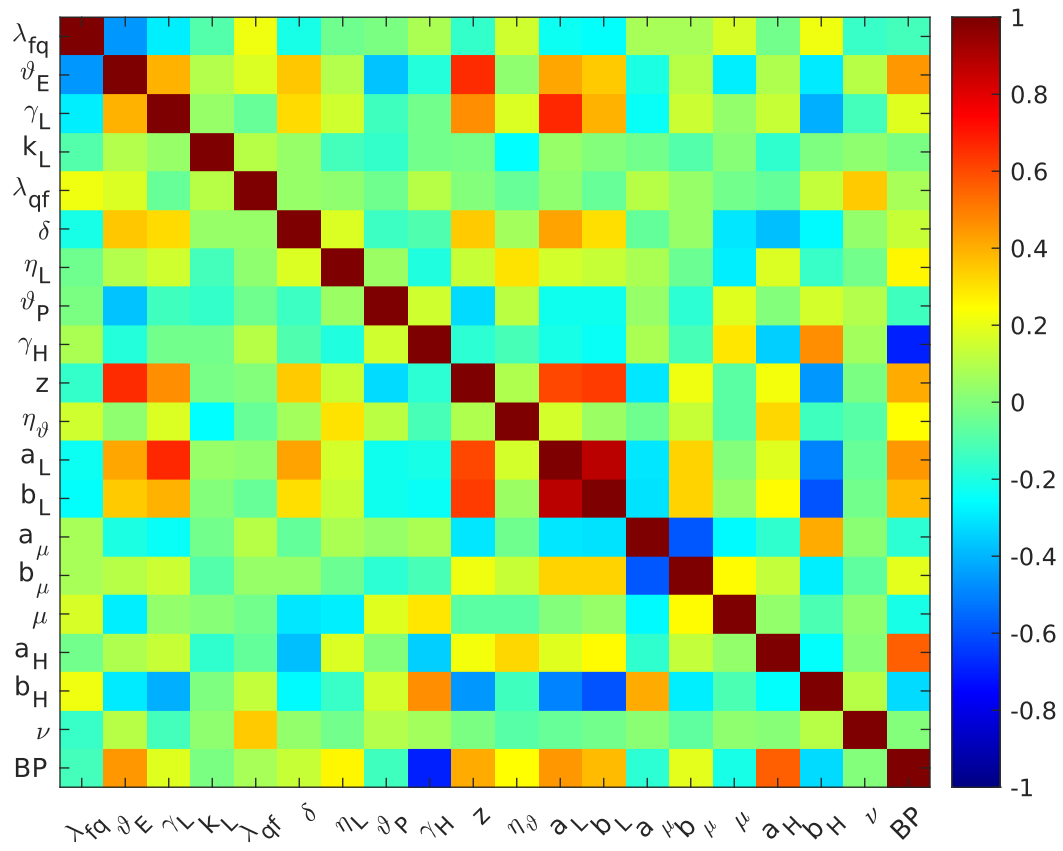
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

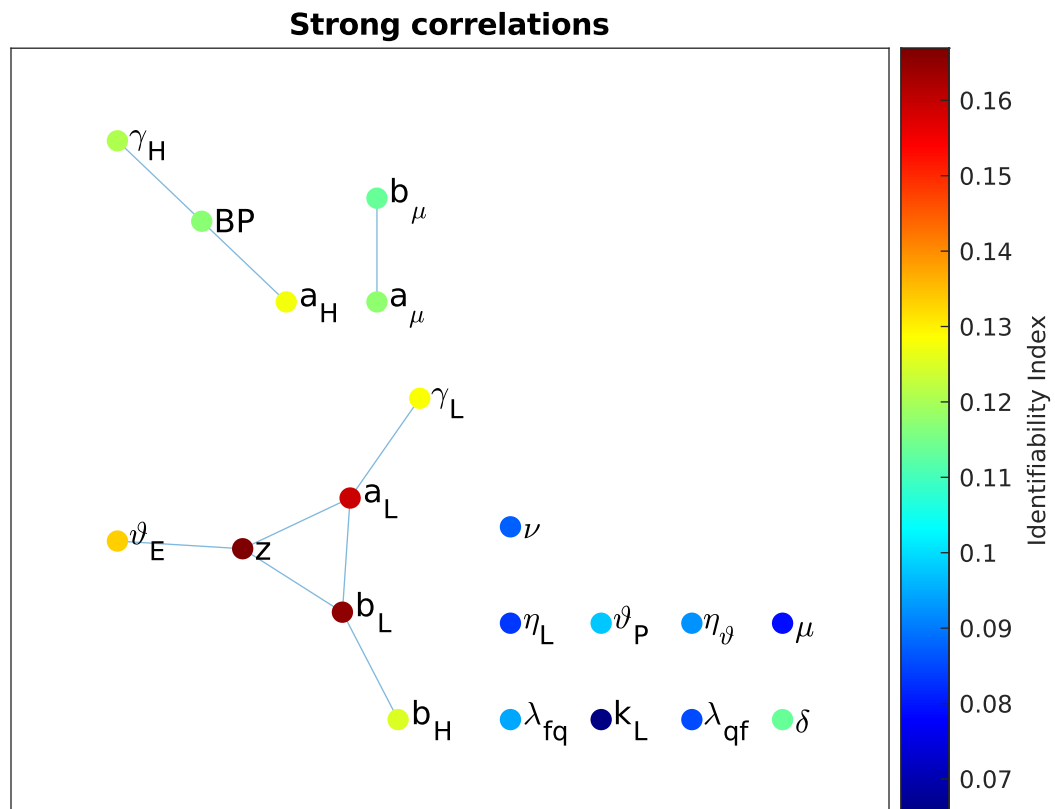
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0017'	'0.0108'	'0.1086'	'0.0048'	'0.0946'
ϑ_E	'0'	'0.014'	'0.7724'	'0.0062'	'0.1334'
γ_L	'0.2707'	'1'	'0.6971'	'0.9958'	'0.1283'
k_L	'1'	'10'	'5.5065'	'6.5501'	'0.0656'
λ_{qf}	'0'	'0.0004'	'0.5778'	'0.0002'	'0.0855'
δ	'0'	'0.0371'	'0.0686'	'0.0165'	'0.1136'
η_L	'0'	'1'	'0.5034'	'0.4957'	'0.0834'
ϑ_P	'0.8768'	'1'	'0.5818'	'0.9978'	'0.0979'
γ_H	'0.025'	'1'	'0.5362'	'0.4528'	'0.1208'
z	'3.6442'	'5.2005'	'17.7587'	'5.1029'	'0.1669'
η_{ϑ}	'0'	'1'	'0.4921'	'0.5052'	'0.0926'
a_L	'7.4842'	'13.6017'	'8.9585'	'12.2358'	'0.1592'
b_L	'7.5479'	'15'	'9.1843'	'14.9391'	'0.1652'
a_{μ}	'1'	'15'	'7.3564'	'1.8792'	'0.1176'
b_{μ}	'1'	'15'	'9.2443'	'14.3235'	'0.1136'
μ	'0'	'1'	'0.0444'	'0.8428'	'0.0791'
a_H	'1'	'15'	'8.5309'	'14.9768'	'0.1276'
b_H	'1'	'15'	'3.3144'	'1.0024'	'0.1252'
ν	'26.2842'	'359.3648'	'241.0235'	'159.7177'	'0.0874'
BP	'503.6411'	'510.3851'	'506.5'	'507.4999'	'0.1171'

