Validation process forATLANTICO

The epidemiology research group, EAFIT

06-Apr-2022

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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 39. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

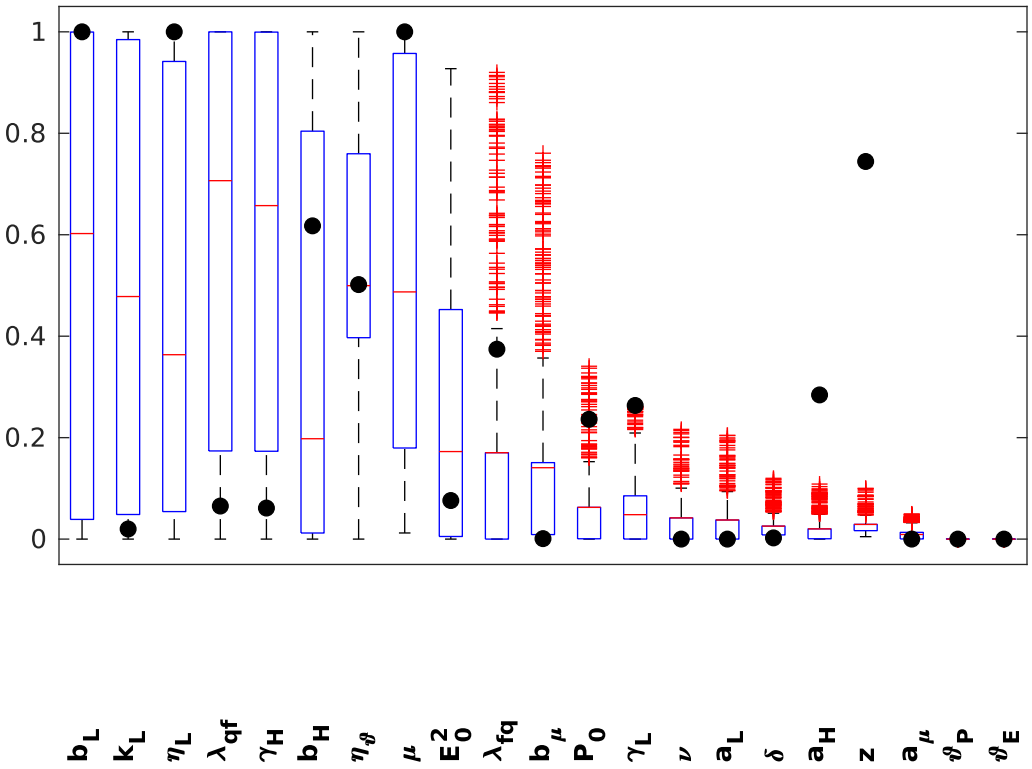
1.2. Estimated parameters with their intervals

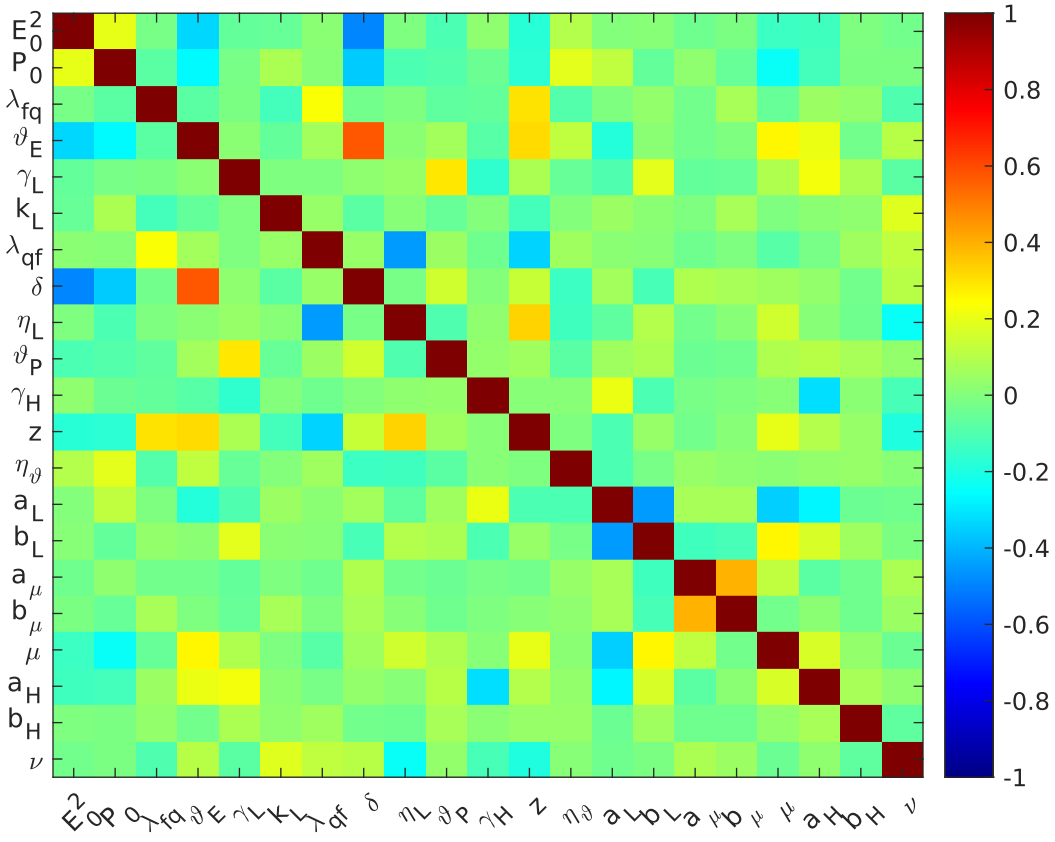
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
E^2_0	'36.0621'	'264.1983'	'345.1299'	'152.0703'	'0.0785'
P_0	'90.1244'	'120.9328'	'25.0341'	'94.484'	'0.0843'
\lambda_{fq}	'0.3561'	'0.3797'	'0.1703'	'0.3744'	'0.0853'
\vartheta_E	'0'	'0'	'0'	'0'	'0.0815'
\gamma_L	'0.2268'	'0.2676'	'0.0482'	'0.2634'	'0.0592'
k_L	'1'	'9.1'	'5.3035'	'1.1792'	'0.0771'
\lambda_{qf}	'0.0596'	'0.067'	'0.7066'	'0.0651'	'0.0843'
\delta	'0.0003'	'0.0005'	'0.0038'	'0.0004'	'0.0872'
\eta_L	'0.9091'	'1'	'0.3635'	'1'	'0.087'
\vartheta_P	'0'	'0'	'0'	'0'	'0.047'
\gamma_H	'0'	'0.1377'	'0.6574'	'0.0612'	'0.079'
z	'19.9668'	'22.4683'	'0.8702'	'22.3318'	'0.0844'
\eta_\vartheta	'0.4977'	'0.5182'	'0.4996'	'0.5017'	'0.0646'
a_L	'1'	'1.1543'	'1.5272'	'1'	'0.0893'
b_L	'12.7943'	'15'	'9.4324'	'15'	'0.0904'
a_\mu	'1'	'1.7226'	'1.1276'	'1.0004'	'0.0496'
b_\mu	'1'	'12.97'	'2.97'	'1.0129'	'0.077'
\mu	'0.4566'	'1'	'0.4873'	'1'	'0.0897'
a_H	'1'	'13.88'	'1.2823'	'4.9793'	'0.0752'
b_H	'1.9053'	'12.6424'	'3.7701'	'9.6454'	'0.0739'
\nu	'0.0002'	'0.0048'	'20.8933'	'0.0022'	'0.0797'

1.3. Identifiability analisys




E_0^2
P_0
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ϑ_E
γ_L
k_L
λ_{qf}
δ
η_L
ϑ_P
γ_H
z
η_ϑ
a_L
b_L
a_μ
b_μ
μ
a_H
b_H
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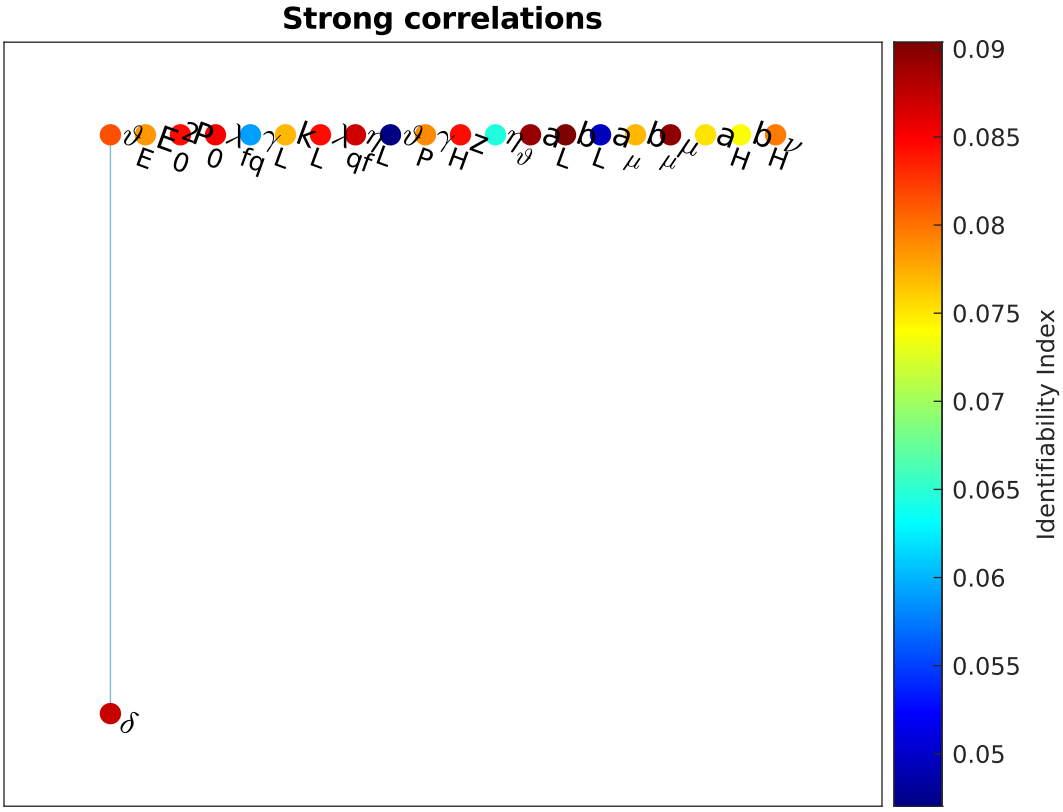
-0.4
-0.6
-0.8
-1


Strong correlations
Identifiability Index
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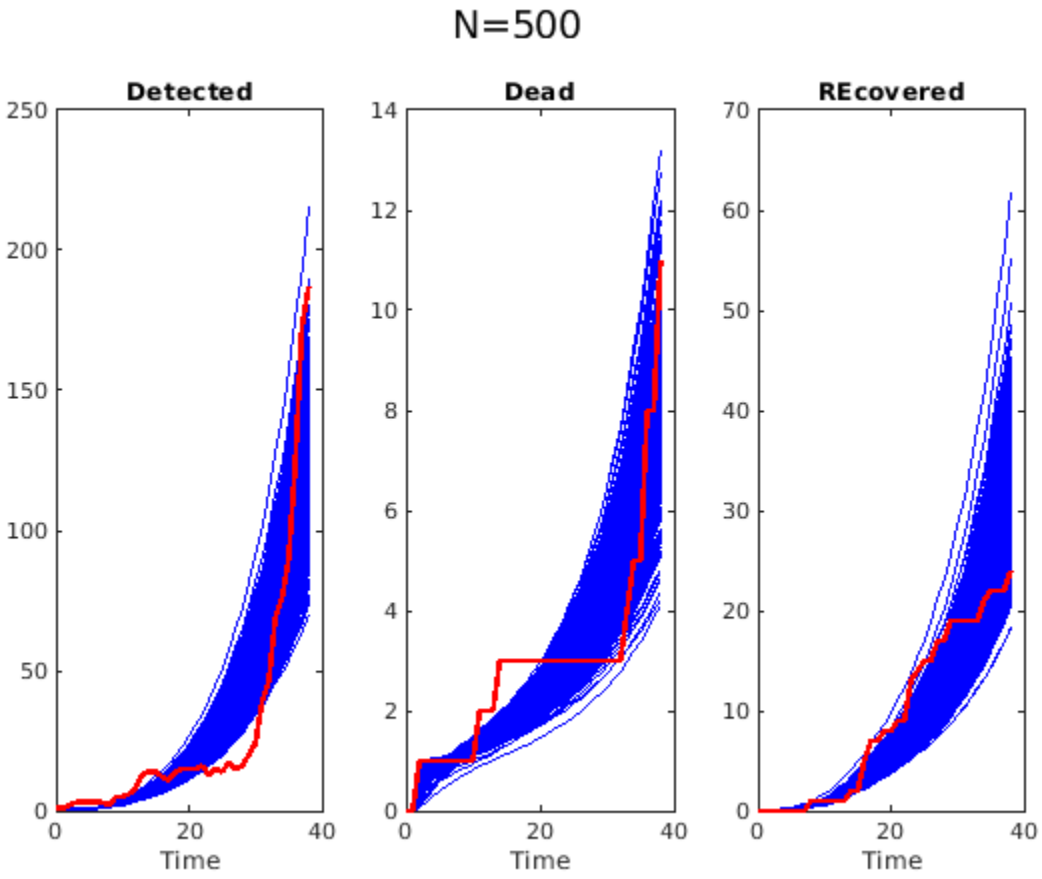
0.055
0.05

1.4. Uncertainty analisys



Chapter 2. Extension number2

2.1. Basic information

The extension to be validated consists of the time series from the data39 to the 78. The status of the validation is: COMPLETED.

