

Validation process for SANTA MARTA

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 96. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was 1000.

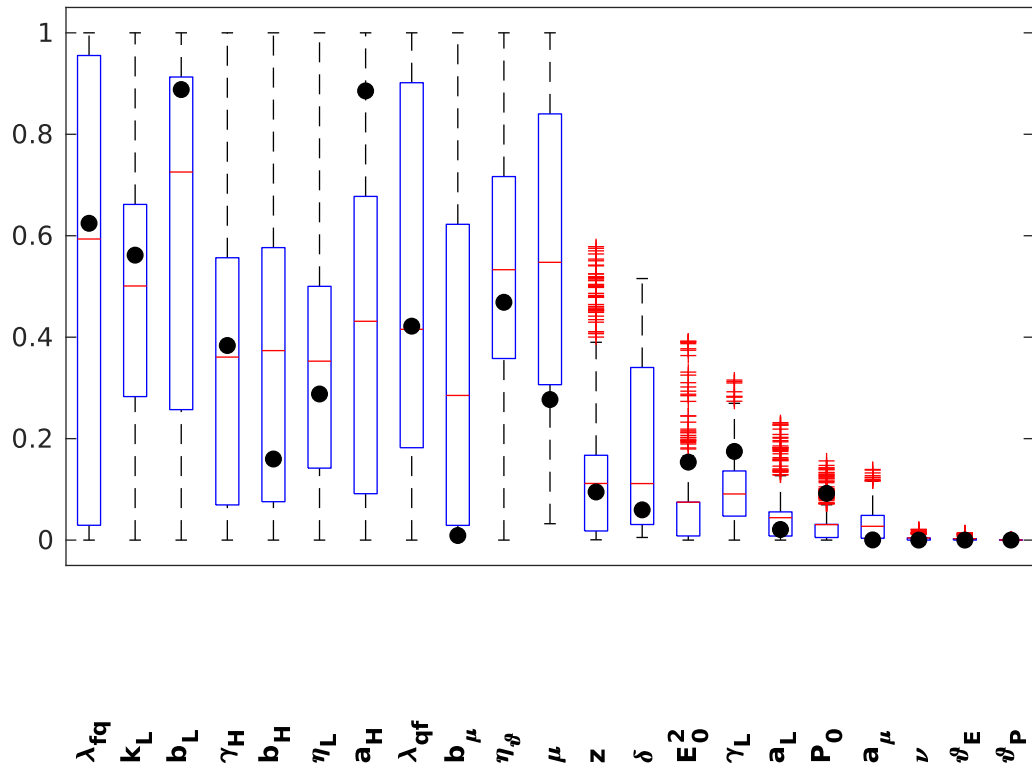
1.2. Estimated parameters with their intervals

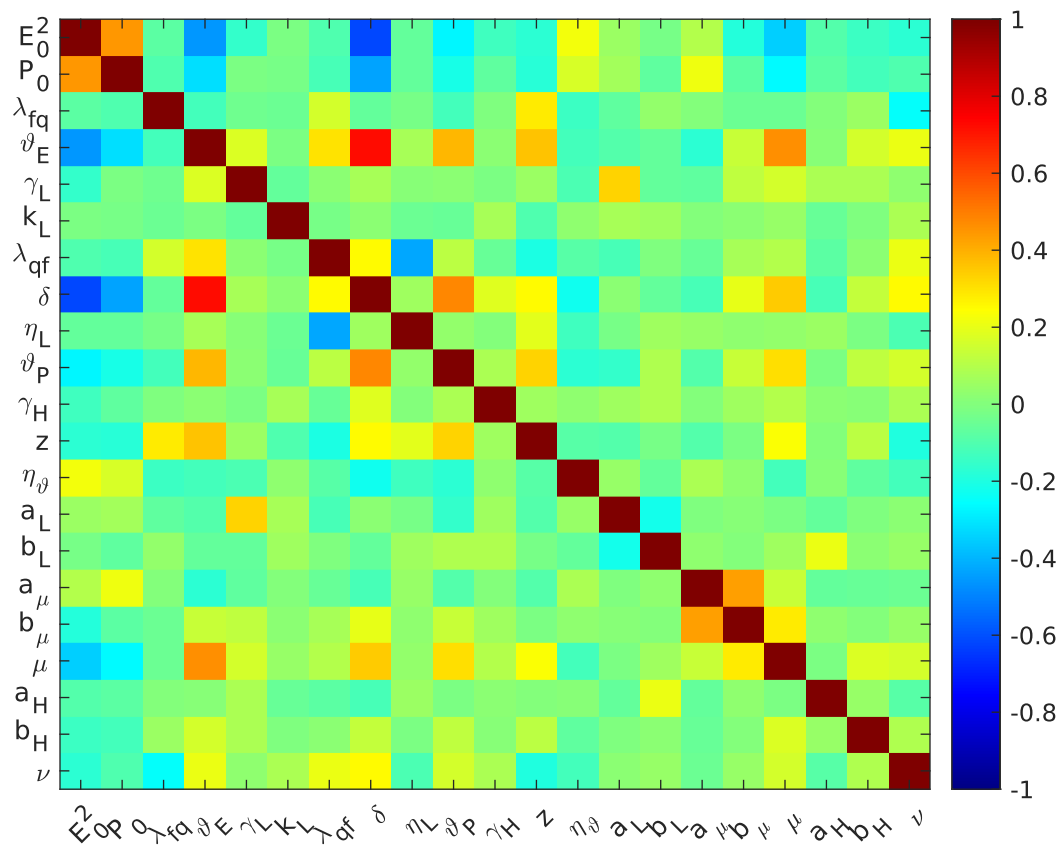
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

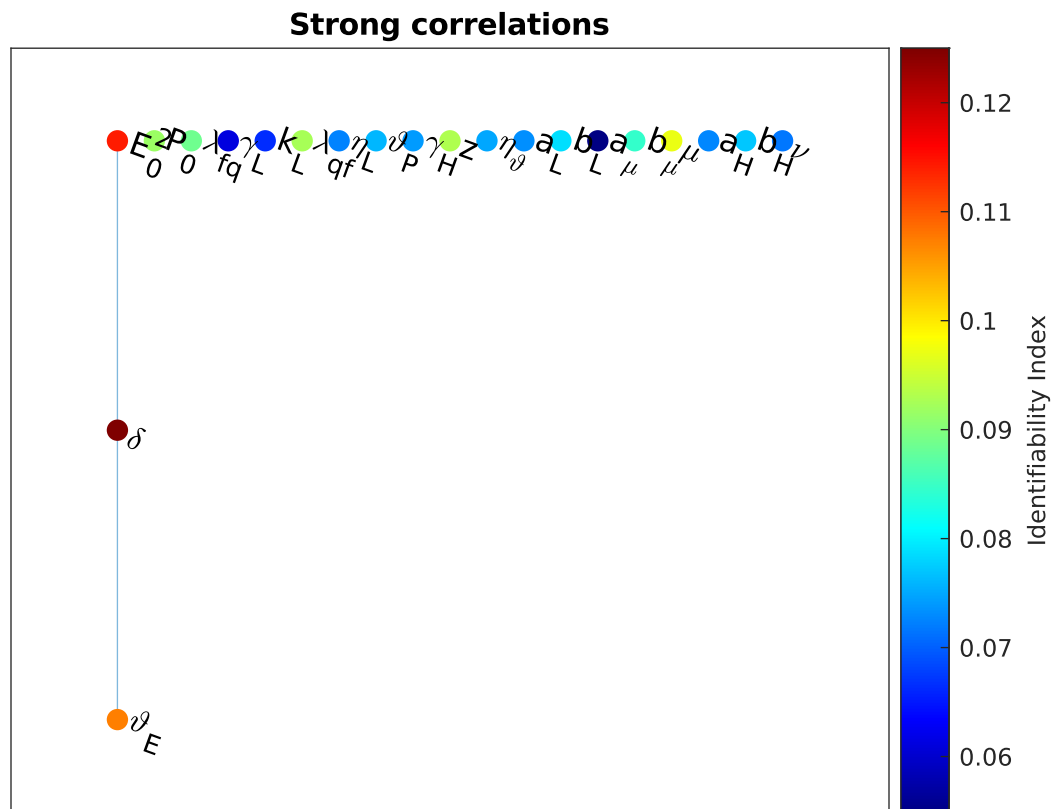
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
E^2_0	'236.4813'	'312.1001'	'149.6112'	'307.4379'	'0.1143'
P_0	'14.7919'	'53.6041'	'12.2744'	'36.8558'	'0.0917'
\lambda_{fq}	'0.6057'	'0.6453'	'0.5935'	'0.6245'	'0.0888'
\vartheta_E	'0'	'0.0001'	'0.0028'	'0'	'0.1072'
\gamma_L	'0.1484'	'0.1831'	'0.091'	'0.1748'	'0.0613'
k_L	'1.36'	'8.0455'	'5.5088'	'6.0556'	'0.0664'
\lambda_{qf}	'0.4055'	'0.4219'	'0.4156'	'0.4217'	'0.0927'
\delta	'0.0087'	'0.0115'	'0.0167'	'0.0089'	'0.125'
\eta_L	'0.2782'	'0.2994'	'0.3527'	'0.288'	'0.0724'
\vartheta_P	'0.0001'	'0.0001'	'0.0002'	'0.0001'	'0.076'
\gamma_H	'0'	'0.82'	'0.3608'	'0.3836'	'0.0741'
z	'2.6972'	'2.9221'	'3.3695'	'2.8469'	'0.0931'
\eta_{\vartheta}	'0.4549'	'0.4885'	'0.533'	'0.4688'	'0.0751'
a_L	'1.0806'	'1.2934'	'1.6189'	'1.2927'	'0.0735'
b_L	'11.1256'	'14.0385'	'11.1583'	'13.4343'	'0.0788'
a_{\mu}	'1'	'1.9097'	'1.3823'	'1.0051'	'0.0549'
b_{\mu}	'1.1227'	'3.4851'	'4.9923'	'1.1271'	'0.0846'
\mu	'0.269'	'0.694'	'0.5476'	'0.2771'	'0.0972'
a_H	'7.0282'	'14.1795'	'7.0393'	'13.3971'	'0.0729'
b_H	'1.7'	'13.3242'	'6.2298'	'3.2377'	'0.0772'
\nu	'0.0016'	'0.0209'	'2.1432'	'0.0138'	'0.0717'

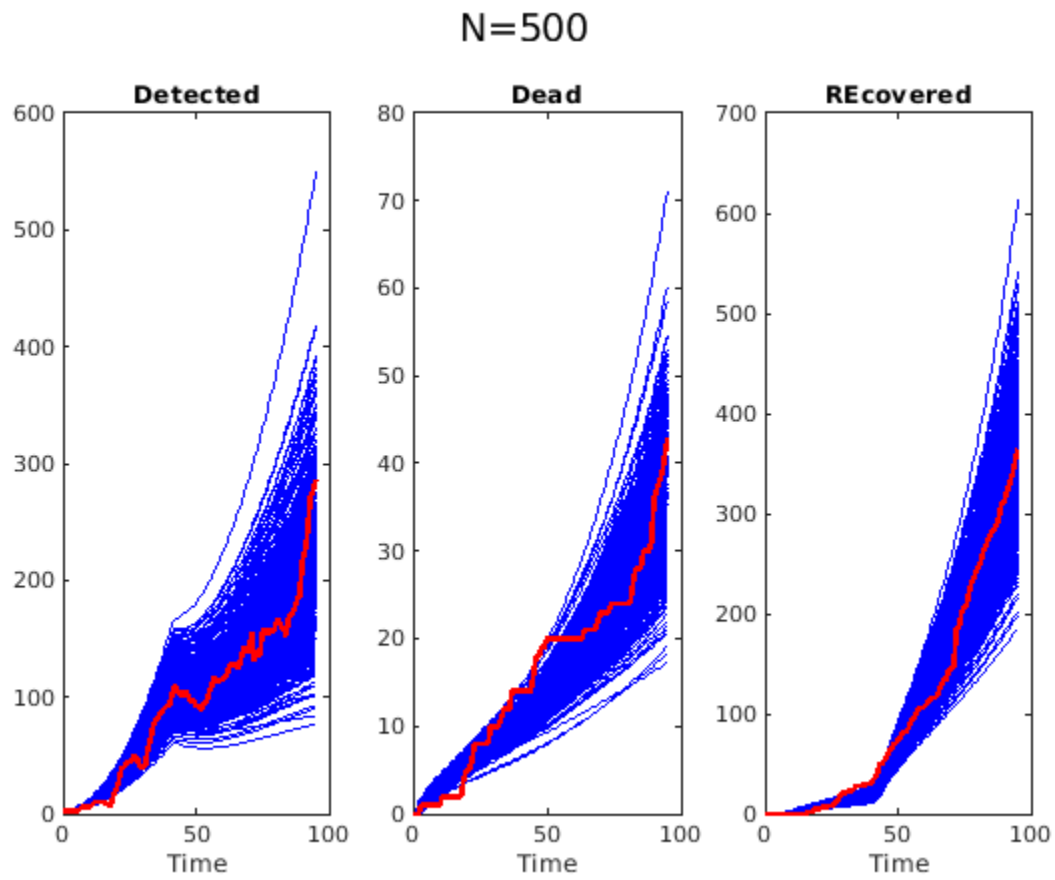
1.3. Identifiability analysis







1.4. Uncertainty analysis



Chapter 2. Extension number2

2.1. Basic information

The extension to be validated consists of the time series from the data96 to the 146. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

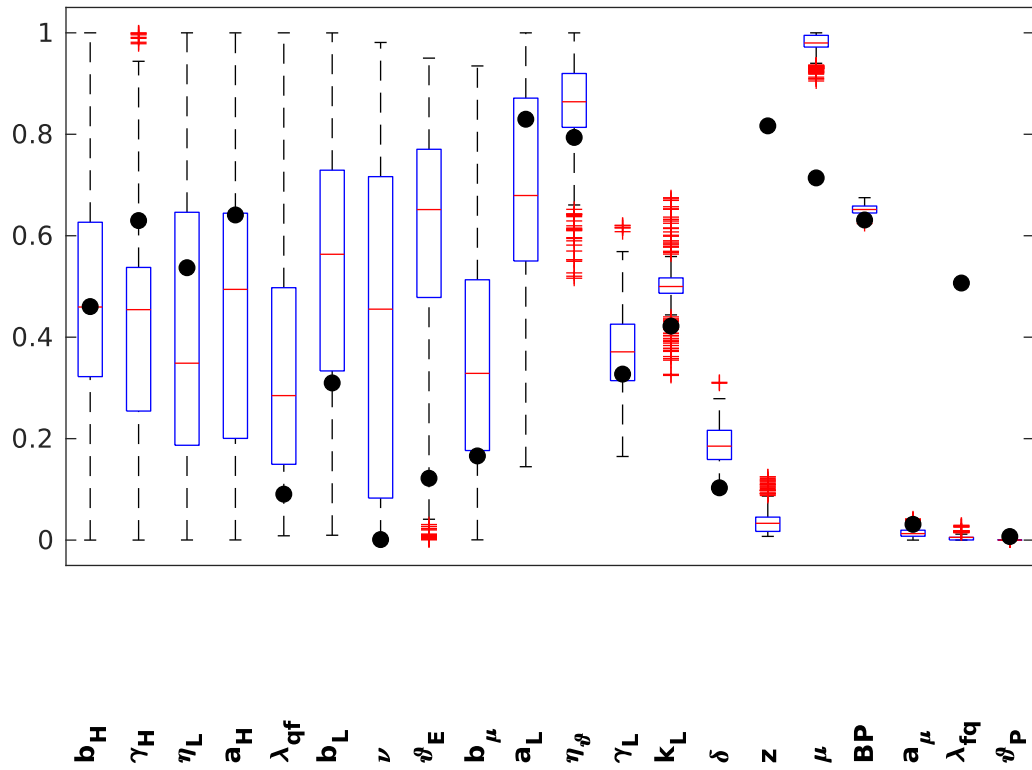
2.2. Estimated parameters with their intervals

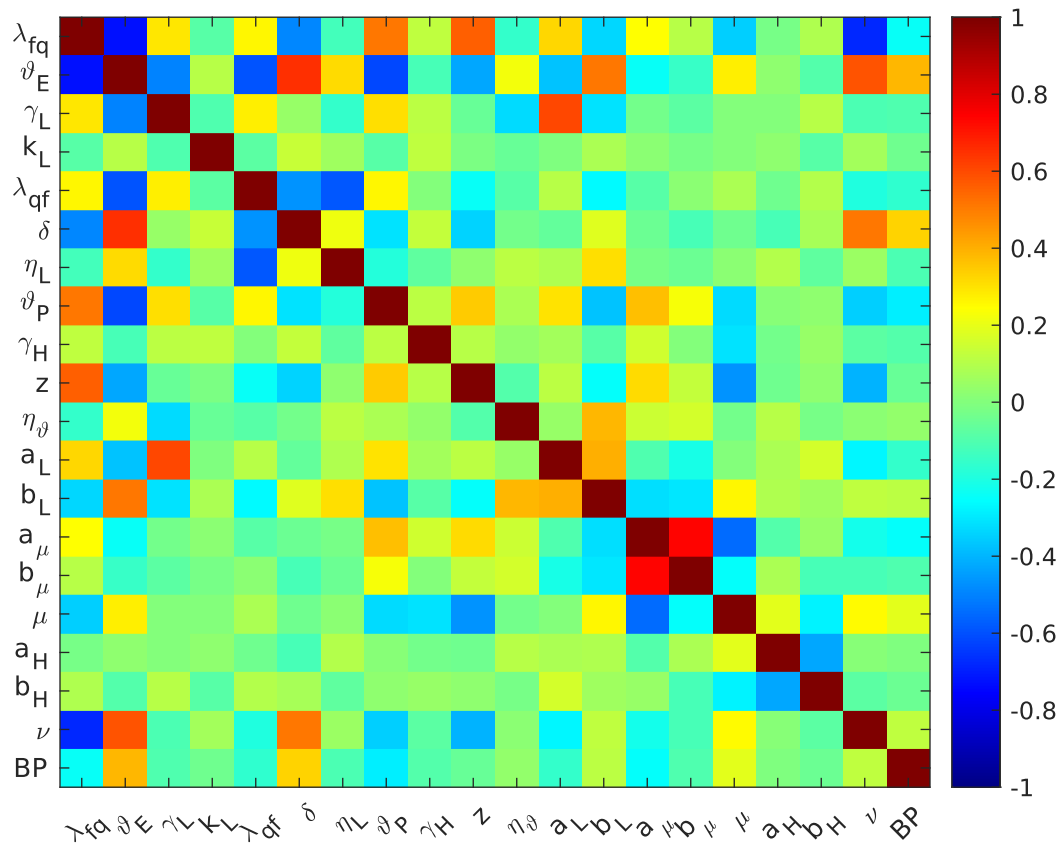
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

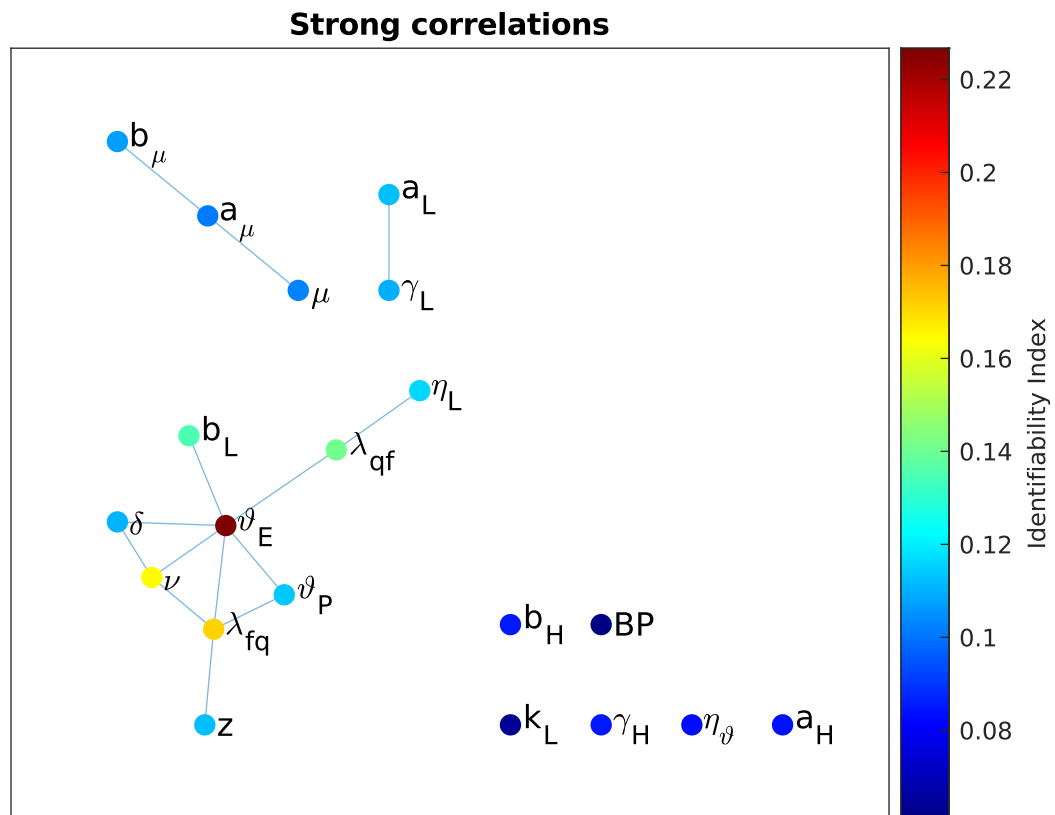
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.4831'	'0.536'	'0.0054'	'0.5068'	'0.1714'
ϑ_E	'0.0738'	'0.2642'	'0.6516'	'0.1219'	'0.2267'
γ_L	'0.2358'	'0.8613'	'0.3712'	'0.3272'	'0.1103'
k_L	'1.18'	'10'	'5.4991'	'4.7974'	'0.0641'
λ_{qf}	'0.088'	'0.098'	'0.2849'	'0.0906'	'0.1415'
δ	'0.0154'	'0.0212'	'0.0278'	'0.0155'	'0.1108'
η_L	'0.4905'	'0.5477'	'0.3487'	'0.537'	'0.1161'
ϑ_P	'0.0067'	'0.0131'	'0.0001'	'0.007'	'0.1139'
γ_H	'0.0396'	'1'	'0.4543'	'0.6299'	'0.0856'
z	'21.5446'	'25.6592'	'0.9949'	'24.4978'	'0.1125'
η_{ϑ}	'0.7482'	'0.8676'	'0.8641'	'0.7938'	'0.0835'
a_L	'10.1027'	'14.5091'	'10.5099'	'12.6153'	'0.1124'
b_L	'3.1272'	'5.4706'	'8.8885'	'5.3377'	'0.1353'
a_{μ}	'1'	'3.0262'	'1.179'	'1.4354'	'0.1016'
b_{μ}	'3.2694'	'15'	'5.6014'	'3.3231'	'0.1071'
μ	'0.2803'	'0.8976'	'0.98'	'0.714'	'0.1028'
a_H	'5.3158'	'15'	'7.9196'	'9.9733'	'0.0838'
b_H	'1'	'15'	'7.4327'	'7.4449'	'0.0853'
ν	'0'	'1.1756'	'227.6283'	'0.5225'	'0.1646'
BP	'92.046'	'99.9262'	'95.5'	'92.5'	'0.0611'

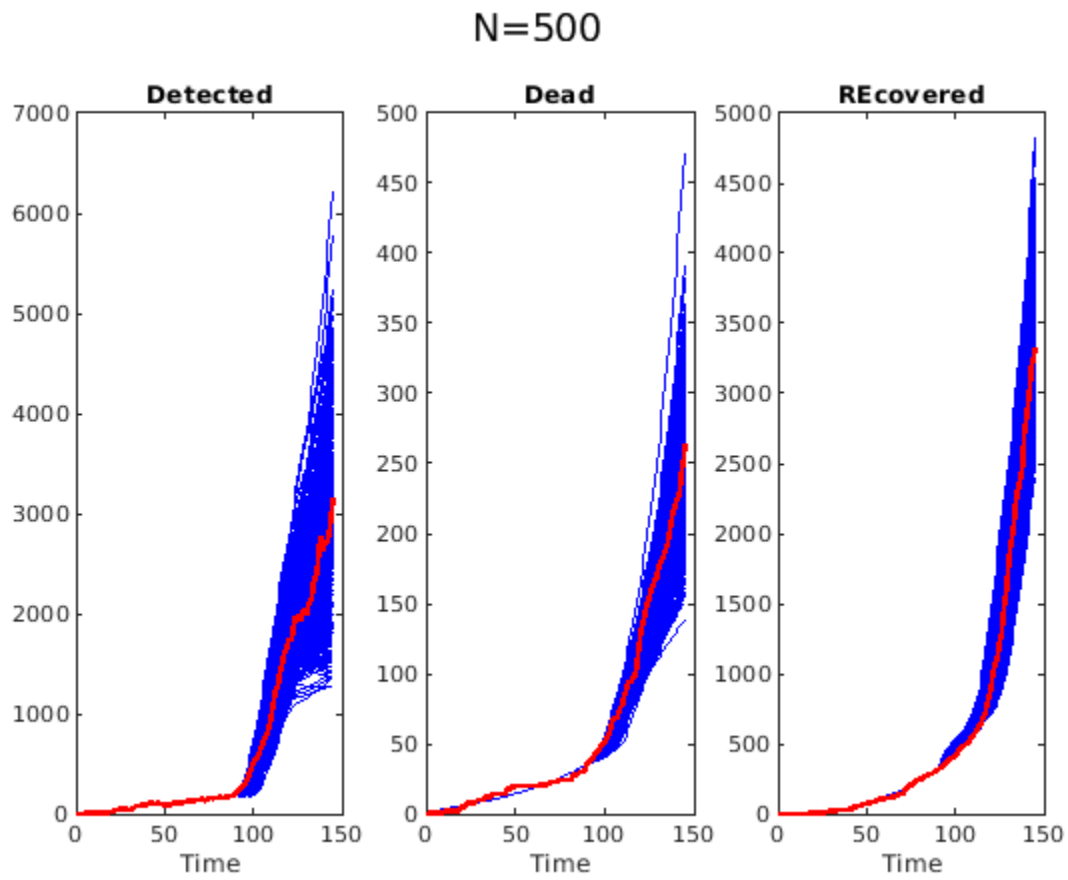
2.3. Identifiability analysis







2.4. Uncertainty analysis



Chapter 3. Extension number3

3.1. Basic information

The extension to be validated consists of the time series from the data146 to the 181. The status of the validation is: COMPLETED.