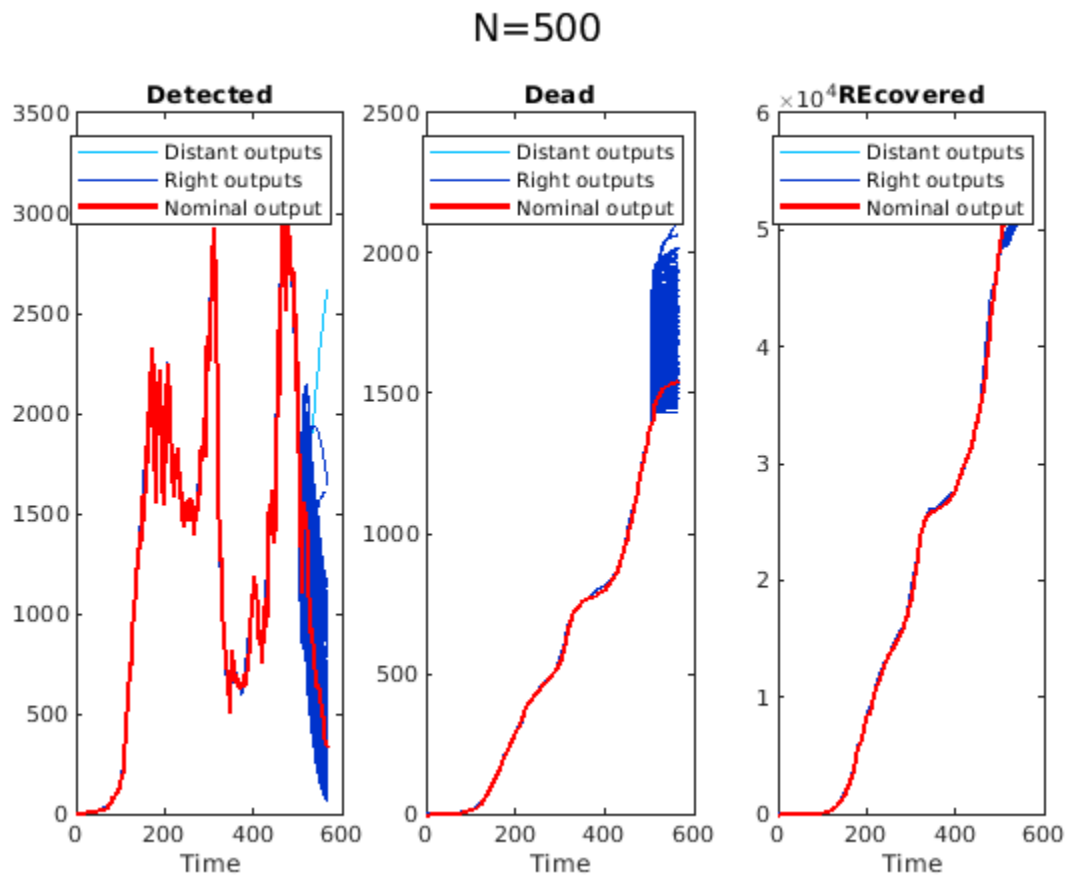
13.3. Identifiability analysis







13.4. Uncertainty analysis



Chapter 14. Extension number14

14.1. Basic information

The extension to be validated consists of the time series from the data569 to the 569. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