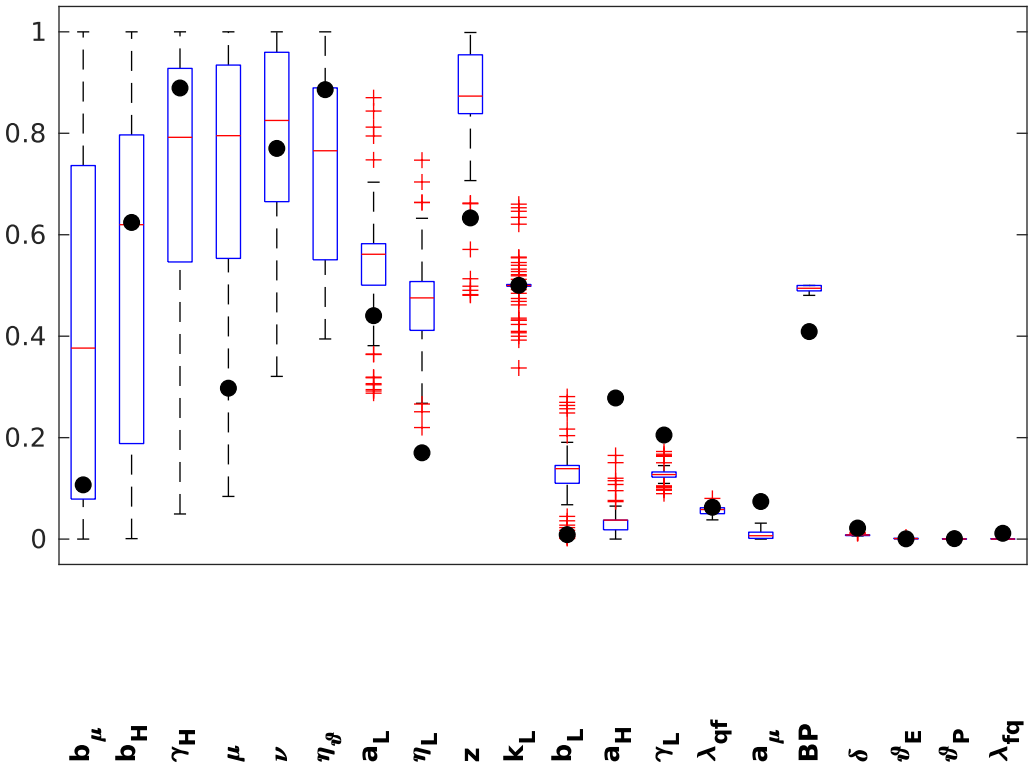
The number of estimations needed to perform the validation was2000.

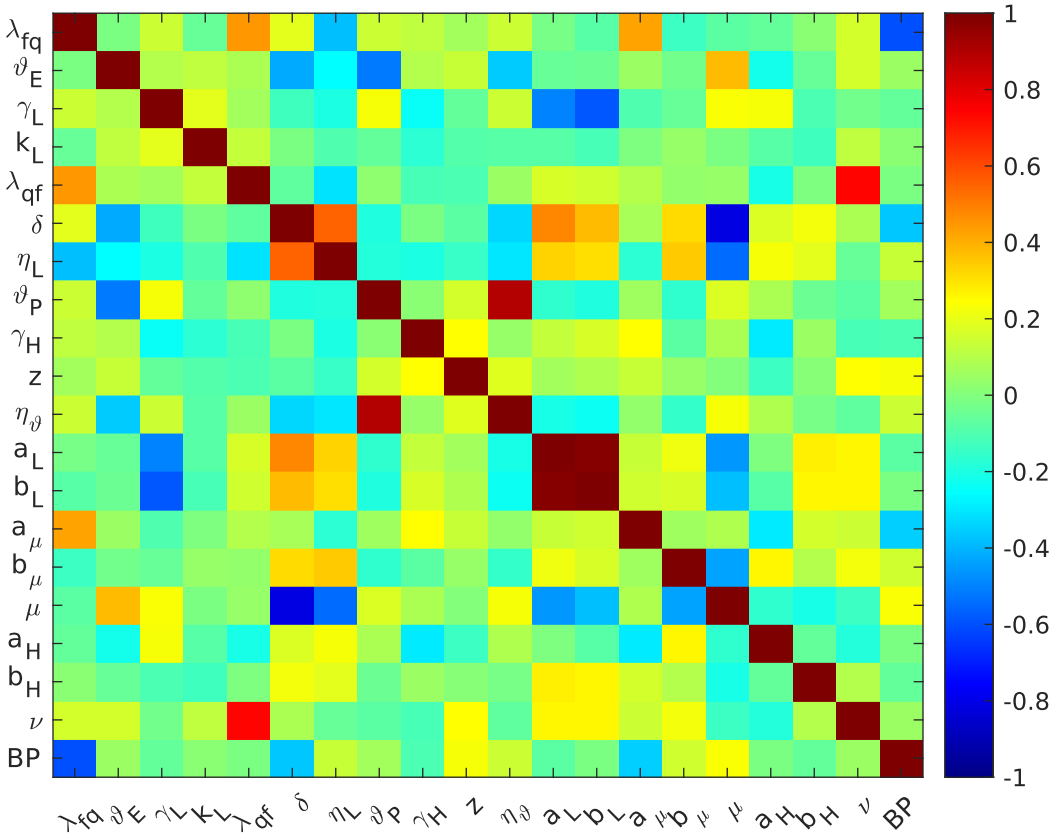
2.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0.0006'	'0.0001'	'0.0115'	'0.0788'
\vartheta_E	'0.0008'	'0.0013'	'0.001'	'0.0005'	'0.0767'
\gamma_L	'0.1148'	'0.1396'	'0.1272'	'0.2052'	'0.0924'
k_L	'5.0595'	'5.9378'	'5.4987'	'5.5026'	'0.0937'
\lambda_{qf}	'0.0551'	'0.0615'	'0.0583'	'0.0628'	'0.0765'
\delta	'0.001'	'0.0014'	'0.0012'	'0.0033'	'0.1122'
\eta_L	'0.4281'	'0.5229'	'0.4755'	'0.1701'	'0.1591'
\vartheta_P	'0.0001'	'0.0003'	'0.0002'	'0.0009'	'0.0933'
\gamma_H	'0.7109'	'0.8732'	'0.792'	'0.8893'	'0.1376'
z	'24.1924'	'28.2051'	'26.1988'	'18.9949'	'0.1197'
\eta_\vartheta	'0.7161'	'0.815'	'0.7655'	'0.886'	'0.1333'
a_L	'8.0981'	'9.6243'	'8.8612'	'7.1664'	'0.1495'
b_L	'2.5843'	'3.3029'	'2.9436'	'1.1227'	'0.1336'
a_\mu	'1.0355'	'1.15'	'1.0927'	'2.0372'	'0.0642'
b_\mu	'4.882'	'7.6614'	'6.2717'	'2.4976'	'0.1617'
\mu	'0.7207'	'0.8699'	'0.7953'	'0.2975'	'0.1831'
a_H	'1'	'2.6063'	'1.5245'	'4.8944'	'0.1181'
b_H	'8.3994'	'10.9548'	'9.6771'	'9.7393'	'0.1421'
\nu	'386.0723'	'439.2137'	'412.643'	'385.0832'	'0.1307'
BP	'38.804'	'39.345'	'39.0745'	'32.5'	'0.0751'

2.3. Identifiability analisys




λ_{fq}
ϑ_E
γ_L
k_L
λ_{qf}
δ
η_L
ϑ_P
γ_H
z
η_ϑ
a_L
b_L
a_μ
b_μ
μ
a_H
b_H
ν
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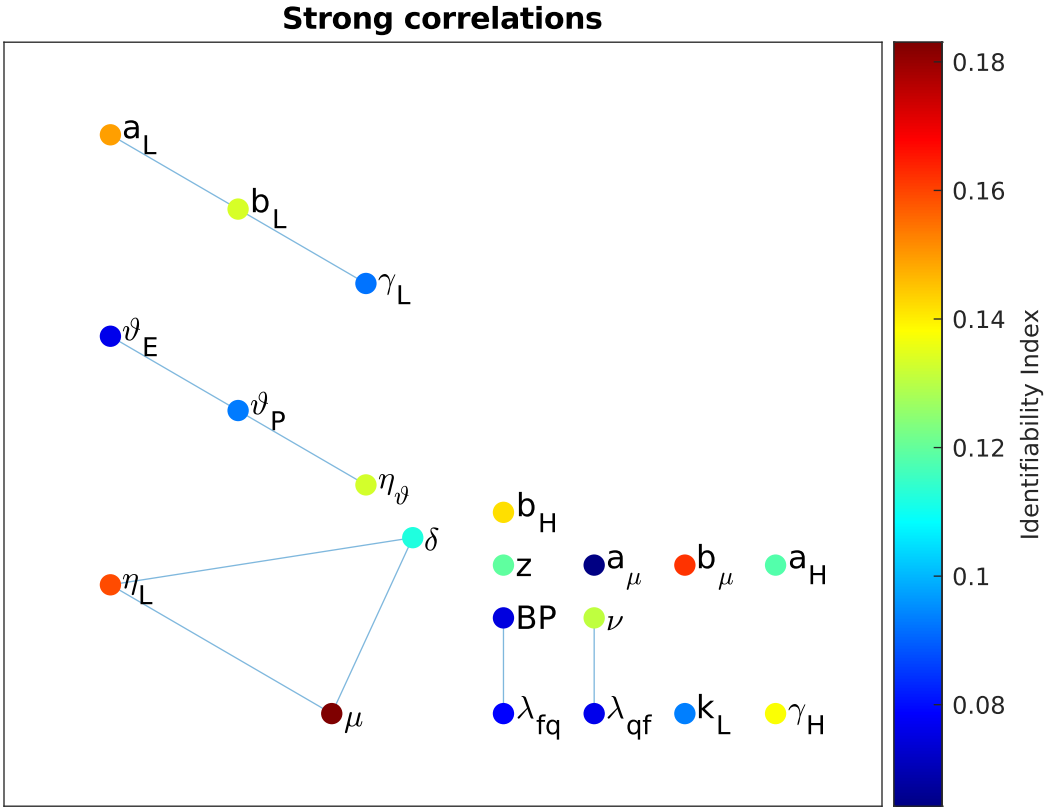
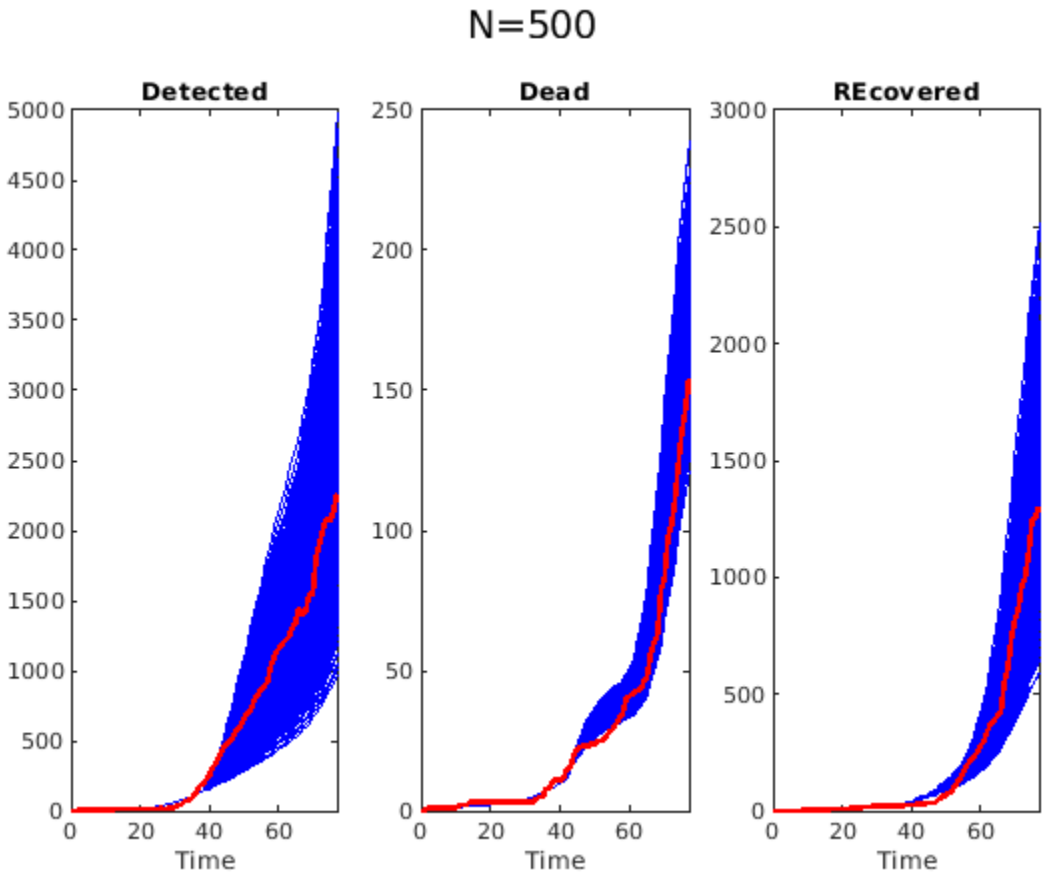
-0.4
-0.6
-0.8
-1


Strong correlations
a_L
b_L
γ_L
ϑ_E
ϑ_P
η_ϑ
δ
η_L
μ
b_H
z
a_μ
b_μ
a_H
BP
ν
λ_fq
λ_qf
k_L
γ_H
0.18
0.16
0.14
0.12
0.1
0.08
Identifiability Index

2.4. Uncertainty analisys



Chapter 3. Extension number3

3.1. Basic information

The extension to be validated consists of the time series from the data78 to the 98. The status of the validation is: COMPLETED.

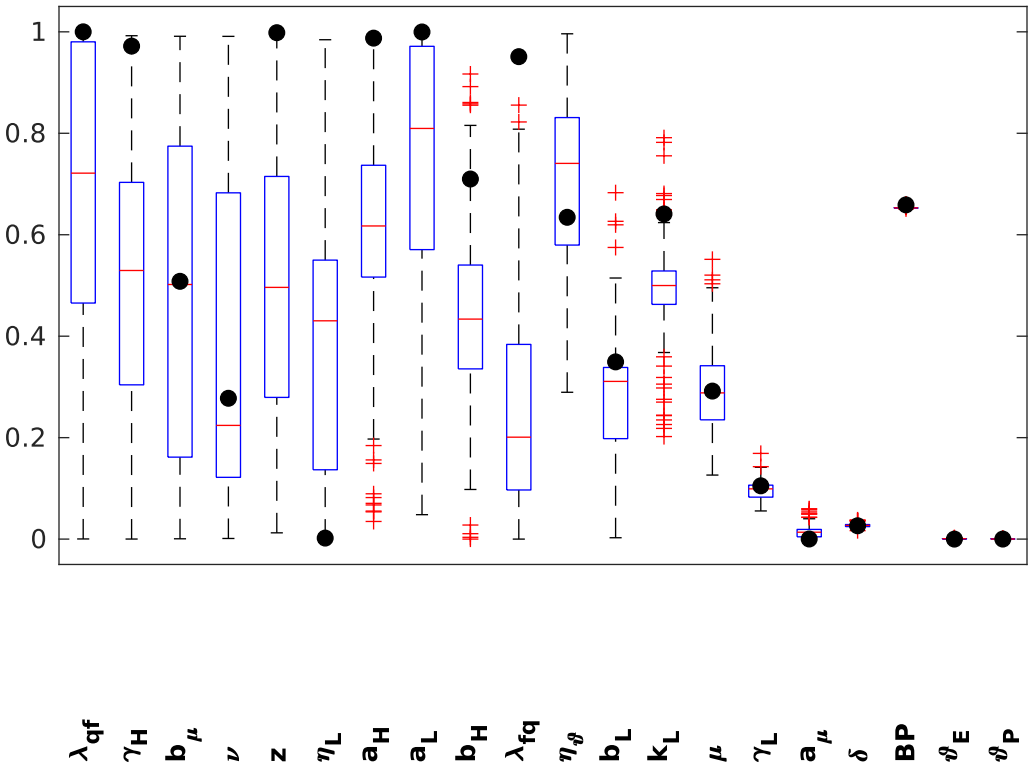
The number of estimations needed to perform the validation was1000.