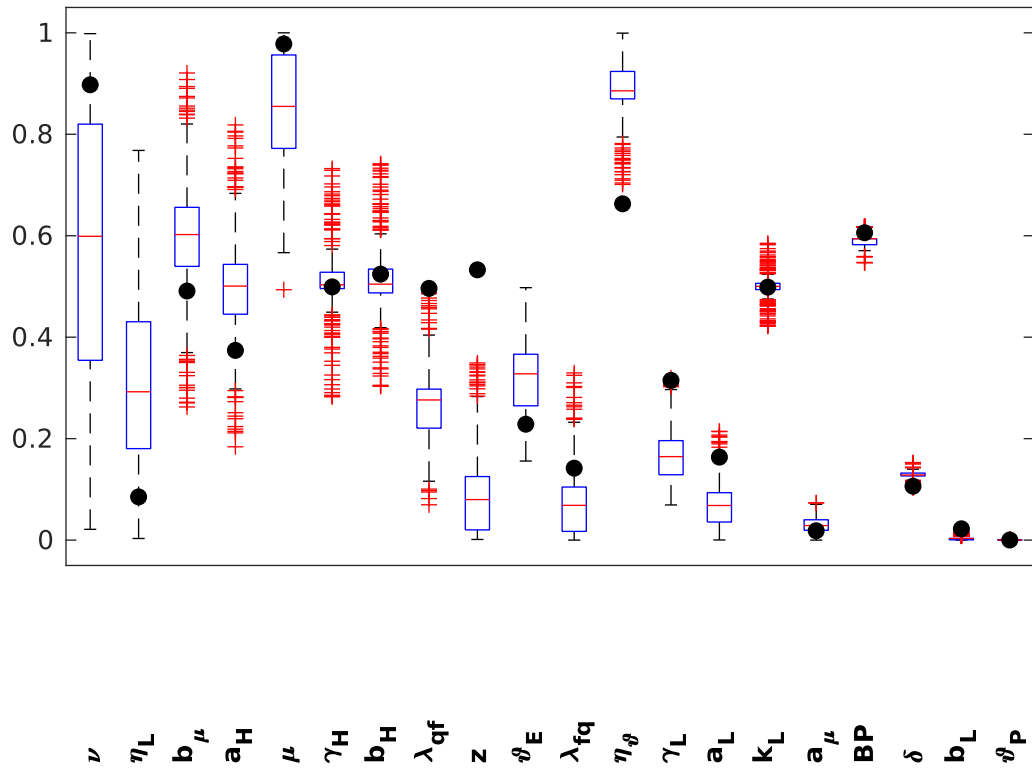
The number of estimations needed to perform the validation was1000.

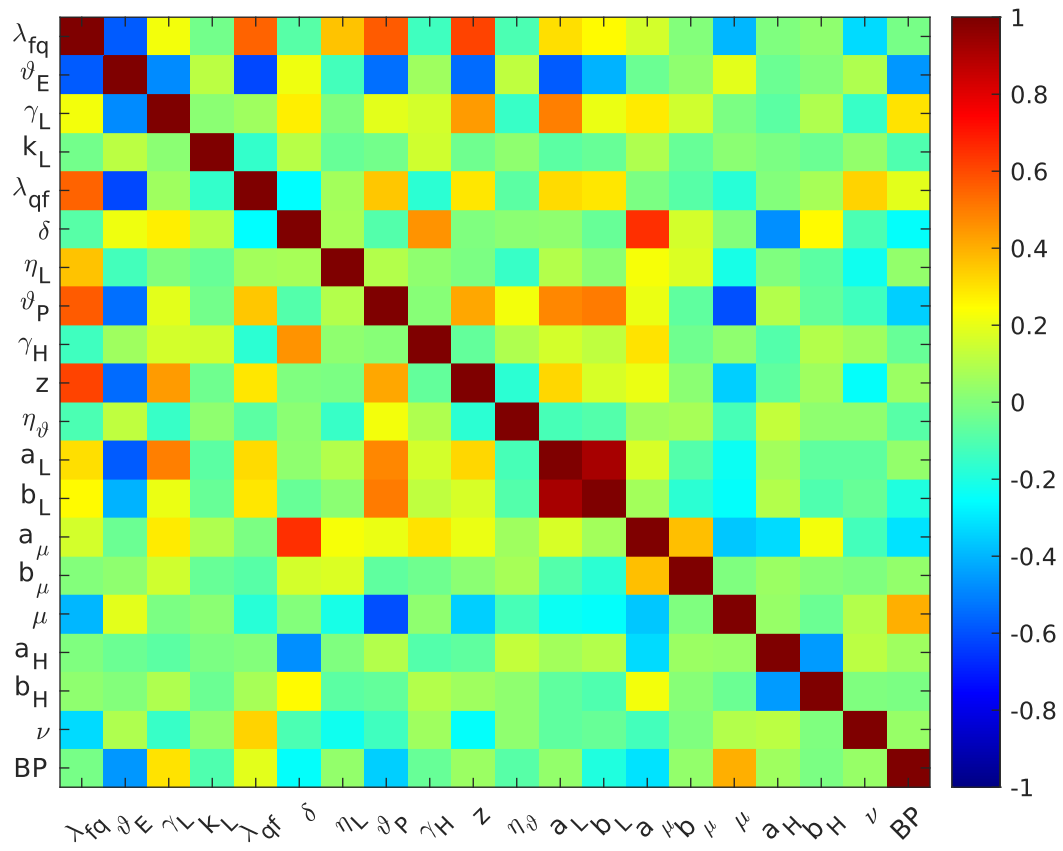
3.2. Estimated parameters with their intervals

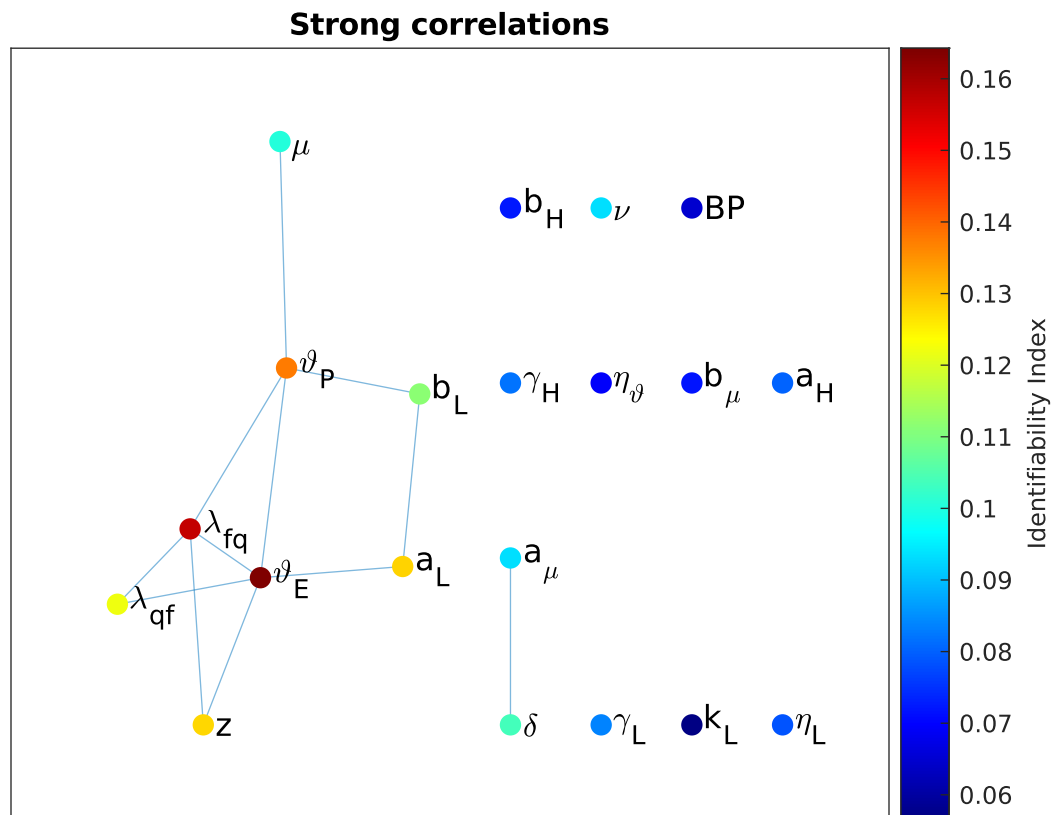
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0458'	'0.0912'	'0.0685'	'0.1418'	'0.1567'
ϑ_E	'0.3162'	'0.3392'	'0.3277'	'0.2284'	'0.1643'
γ_L	'0.1529'	'0.1763'	'0.1646'	'0.3148'	'0.0837'
k_L	'5.3482'	'5.6538'	'5.501'	'5.4878'	'0.0567'
λ_{qf}	'0.2549'	'0.2979'	'0.2764'	'0.4962'	'0.1221'
δ	'0.0159'	'0.0226'	'0.0193'	'0.0159'	'0.1041'
η_L	'0.2645'	'0.3211'	'0.2928'	'0.0852'	'0.0788'
ϑ_P	'0.0002'	'0.0006'	'0.0004'	'0.0002'	'0.1378'
γ_H	'0.4742'	'0.5322'	'0.5032'	'0.4991'	'0.082'
z	'1.5898'	'3.2251'	'2.4074'	'15.9848'	'0.128'
η_{ϑ}	'0.8642'	'0.907'	'0.8856'	'0.6629'	'0.0693'
a_L	'1.6703'	'2.2419'	'1.9561'	'3.2901'	'0.1282'
b_L	'1'	'1.3165'	'1.0459'	'1.3117'	'0.1114'
a_{μ}	'1.3504'	'1.4536'	'1.402'	'1.2576'	'0.0935'
b_{μ}	'9.0528'	'9.8121'	'9.4324'	'7.8742'	'0.0719'
μ	'0.8356'	'0.8741'	'0.8549'	'0.9781'	'0.1007'
a_H	'7.6157'	'8.4042'	'8.0099'	'6.2355'	'0.0806'
b_H	'7.6978'	'8.4294'	'8.0636'	'8.3393'	'0.0726'
ν	'279.0568'	'319.8474'	'299.4521'	'448.791'	'0.0935'
BP	'146.2645'	'146.7355'	'146.5'	'147.5'	'0.0648'

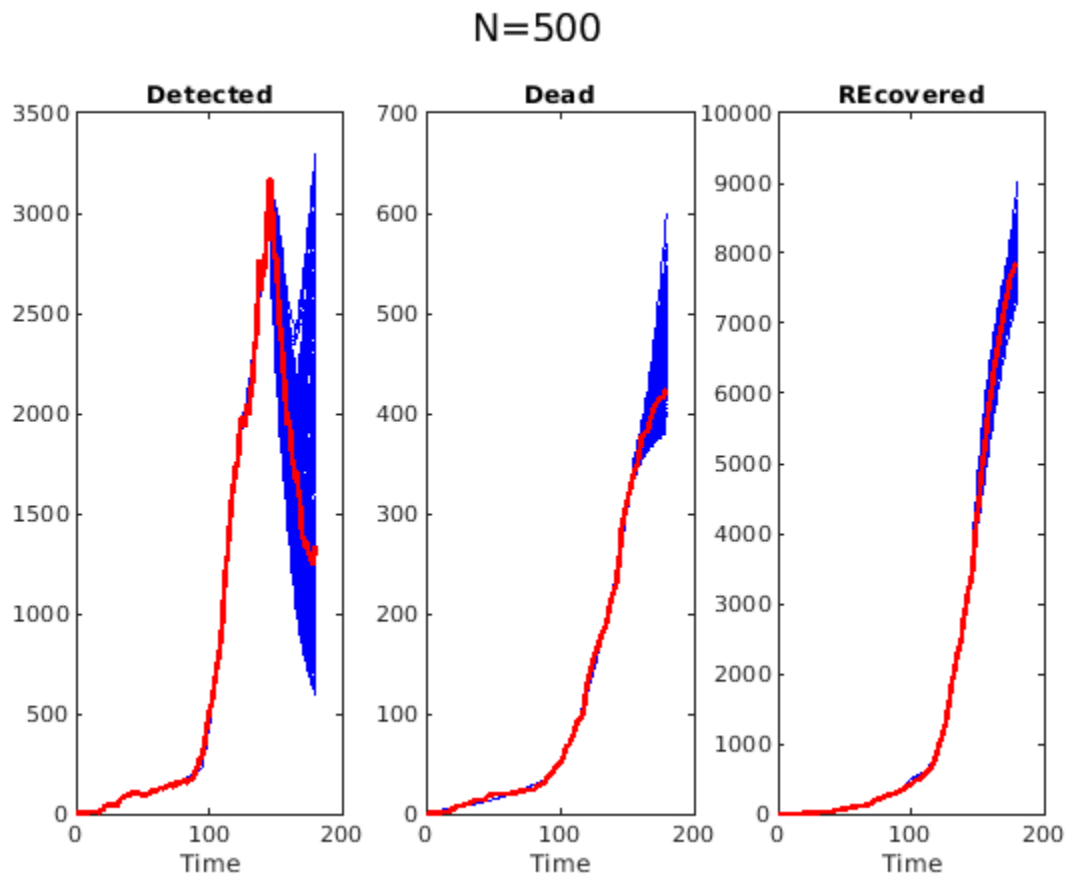
3.3. Identifiability analysys







3.4. Uncertainty analysis



Chapter 4. Extension number4

4.1. Basic information

The extension to be validated consists of the time series from the data181 to the 246. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

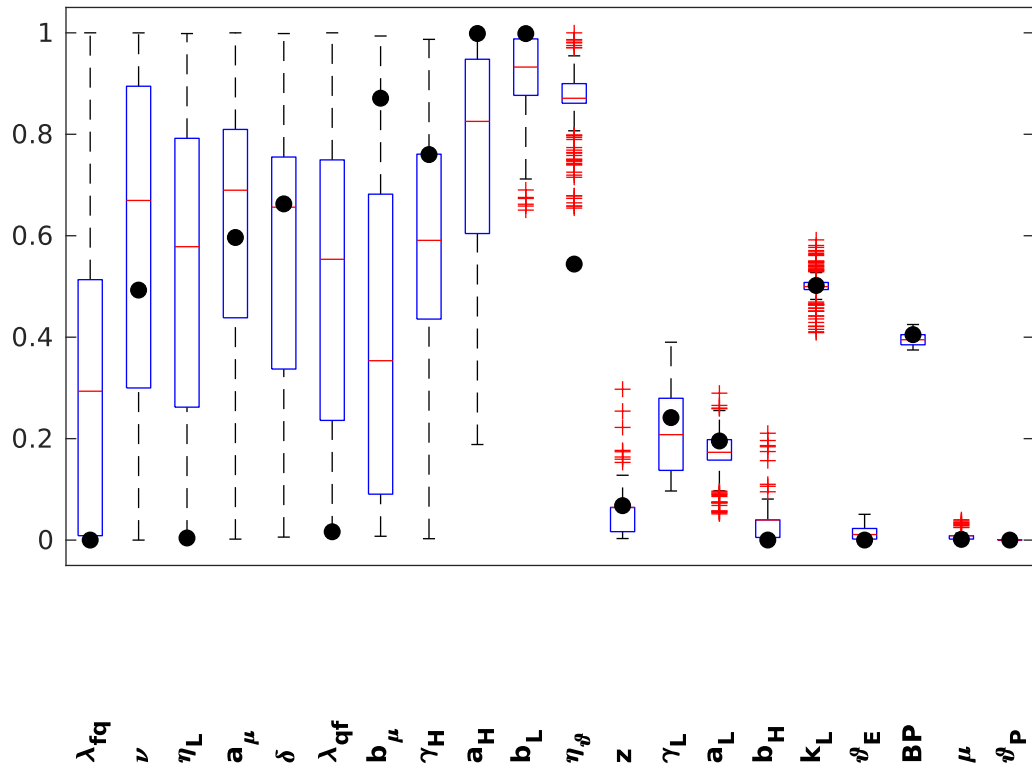
4.2. Estimated parameters with their intervals

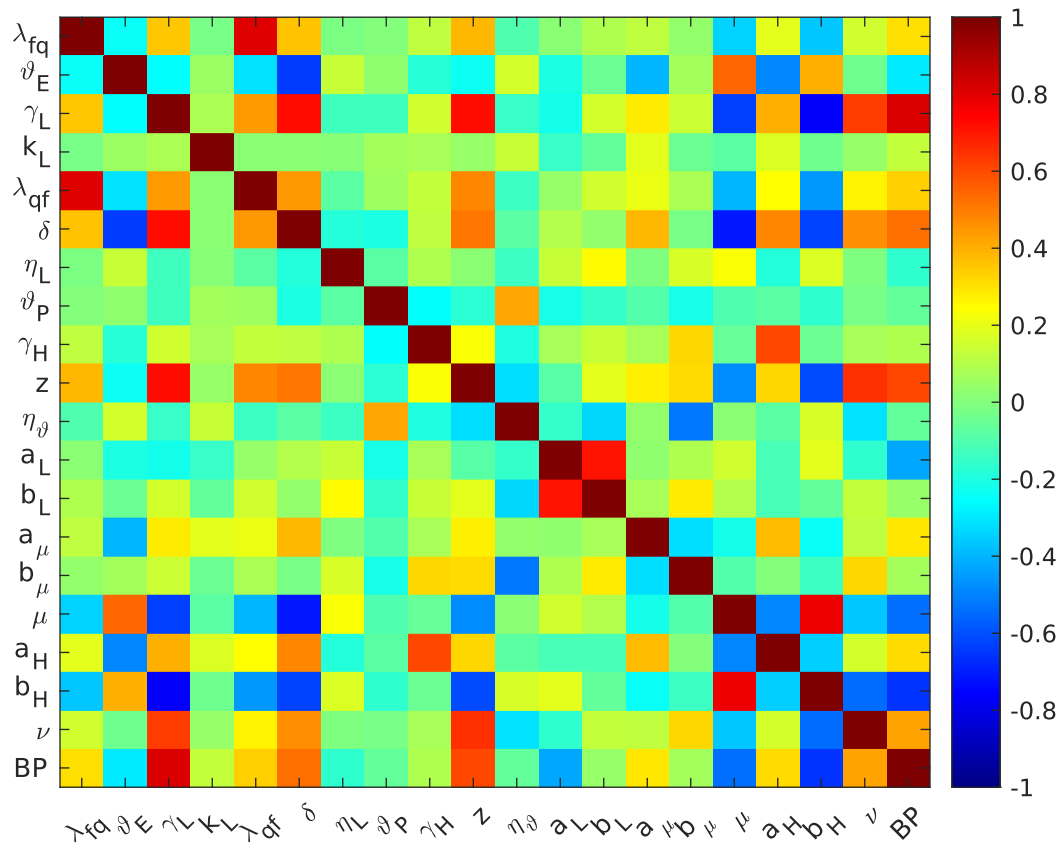
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

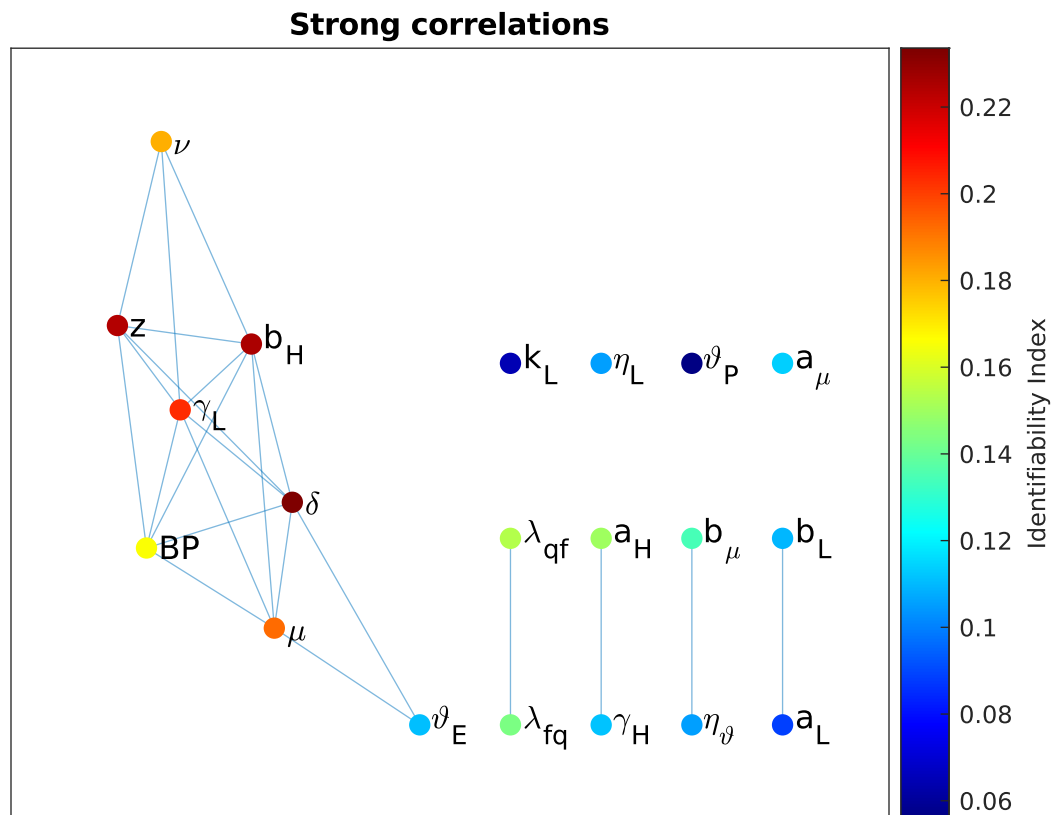
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0001'	'0.2935'	'0.0001'	'0.1439'
ϑ_E	'0'	'0.0001'	'0.011'	'0.0001'	'0.1112'
γ_L	'0.1898'	'0.312'	'0.2078'	'0.2415'	'0.2032'
k_L	'1.9059'	'7.543'	'5.4977'	'5.5175'	'0.0648'
λ_{qf}	'0.0149'	'0.0225'	'0.5536'	'0.0164'	'0.1532'
δ	'0.0975'	'0.125'	'0.0984'	'0.0994'	'0.2336'
η_L	'0.0016'	'0.006'	'0.5784'	'0.0042'	'0.1056'
ϑ_P	'0'	'0.0001'	'0.0003'	'0'	'0.056'
γ_H	'0.3579'	'0.7837'	'0.5909'	'0.76'	'0.1117'
z	'1.8991'	'2.2914'	'1.9303'	'2.0368'	'0.2239'
η_{ϑ}	'0.4343'	'0.5485'	'0.871'	'0.5441'	'0.1059'
a_L	'3.7136'	'9.0187'	'3.4233'	'3.7361'	'0.0887'
b_L	'10.2021'	'15'	'14.0551'	'14.9783'	'0.1097'
a_{μ}	'4.3075'	'13.4519'	'10.6567'	'9.3516'	'0.1141'
b_{μ}	'3.2137'	'13.2563'	'5.9509'	'13.196'	'0.1344'
μ	'0.0004'	'0.0019'	'0.0087'	'0.0015'	'0.192'
a_H	'10.4084'	'15'	'12.5559'	'14.9815'	'0.1496'
b_H	'1'	'3.5423'	'1.5571'	'1.0018'	'0.2258'
ν	'206.2001'	'257.3095'	'334.7794'	'246.4282'	'0.1804'
BP	'180.0222'	'193.5608'	'185.5'	'186.5'	'0.1661'