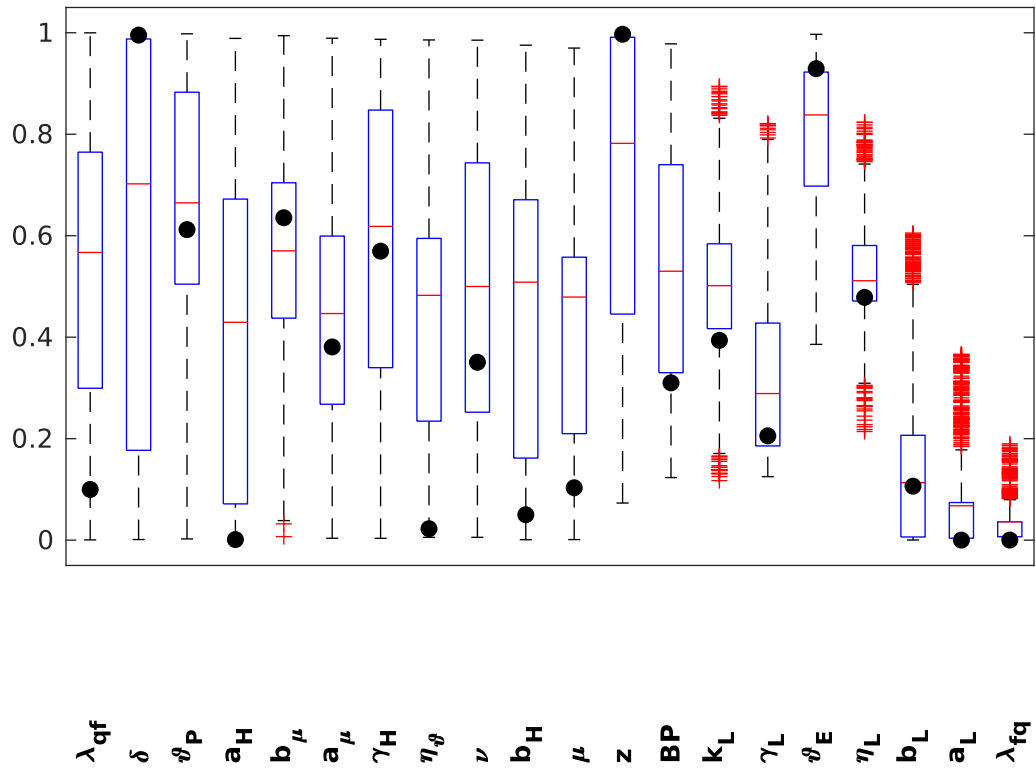
14.2. Estimated parameters with their intervals

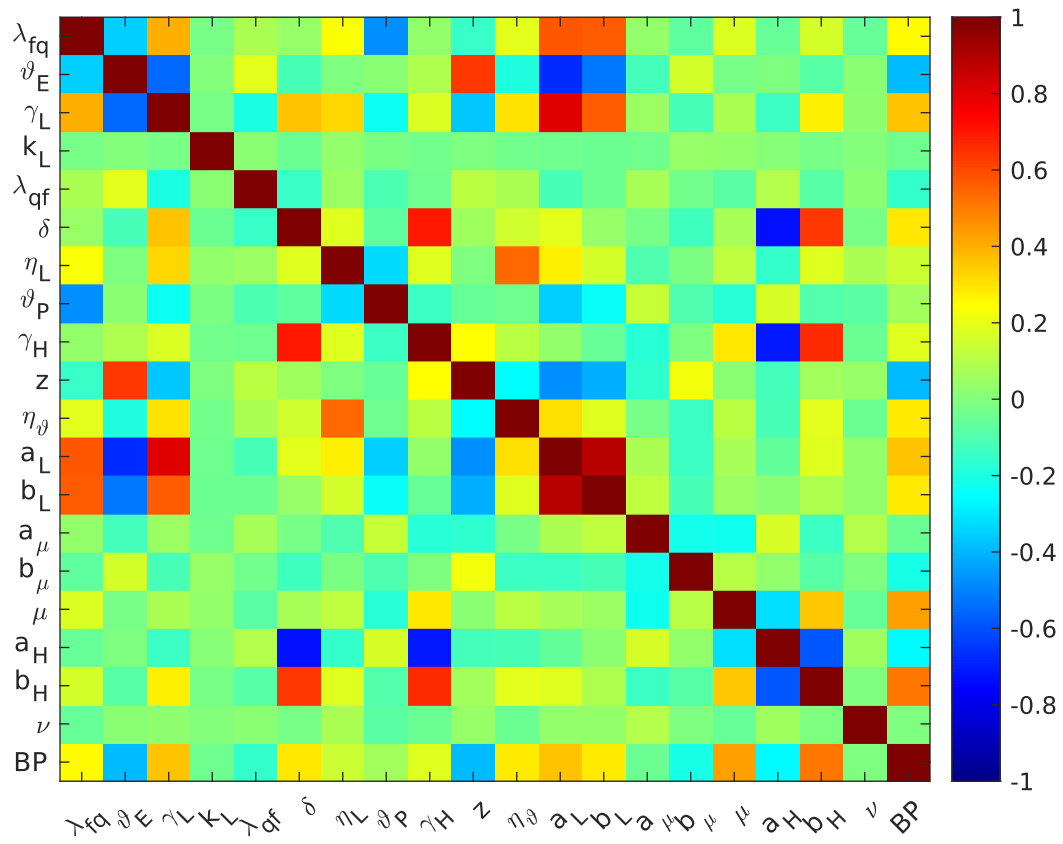
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