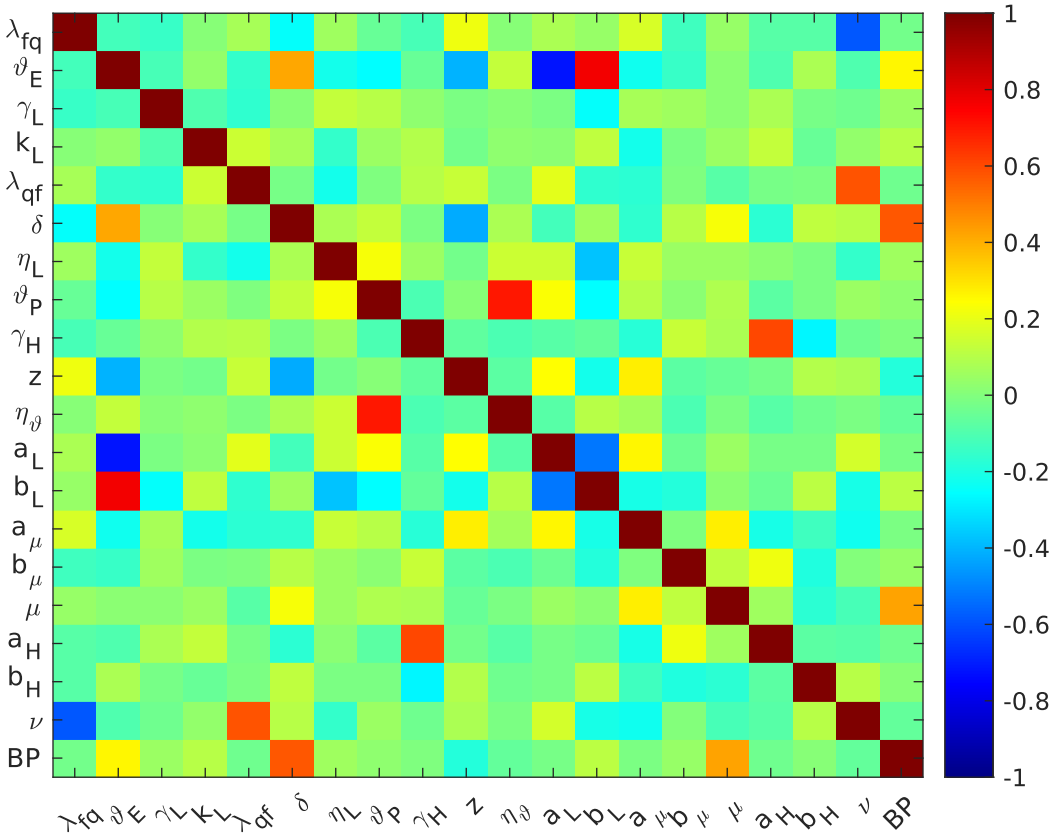
3.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.1367'	'0.2652'	'0.2009'	'0.9511'	'0.1302'
\vartheta_E	'0'	'0.005'	'0.0007'	'0'	'0.1062'
\gamma_L	'0.0905'	'0.1076'	'0.0991'	'0.105'	'0.0511'
k_L	'5.1597'	'5.8379'	'5.4988'	'6.7688'	'0.0809'
\lambda_{qf}	'0.6534'	'0.7895'	'0.7214'	'1'	'0.134'
\delta	'0.0038'	'0.0043'	'0.004'	'0.0039'	'0.0783'
\eta_L	'0.3726'	'0.4881'	'0.4303'	'0.002'	'0.1115'
\vartheta_P	'0.0001'	'0.0003'	'0.0002'	'0.0001'	'0.069'
\gamma_H	'0.4718'	'0.5872'	'0.5295'	'0.9719'	'0.1226'
z	'13.0968'	'16.6754'	'14.8861'	'29.9488'	'0.1177'
\eta_\vartheta	'0.7068'	'0.7745'	'0.7406'	'0.6344'	'0.0945'
a_L	'11.3758'	'13.2914'	'12.3336'	'14.9961'	'0.1563'
b_L	'4.5698'	'6.1346'	'5.3522'	'5.8908'	'0.1535'
a_\mu	'1.0845'	'1.2959'	'1.1902'	'1.0028'	'0.0713'
b_\mu	'7.054'	'8.9997'	'8.0269'	'8.1146'	'0.1151'
\mu	'0.2584'	'0.3181'	'0.2882'	'0.2918'	'0.0795'
a_H	'8.8442'	'10.4405'	'9.6423'	'14.8259'	'0.121'
b_H	'6.4112'	'7.7323'	'7.0717'	'10.9379'	'0.0922'
\nu	'76.522'	'147.6155'	'112.0687'	'138.8086'	'0.1552'
BP	'77.3405'	'77.7065'	'77.5235'	'77.8733'	'0.0669'

3.3. Identifiability analisys




λfq
ϑE
γL
kL
λqf
δ
ηL
ϑP
γH
z
ηϑ
aL
bL
aμ
bμ
μ
aH
bH
ν
BP
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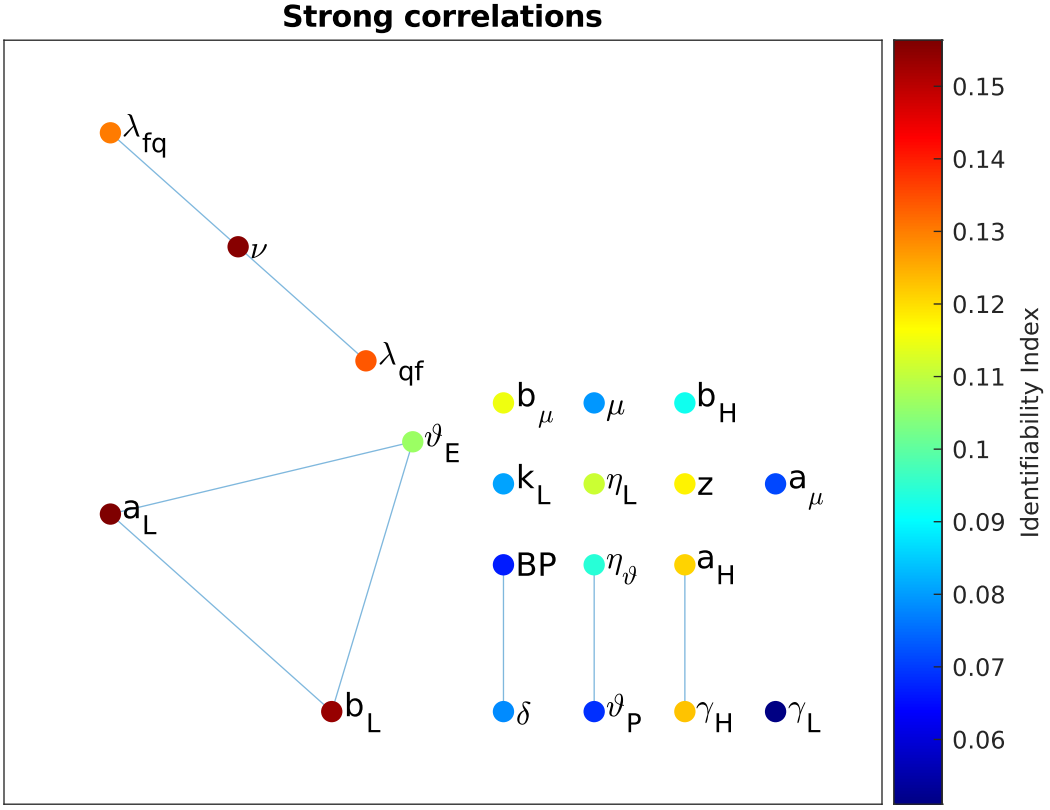
-0.6
-0.8
-1


Strong correlations
λ_{fq}
ν
λ_{qf}
ϑ_E
a_L
b_L
b_μ
μ
b_H
k_L
η_L
z
a_μ
BP
η_ϑ
a_H
δ
ϑ_P
γ_H
γ_L
0.15
0.14
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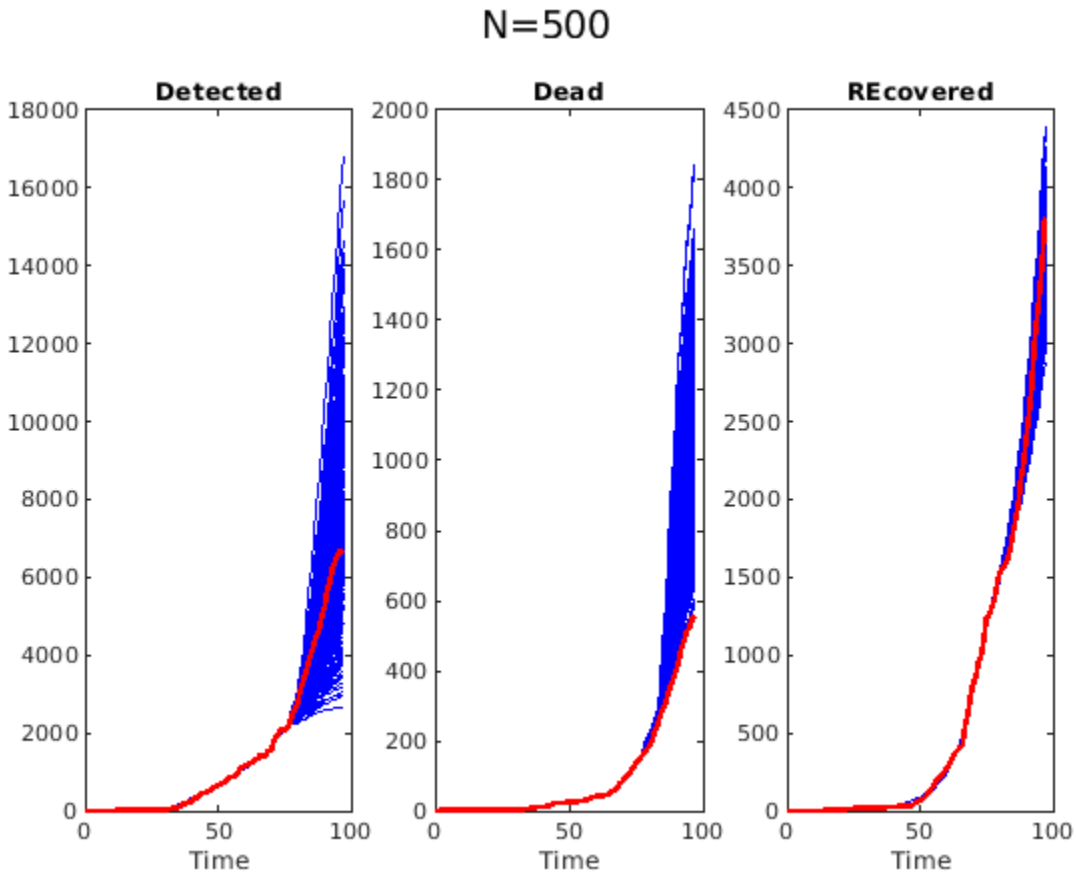
0.1
0.09
0.08
0.07
0.06
Identifiability Index

3.4. Uncertainty analisys



Chapter 4. Extension number4

4.1. Basic information

The extension to be validated consists of the time series from the data98 to the 137. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was5000.

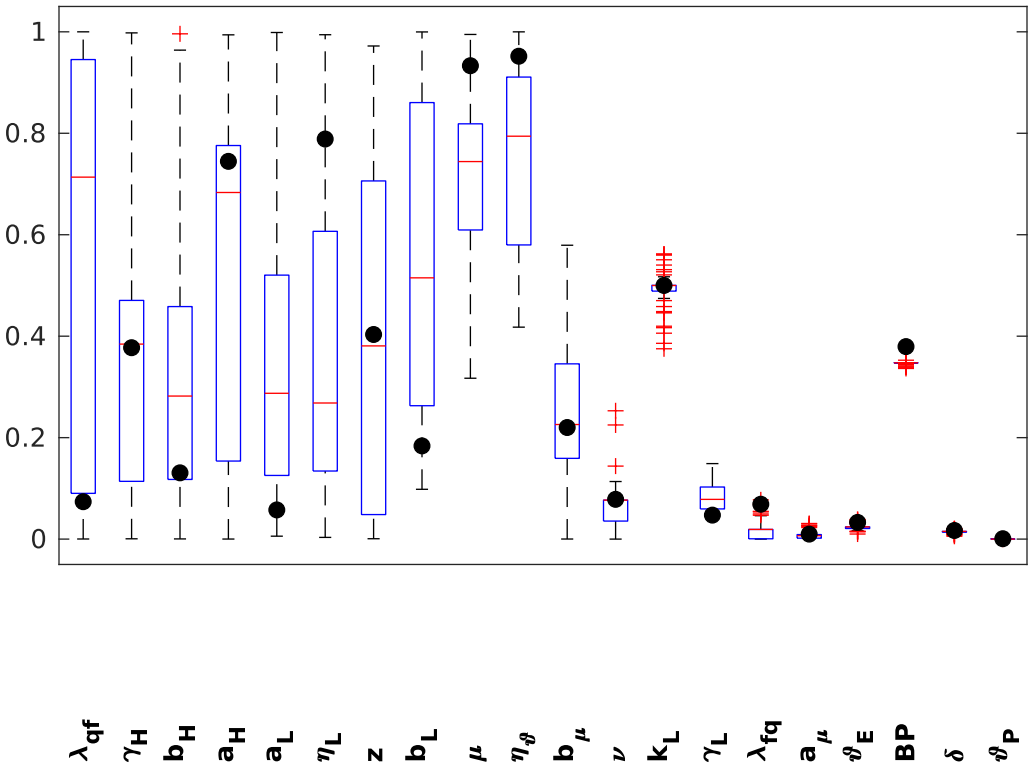
4.2. Estimated parameters with their intervals