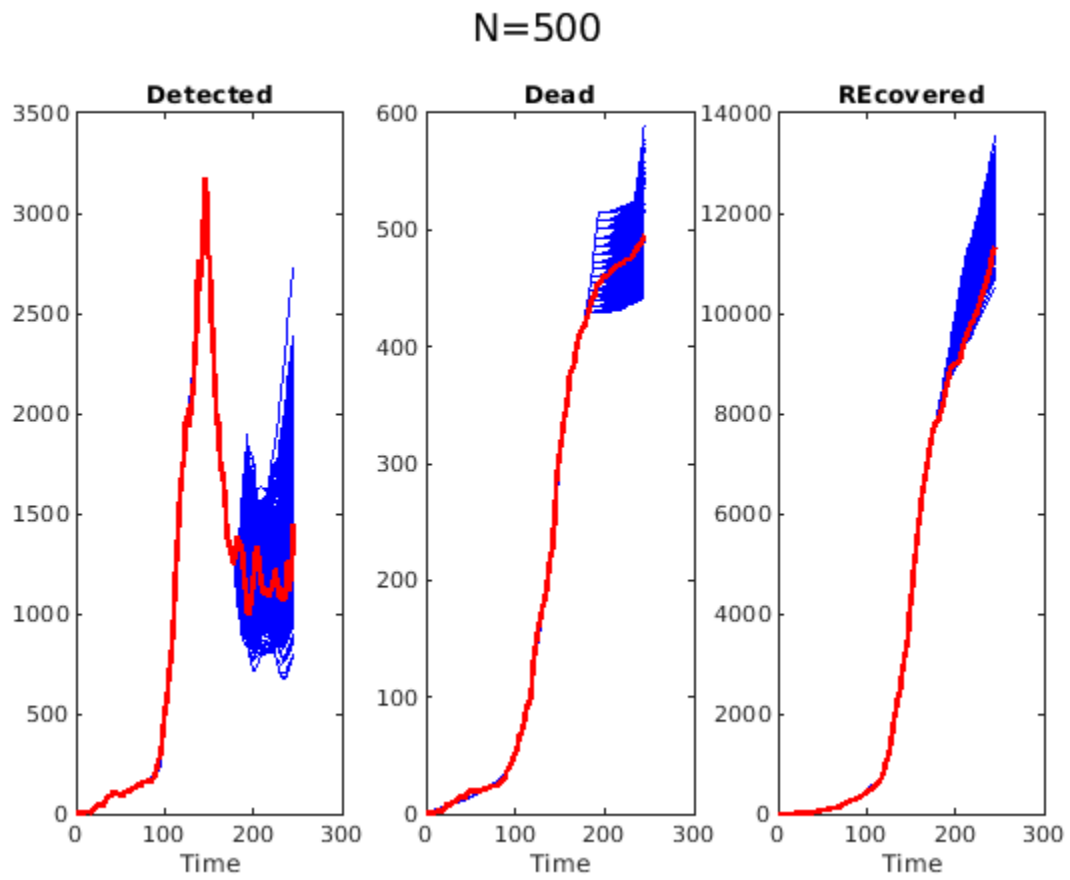
4.3. Identifiability analysis







4.4. Uncertainty analysis



Chapter 5. Extension number5

5.1. Basic information

The extension to be validated consists of the time series from the data246 to the 271. The status of the validation is: COMPLETED.

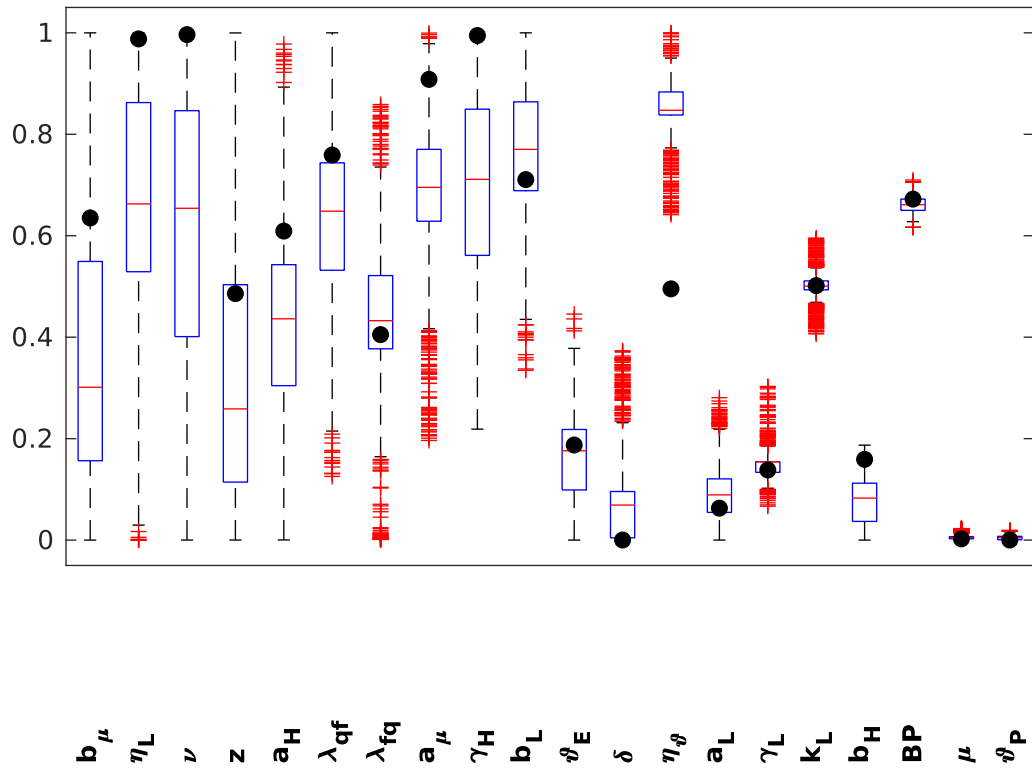
The number of estimations needed to perform the validation was1000.

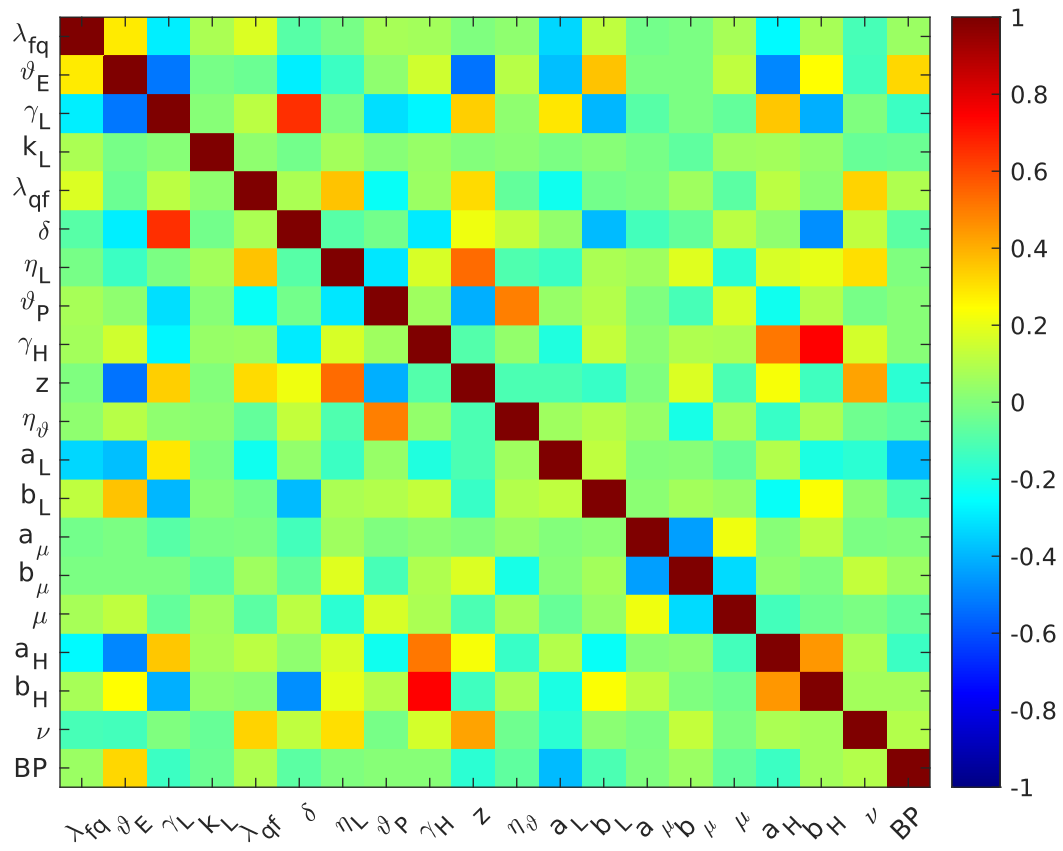
5.2. Estimated parameters with their intervals

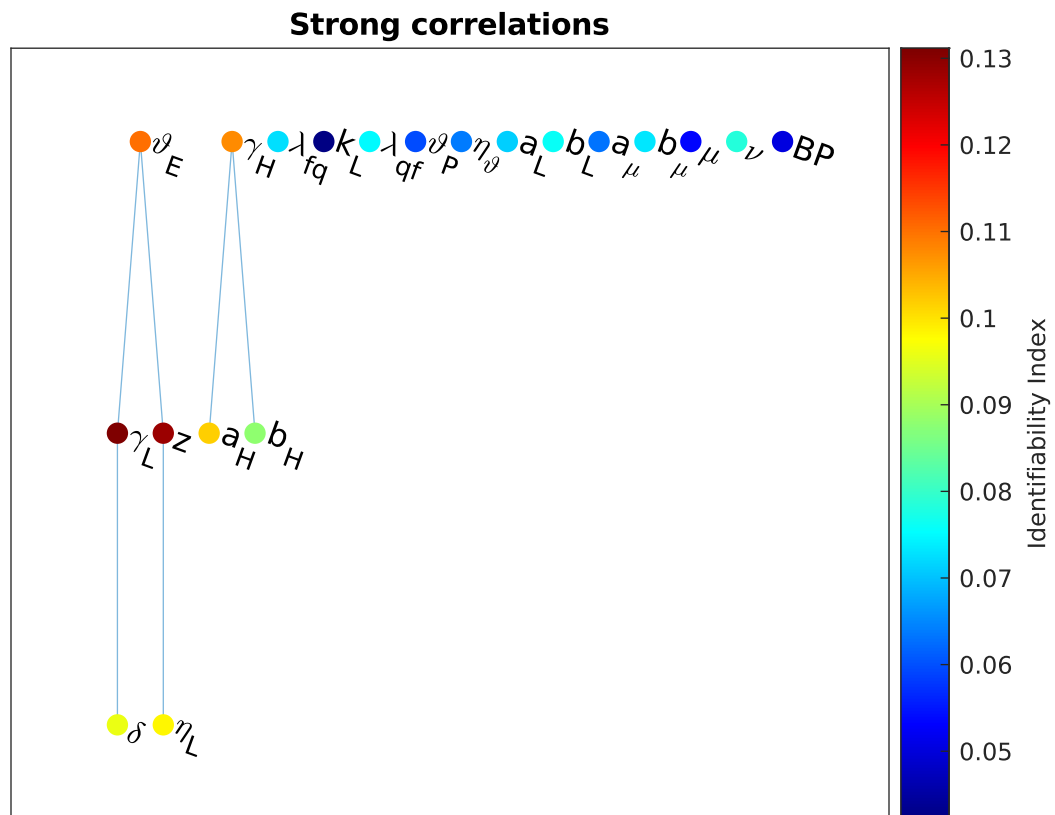
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.4122'	'0.4529'	'0.4325'	'0.405'	'0.0725'
ϑ_E	'0.1681'	'0.1846'	'0.1763'	'0.1875'	'0.1102'
γ_L	'0.1271'	'0.1819'	'0.1545'	'0.1383'	'0.1312'
k_L	'5.4255'	'5.5848'	'5.5051'	'5.5156'	'0.0423'
λ_{qf}	'0.628'	'0.6683'	'0.6481'	'0.7591'	'0.0752'
δ	'0.0078'	'0.0129'	'0.0104'	'0'	'0.0959'
η_L	'0.6406'	'0.685'	'0.6628'	'0.988'	'0.0984'
ϑ_P	'0.0042'	'0.005'	'0.0046'	'0.0002'	'0.0597'
γ_H	'0.6932'	'0.7291'	'0.7111'	'0.9947'	'0.1079'
z	'6.9206'	'8.5975'	'7.759'	'14.5777'	'0.1284'
η_{ϑ}	'0.8324'	'0.8621'	'0.8473'	'0.4953'	'0.0639'
a_L	'2.098'	'2.401'	'2.2495'	'1.8817'	'0.0714'
b_L	'11.5405'	'12.0219'	'11.7812'	'10.9491'	'0.0761'
a_{μ}	'10.4167'	'11.0541'	'10.7354'	'13.7157'	'0.0631'
b_{μ}	'4.8988'	'5.5376'	'5.2182'	'9.8909'	'0.0733'
μ	'0.0012'	'0.0093'	'0.0053'	'0.0025'	'0.0535'
a_H	'6.8689'	'7.3569'	'7.1129'	'9.5285'	'0.1019'
b_H	'2.0969'	'2.222'	'2.1595'	'3.2285'	'0.088'
ν	'314.4232'	'339.7114'	'327.0673'	'498.2236'	'0.0786'
BP	'240.3238'	'240.6762'	'240.5'	'241.4993'	'0.0505'

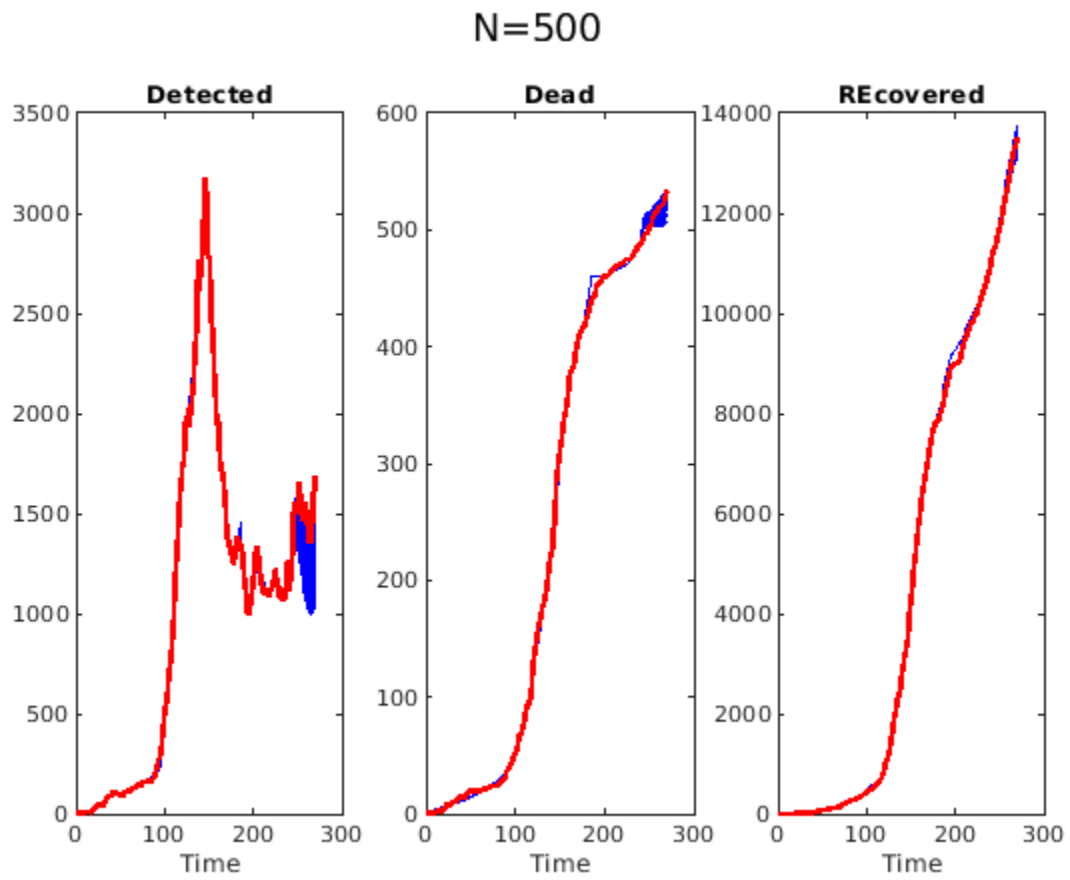
5.3. Identifiability analysis







5.4. Uncertainty analysis



Chapter 6. Extension number6

6.1. Basic information

The extension to be validated consists of the time series from the data271 to the 292. The status of the validation is: COMPLETED.

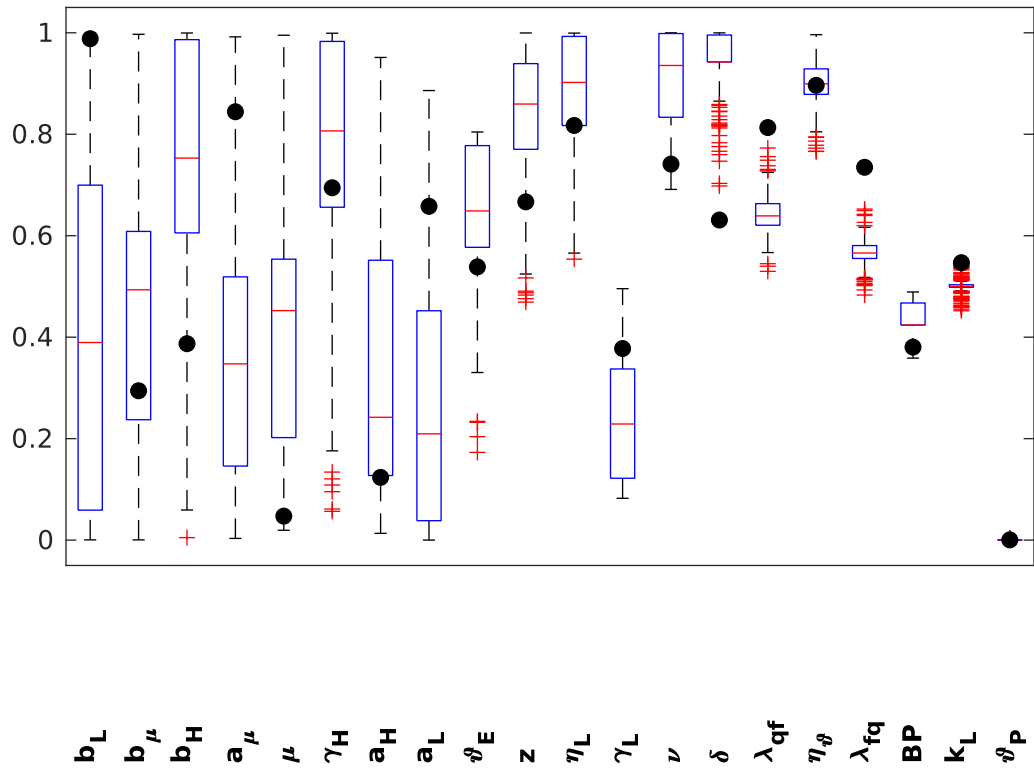
The number of estimations needed to perform the validation was1000.