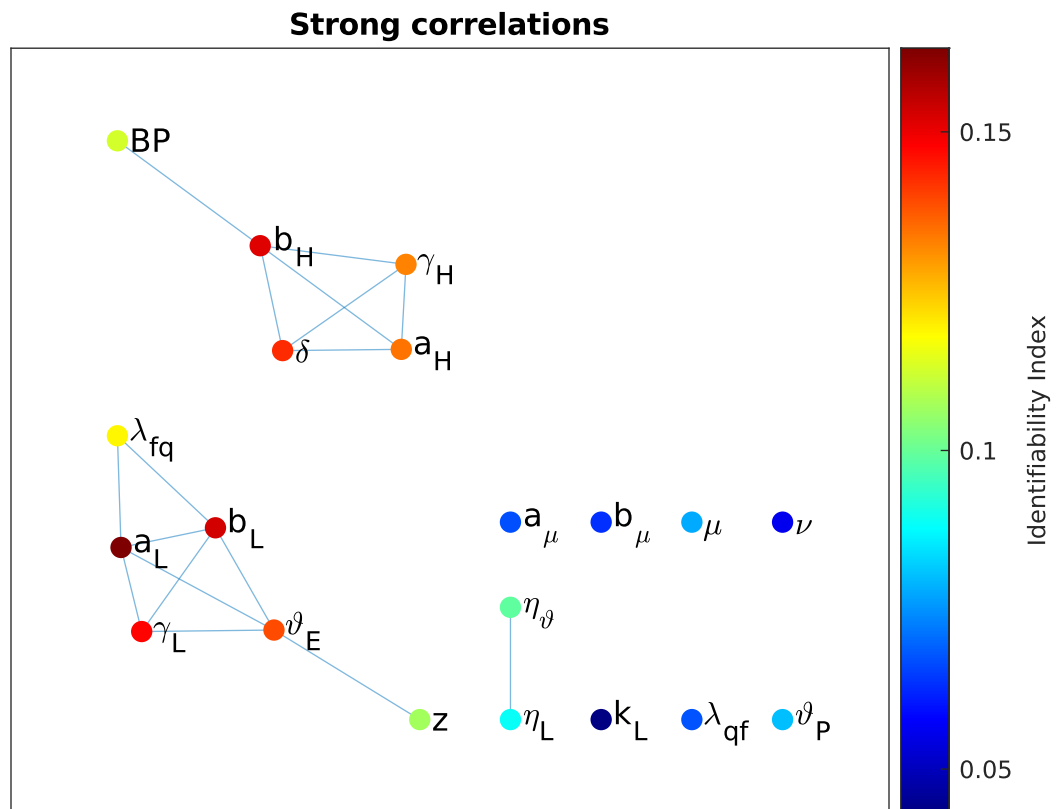
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0002'	'0.0002'	'0.0362'	'0.0002'	'0.1189'
ϑ_E	'0.6504'	'0.9941'	'0.838'	'0.9292'	'0.1388'
γ_L	'0.1439'	'0.3083'	'0.2889'	'0.2056'	'0.1476'
k_L	'3.181'	'6.8164'	'5.5142'	'4.5443'	'0.0432'
λ_{qf}	'0.0699'	'0.1499'	'0.567'	'0.0999'	'0.0678'
δ	'0.1045'	'0.15'	'0.1053'	'0.1493'	'0.1429'
η_L	'0.335'	'0.7178'	'0.5112'	'0.4785'	'0.0888'
ϑ_P	'0.4284'	'0.9181'	'0.6648'	'0.612'	'0.0803'
γ_H	'0.3987'	'0.8543'	'0.6184'	'0.5695'	'0.1323'
z	'20.9385'	'30'	'23.4587'	'29.9122'	'0.1072'
η_{ϑ}	'0.0158'	'0.0338'	'0.4825'	'0.0225'	'0.0993'
a_L	'1'	'1.5031'	'1.949'	'1.0021'	'0.1631'
b_L	'1.7427'	'3.7343'	'2.5861'	'2.4896'	'0.153'
a_{μ}	'4.4313'	'9.4957'	'7.2526'	'6.3305'	'0.0672'
b_{μ}	'6.9269'	'14.8434'	'8.9825'	'9.8956'	'0.0638'
μ	'0.0723'	'0.1549'	'0.4791'	'0.1032'	'0.0782'
a_H	'1'	'1.524'	'7.0105'	'1.016'	'0.1344'
b_H	'1.1905'	'2.5511'	'8.1182'	'1.7007'	'0.1517'
ν	'122.6972'	'262.9225'	'249.9702'	'175.2817'	'0.056'
BP	'509'	'559'	'535.5'	'524.4999'	'0.113'

14.3. Identifiability analysis

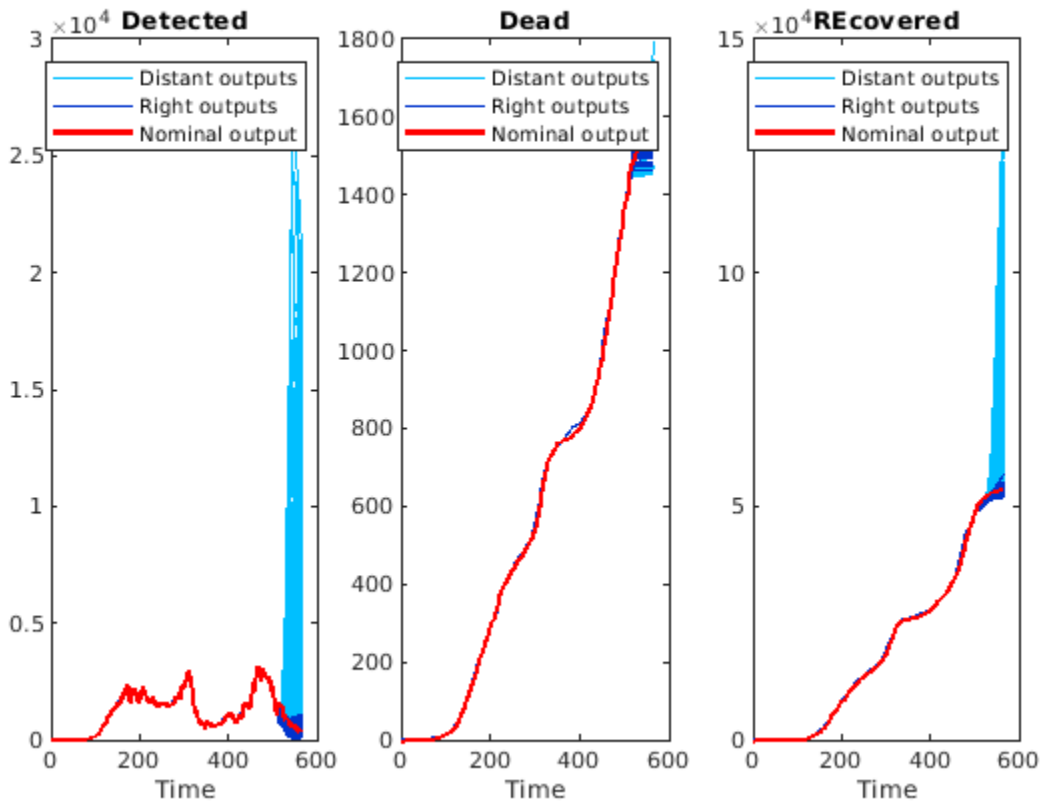






14.4. Uncertainty analysys

N=500



Chapter 15. Extension number15

15.1. Basic information

The extension to be validated consists of the time series from the data569 to the 715. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