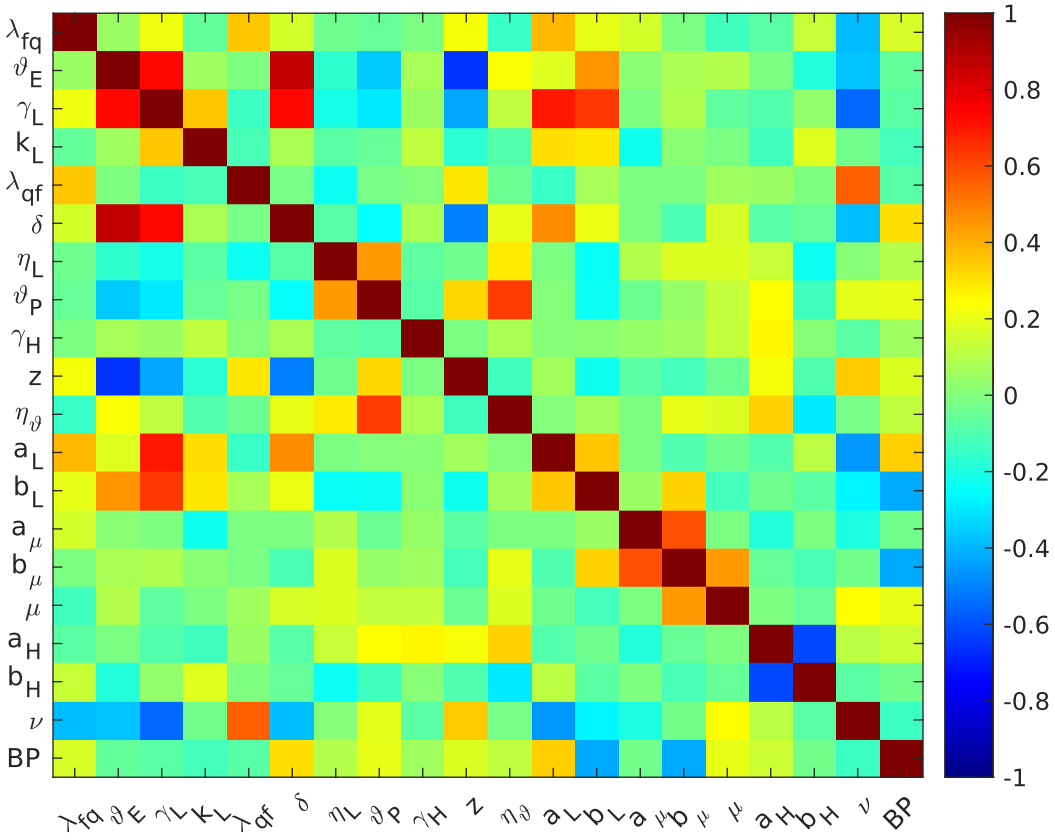
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0618'	'0.2332'	'0.0191'	'0.0688'	'0.1241'
\vartheta_E	'0.0039'	'0.0617'	'0.0241'	'0.0329'	'0.1434'
\gamma_L	'0.0042'	'0.0511'	'0.0783'	'0.0473'	'0.1661'
k_L	'1'	'9.208'	'5.499'	'5.5001'	'0.1133'
\lambda_{qf}	'0'	'0.1106'	'0.7135'	'0.0737'	'0.1856'
\delta	'0.0013'	'0.0057'	'0.0023'	'0.0025'	'0.1277'
\eta_L	'0'	'1'	'0.2683'	'0.7887'	'0.1521'
\vartheta_P	'0.0007'	'0.0016'	'0'	'0.0008'	'0.0841'
\gamma_H	'0.0191'	'0.764'	'0.3844'	'0.3773'	'0.1275'
z	'1.9868'	'28.5993'	'11.4255'	'12.1003'	'0.2025'
\eta_\vartheta	'0.8689'	'0.9565'	'0.7942'	'0.9519'	'0.1334'
a_L	'1'	'15'	'5.024'	'1.8055'	'0.1636'
b_L	'1'	'15'	'8.2102'	'3.5726'	'0.1862'
a_\mu	'1.1207'	'5.8265'	'1.0937'	'1.1377'	'0.0646'
b_\mu	'3.6106'	'14.4305'	'4.1624'	'4.0795'	'0.118'
\mu	'0.264'	'0.9685'	'0.7442'	'0.9332'	'0.1063'
a_H	'5.783'	'14.5392'	'10.5657'	'11.4251'	'0.1774'
b_H	'1'	'14.44'	'4.9477'	'2.8289'	'0.1551'
\nu	'34.3993'	'63.6373'	'38.4302'	'39.1906'	'0.1958'
BP	'100.2626'	'114.5993'	'98.5'	'100.3888'	'0.0696'

4.3. Identifiability analisys




λfq
ϑE
γL
kL
λqf
δ
ηL
ϑP
γH
z
ηϑ
aL
bL
aμ
bμ
μ
aH
bH
ν
BP
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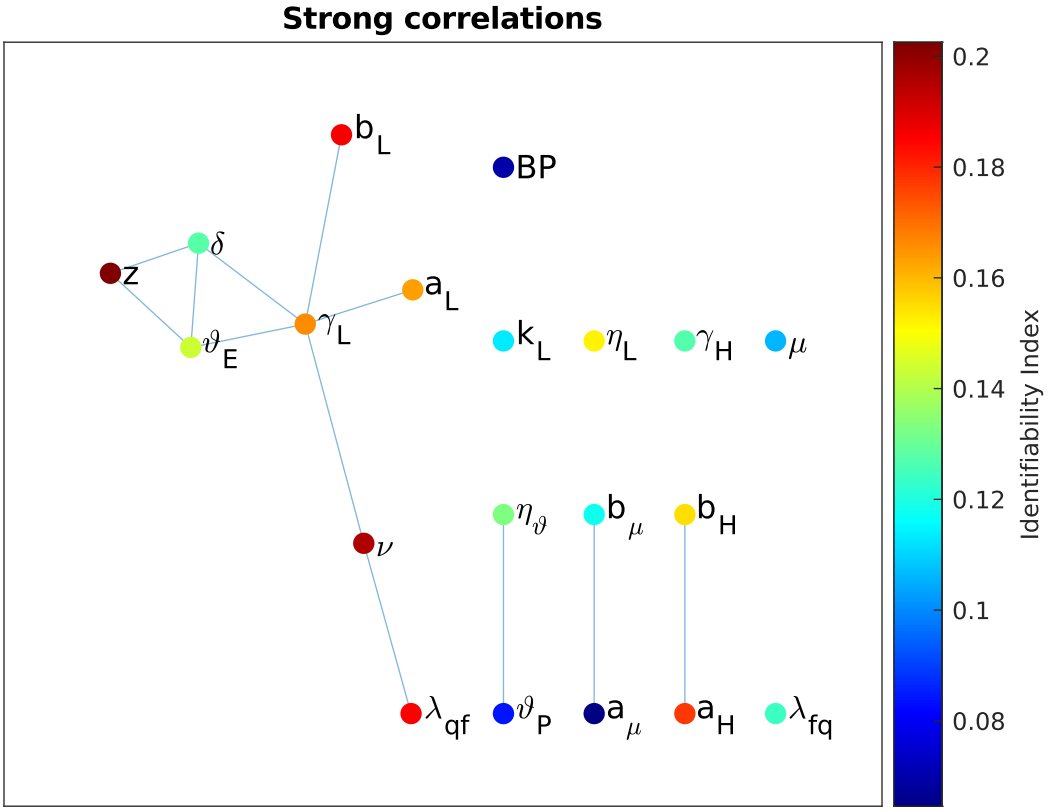
-0.4
-0.6
-0.8
-1


Strong correlations
b L
BP
δ
z
a L
γ L
ϑ E
k L
η L
γ H
μ
η ϑ
b μ
b H
ν
λ qf
ϑ P
a μ
a H
λ fq
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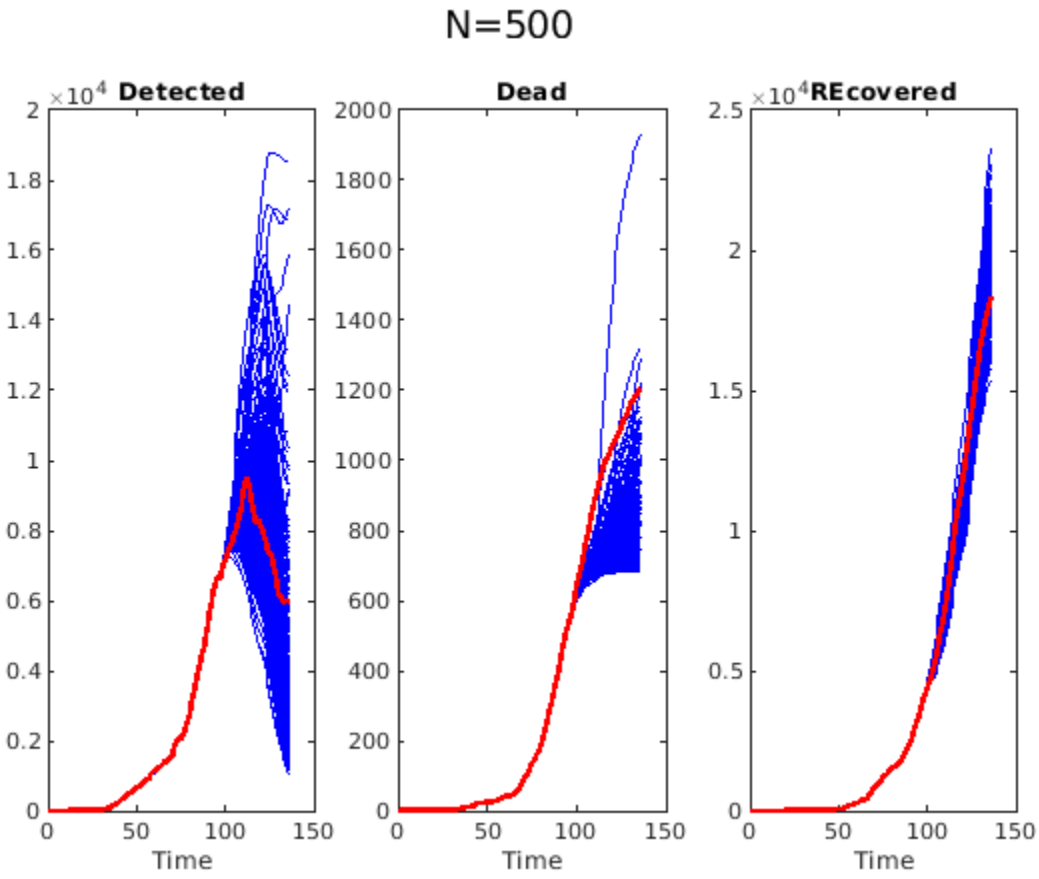
0.18
0.16
0.14
0.12
0.1
0.08
Identifiability Index

4.4. Uncertainty analisys



Chapter 5. Extension number5

5.1. Basic information

The extension to be validated consists of the time series from the data137 to the 162. The status of the validation is: COMPLETED.

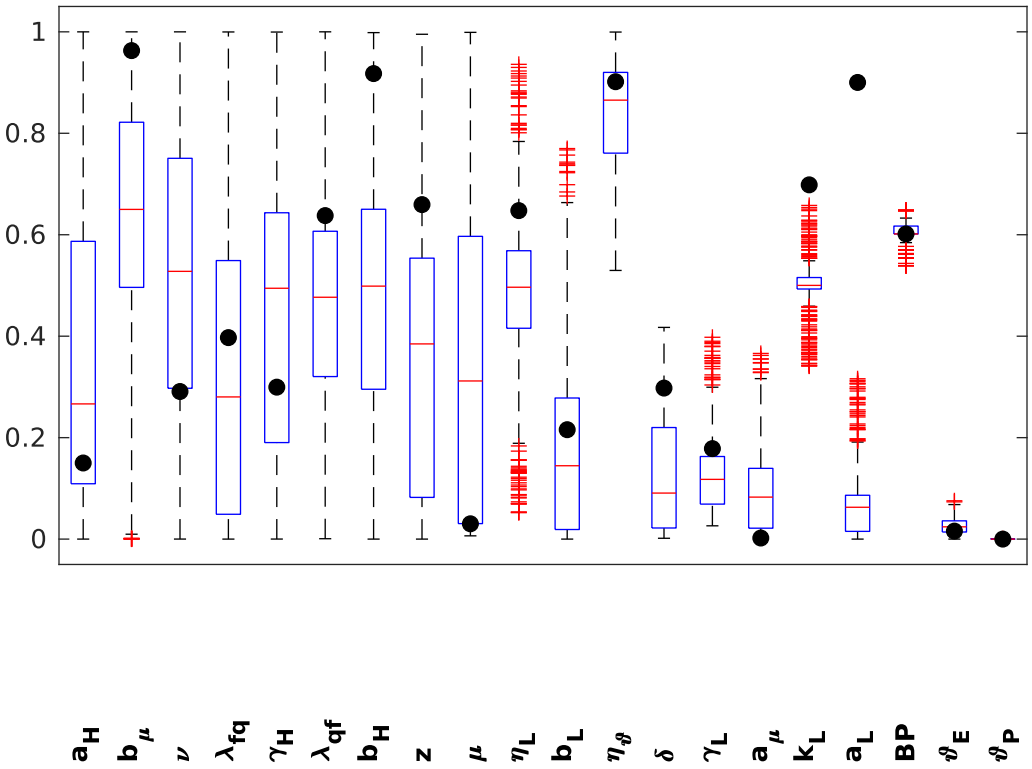
The number of estimations needed to perform the validation was1000.

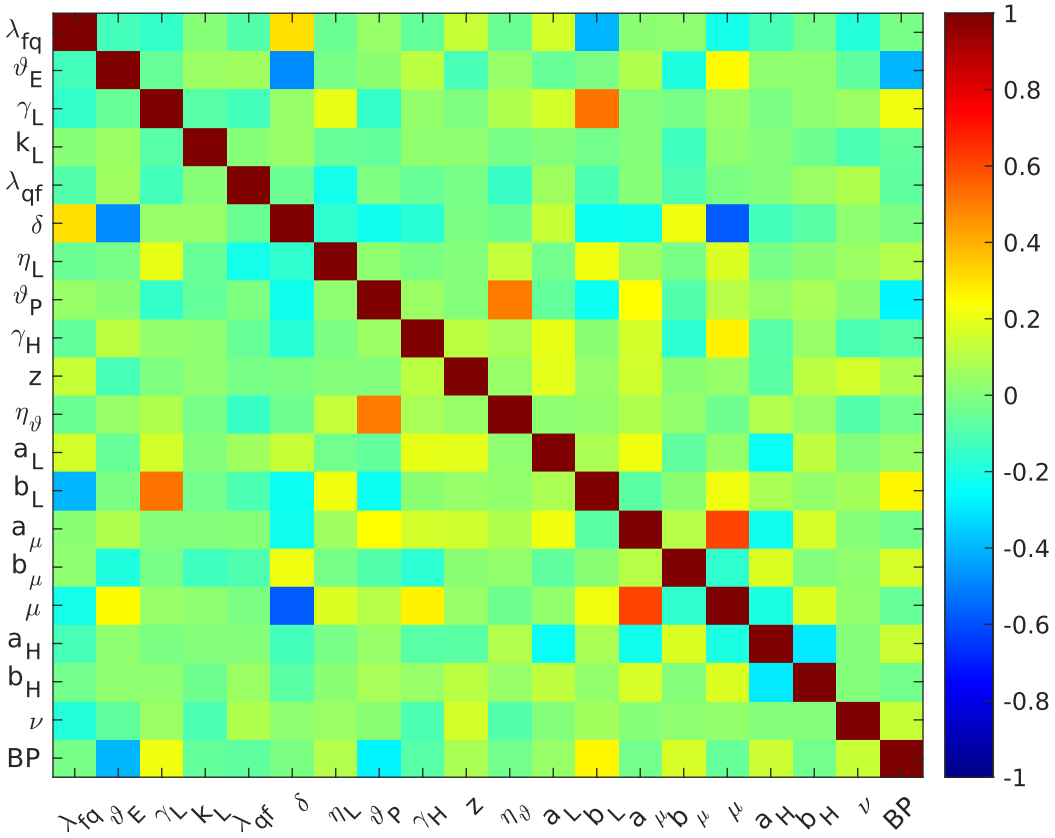
5.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.243'	'0.3176'	'0.2803'	'0.3972'	'0.0894'
\vartheta_E	'0.0221'	'0.0263'	'0.0242'	'0.0158'	'0.0544'
\gamma_L	'0.0912'	'0.1443'	'0.1178'	'0.1784'	'0.0886'
k_L	'5.3321'	'5.6705'	'5.5013'	'7.2852'	'0.0533'
\lambda_{qf}	'0.447'	'0.5065'	'0.4768'	'0.6377'	'0.0706'
\delta	'0.0112'	'0.016'	'0.0136'	'0.0447'	'0.093'
\eta_L	'0.4682'	'0.5248'	'0.4965'	'0.6475'	'0.0726'
\vartheta_P	'0'	'0.0001'	'0.0001'	'0'	'0.0654'
\gamma_H	'0.4597'	'0.5293'	'0.4945'	'0.2995'	'0.0827'
z	'10.5641'	'12.5233'	'11.5437'	'19.7822'	'0.0748'
\eta_\vartheta	'0.8437'	'0.8869'	'0.8653'	'0.9017'	'0.0791'
a_L	'1.4665'	'2.2909'	'1.8787'	'13.603'	'0.078'
b_L	'2.4925'	'3.5569'	'3.0247'	'4.0193'	'0.1087'
a_\mu	'1.9662'	'2.3515'	'2.1588'	'1.0297'	'0.0824'
b_\mu	'9.6398'	'10.5586'	'10.0992'	'14.4818'	'0.0796'
\mu	'0.2744'	'0.3491'	'0.3117'	'0.0302'	'0.1278'
a_H	'4.2325'	'5.2299'	'4.7312'	'3.1005'	'0.085'
b_H	'7.5351'	'8.4283'	'7.9817'	'13.8476'	'0.0739'
\nu	'246.4704'	'281.3504'	'263.9104'	'145.4757'	'0.0753'
BP	'136.161'	'136.839'	'136.5'	'136.5'	'0.0575'