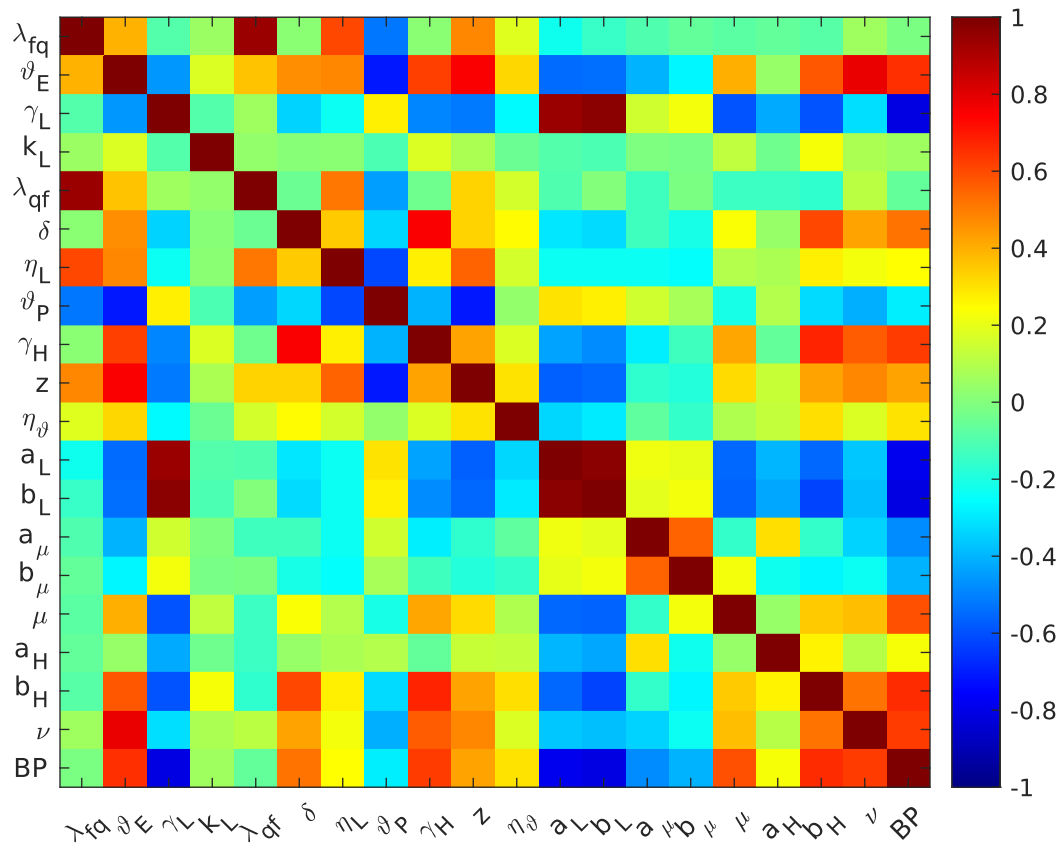
6.2. Estimated parameters with their intervals

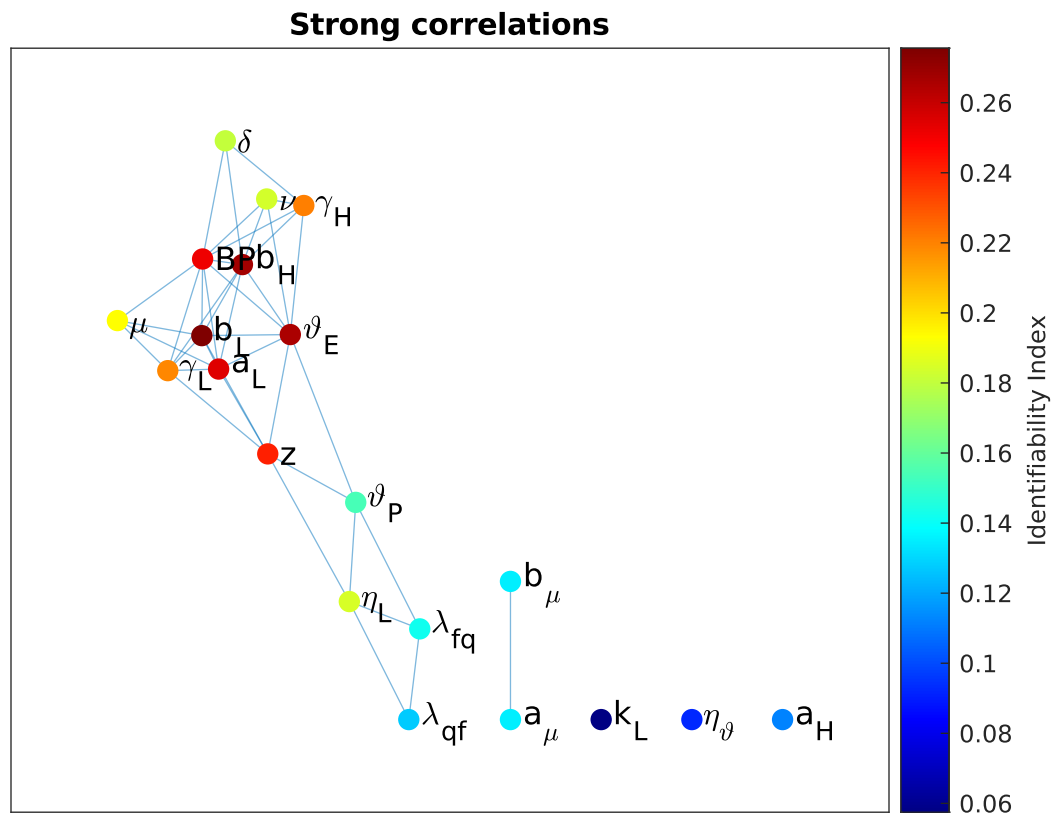
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.537'	'0.5948'	'0.5659'	'0.7349'	'0.1426'
ϑ_E	'0.6203'	'0.6774'	'0.6488'	'0.5385'	'0.2654'
γ_L	'0.208'	'0.2497'	'0.2289'	'0.3776'	'0.2186'
k_L	'5.3797'	'5.6203'	'5.5'	'5.921'	'0.0575'
λ_{qf}	'0.609'	'0.6692'	'0.6391'	'0.8132'	'0.1274'
δ	'0.1343'	'0.1484'	'0.1414'	'0.0946'	'0.1806'
η_L	'0.863'	'0.9413'	'0.9022'	'0.8173'	'0.1848'
ϑ_P	'0'	'0.0015'	'0.0006'	'0.0004'	'0.1538'
γ_H	'0.7613'	'0.8519'	'0.8066'	'0.6945'	'0.221'
z	'24.4396'	'27.1356'	'25.7876'	'20.0041'	'0.2413'
η_{ϑ}	'0.8785'	'0.9203'	'0.8994'	'0.8965'	'0.0928'
a_L	'3.3569'	'4.508'	'3.9325'	'10.2118'	'0.2547'
b_L	'5.5871'	'7.319'	'6.453'	'14.8366'	'0.2756'
a_{μ}	'5.2281'	'6.4982'	'5.8631'	'12.8211'	'0.1353'
b_{μ}	'7.2206'	'8.5942'	'7.9074'	'5.1211'	'0.1352'
μ	'0.4031'	'0.5017'	'0.4524'	'0.0473'	'0.1936'
a_H	'3.7395'	'5.0388'	'4.3891'	'2.7309'	'0.1121'
b_H	'10.8884'	'12.1967'	'11.5426'	'6.4198'	'0.2673'
ν	'454.4838'	'481.1108'	'467.7973'	'370.6003'	'0.1838'
BP	'265.2145'	'265.7855'	'265.5'	'263.5'	'0.2509'

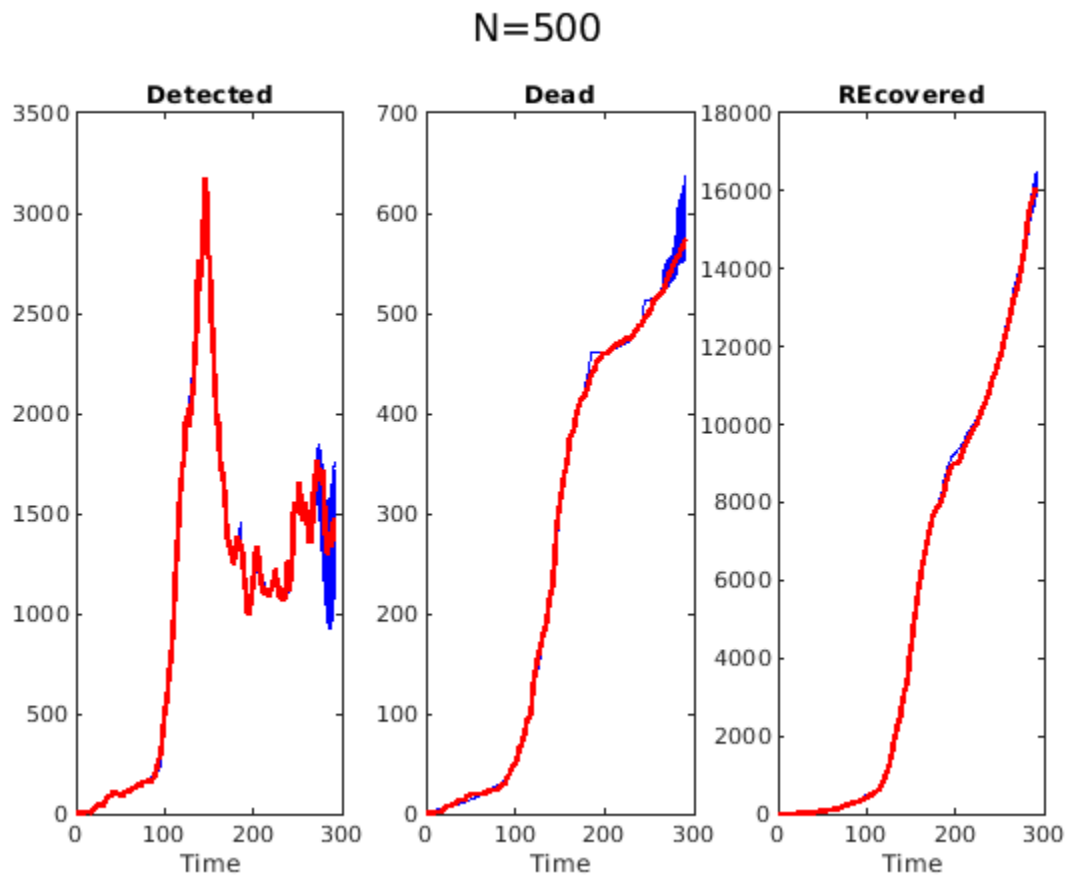
6.3. Identifiability analysis







6.4. Uncertainty analysys



Chapter 7. Extension number7

7.1. Basic information

The extension to be validated consists of the time series from the data292 to the 330. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

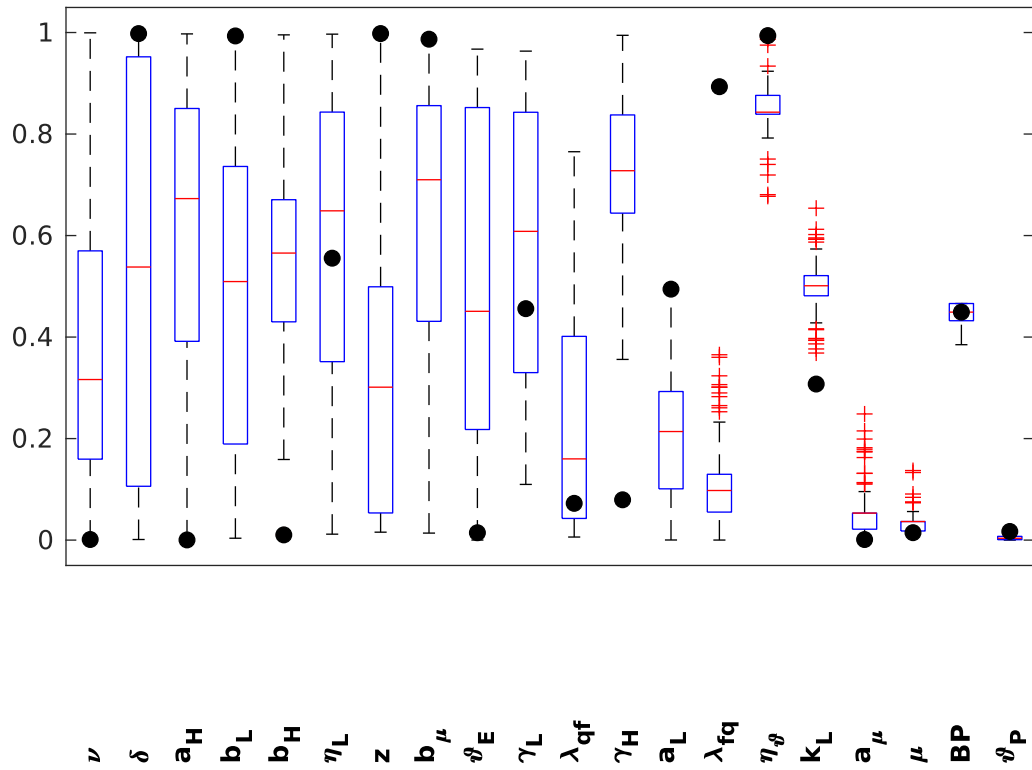
7.2. Estimated parameters with their intervals

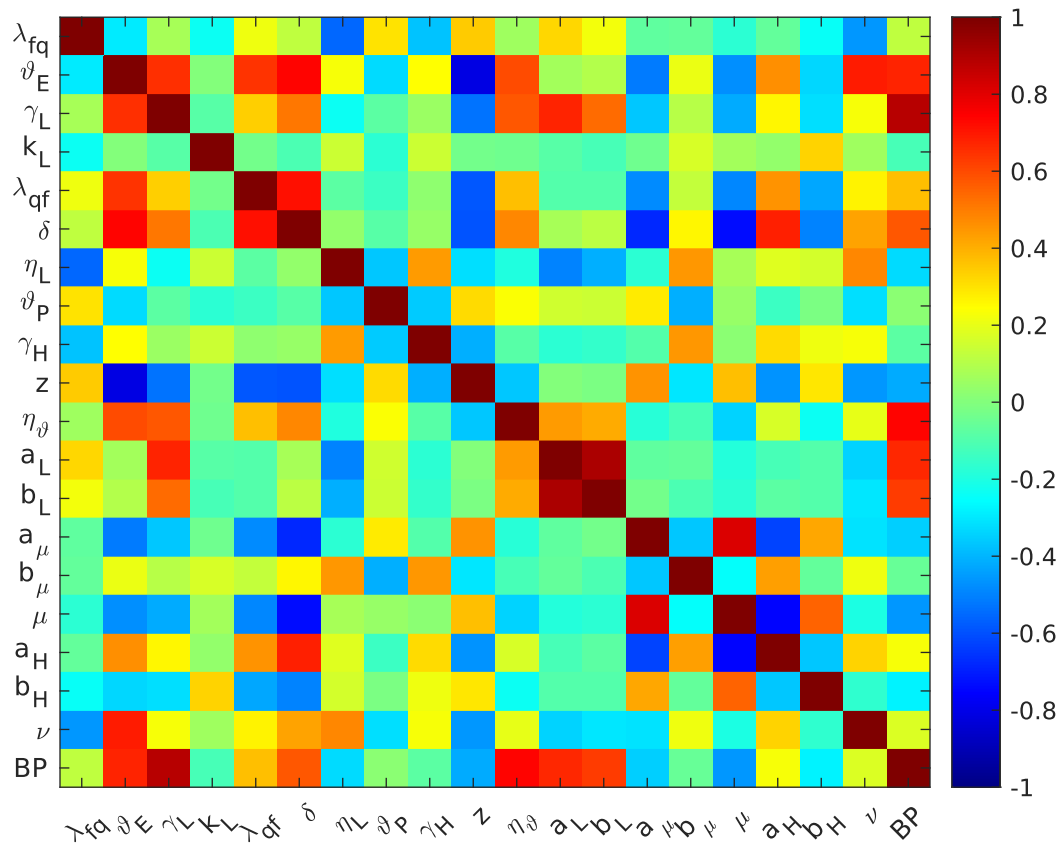
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

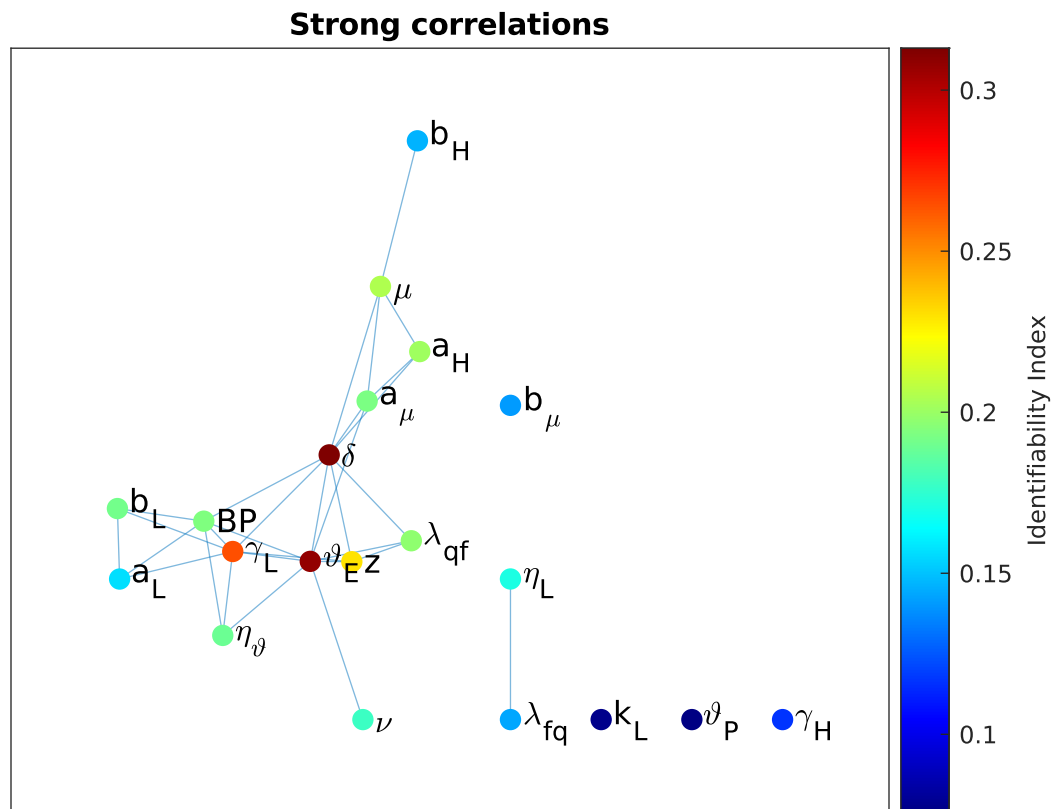
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.5841'	'0.9792'	'0.0977'	'0.8933'	'0.1435'
ϑ_E	'0'	'0.0326'	'0.4508'	'0.0145'	'0.3082'
γ_L	'0.2998'	'0.7568'	'0.6083'	'0.456'	'0.2641'
k_L	'1'	'10'	'5.5099'	'3.767'	'0.0784'
λ_{qf}	'0.0124'	'0.0801'	'0.16'	'0.0724'	'0.1979'
δ	'0.0369'	'0.15'	'0.0807'	'0.1497'	'0.313'
η_L	'0'	'0.7551'	'0.6487'	'0.5554'	'0.1712'
ϑ_P	'0.0108'	'0.0297'	'0.0036'	'0.017'	'0.0758'
γ_H	'0.035'	'0.9056'	'0.7277'	'0.0794'	'0.1172'
z	'18.4017'	'30'	'9.0384'	'29.9388'	'0.2303'
η_{ϑ}	'0.7672'	'1'	'0.8431'	'0.9939'	'0.1898'
a_L	'6.1926'	'8.966'	'3.9944'	'7.9216'	'0.1569'
b_L	'9.2616'	'15'	'8.1309'	'14.9058'	'0.1914'
a_{μ}	'1'	'14.44'	'1.7449'	'1.0156'	'0.1929'
b_{μ}	'1'	'15'	'10.9394'	'14.8162'	'0.1414'
μ	'0'	'0.0316'	'0.0366'	'0.0146'	'0.2054'
a_H	'1'	'2.2245'	'10.4194'	'1.0049'	'0.2018'
b_H	'1'	'12.0906'	'8.9169'	'1.1439'	'0.1465'
ν	'0'	'1.3359'	'158.1699'	'0.5937'	'0.1783'
BP	'296.679'	'307.1261'	'297.5'	'297.5'	'0.1944'

7.3. Identifiability analysis

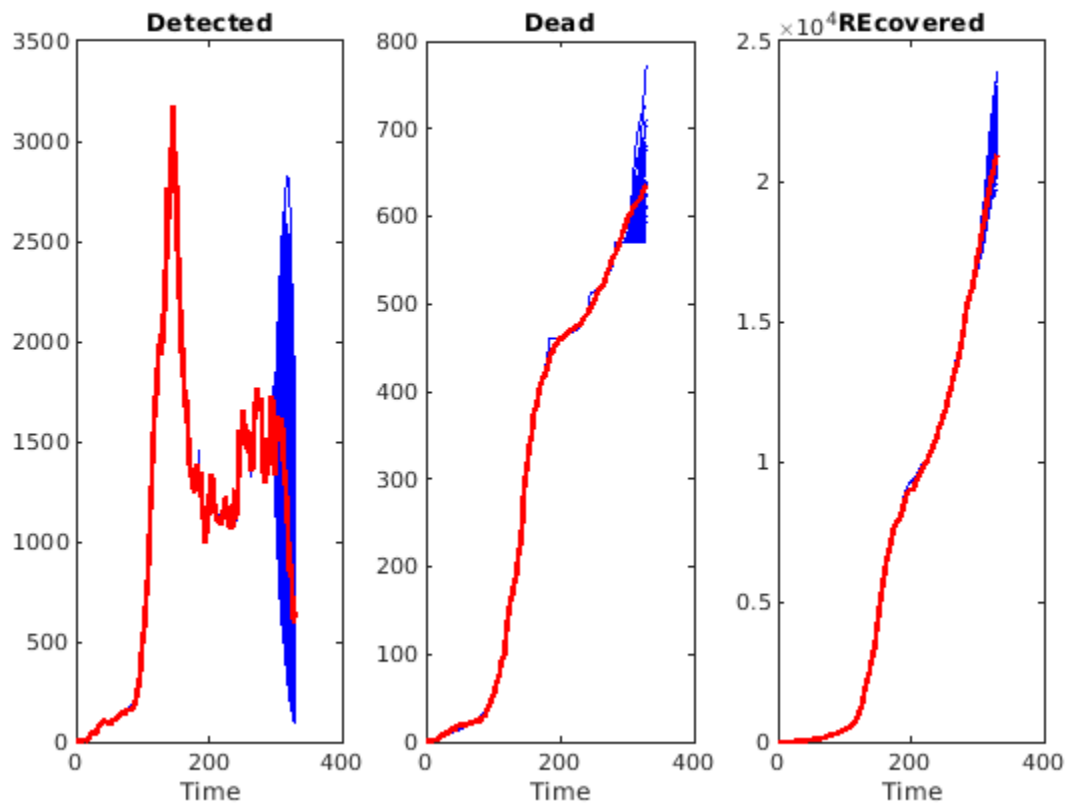






7.4. Uncertainty analysis

N=500



Chapter 8. Extension number8

8.1. Basic information

The extension to be validated consists of the time series from the data330 to the 347. The status of the validation is: COMPLETED.

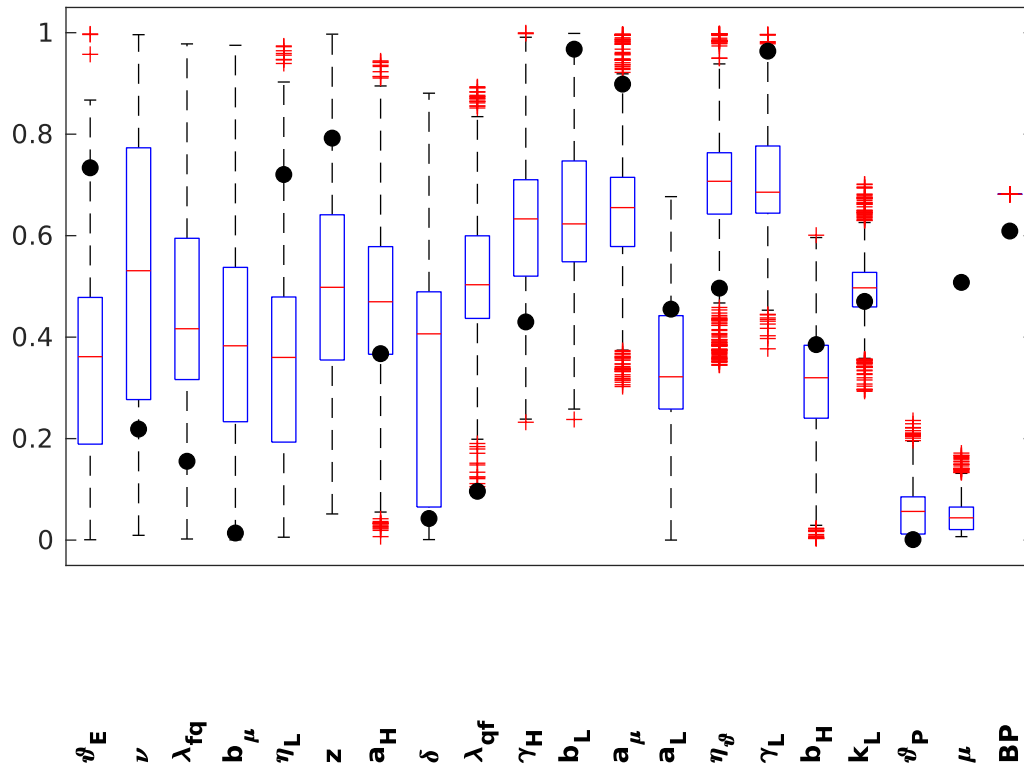
The number of estimations needed to perform the validation was1000.