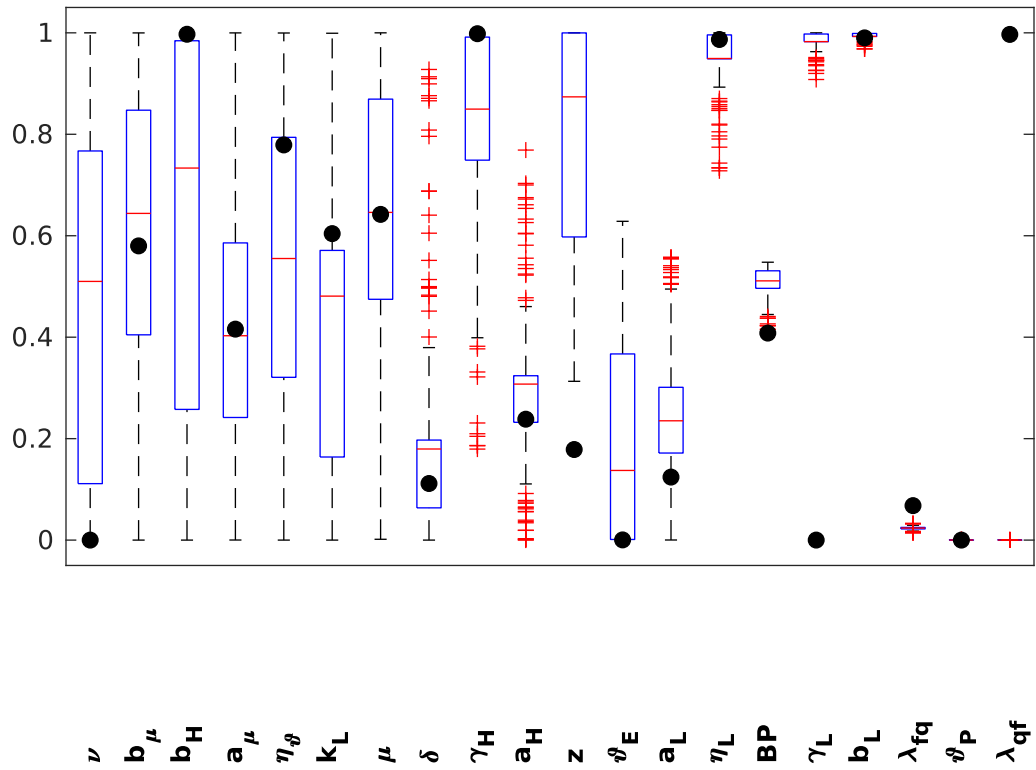
15.2. Estimated parameters with their intervals

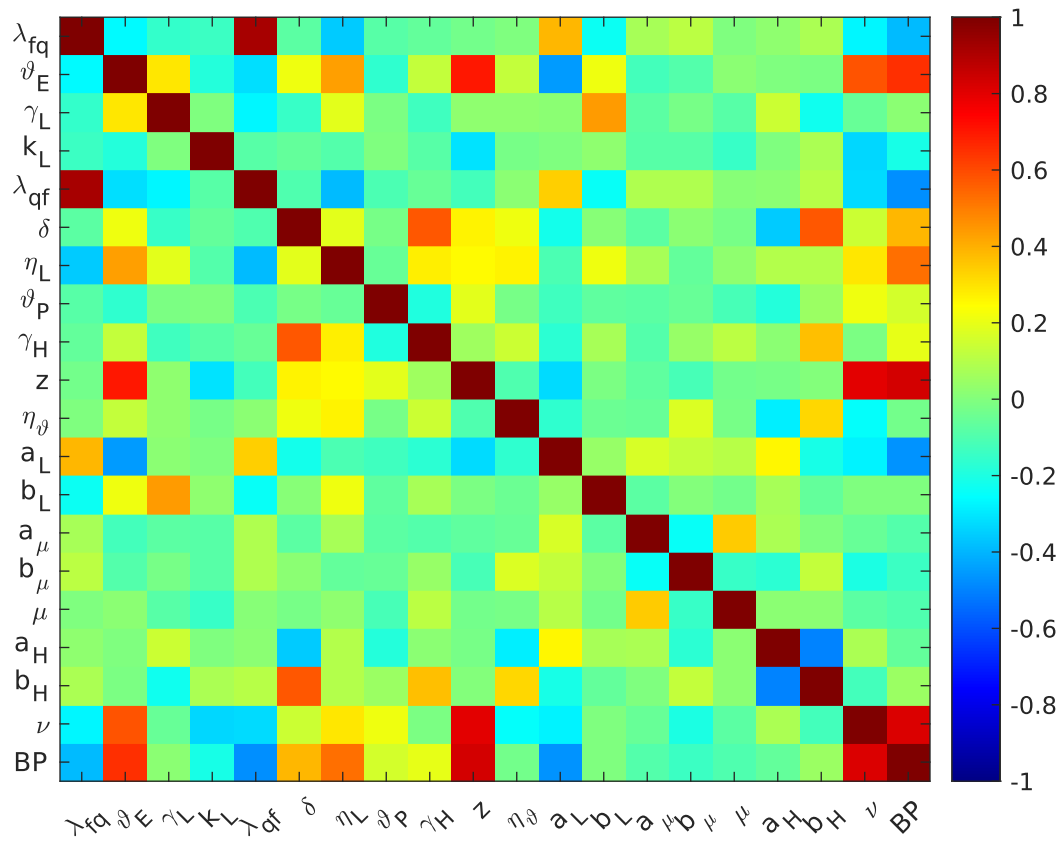
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