5.3. Identifiability analisys




λ_{fq}
ϑ_E
γ_L
k_L
λ_{qf}
δ
η_L
ϑ_P
γ_H
z
η_ϑ
a_L
b_L
a_μ
b_μ
μ
a_H
b_H
ν
BP
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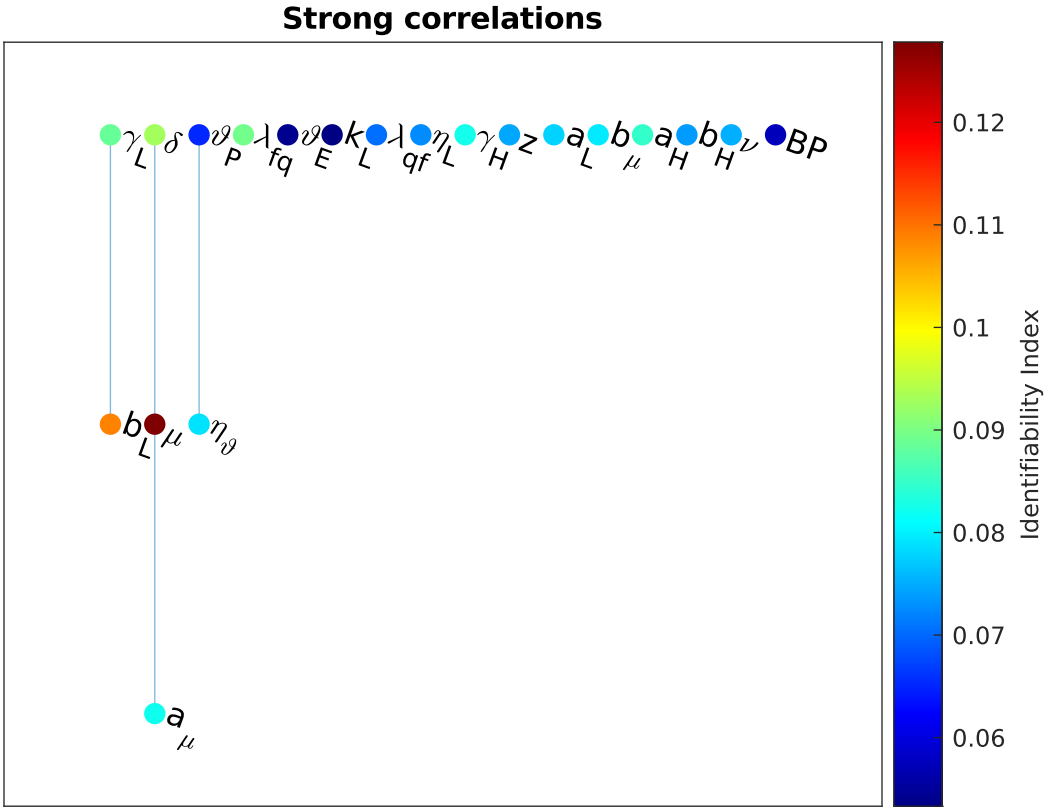
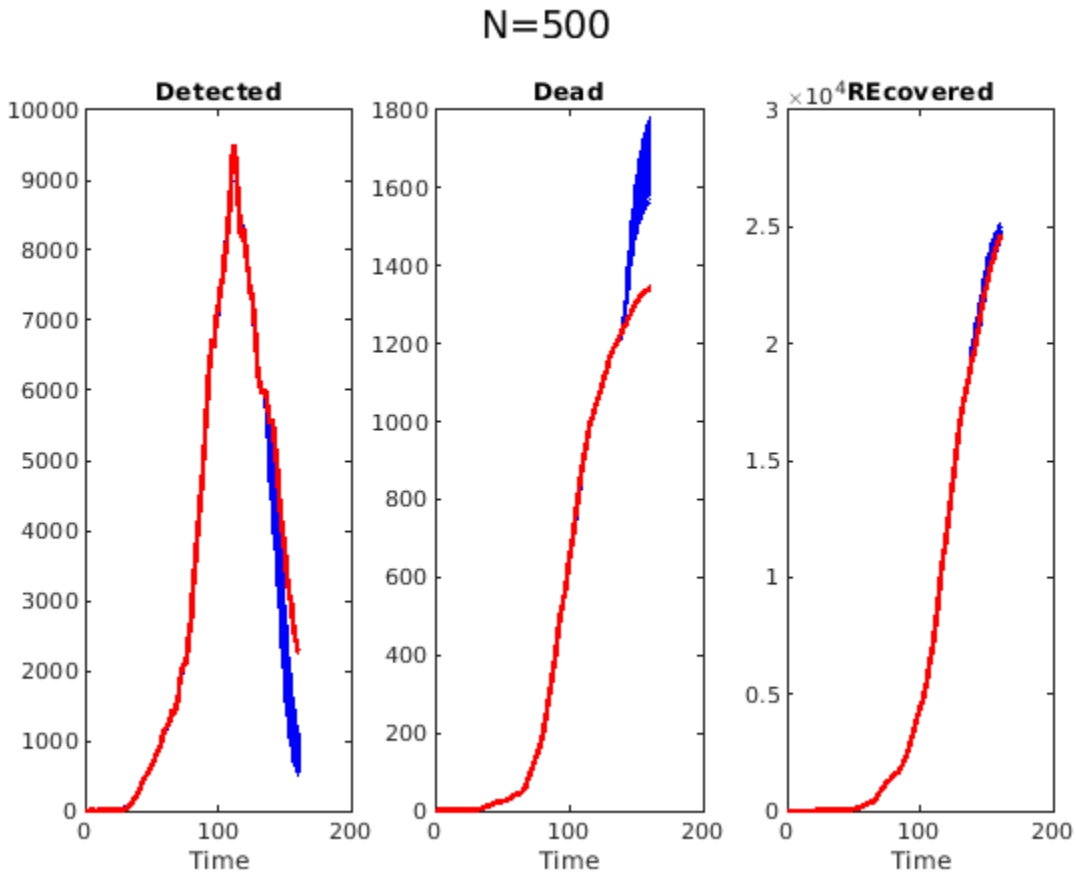
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
γ_L
δ
ϑ_P
λ_{fq}
ϑ_E
k_L
λ_{qf}
η_L
γ_H
z
a_L
b_μ
a_H
b_H
ν
BP
b_L
μ
η_ϑ
a_μ
0.12
0.11
0.1
0.09
0.08
0.07
0.06
Identifiability Index

5.4. Uncertainty analisys



Chapter 6. Extension number6

6.1. Basic information

The extension to be validated consists of the time series from the data162 to the 193. The status of the validation is: COMPLETED.

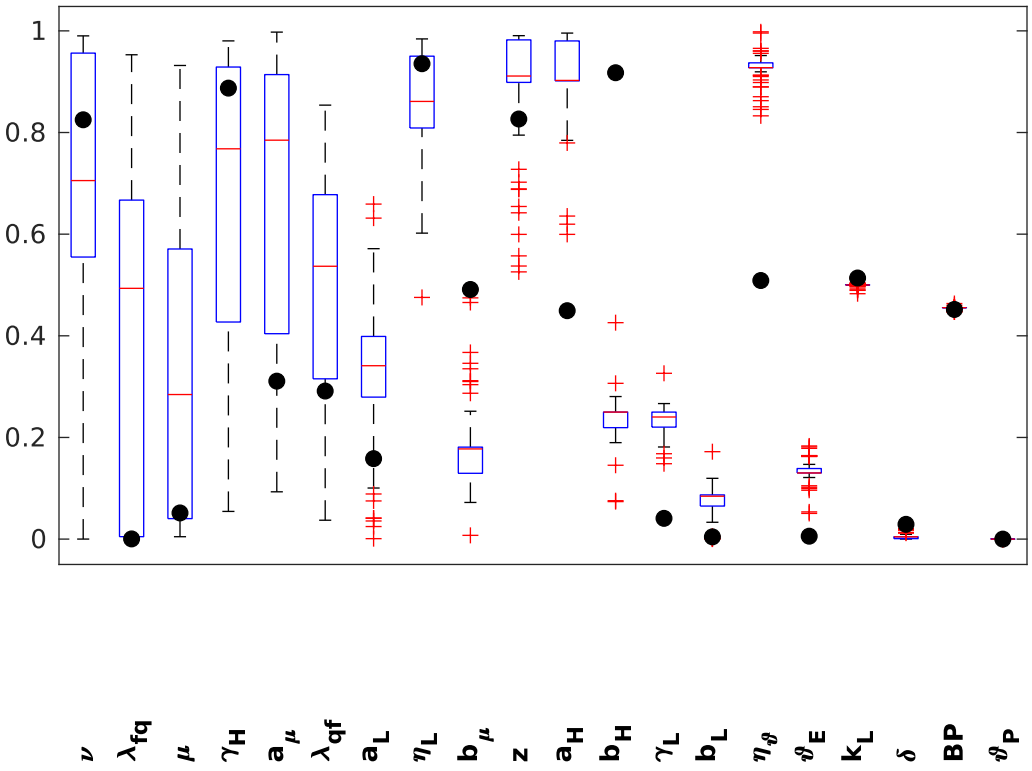
The number of estimations needed to perform the validation was3000.

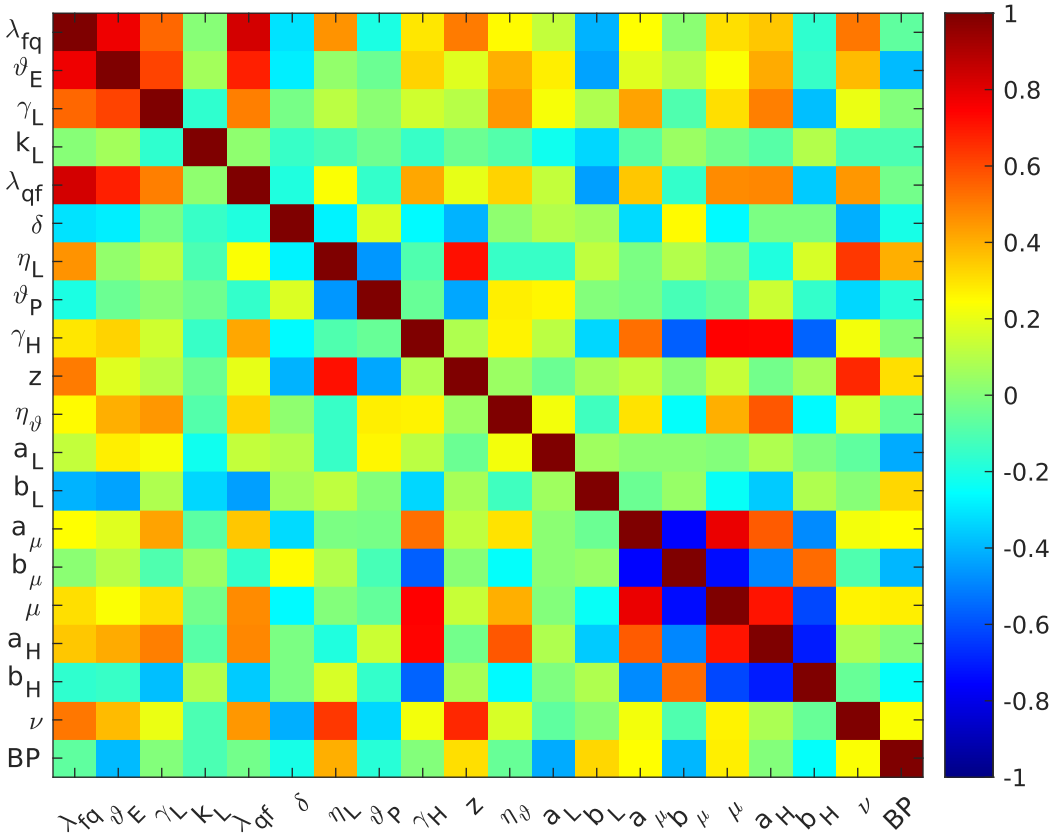
6.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4017'	'0.5851'	'0.4934'	'0.0004'	'0.259'
\vartheta_E	'0.1123'	'0.1479'	'0.1301'	'0.0057'	'0.1552'
\gamma_L	'0.2158'	'0.2647'	'0.2402'	'0.0408'	'0.1358'
k_L	'5.1553'	'5.8448'	'5.5'	'5.6236'	'0.0876'
\lambda_{qf}	'0.4794'	'0.5943'	'0.5368'	'0.2913'	'0.1878'
\delta	'0'	'0.0034'	'0.0007'	'0.0044'	'0.083'
\eta_L	'0.7781'	'0.9407'	'0.8594'	'0.9354'	'0.1867'
\vartheta_P	'0'	'0'	'0'	'0'	'0.0638'
\gamma_H	'0.6853'	'0.8506'	'0.7679'	'0.8874'	'0.2443'
z	'24.0524'	'29.8638'	'26.9581'	'24.7978'	'0.2117'
\eta_\vartheta	'0.8886'	'0.9662'	'0.9274'	'0.5088'	'0.1342'
a_L	'4.9276'	'6.6435'	'5.7855'	'3.2163'	'0.1181'
b_L	'1.2403'	'3.1359'	'2.1881'	'1.062'	'0.1375'
a_\mu	'10.7167'	'13.2025'	'11.9596'	'5.3509'	'0.2349'
b_\mu	'2.3265'	'4.7402'	'3.5334'	'7.8762'	'0.2209'
\mu	'0.2061'	'0.3628'	'0.2845'	'0.0515'	'0.2484'
a_H	'12.2777'	'14.9672'	'13.6224'	'7.2917'	'0.2652'
b_H	'3.1807'	'5.818'	'4.4993'	'13.8468'	'0.2328'
\nu	'312.716'	'392.712'	'352.714'	'412.5282'	'0.2066'
BP	'162.1956'	'162.8044'	'162.5'	'162.3028'	'0.0792'