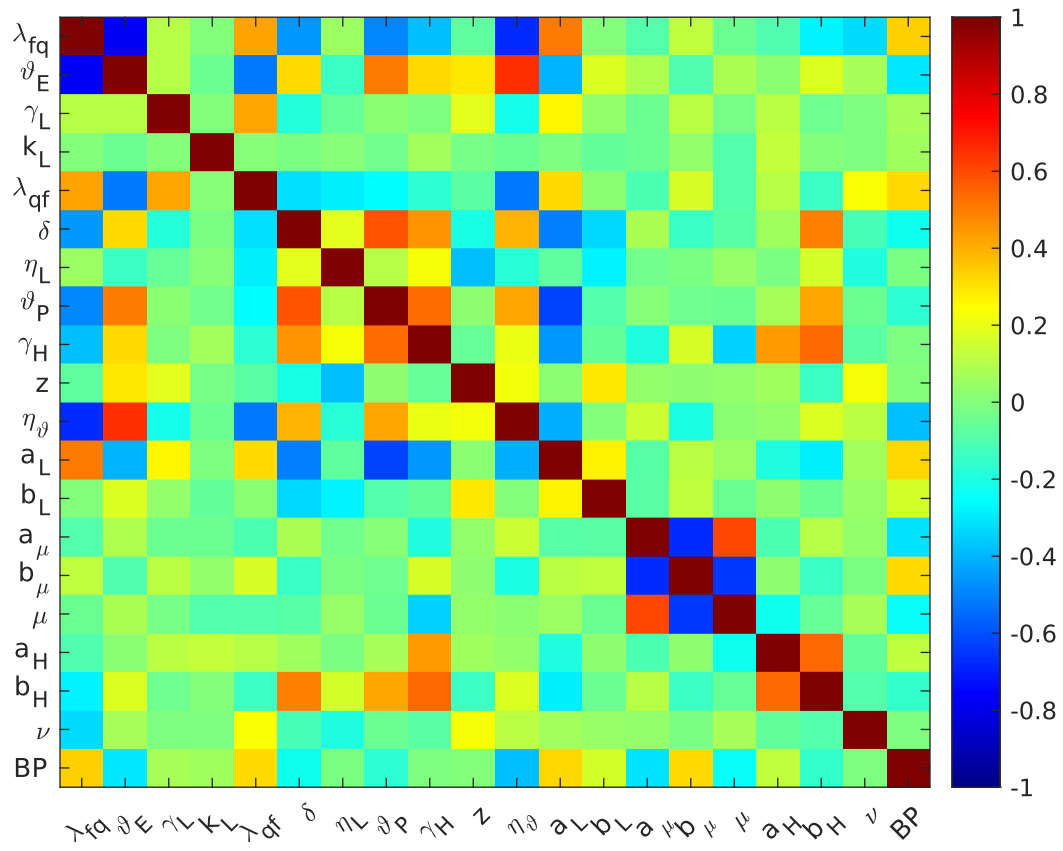
8.2. Estimated parameters with their intervals

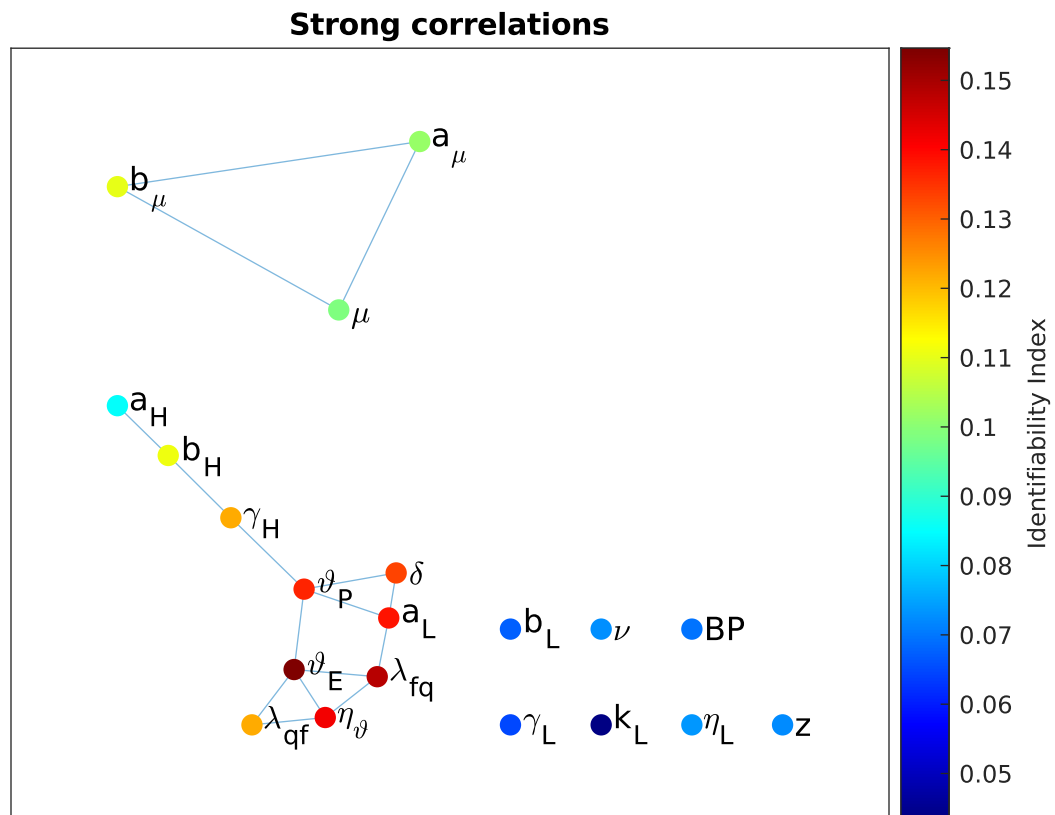
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.396'	'0.4372'	'0.4166'	'0.1554'	'0.1483'
ϑ_E	'0.3454'	'0.3776'	'0.3615'	'0.7338'	'0.1546'
γ_L	'0.6705'	'0.7008'	'0.6856'	'0.9636'	'0.065'
k_L	'5.3809'	'5.568'	'5.4744'	'5.2338'	'0.0436'
λ_{qf}	'0.4876'	'0.5189'	'0.5033'	'0.0962'	'0.1217'
δ	'0.0581'	'0.0639'	'0.061'	'0.0064'	'0.1334'
η_L	'0.3419'	'0.3784'	'0.3602'	'0.7205'	'0.0735'
ϑ_P	'0.0509'	'0.0623'	'0.0566'	'0.001'	'0.1365'
γ_H	'0.6196'	'0.6464'	'0.633'	'0.43'	'0.1221'
z	'14.4097'	'15.4827'	'14.9462'	'23.7668'	'0.0724'
η_{ϑ}	'0.69'	'0.7241'	'0.707'	'0.4966'	'0.1418'
a_L	'5.3115'	'5.7048'	'5.5082'	'7.3724'	'0.1384'
b_L	'9.4986'	'9.949'	'9.7238'	'14.5453'	'0.0676'
a_{μ}	'9.9442'	'10.3947'	'10.1695'	'13.5811'	'0.1015'
b_{μ}	'6.0692'	'6.6533'	'6.3613'	'1.1955'	'0.1102'
μ	'0.0306'	'0.0576'	'0.0441'	'0.5079'	'0.0987'
a_H	'7.3334'	'7.8245'	'7.579'	'6.1441'	'0.0855'
b_H	'5.317'	'5.6421'	'5.4796'	'6.3938'	'0.1111'
ν	'252.6822'	'278.2033'	'265.4427'	'109.395'	'0.073'
BP	'329.4256'	'329.5744'	'329.5'	'325.5'	'0.07'

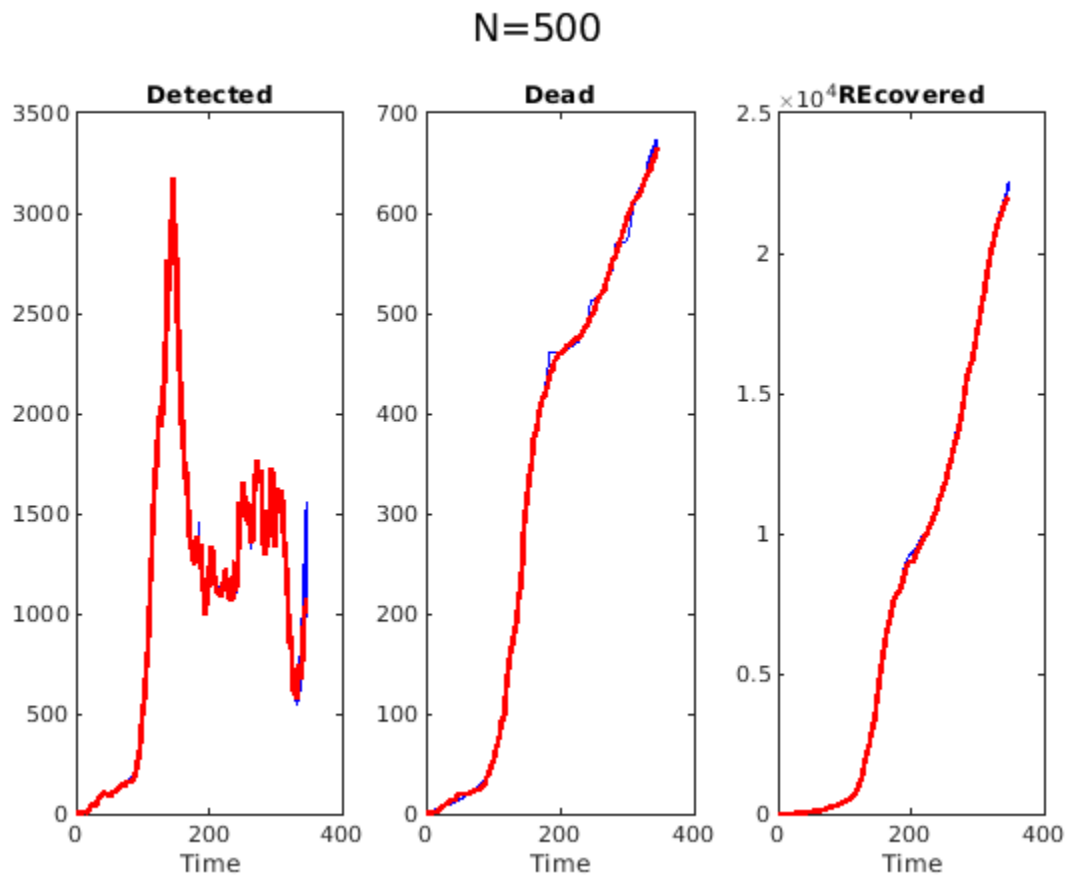
8.3. Identifiability analysis







8.4. Uncertainty analysis



Chapter 9. Extension number9

9.1. Basic information

The extension to be validated consists of the time series from the data347 to the 379. The status of the validation is: COMPLETED.

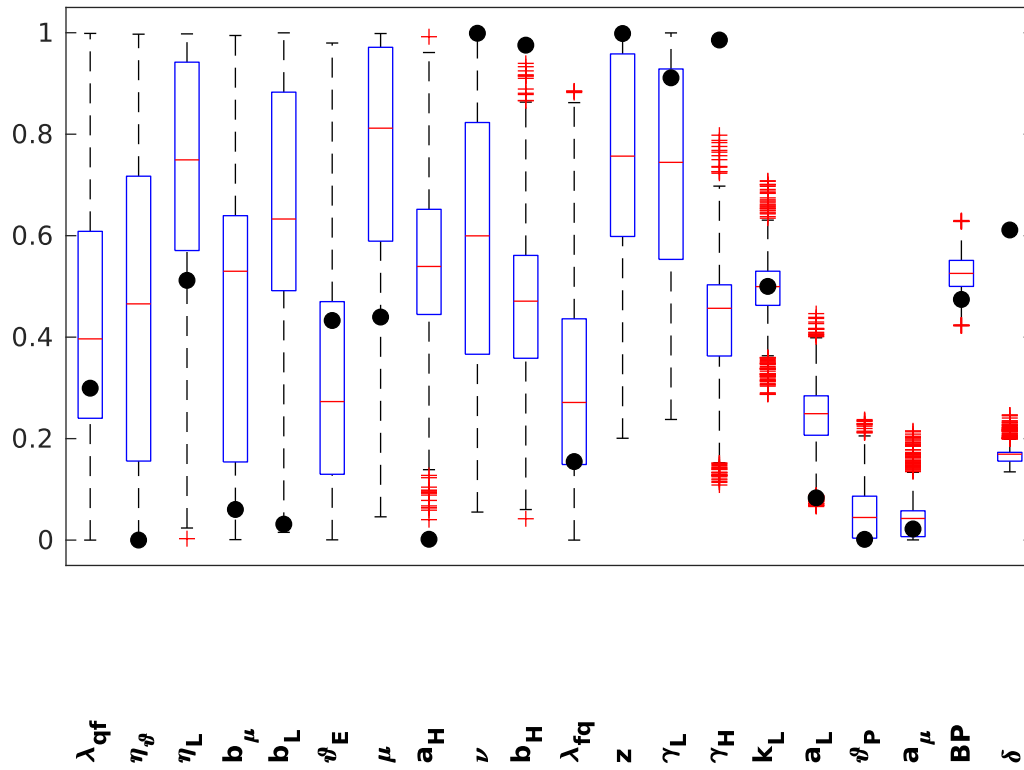
The number of estimations needed to perform the validation was1000.

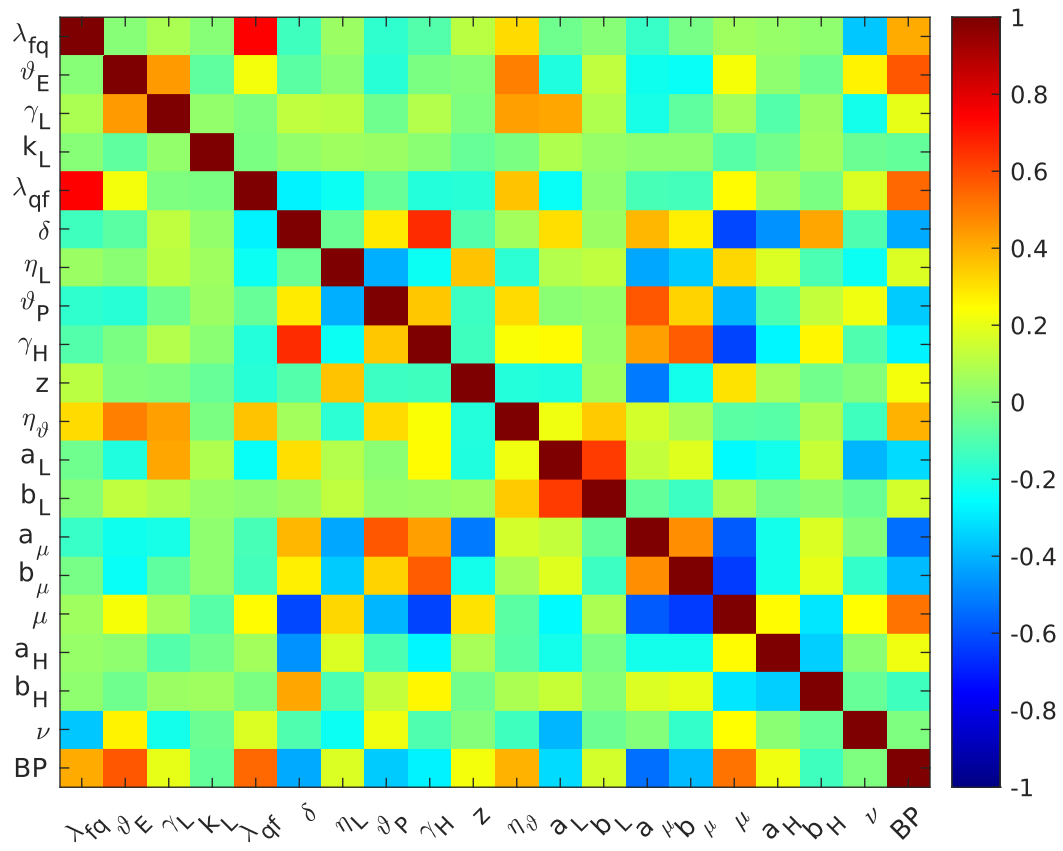
9.2. Estimated parameters with their intervals

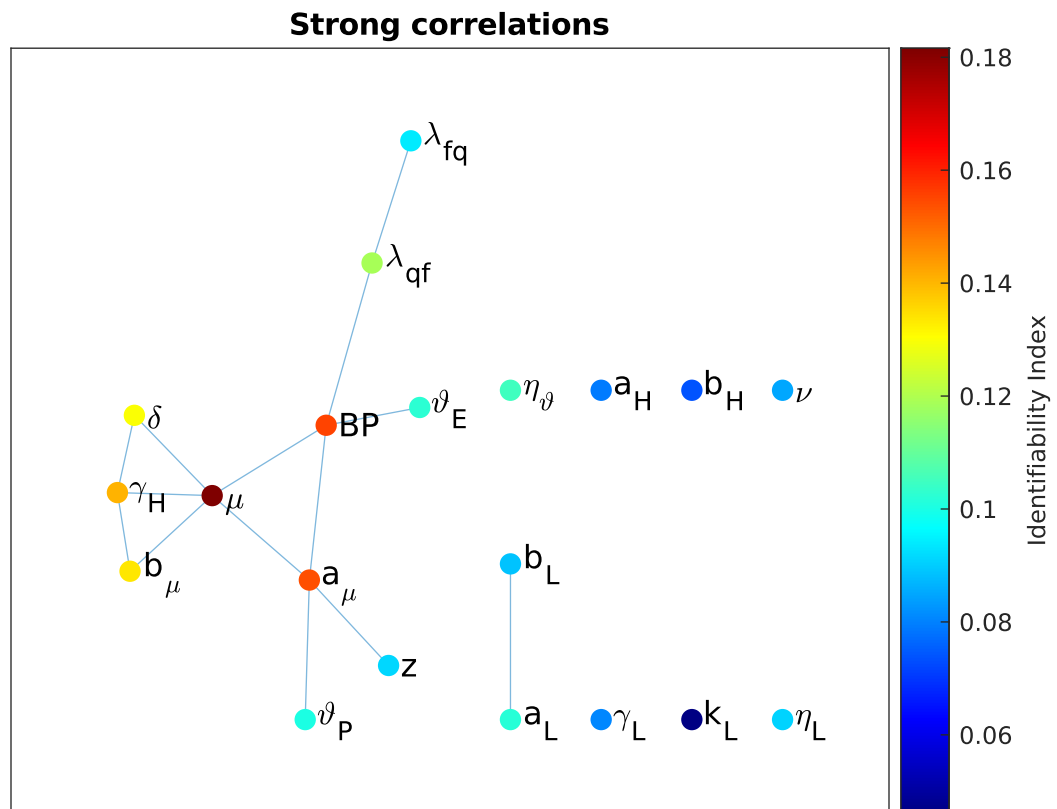
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.25'	'0.2925'	'0.2713'	'0.1548'	'0.0942'
ϑ_E	'0.251'	'0.2951'	'0.273'	'0.4328'	'0.1025'
γ_L	'0.7231'	'0.766'	'0.7445'	'0.9112'	'0.0811'
k_L	'5.3941'	'5.5989'	'5.4965'	'5.5002'	'0.0463'
λ_{qf}	'0.3753'	'0.4179'	'0.3966'	'0.2994'	'0.119'
δ	'0.0225'	'0.0283'	'0.0254'	'0.0917'	'0.1299'
η_L	'0.7297'	'0.7692'	'0.7494'	'0.512'	'0.091'
ϑ_P	'0.0334'	'0.0558'	'0.0446'	'0.0015'	'0.1005'
γ_H	'0.4394'	'0.4743'	'0.4569'	'0.9856'	'0.1407'
z	'22.1478'	'23.2582'	'22.703'	'29.9528'	'0.0917'
η_{ϑ}	'0.4373'	'0.4939'	'0.4656'	'0.0001'	'0.1054'
a_L	'4.3415'	'4.6349'	'4.4882'	'2.1662'	'0.1021'
b_L	'9.5087'	'10.2112'	'9.86'	'1.4401'	'0.0889'
a_{μ}	'1.4322'	'1.7618'	'1.597'	'1.3074'	'0.1538'
b_{μ}	'8.0661'	'8.7709'	'8.4185'	'1.8451'	'0.1336'
μ	'0.7914'	'0.8324'	'0.8119'	'0.4396'	'0.1816'
a_H	'8.3056'	'8.7957'	'8.5506'	'1.0231'	'0.0791'
b_H	'7.3566'	'7.8295'	'7.593'	'14.6571'	'0.0738'
ν	'287.0696'	'312.5827'	'299.8262'	'499.479'	'0.0849'
BP	'350.2425'	'350.7575'	'350.5'	'348.4995'	'0.1554'

9.3. Identifiability analysis

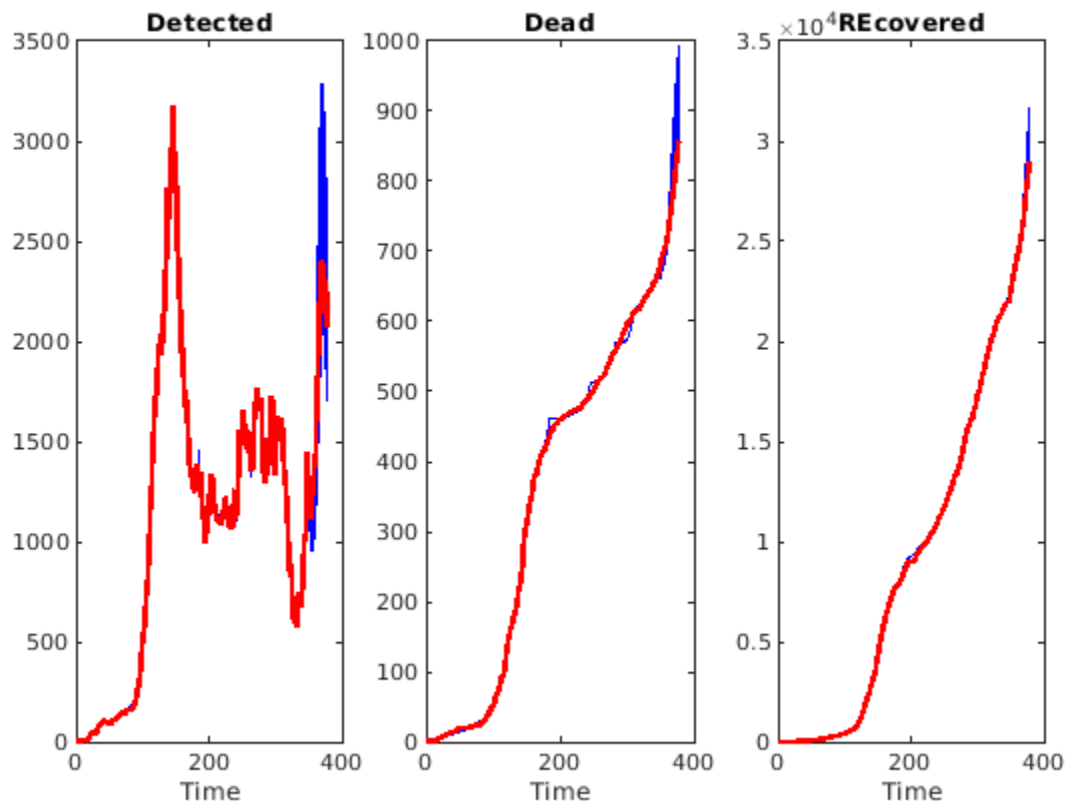






9.4. Uncertainty analysis

N=500



Chapter 10. Extension number10

10.1. Basic information

The extension to be validated consists of the time series from the data379 to the 430. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