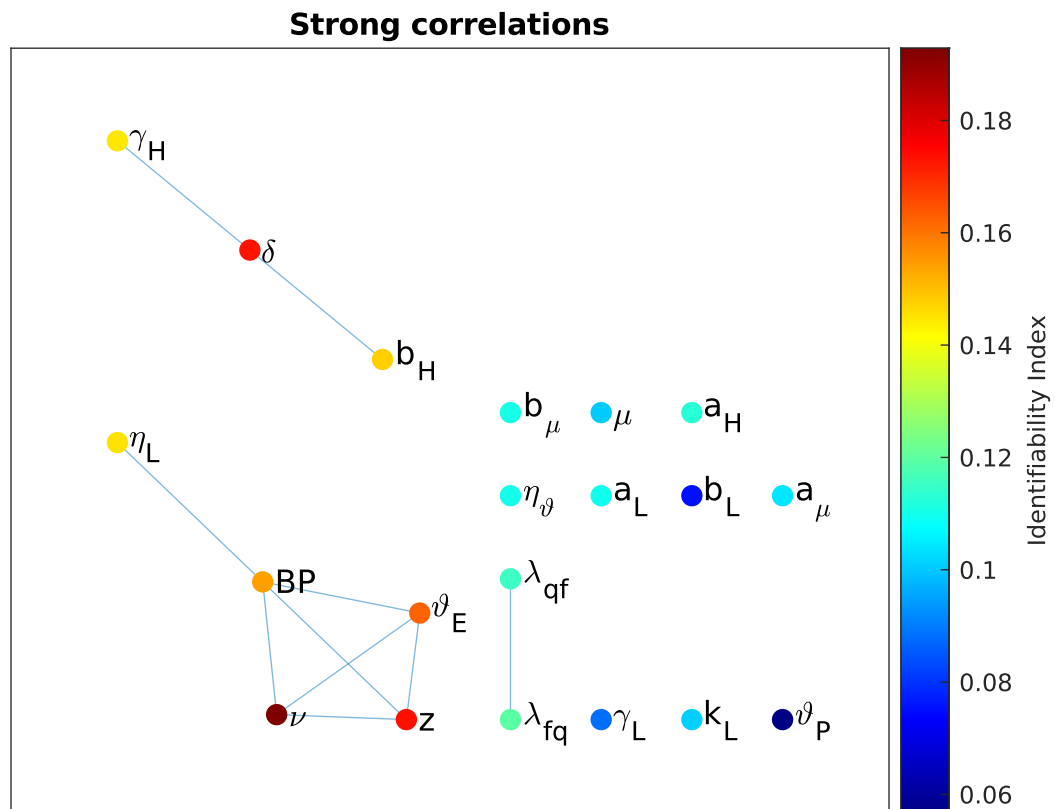
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0388'	'0.0906'	'0.0238'	'0.068'	'0.1199'
ϑ_E	'0.0002'	'0.0004'	'0.1373'	'0.0004'	'0.1624'
γ_L	'0'	'0.0001'	'0.9826'	'0.0001'	'0.0882'
k_L	'4.1098'	'8.0327'	'5.3287'	'6.4375'	'0.1013'
λ_{qf}	'0.9079'	'1'	'0.0001'	'0.9969'	'0.1155'
δ	'0.0145'	'0.017'	'0.0272'	'0.0167'	'0.1729'
η_L	'0.8091'	'0.9901'	'0.9487'	'0.9869'	'0.1452'
ϑ_P	'0'	'0'	'0.0001'	'0'	'0.0568'
γ_H	'0.9212'	'1'	'0.8477'	'0.9983'	'0.145'
z	'5.2229'	'5.779'	'26.2131'	'5.3568'	'0.1736'
η_{ϑ}	'0.7644'	'0.8706'	'0.5551'	'0.779'	'0.11'
a_L	'2.1213'	'8.6637'	'4.2968'	'2.7393'	'0.1096'
b_L	'12.5436'	'15'	'14.8999'	'14.8604'	'0.0757'
a_{μ}	'6.4671'	'10.2072'	'6.6401'	'6.8225'	'0.1045'
b_{μ}	'5.7711'	'9.5065'	'10.0163'	'9.1198'	'0.111'
μ	'0.2942'	'0.6438'	'0.646'	'0.6421'	'0.1006'
a_H	'3.8605'	'4.3919'	'5.3081'	'4.3367'	'0.113'
b_H	'13.6464'	'15'	'11.2679'	'14.9605'	'0.1479'
ν	'0.0001'	'0.0001'	'254.9755'	'0.0001'	'0.1929'
BP	'620.5'	'705'	'638.5'	'624.4997'	'0.1541'