6.3. Identifiability analisys




λfq
ϑE
γL
kL
λqf
δ
ηL
ϑP
γH
z
ηϑ
aL
bL
aμ
bμ
μ
aH
bH
ν
BP
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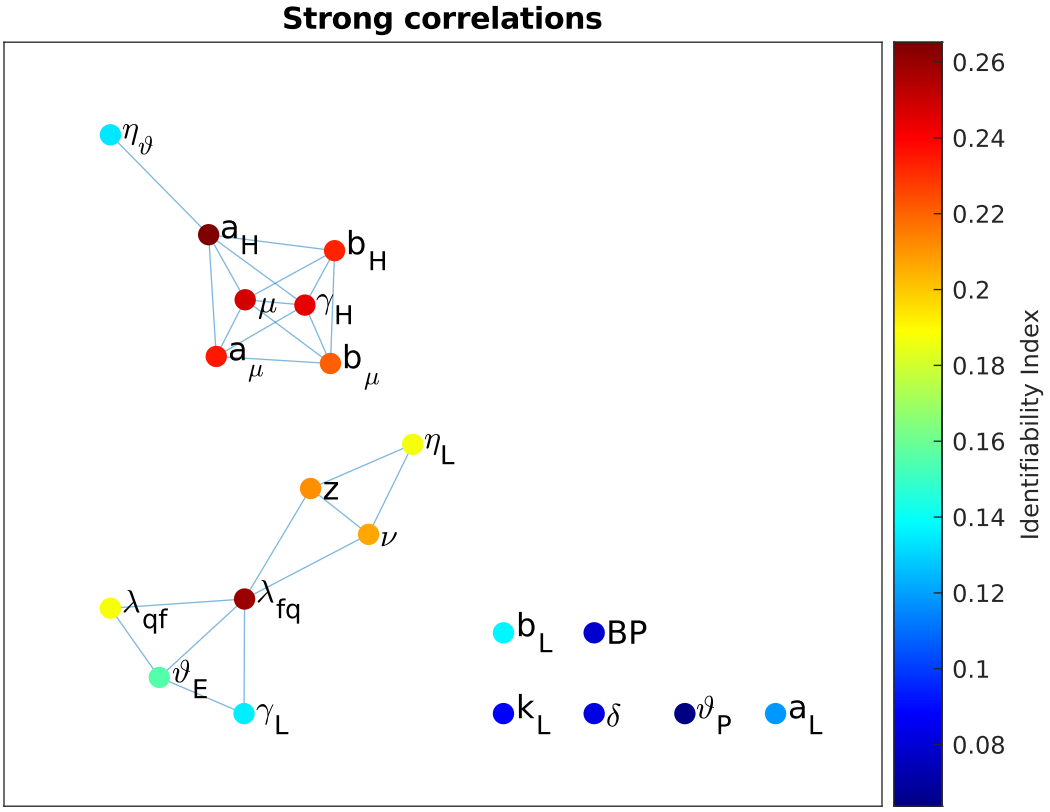
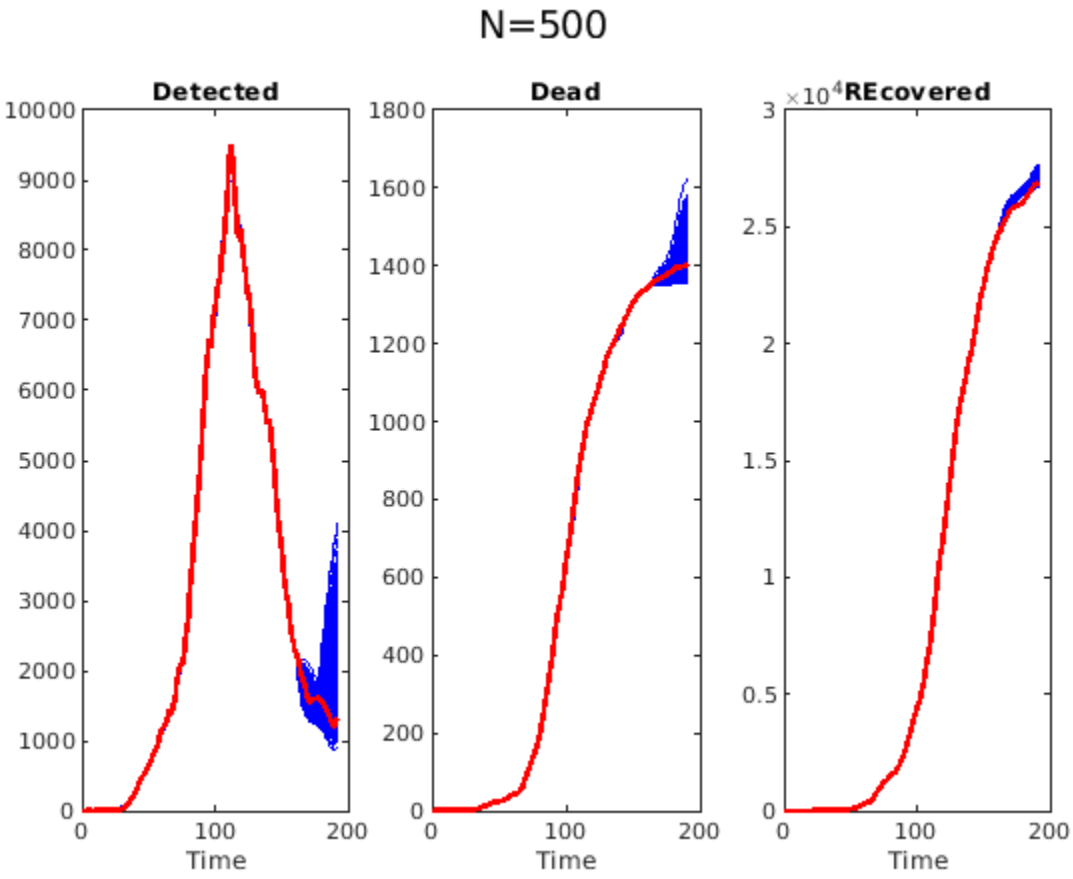
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
η_ϑ
a_H
b_H
μ
γ_H
a_μ
b_μ
η_L
z
ν
λ_{qf}
λ_{fq}
ϑ_E
γ_L
b_L
BP
k_L
δ
ϑ_P
a_L
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
Identifiability Index

6.4. Uncertainty analisys



Chapter 7. Extension number7

7.1. Basic information

The extension to be validated consists of the time series from the data193 to the 231. The status of the validation is: COMPLETED.

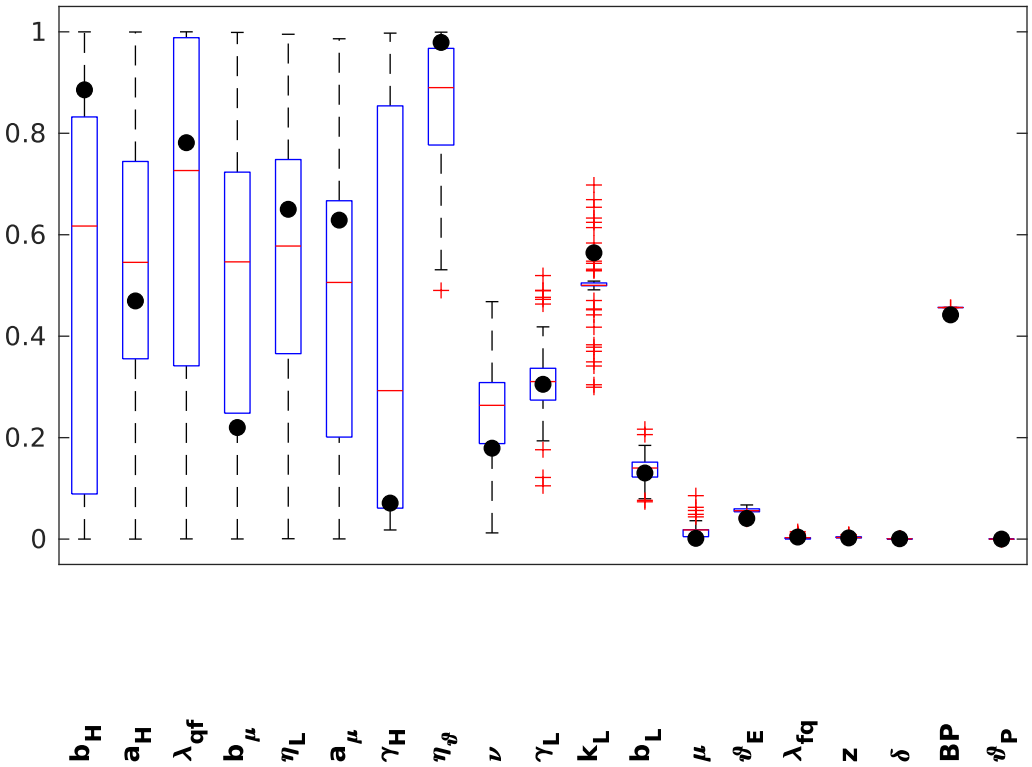
The number of estimations needed to perform the validation was8000.

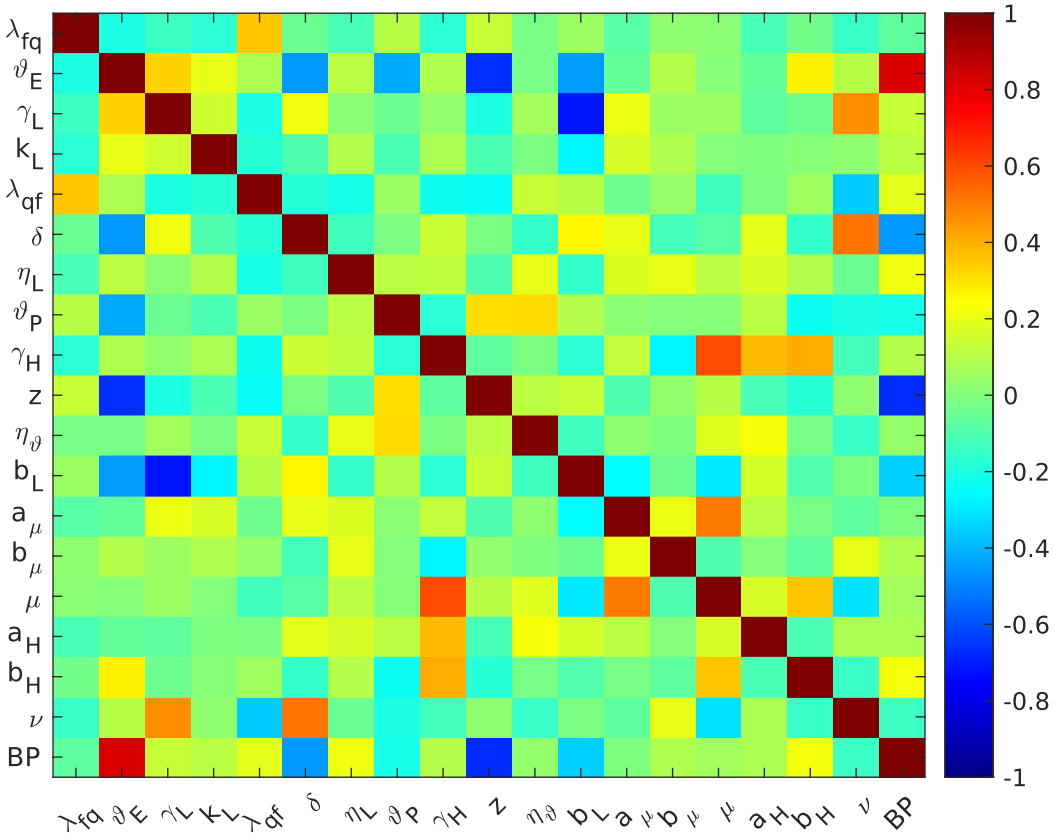
7.2. Estimated parameters with their intervals

It was necessary to fix 1 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0.085'	'0.0028'	'0.0041'	'0.0949'
\vartheta_E	'0.0526'	'0.0592'	'0.0559'	'0.0407'	'0.1142'
\gamma_L	'0.2699'	'0.3517'	'0.3108'	'0.3051'	'0.1215'
k_L	'4.979'	'6.027'	'5.503'	'6.0791'	'0.1093'
\lambda_{qf}	'0.6316'	'0.8215'	'0.7266'	'0.7814'	'0.158'
\delta	'0'	'0.0019'	'0.0001'	'0.0001'	'0.0906'
\eta_L	'0.5014'	'0.6541'	'0.5777'	'0.6501'	'0.134'
\vartheta_P	'0'	'0'	'0'	'0'	'0.0594'
\gamma_H	'0.186'	'0.3994'	'0.2927'	'0.071'	'0.1894'
z	'0'	'0.8492'	'0.0972'	'0.0696'	'0.1099'
\eta_\vartheta	'0.8471'	'0.9307'	'0.8889'	'0.9791'	'0.092'
a_L	'8.7392'	'8.7392'	'8.7392'	'8.7392'	'0'
b_L	'2.8291'	'3.0943'	'2.9617'	'2.8244'	'0.0979'
a_\mu	'6.9632'	'9.2038'	'8.0835'	'9.8033'	'0.1505'
b_\mu	'7.48'	'9.8225'	'8.6513'	'4.079'	'0.1316'
\mu	'0'	'0.0949'	'0.0185'	'0.0015'	'0.1408'
a_H	'7.5073'	'9.7684'	'8.6378'	'7.573'	'0.1356'
b_H	'8.2337'	'11.0463'	'9.64'	'13.3996'	'0.1594'
\nu	'116.9398'	'146.7476'	'131.8437'	'89.6139'	'0.11'
BP	'193.3169'	'193.6829'	'193.4999'	'192.5'	'0.1072'