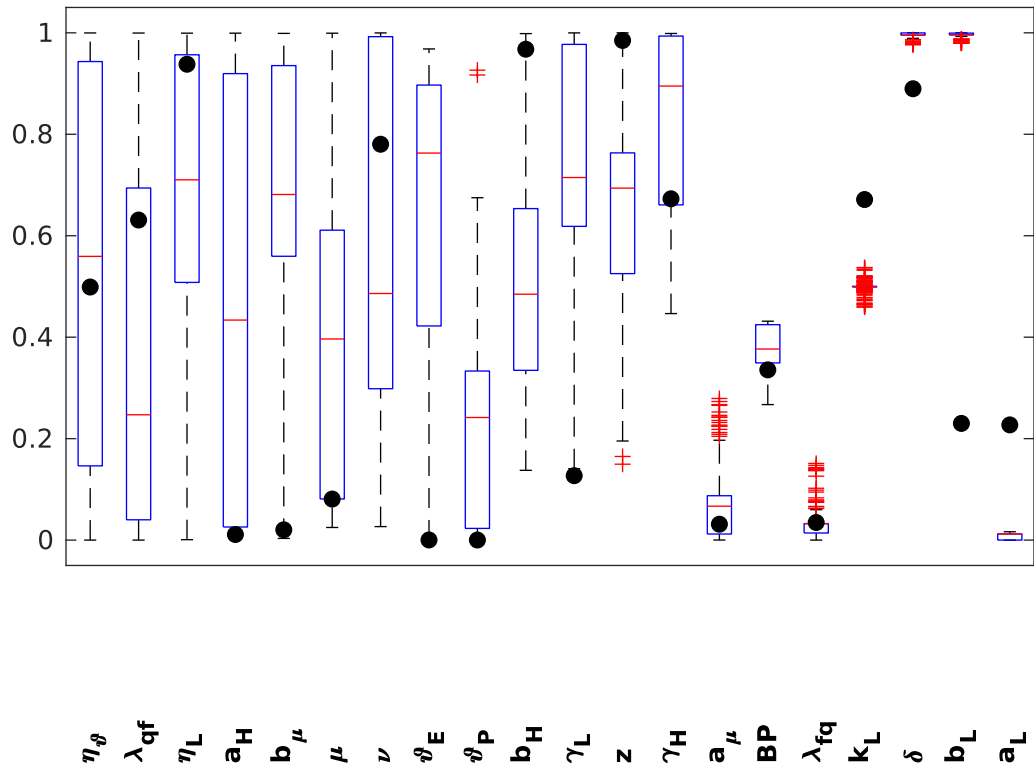
10.2. Estimated parameters with their intervals

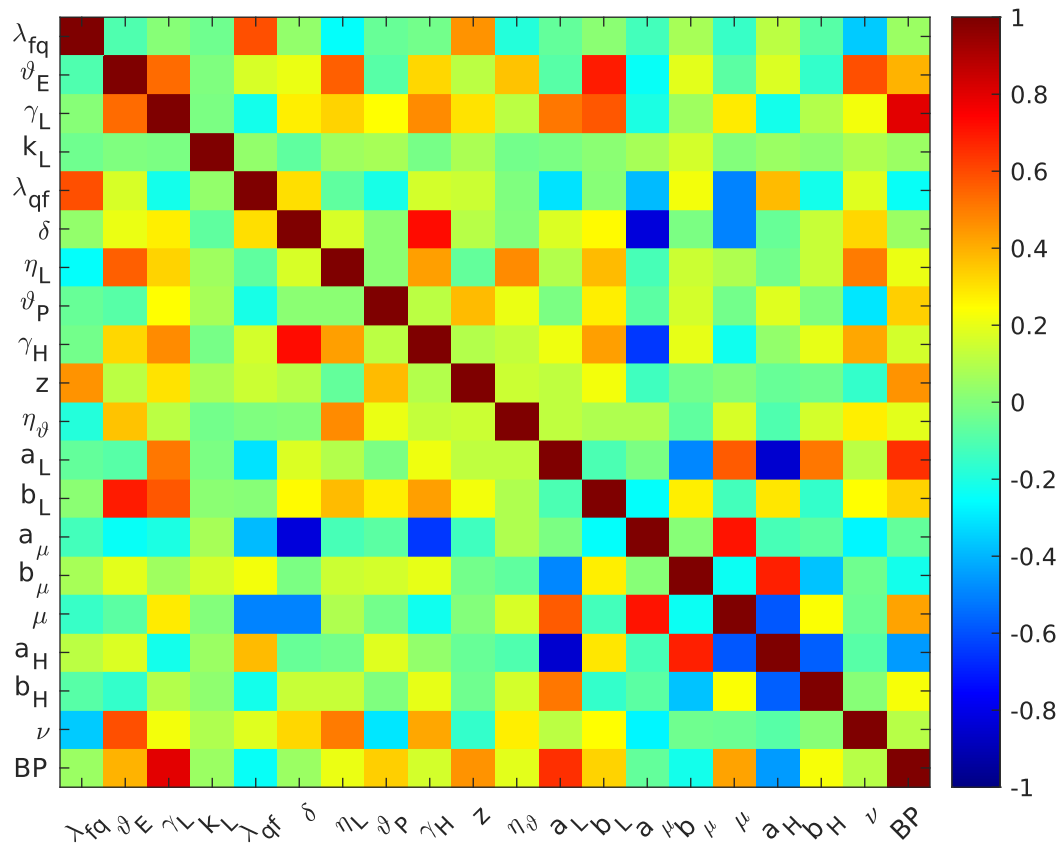
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

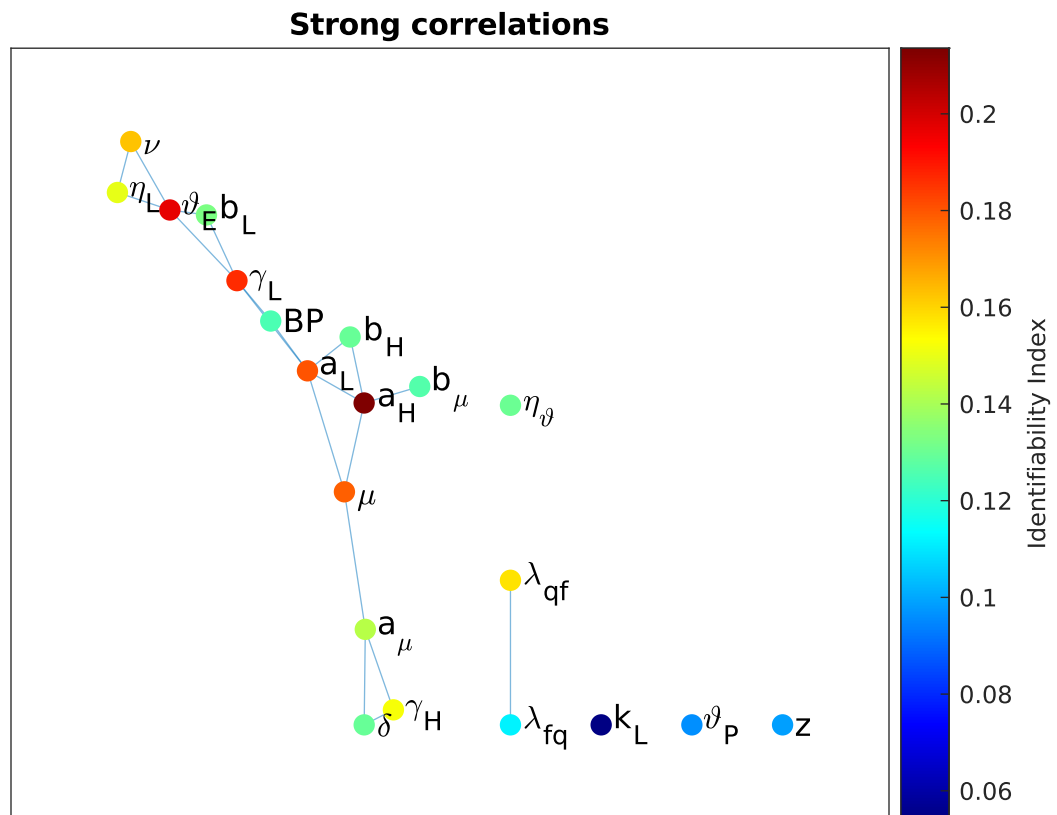
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0063'	'0.0422'	'0.0324'	'0.0347'	'0.112'
\vartheta_E	'0'	'0.0005'	'0.7629'	'0.0003'	'0.1971'
\gamma_L	'0.1151'	'0.1878'	'0.7134'	'0.127'	'0.1863'
k_L	'1.5675'	'7.7969'	'5.4999'	'7.0422'	'0.0543'
\lambda_{qf}	'0.4881'	'0.9361'	'0.247'	'0.6309'	'0.1577'
\delta	'0.0727'	'0.1352'	'0.1493'	'0.1335'	'0.1298'
\eta_L	'0.2841'	'1'	'0.7102'	'0.9381'	'0.1495'
\vartheta_P	'0.0001'	'0.0001'	'0.2417'	'0.0001'	'0.0963'
\gamma_H	'0.4799'	'0.9117'	'0.8946'	'0.6728'	'0.1521'
z	'16.4729'	'30'	'20.8153'	'29.5494'	'0.0986'
\eta_{\vartheta}	'0.4948'	'0.5283'	'0.5593'	'0.4989'	'0.1303'
a_L	'4.1321'	'5.527'	'1.1706'	'4.1798'	'0.1804'
b_L	'3.4443'	'5.2477'	'14.9436'	'4.2205'	'0.1331'
a_{\mu}	'1.4281'	'3.0489'	'1.9361'	'1.4386'	'0.1424'
b_{\mu}	'1.2114'	'6.2852'	'10.538'	'1.2837'	'0.1269'
\mu	'0.0169'	'0.1373'	'0.3964'	'0.0809'	'0.1785'
a_H	'1.1043'	'3.4118'	'7.0724'	'1.1549'	'0.2136'
b_H	'5.175'	'15'	'7.7864'	'14.5475'	'0.1296'
\nu	'323.2568'	'448.0449'	'243.0502'	'390.1742'	'0.1631'
BP	'371.4806'	'377.4211'	'374.5'	'371.5'	'0.1258'

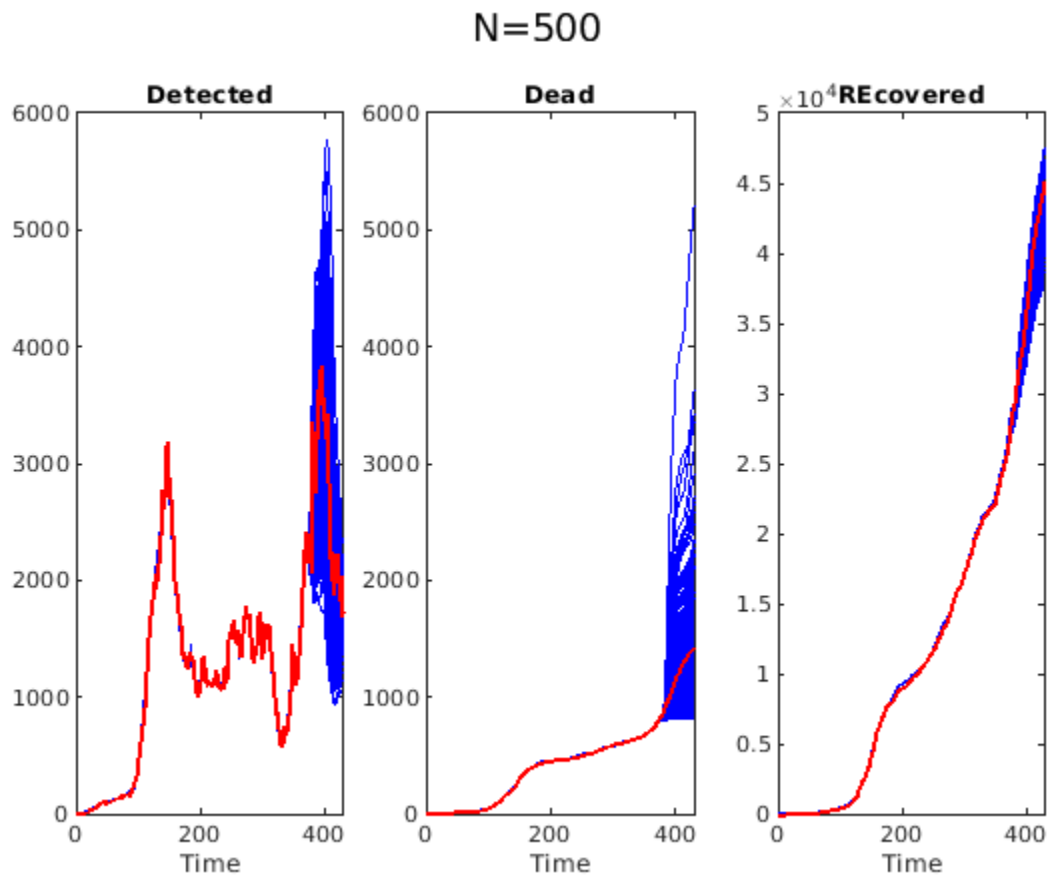
10.3. Identifiability analysis







10.4. Uncertainty analysis



Chapter 11. Extension number11

11.1. Basic information

The extension to be validated consists of the time series from the data430 to the 479. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

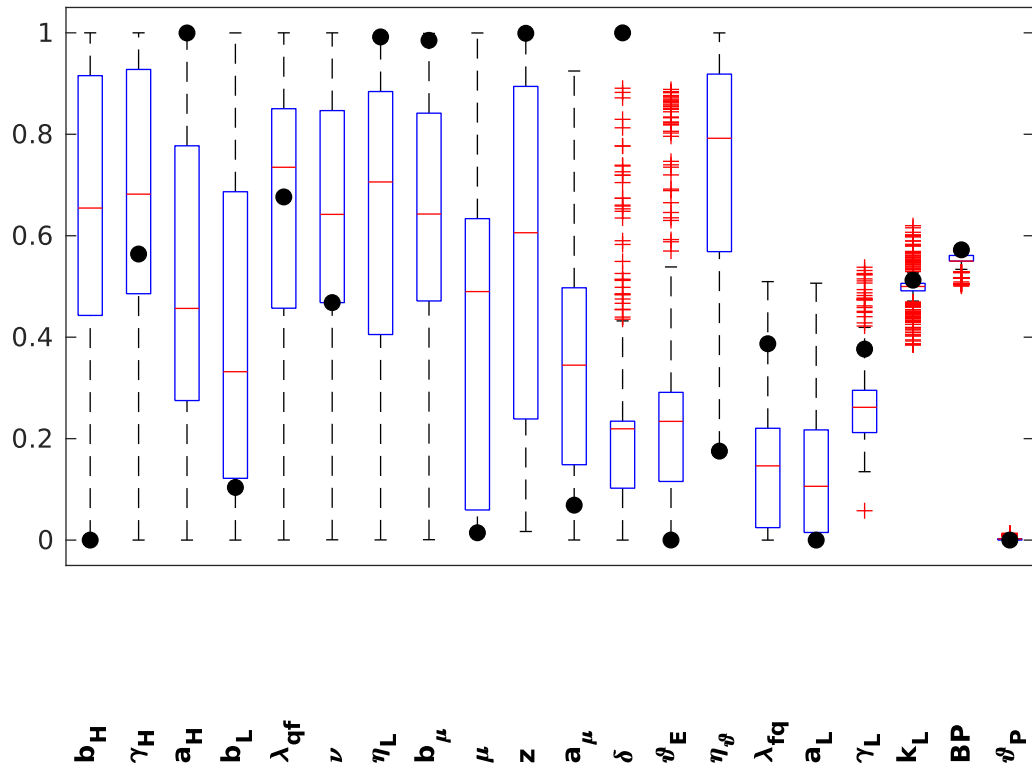
11.2. Estimated parameters with their intervals

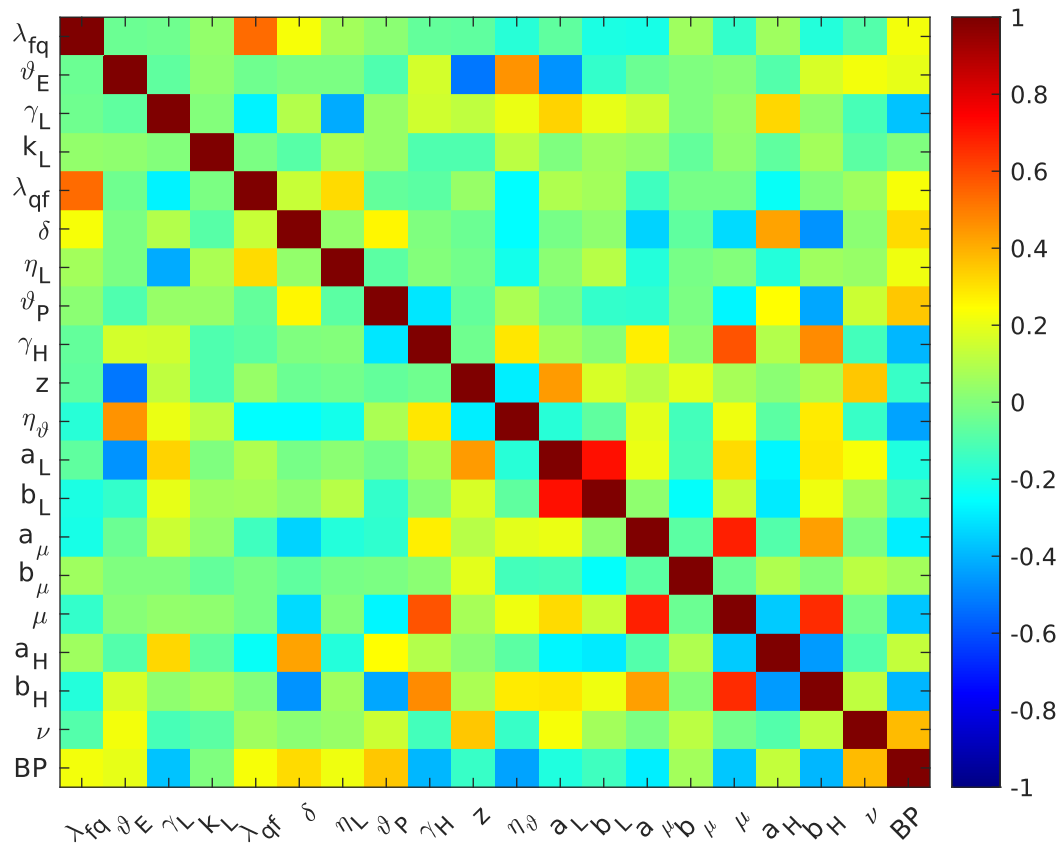
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

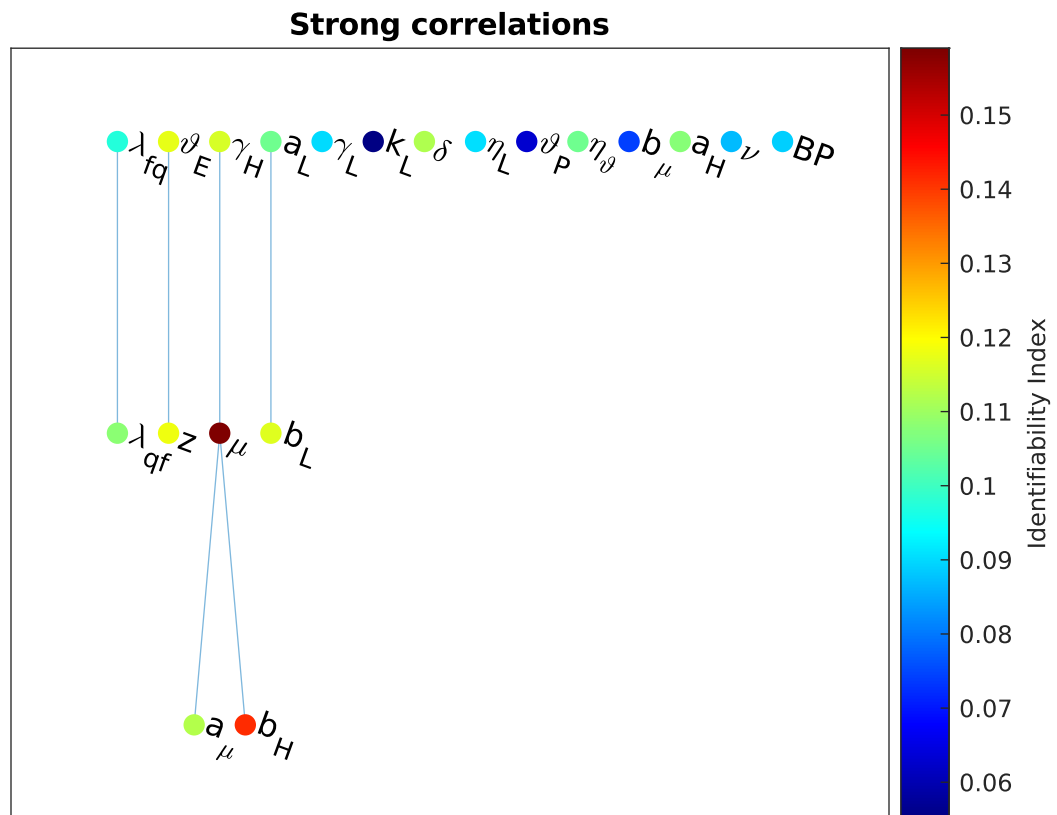
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.2808'	'0.4377'	'0.1463'	'0.3871'	'0.0976'
ϑ_E	'0'	'0.0003'	'0.234'	'0.0001'	'0.1173'
γ_L	'0.3764'	'0.4308'	'0.2618'	'0.3765'	'0.0902'
k_L	'1.4005'	'10'	'5.4998'	'5.6117'	'0.0551'
λ_{qf}	'0.6163'	'0.9183'	'0.735'	'0.6765'	'0.1079'
δ	'0.0757'	'0.15'	'0.0329'	'0.15'	'0.1118'
η_L	'0.0445'	'1'	'0.706'	'0.9919'	'0.0907'
ϑ_P	'0'	'0.0002'	'0.0024'	'0'	'0.063'
γ_H	'0.0918'	'0.6279'	'0.682'	'0.5639'	'0.1157'
z	'15.9907'	'30'	'18.177'	'29.9726'	'0.1181'
η_{ϑ}	'0.1725'	'0.2027'	'0.7921'	'0.1754'	'0.1053'
a_L	'1'	'1.6267'	'2.4846'	'1.0002'	'0.1052'
b_L	'1.7009'	'3.1979'	'5.6472'	'2.4536'	'0.1165'
a_{μ}	'1.28'	'15'	'5.828'	'1.9646'	'0.1121'
b_{μ}	'1'	'15'	'9.9989'	'14.7925'	'0.0745'
μ	'0'	'0.0326'	'0.4899'	'0.0145'	'0.159'
a_H	'7.7986'	'15'	'7.3942'	'14.9963'	'0.1078'
b_H	'1'	'6.7344'	'10.164'	'1.0004'	'0.1412'
ν	'185.6152'	'236.9068'	'321.0495'	'234.0807'	'0.087'
BP	'430.4996'	'432.3616'	'428.5'	'430.5'	'0.0891'