15.3. Identifiability analysis

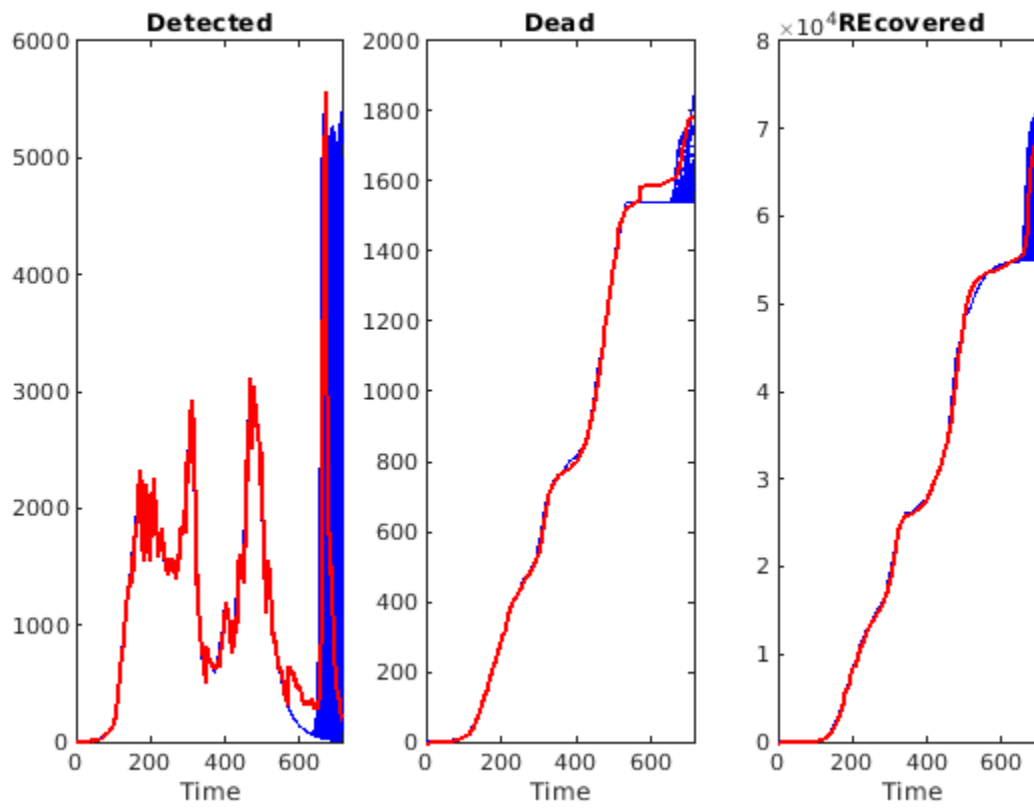






15.4. Uncertainty analysis

N=500



Chapter 16. Extension number16

16.1. Basic information

The extension to be validated consists of the time series from the data715 to the 729. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

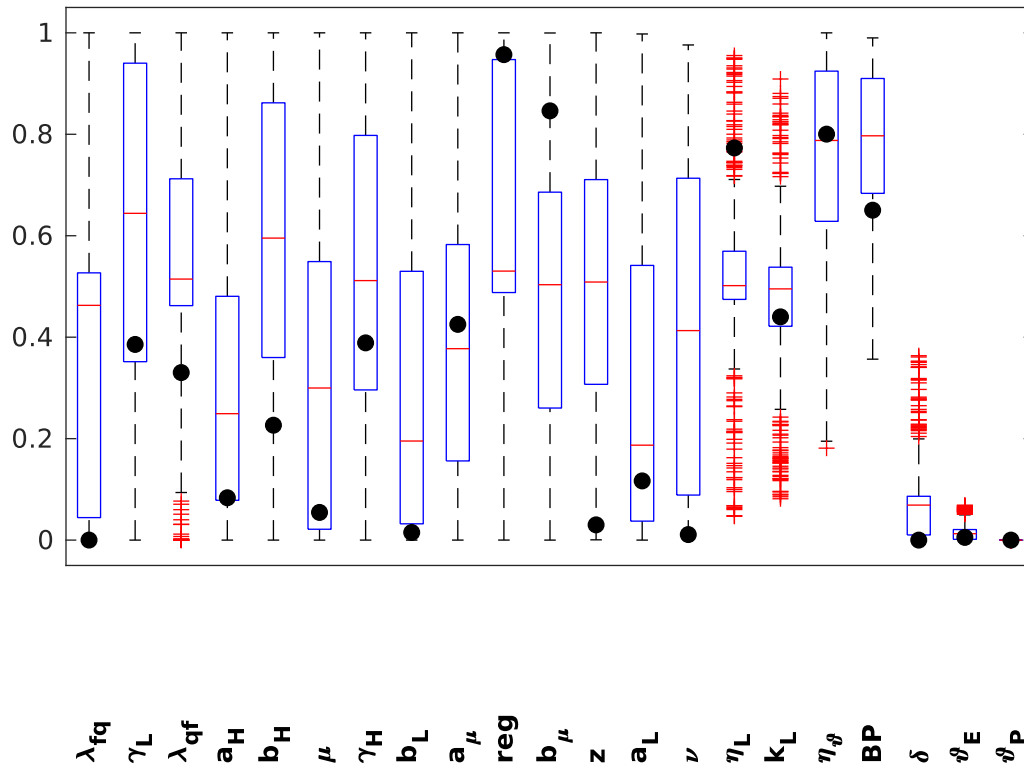
16.2. Estimated parameters with their intervals

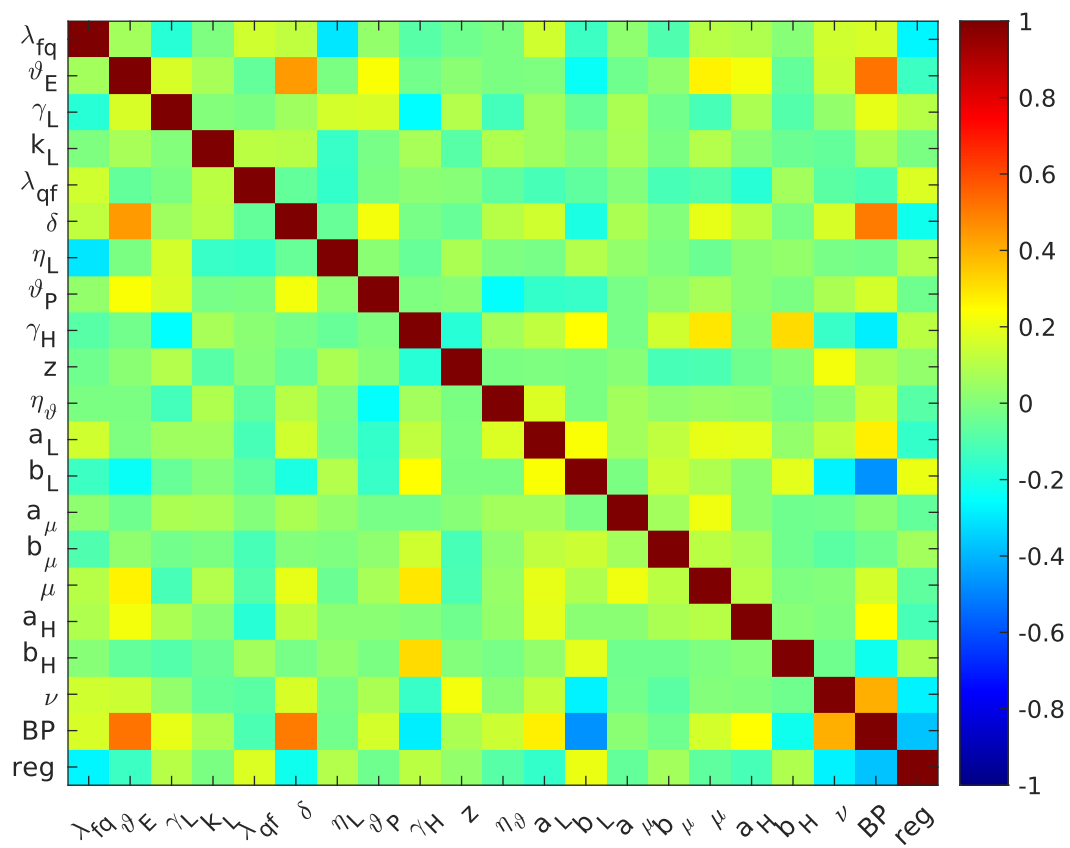
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