7.3. Identifiability analisys




λfq
ϑE
γL
kL
λqf
δ
ηL
ϑP
γH
z
ηϑ
bL
aμ
bμ
μ
aH
bH
ν
BP
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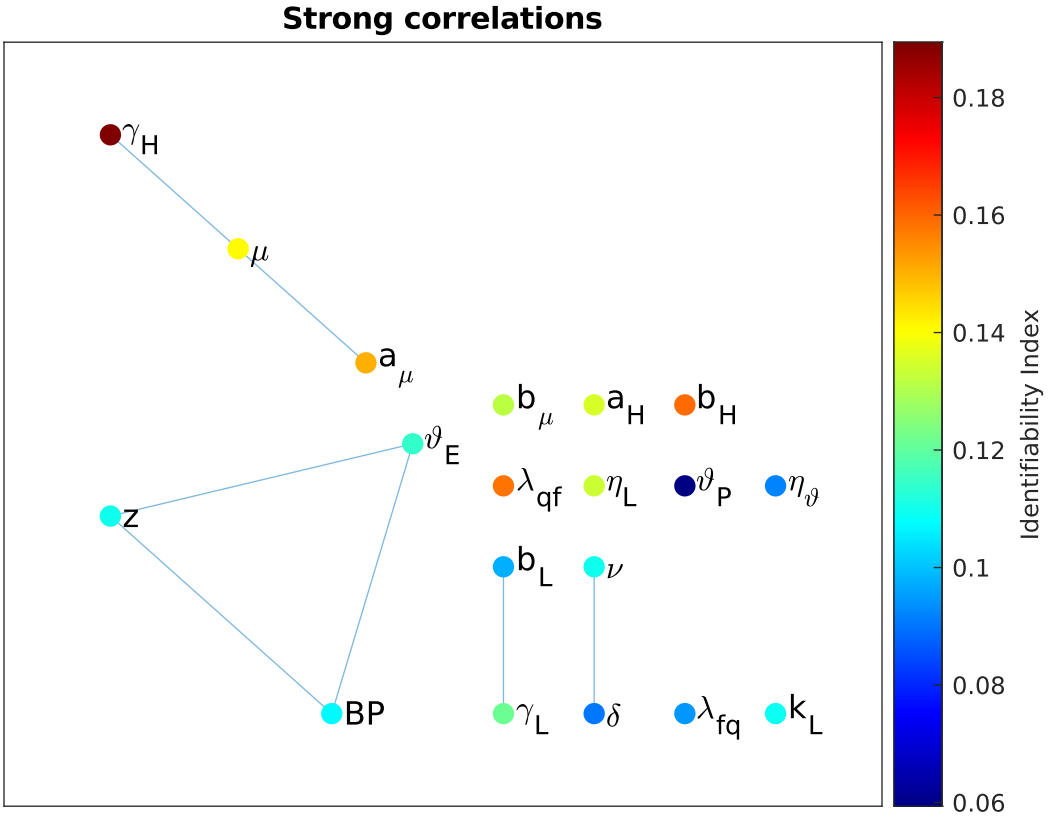
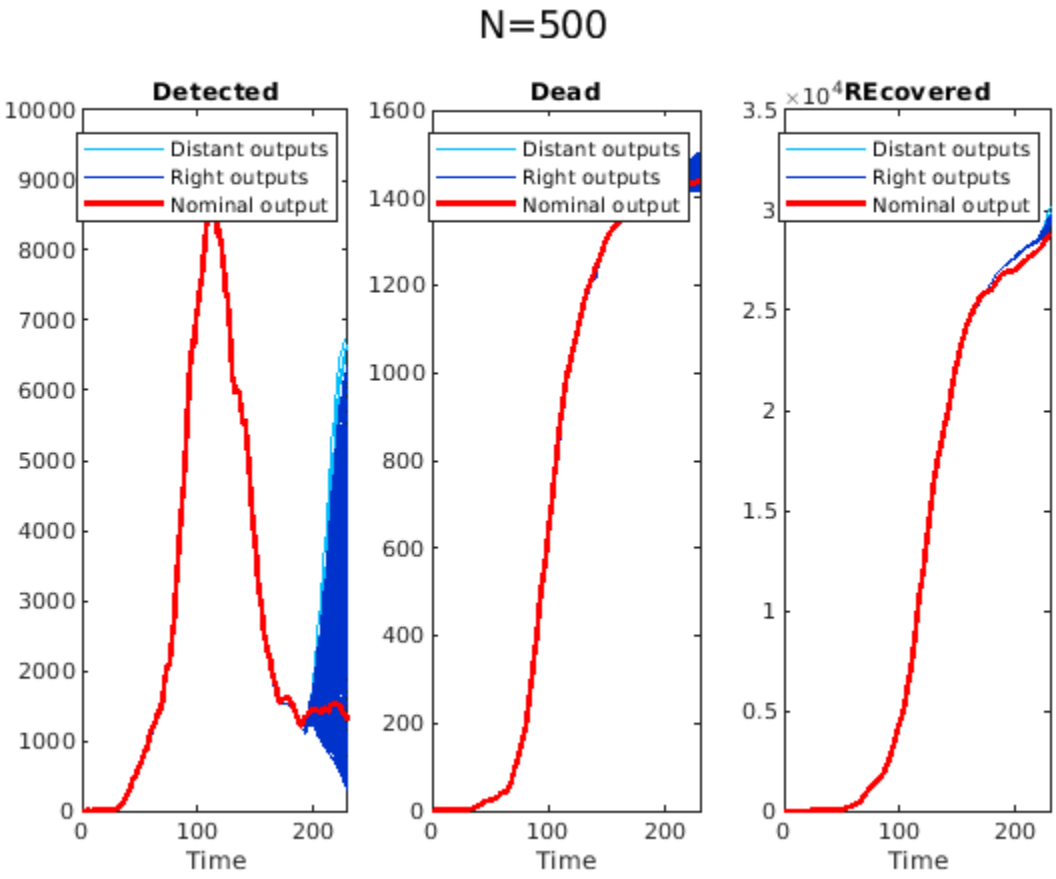
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
γ_H
μ
a_μ
ϑ_E
z
BP
b_μ
a_H
b_H
λ_{qf}
η_L
ϑ_P
η_ϑ
b_L
ν
γ_L
δ
λ_{fq}
k_L
0.18
0.16
0.14
0.12
0.1
0.08
0.06
Identifiability Index

7.4. Uncertainty analisys



Chapter 8. Extension number8

8.1. Basic information

The extension to be validated consists of the time series from the data231 to the 288. The status of the validation is: COMPLETED.

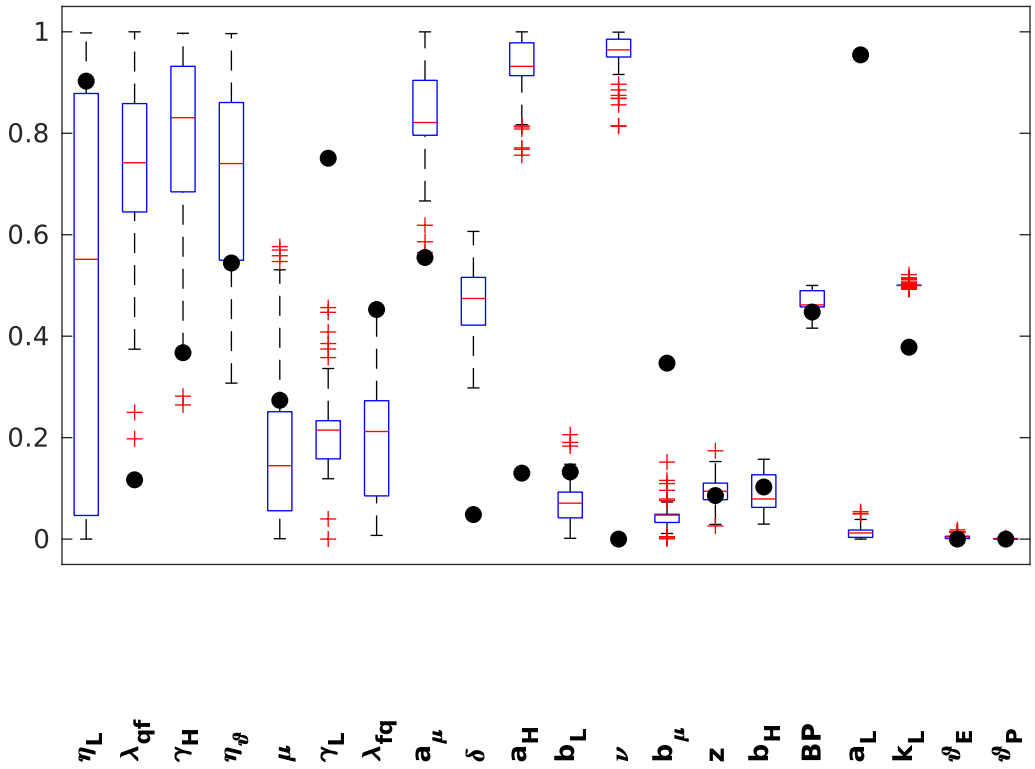
The number of estimations needed to perform the validation was3000.

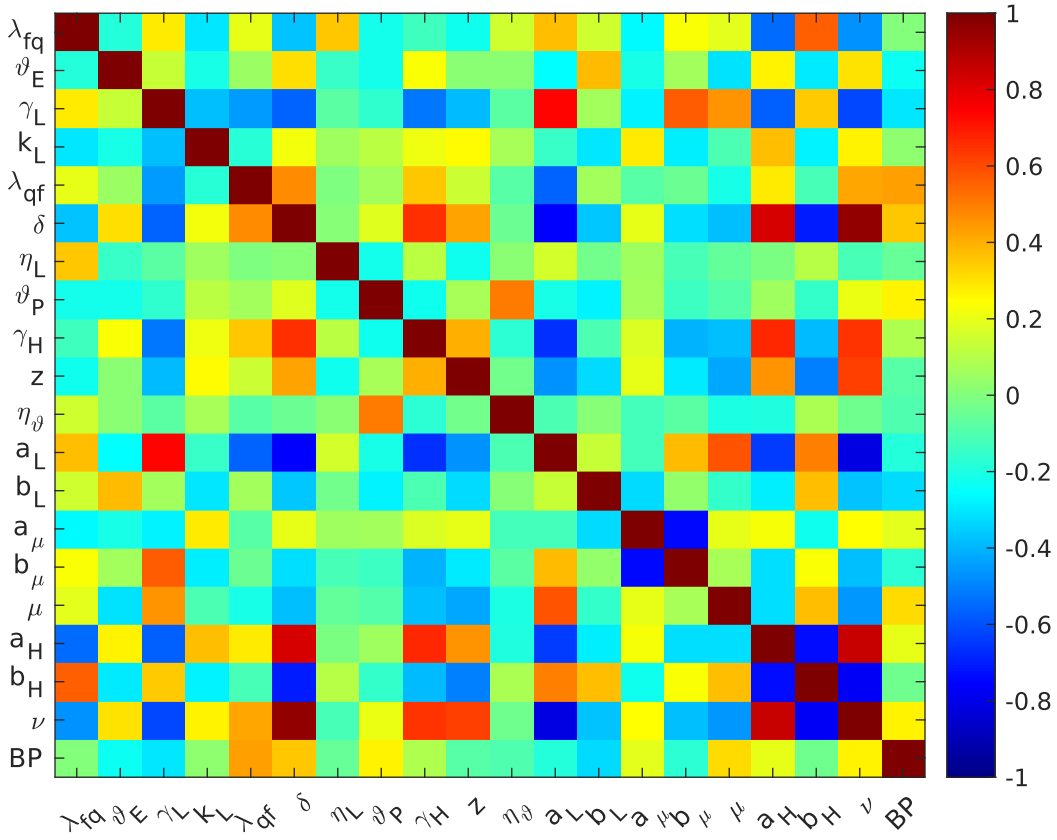
8.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.152'	'0.2763'	'0.2141'	'0.4526'	'0.1772'
\vartheta_E	'0'	'0.0116'	'0.0044'	'0'	'0.079'
\gamma_L	'0.1524'	'0.2781'	'0.2152'	'0.7508'	'0.2497'
k_L	'5.1541'	'5.8466'	'5.5004'	'4.4044'	'0.1144'
\lambda_{qf}	'0.6745'	'0.8068'	'0.7407'	'0.1169'	'0.1561'
\delta	'0.0637'	'0.0785'	'0.0711'	'0.0073'	'0.2505'
\eta_L	'0.4321'	'0.6709'	'0.5515'	'0.9028'	'0.1682'
\vartheta_P	'0.0003'	'0.001'	'0.0007'	'0'	'0.0808'
\gamma_H	'0.7672'	'0.8907'	'0.8289'	'0.3674'	'0.2307'
z	'2.5098'	'3.1514'	'2.8306'	'2.574'	'0.13'
\eta_\vartheta	'0.6861'	'0.7945'	'0.7403'	'0.5443'	'0.1178'
a_L	'1'	'2.1508'	'1.1701'	'14.364'	'0.2507'
b_L	'1.6245'	'2.3631'	'1.9938'	'2.8535'	'0.1025'
a_\mu	'11.5526'	'13.4216'	'12.4871'	'8.7723'	'0.1569'
b_\mu	'1'	'2.6886'	'1.6639'	'5.8556'	'0.171'
\mu	'0.0859'	'0.2055'	'0.1457'	'0.2736'	'0.1629'
a_H	'13.0467'	'15'	'14.033'	'2.8209'	'0.2801'
b_H	'1.2476'	'2.9803'	'2.114'	'2.4385'	'0.2342'
\nu	'431.0899'	'500'	'481.9134'	'0.0119'	'0.2913'
BP	'236.0765'	'237.3956'	'236.736'	'235.5187'	'0.0776'