11.3. Identifiability analysis

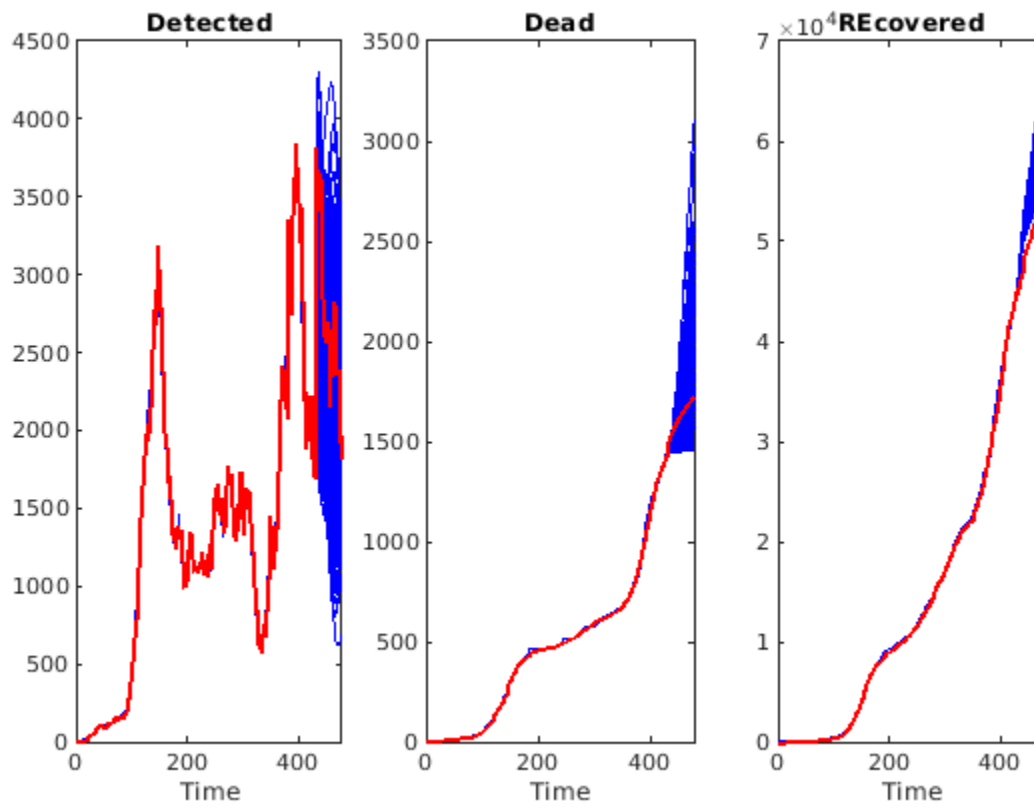






11.4. Uncertainty analysis

N=500



Chapter 12. Extension number12

12.1. Basic information

The extension to be validated consists of the time series from the data479 to the 487. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

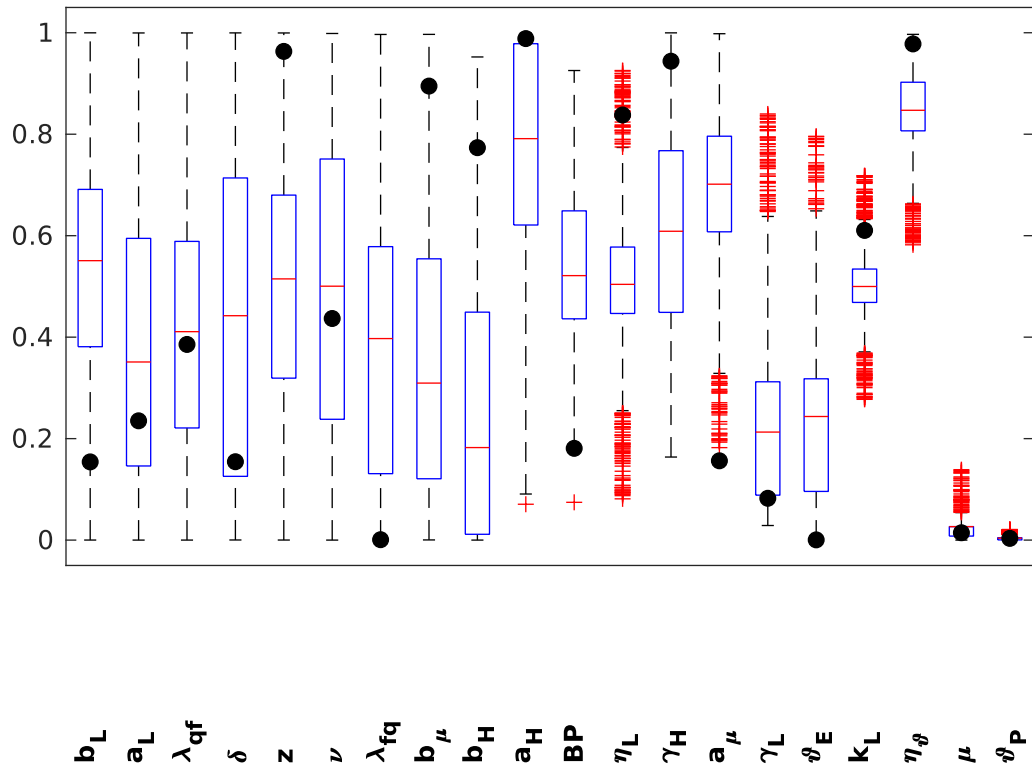
12.2. Estimated parameters with their intervals

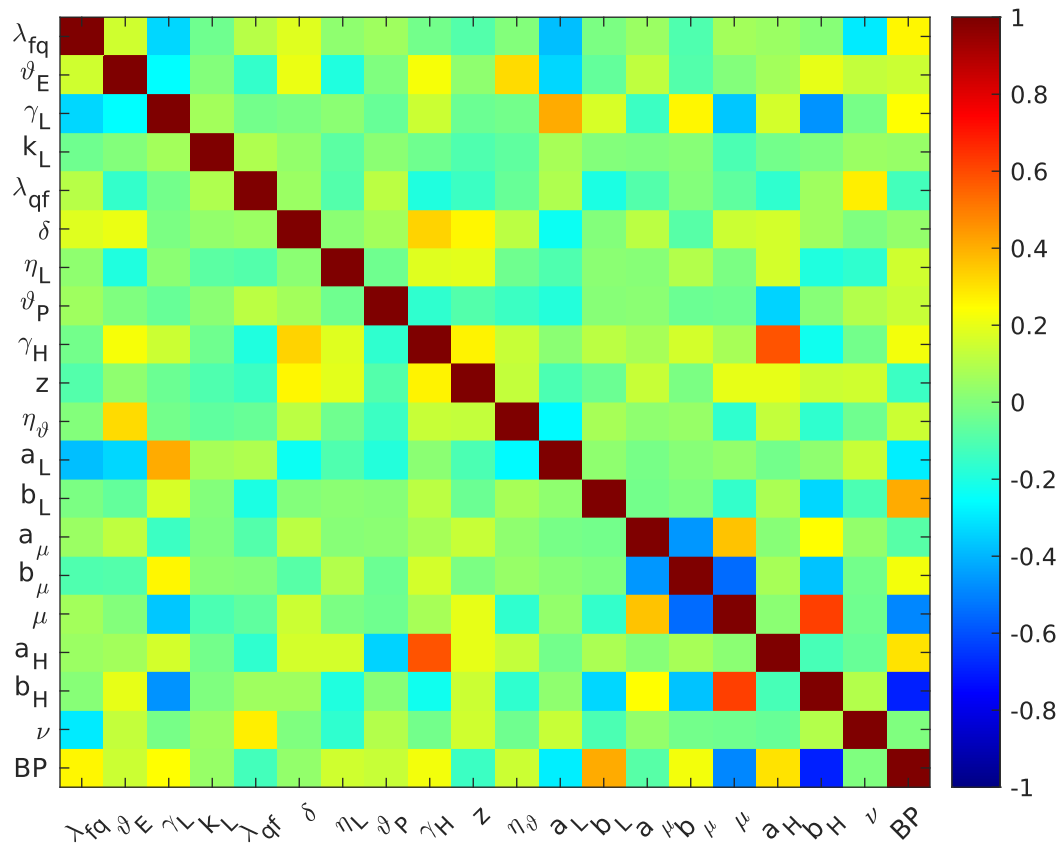
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

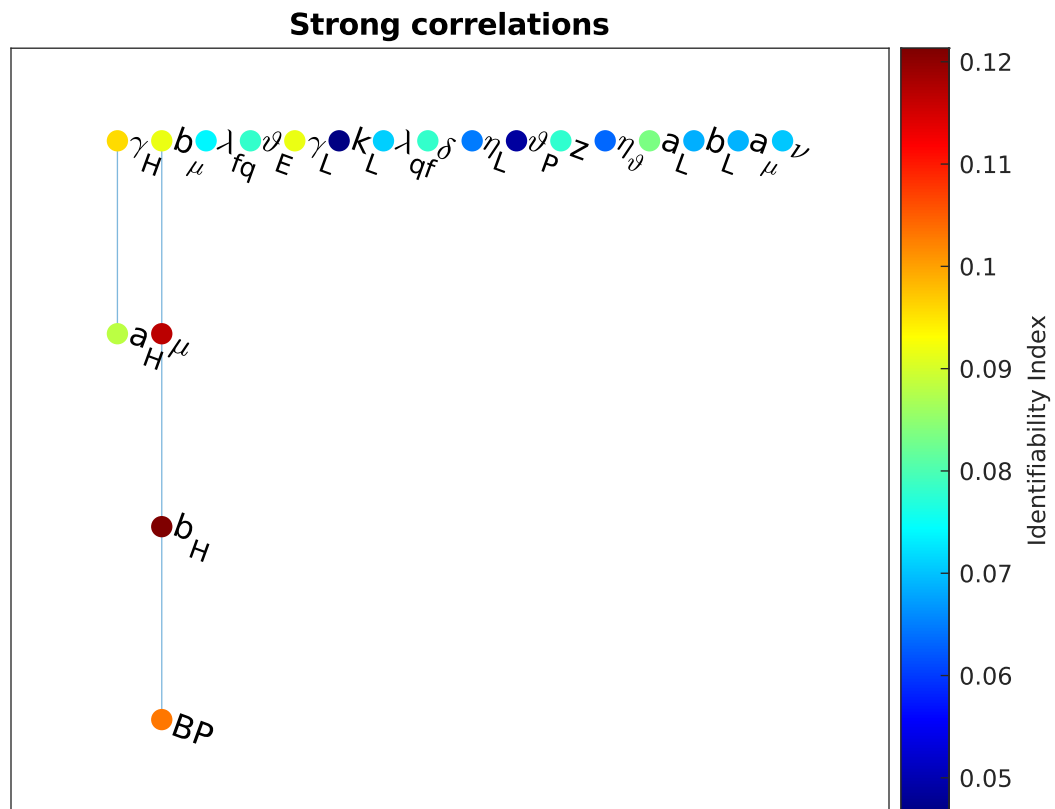
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0015'	'0.3972'	'0.0008'	'0.0739'
ϑ_E	'0'	'0.001'	'0.2436'	'0.0005'	'0.0784'
γ_L	'0.0677'	'0.1094'	'0.2129'	'0.0824'	'0.0917'
k_L	'1.1625'	'9.1225'	'5.4988'	'6.4935'	'0.0466'
λ_{qf}	'0.1704'	'1'	'0.4108'	'0.3856'	'0.0711'
δ	'0.0166'	'0.0479'	'0.0663'	'0.0232'	'0.0782'
η_L	'0.2127'	'0.8755'	'0.5041'	'0.8379'	'0.0649'
ϑ_P	'0.0028'	'0.0041'	'0.0039'	'0.0034'	'0.0489'
γ_H	'0.1951'	'0.9578'	'0.6087'	'0.9439'	'0.0959'
z	'10.6101'	'29.2244'	'15.4452'	'28.897'	'0.0781'
η_{ϑ}	'0.9174'	'0.9895'	'0.8472'	'0.978'	'0.0635'
a_L	'2.0613'	'5.9073'	'5.915'	'4.2918'	'0.0837'
b_L	'2.6066'	'8.6159'	'8.7107'	'3.158'	'0.0685'
a_{μ}	'2.6562'	'12.6613'	'10.821'	'3.1881'	'0.069'
b_{μ}	'2.3036'	'13.9663'	'5.3324'	'13.5282'	'0.0918'
μ	'0.0024'	'0.0274'	'0.0266'	'0.0145'	'0.1168'
a_H	'9.0192'	'15'	'12.0776'	'14.8384'	'0.0881'
b_H	'4.8029'	'12.2238'	'3.5532'	'11.8283'	'0.1213'
ν	'200.8281'	'294.0654'	'250.2196'	'218.3839'	'0.0704'
BP	'430'	'443.3208'	'454.5'	'438.5'	'0.1031'

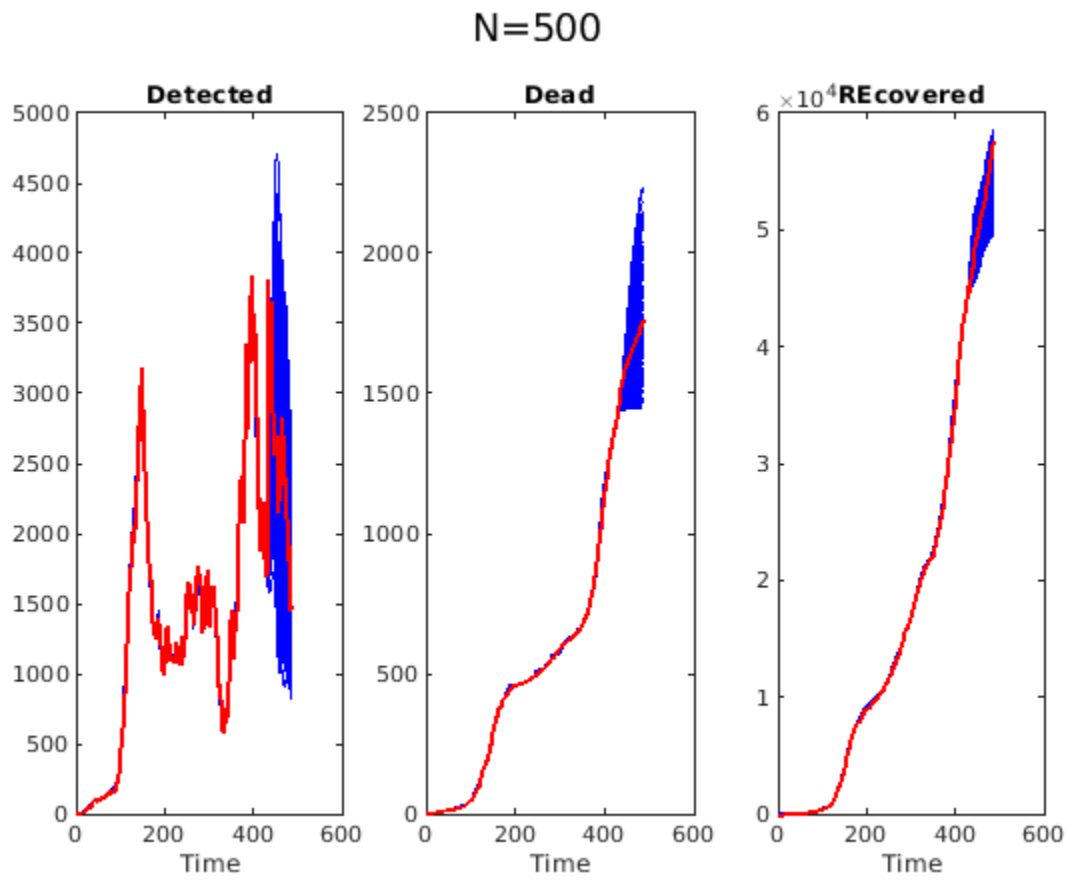
12.3. Identifiability analysis







12.4. Uncertainty analysis



Chapter 13. Extension number13

13.1. Basic information

The extension to be validated consists of the time series from the data487 to the 508. The status of the validation is: COMPLETED.

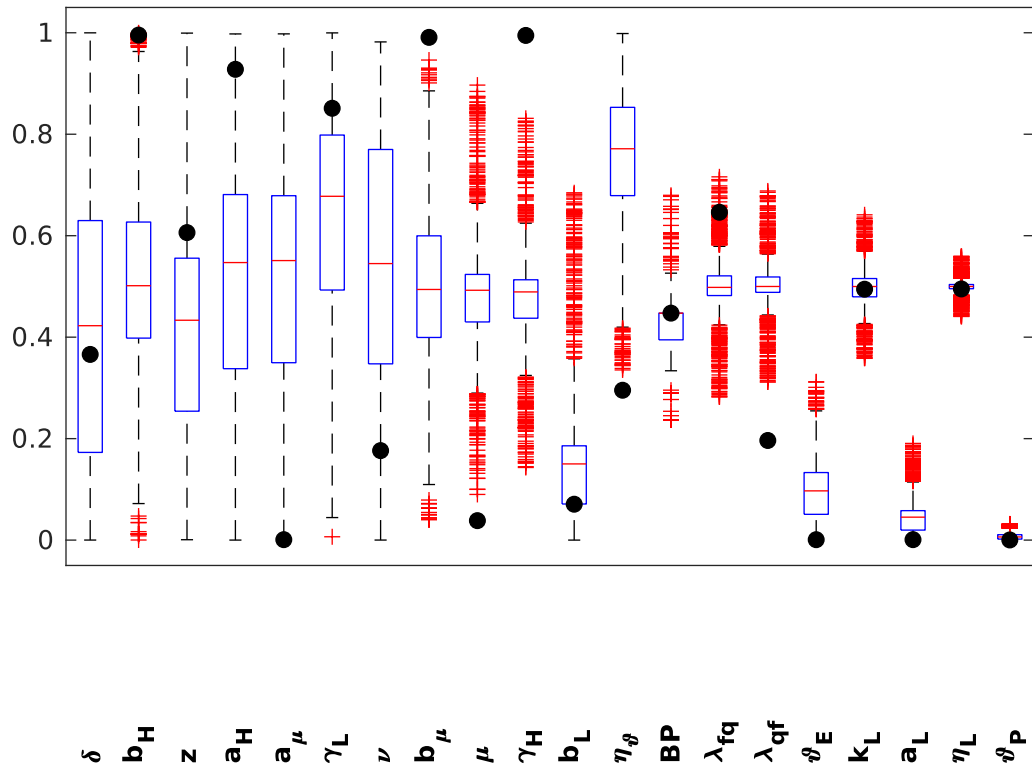
The number of estimations needed to perform the validation was1000.

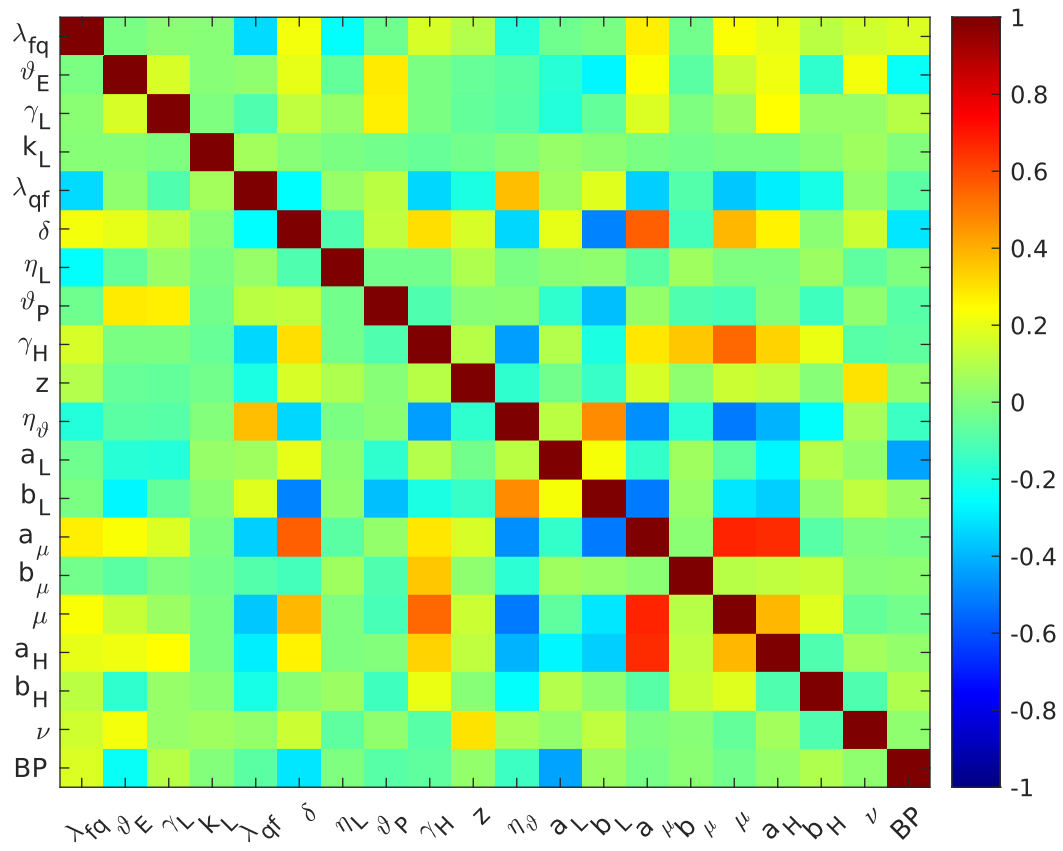
13.2. Estimated parameters with their intervals

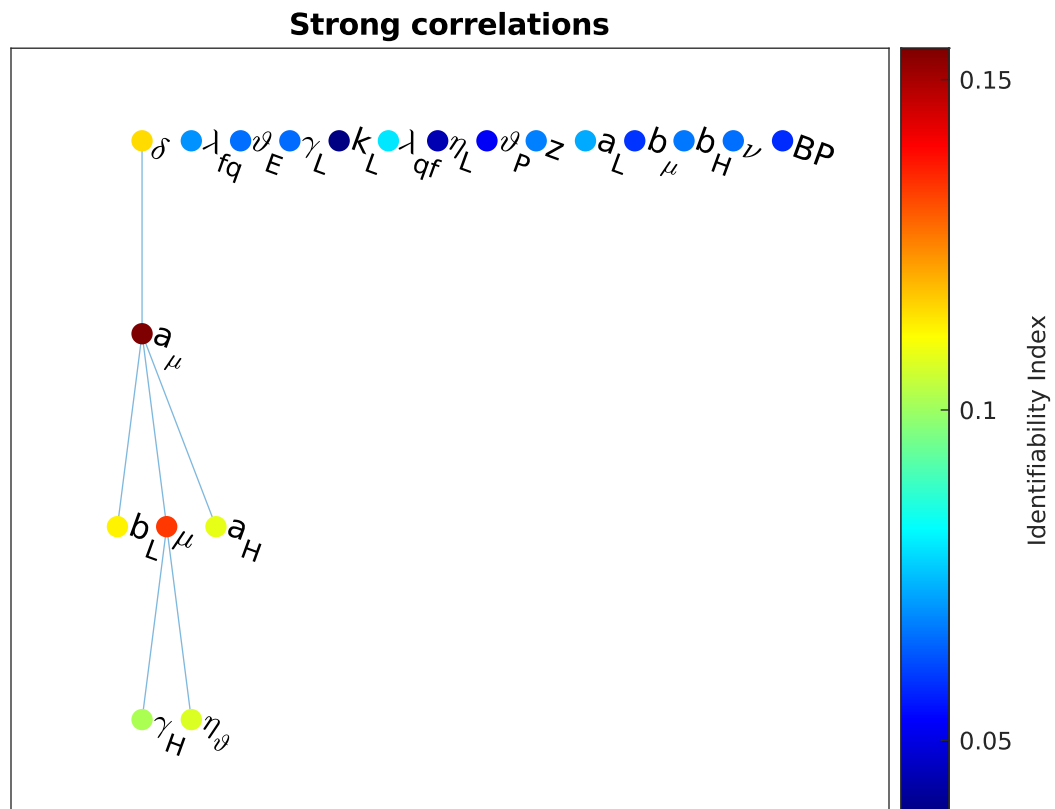
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.4848'	'0.5114'	'0.4981'	'0.6462'	'0.0703'
ϑ_E	'0.0892'	'0.1049'	'0.097'	'0.0008'	'0.0658'
γ_L	'0.6596'	'0.6957'	'0.6777'	'0.8512'	'0.0655'
k_L	'5.4211'	'5.5761'	'5.4986'	'5.4507'	'0.0391'
λ_{qf}	'0.4885'	'0.5113'	'0.4999'	'0.1964'	'0.0795'
δ	'0.0599'	'0.0669'	'0.0634'	'0.0549'	'0.1153'
η_L	'0.4921'	'0.5077'	'0.4999'	'0.4951'	'0.0449'
ϑ_P	'0.0043'	'0.0081'	'0.0062'	'0.0003'	'0.0524'
γ_H	'0.4717'	'0.5067'	'0.4892'	'0.9947'	'0.1016'
z	'12.4548'	'13.5467'	'13.0007'	'18.1837'	'0.0677'
η_{ϑ}	'0.7554'	'0.7874'	'0.7714'	'0.2954'	'0.107'
a_L	'1.3964'	'1.8698'	'1.6331'	'1.0124'	'0.0727'
b_L	'2.7386'	'3.4659'	'3.1023'	'1.9902'	'0.1124'
a_{μ}	'8.4325'	'8.9946'	'8.7136'	'1.0121'	'0.1548'
b_{μ}	'7.7096'	'8.1228'	'7.9162'	'14.873'	'0.0593'
μ	'0.4754'	'0.5095'	'0.4925'	'0.0384'	'0.1336'
a_H	'8.3782'	'8.9391'	'8.6586'	'13.9912'	'0.1084'
b_H	'7.7912'	'8.2488'	'8.02'	'14.9358'	'0.0667'
ν	'262.2948'	'282.7378'	'272.5163'	'88.1873'	'0.0659'
BP	'487.3231'	'487.6767'	'487.4999'	'487.5'	'0.0584'