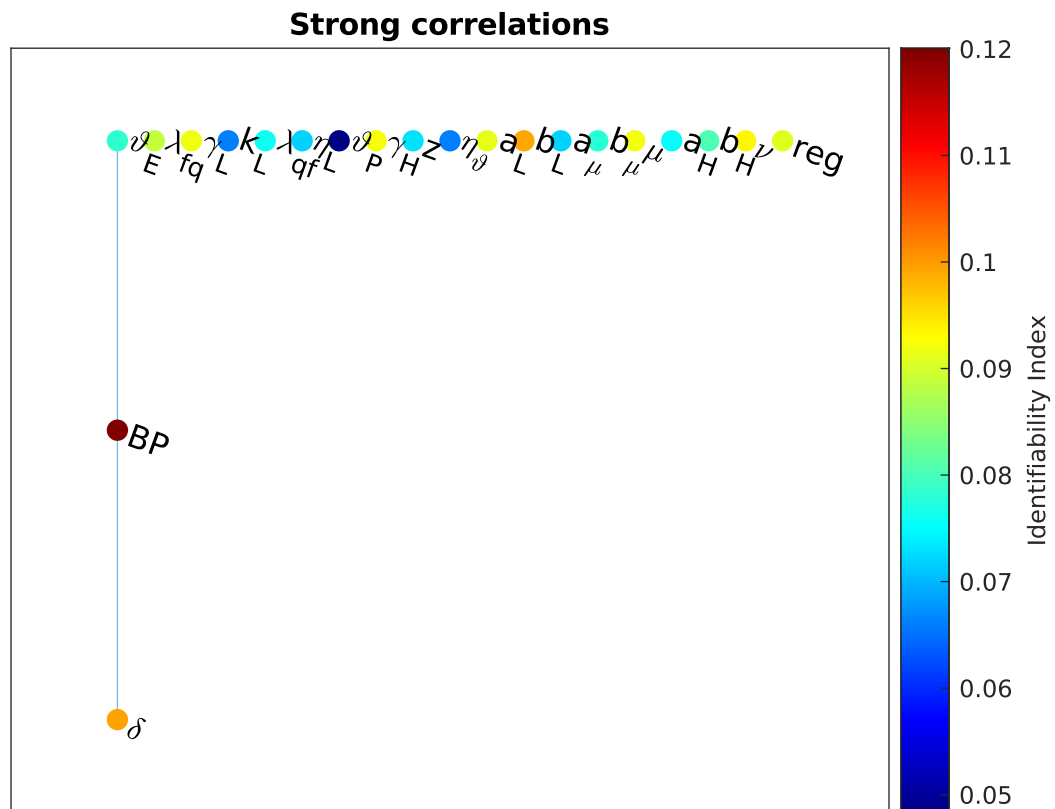
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0001'	'0.4628'	'0.0001'	'0.0887'
ϑ_E	'0.004'	'0.0056'	'0.0127'	'0.0053'	'0.0784'
γ_L	'0.3226'	'0.78'	'0.6442'	'0.3857'	'0.0918'
k_L	'1.45'	'9.5725'	'5.457'	'4.9608'	'0.0661'
λ_{qf}	'0'	'0.7431'	'0.5146'	'0.3303'	'0.0761'
δ	'0'	'0'	'0.0104'	'0'	'0.0994'
η_L	'0.3372'	'0.9257'	'0.5016'	'0.773'	'0.072'
ϑ_P	'0'	'0'	'0'	'0'	'0.0484'
γ_H	'0.3144'	'1'	'0.5116'	'0.3888'	'0.0924'
z	'0.8738'	'1.3875'	'15.2621'	'0.9016'	'0.0733'
η_{ϑ}	'0.6262'	'0.9103'	'0.7874'	'0.8003'	'0.0662'
a_L	'2.5982'	'3.1733'	'3.6197'	'2.6336'	'0.0913'
b_L	'1.0847'	'1.5544'	'3.7342'	'1.2104'	'0.0993'
a_{μ}	'4.2372'	'15'	'6.283'	'6.9538'	'0.072'
b_{μ}	'1'	'15'	'8.0487'	'12.8469'	'0.0778'
μ	'0'	'0.1228'	'0.2998'	'0.0546'	'0.0922'
a_H	'1.2007'	'3.4975'	'4.4892'	'2.1684'	'0.0754'
b_H	'1.315'	'13.6'	'9.3348'	'4.1711'	'0.0803'
ν	'2.233'	'6.8821'	'206.5012'	'5.4429'	'0.0937'
BP	'660.7251'	'666.7741'	'688.5501'	'666.5535'	'0.1201'
reg	'0.2022'	'0.25'	'0.1326'	'0.2393'	'0.0907'

16.3. Identifiability analysis







16.4. Uncertainty analysis