13.3. Identifiability analysis

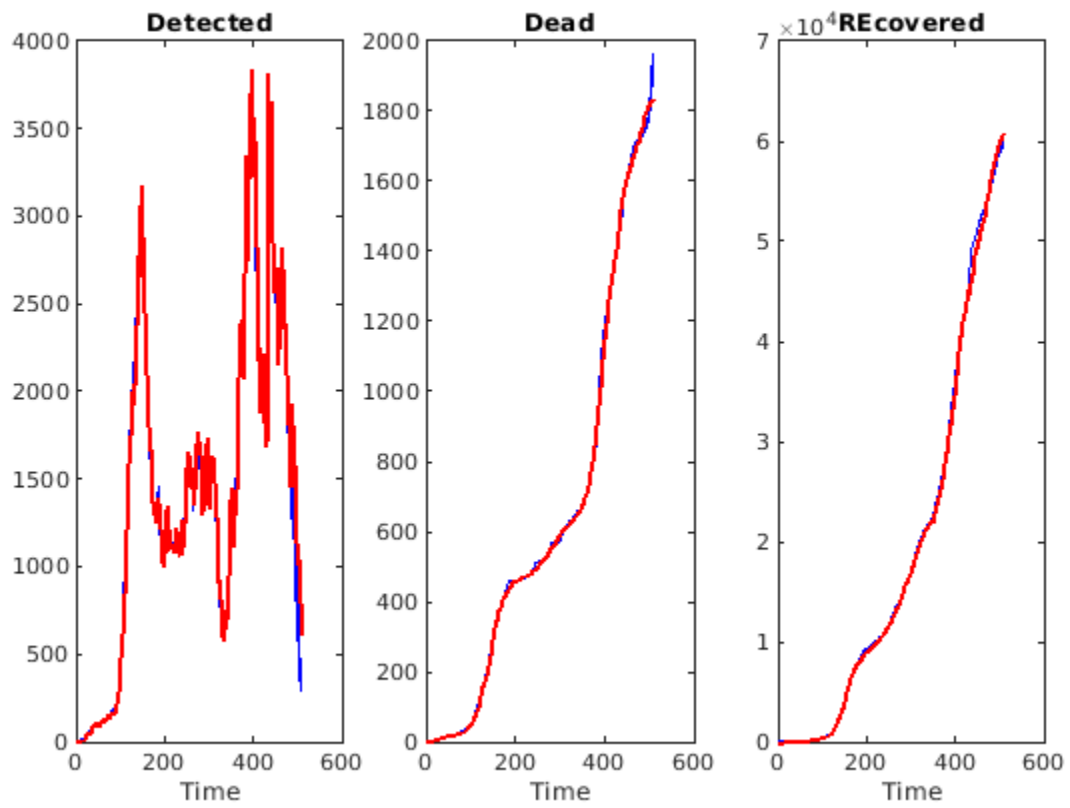






13.4. Uncertainty analysis

N=500



Chapter 14. Extension number14

14.1. Basic information

The extension to be validated consists of the time series from the data508 to the 618. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

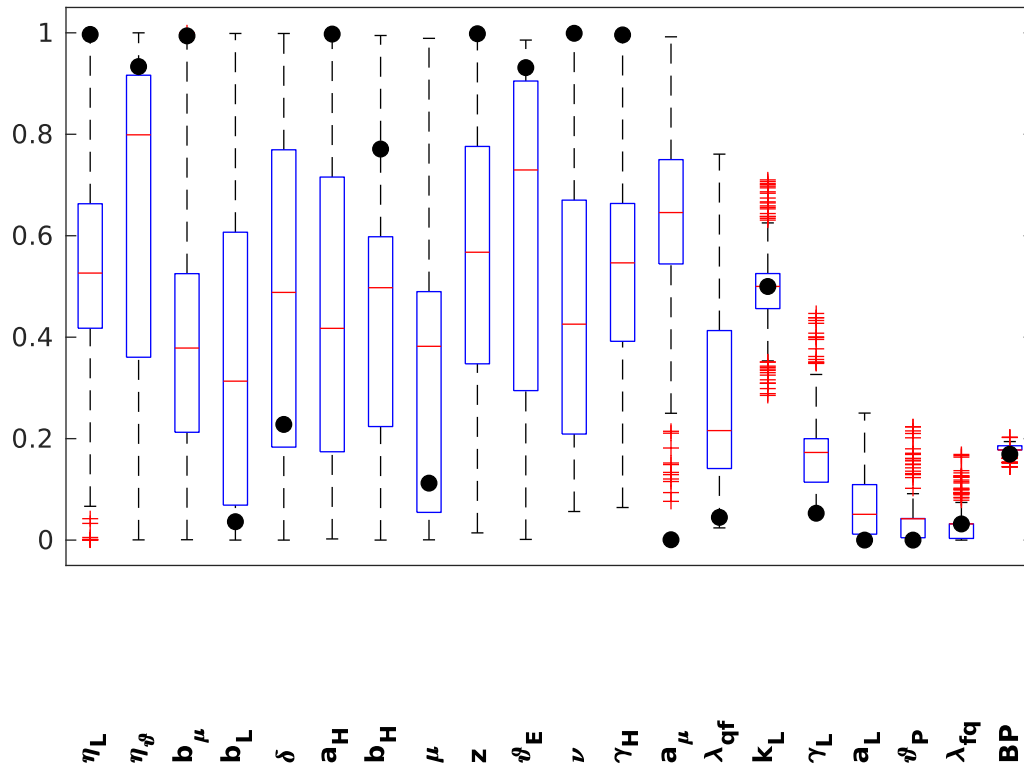
14.2. Estimated parameters with their intervals

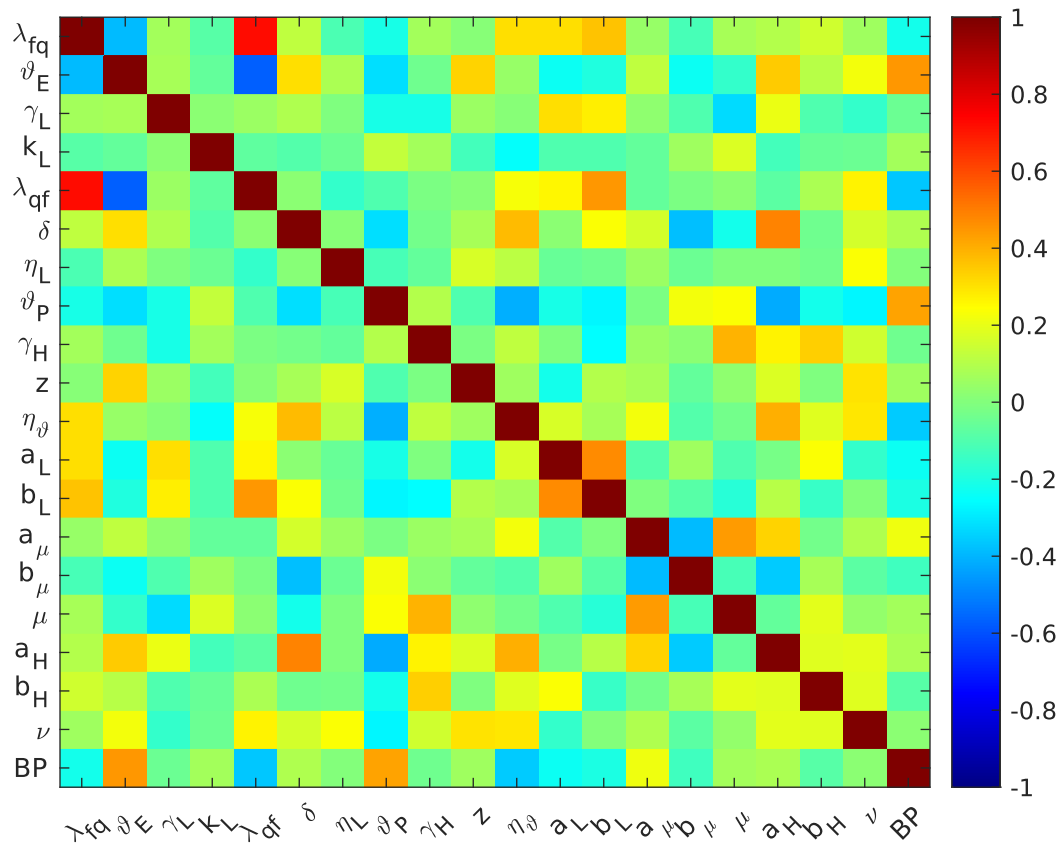
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0318'	'0.0452'	'0.032'	'0.0318'	'0.1159'
ϑ_E	'0.9056'	'0.9712'	'0.7296'	'0.9314'	'0.1458'
γ_L	'0.0494'	'0.0846'	'0.1732'	'0.0529'	'0.087'
k_L	'4.0597'	'6.7727'	'5.5007'	'5.4993'	'0.067'
λ_{qf}	'0.0395'	'0.0449'	'0.2165'	'0.0448'	'0.137'
δ	'0.0151'	'0.0536'	'0.0732'	'0.0342'	'0.1181'
η_L	'0.9374'	'1'	'0.5264'	'0.9968'	'0.0797'
ϑ_P	'0'	'0'	'0.0426'	'0'	'0.126'
γ_H	'0.8413'	'1'	'0.5465'	'0.9959'	'0.0907'
z	'28.1456'	'30'	'17.024'	'29.9458'	'0.0923'
η_{ϑ}	'0.669'	'0.95'	'0.7989'	'0.9334'	'0.1237'
a_L	'1'	'1.1666'	'1.7132'	'1.0005'	'0.085'
b_L	'1.3242'	'3.6962'	'5.3864'	'1.508'	'0.12'
a_{μ}	'1'	'4.8607'	'10.0267'	'1.0097'	'0.0948'
b_{μ}	'13.9064'	'15'	'6.3003'	'14.916'	'0.0974'
μ	'0.0511'	'0.1199'	'0.382'	'0.1123'	'0.1035'
a_H	'12.336'	'15'	'6.8441'	'14.9655'	'0.1242'
b_H	'9.2617'	'12.0896'	'7.9657'	'11.7925'	'0.0957'
ν	'472.3726'	'500'	'212.8321'	'499.5259'	'0.1048'
BP	'499.1'	'608'	'508.5'	'507.4983'	'0.0685'

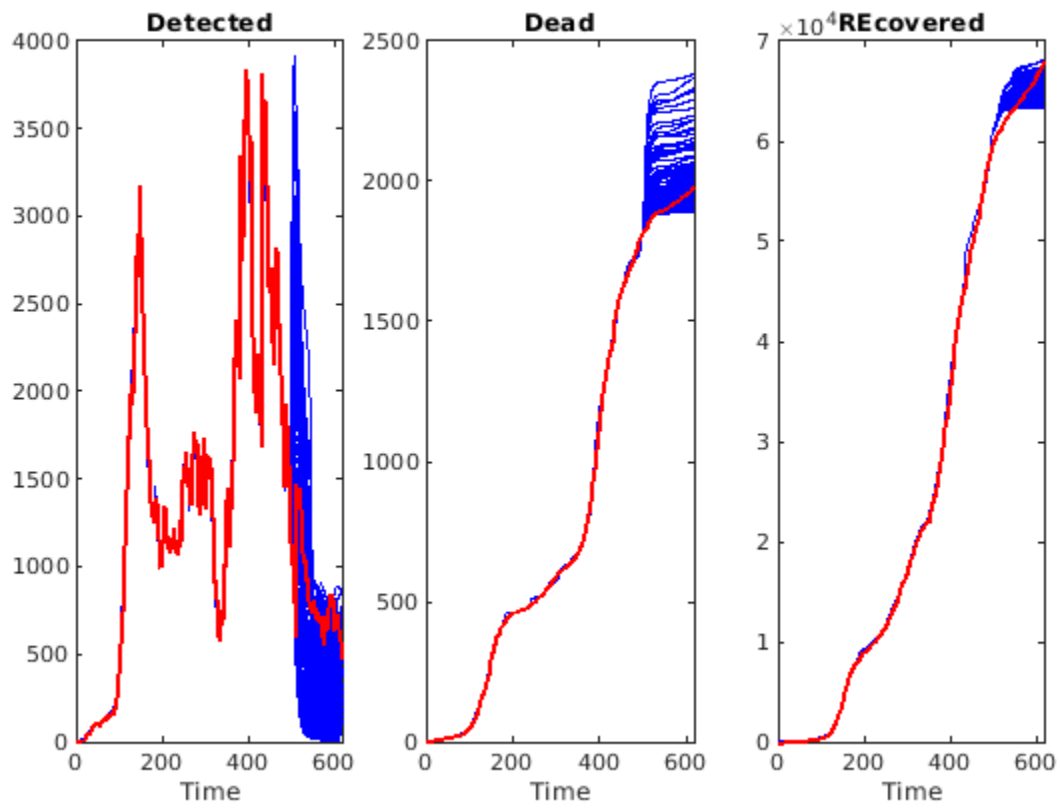
14.3. Identifiability analysis





14.4. Uncertainty analysis

N=500



Chapter 15. Extension number15

15.1. Basic information

The extension to be validated consists of the time series from the data618 to the 714. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was2000.

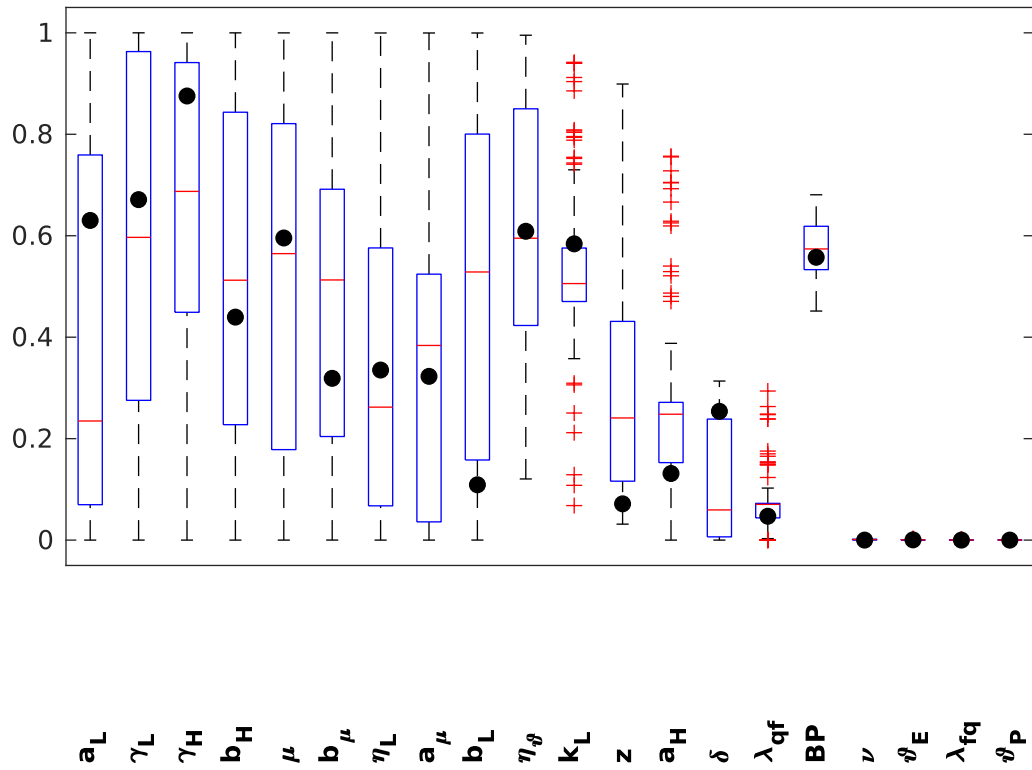
15.2. Estimated parameters with their intervals

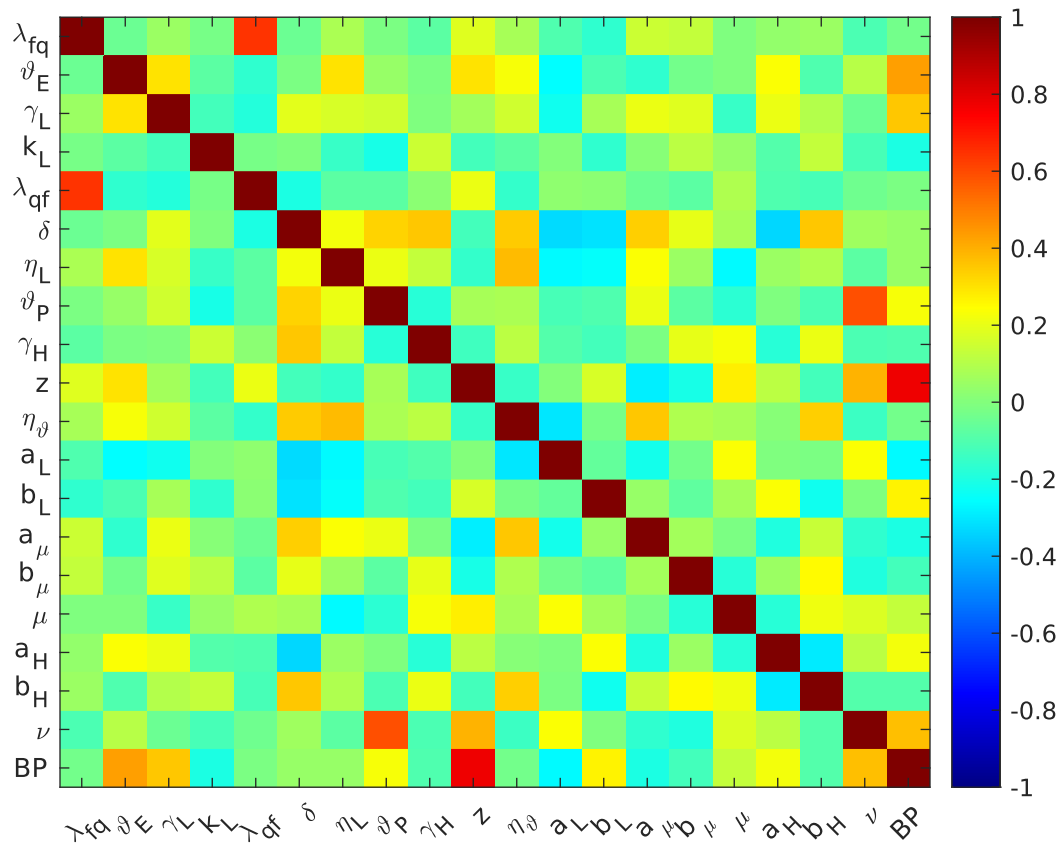
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

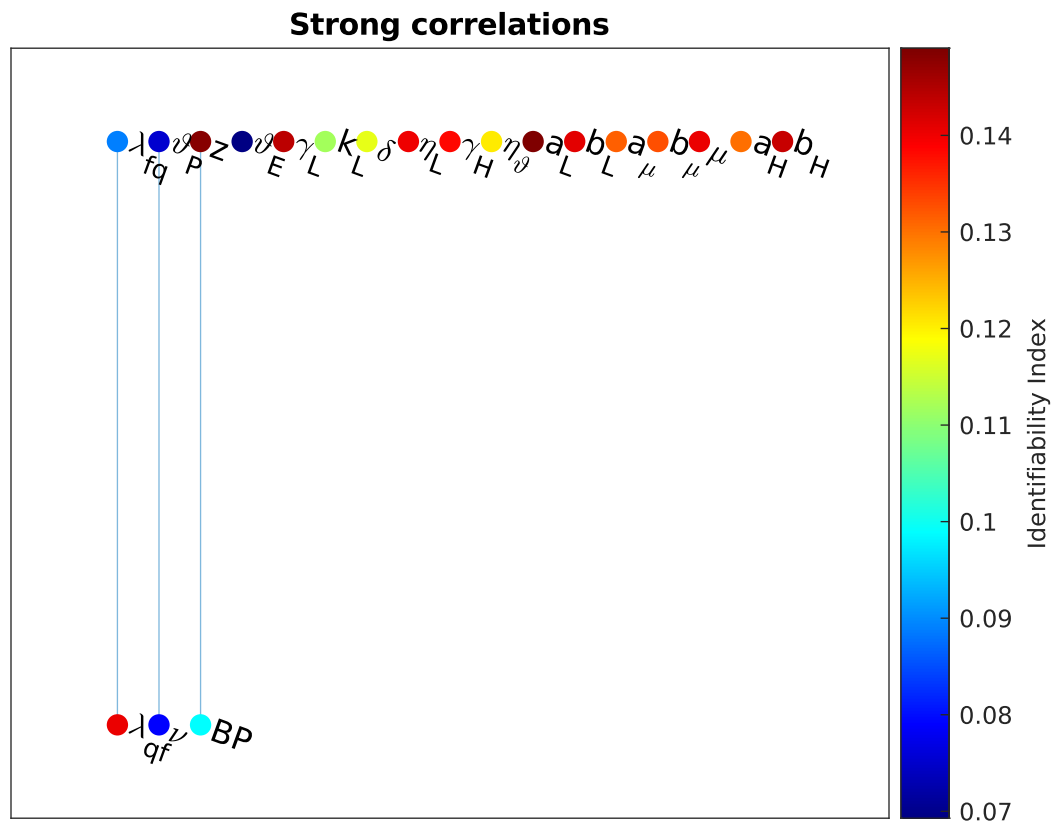
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0'	'0.0004'	'0'	'0.0892'
ϑ_E	'0.0002'	'0.0006'	'0.0006'	'0.0005'	'0.0693'
γ_L	'0.4119'	'0.7043'	'0.5968'	'0.6712'	'0.1443'
k_L	'2.8567'	'6.5892'	'5.5514'	'6.256'	'0.1117'
λ_{qf}	'0.0324'	'0.3066'	'0.0704'	'0.047'	'0.1405'
δ	'0.0303'	'0.0391'	'0.0089'	'0.0381'	'0.1172'
η_L	'0.3133'	'0.5651'	'0.2621'	'0.3352'	'0.1402'
ϑ_P	'0'	'0'	'0'	'0'	'0.0754'
γ_H	'0.6703'	'0.8795'	'0.6874'	'0.8755'	'0.1384'
z	'1.9734'	'2.4458'	'7.2238'	'2.1444'	'0.1483'
η_{ϑ}	'0.607'	'0.7241'	'0.5951'	'0.6088'	'0.1205'
a_L	'6.2596'	'10.0369'	'4.2874'	'9.8219'	'0.149'
b_L	'2.2121'	'4.8707'	'8.3999'	'2.5265'	'0.1411'
a_{μ}	'5.1447'	'8.6374'	'6.3719'	'5.5193'	'0.1314'
b_{μ}	'4.3337'	'7.8831'	'8.1796'	'5.4645'	'0.1327'
μ	'0.3789'	'0.5963'	'0.5647'	'0.5956'	'0.1403'
a_H	'2.3123'	'2.8977'	'4.4742'	'2.8383'	'0.1302'
b_H	'7.0914'	'10.1212'	'8.1728'	'7.1541'	'0.1432'
ν	'0.0014'	'0.0038'	'0.5631'	'0.0038'	'0.0792'
BP	'613.8125'	'704'	'620.4992'	'617.2763'	'0.0991'

15.3. Identifiability analysis







15.4. Uncertainty analysis

N=500