8.3. Identifiability analisys




λfq
ϑE
γL
kL
λqf
δ
ηL
ϑP
γH
z
ηϑ
aL
bL
aμ
bμ
μ
aH
bH
ν
BP
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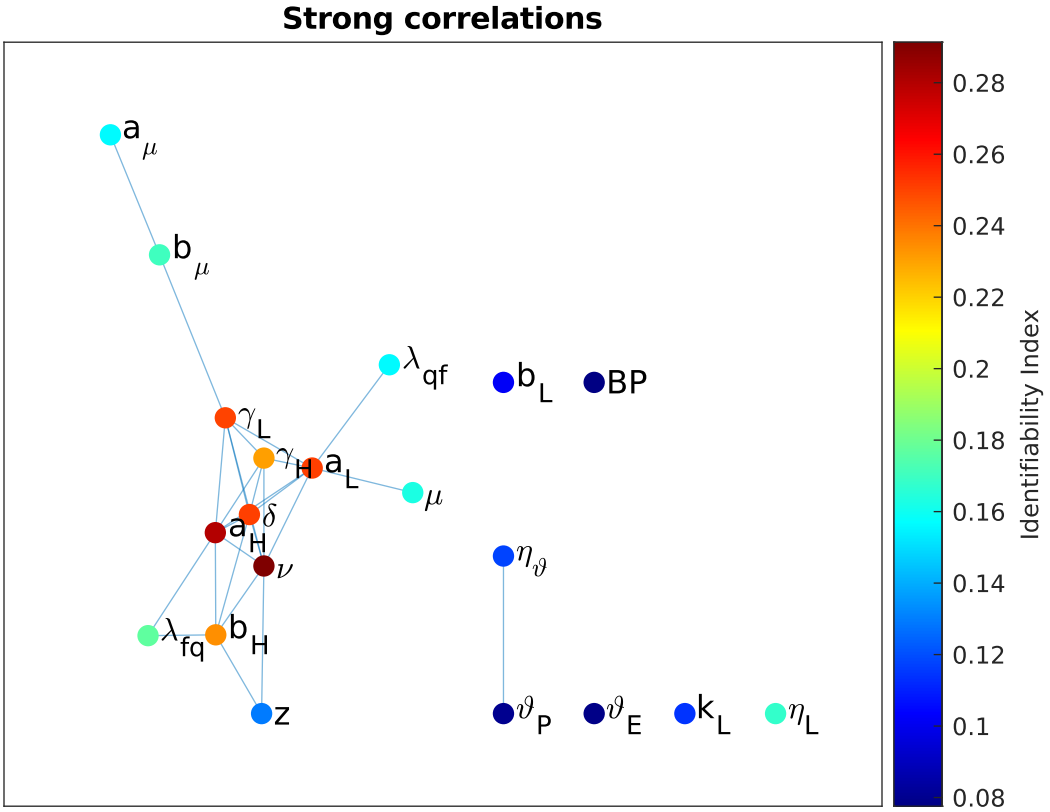
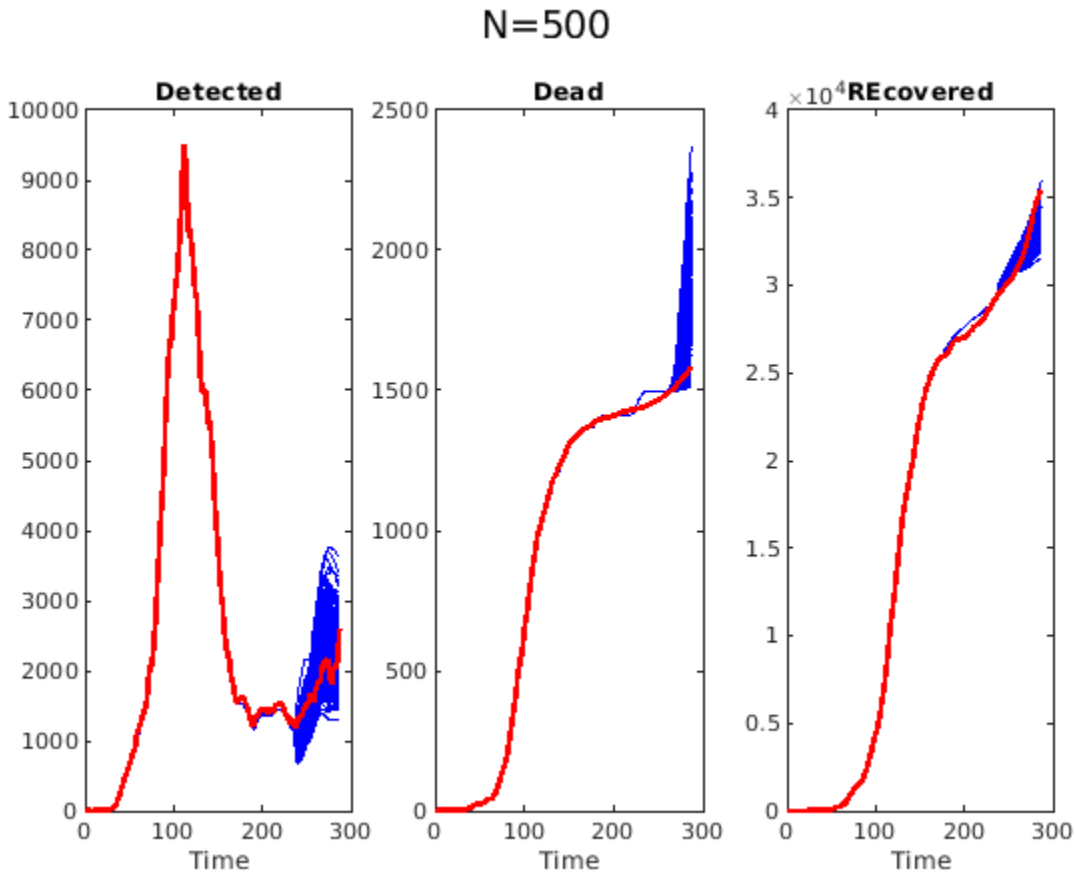
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
a_μ
b_μ
λ_{qf}
b_L
BP
γ_L
γ_H
a_L
μ
a_H
δ
ν
η_ϑ
λ_{fq}
b_H
z
ϑ_P
ϑ_E
k_L
η_L
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
Identifiability Index

8.4. Uncertainty analisys



Chapter 9. Extension number9

9.1. Basic information

The extension to be validated consists of the time series from the data288 to the 308. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

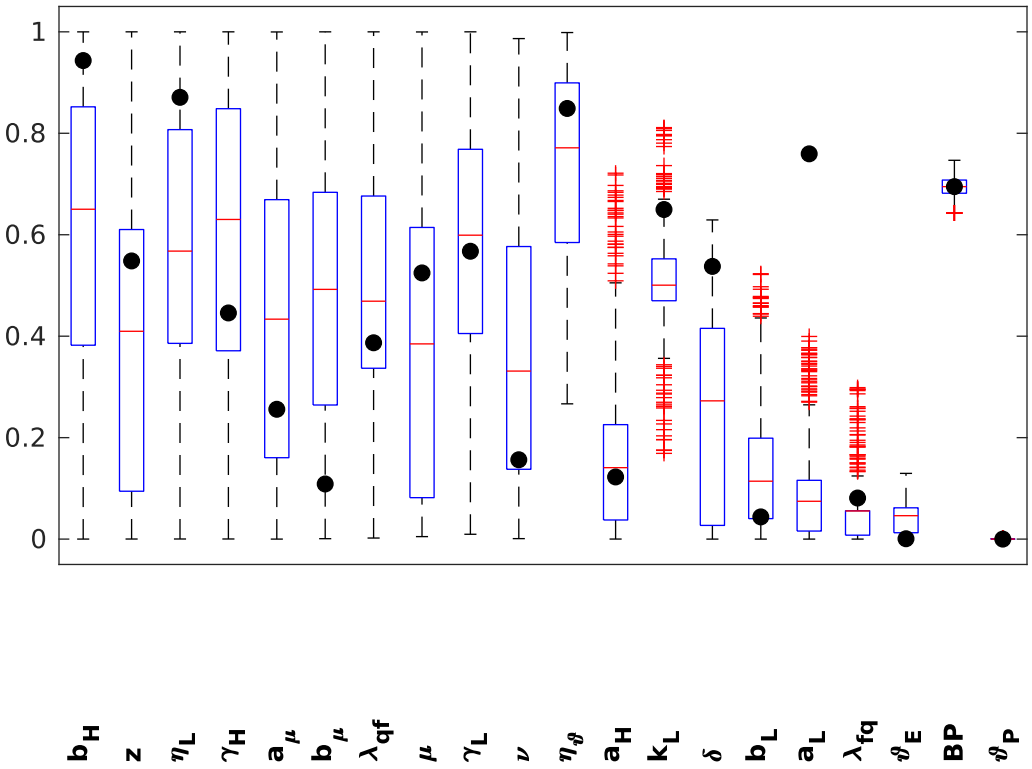
9.2. Estimated parameters with their intervals

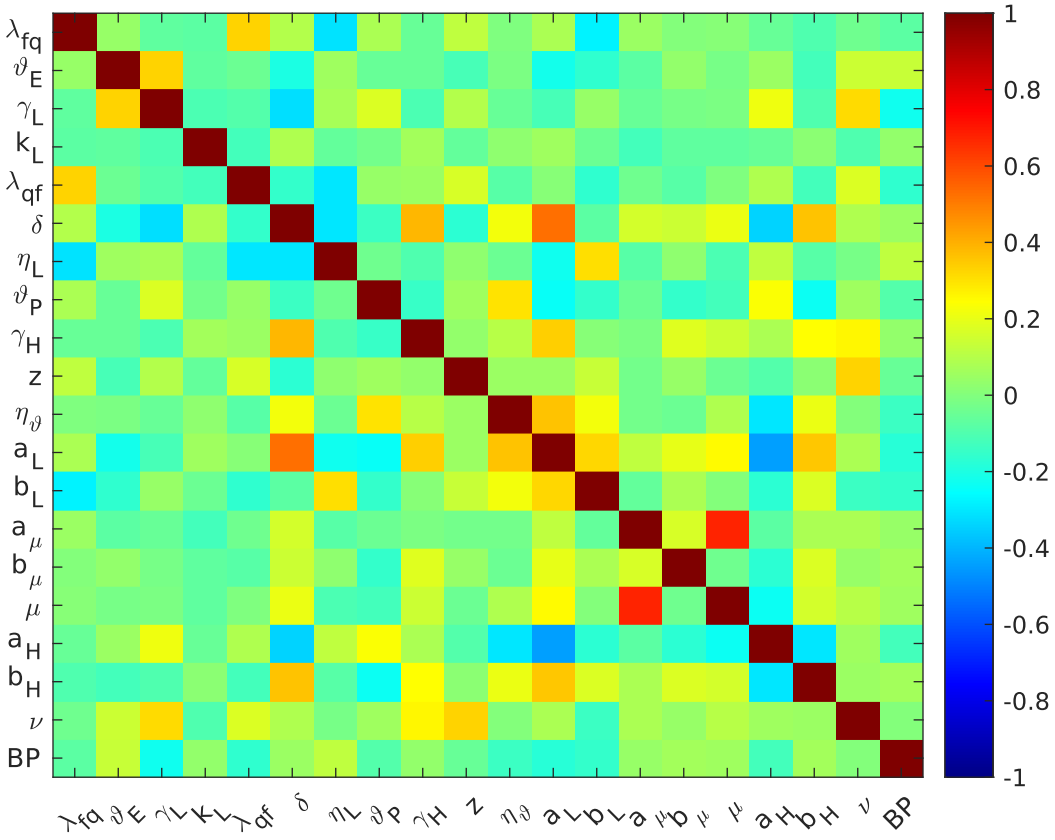
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

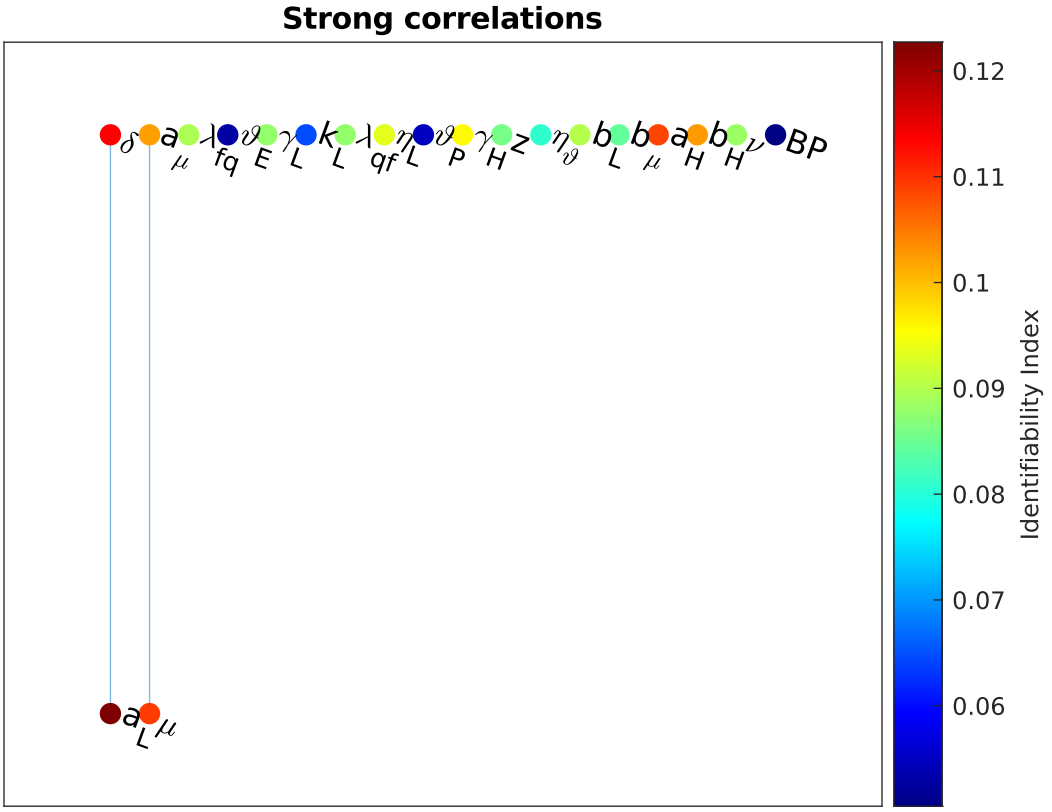
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0687'	'0.1338'	'0.0559'	'0.081'	'0.0895'
\vartheta_E	'0.0001'	'0.0015'	'0.0462'	'0.0007'	'0.053'
\gamma_L	'0.1322'	'0.5709'	'0.5991'	'0.5674'	'0.0878'
k_L	'1.5725'	'10'	'5.5052'	'6.8473'	'0.0648'
\lambda_{qf}	'0.3443'	'0.5334'	'0.469'	'0.387'	'0.0879'
\delta	'0.0519'	'0.0891'	'0.0409'	'0.0806'	'0.1135'
\eta_L	'0.34'	'0.9655'	'0.5677'	'0.8709'	'0.0936'
\vartheta_P	'0'	'0'	'0.0001'	'0'	'0.0548'
\gamma_H	'0.2482'	'0.6045'	'0.6301'	'0.4458'	'0.0958'
z	'7.8129'	'26.2958'	'12.29'	'16.4505'	'0.0859'
\eta_\vartheta	'0.6829'	'0.8921'	'0.7713'	'0.8489'	'0.0807'
a_L	'9.8635'	'15'	'2.0441'	'11.6327'	'0.1227'
b_L	'1'	'2.8137'	'2.6063'	'1.6129'	'0.0901'
a_\mu	'4.4166'	'12.9976'	'7.07'	'4.5829'	'0.1023'
b_\mu	'1'	'9.9631'	'7.892'	'2.5215'	'0.0845'
\mu	'0'	'1'	'0.3848'	'0.5247'	'0.1093'
a_H	'1.0409'	'2.8872'	'2.9761'	'2.7154'	'0.1088'
b_H	'6.0236'	'15'	'10.1037'	'14.207'	'0.1025'
\nu	'69.0786'	'96.0136'	'165.6156'	'78.2087'	'0.0885'
BP	'283.8742'	'290.04'	'284.5'	'284.5'	'0.0505'

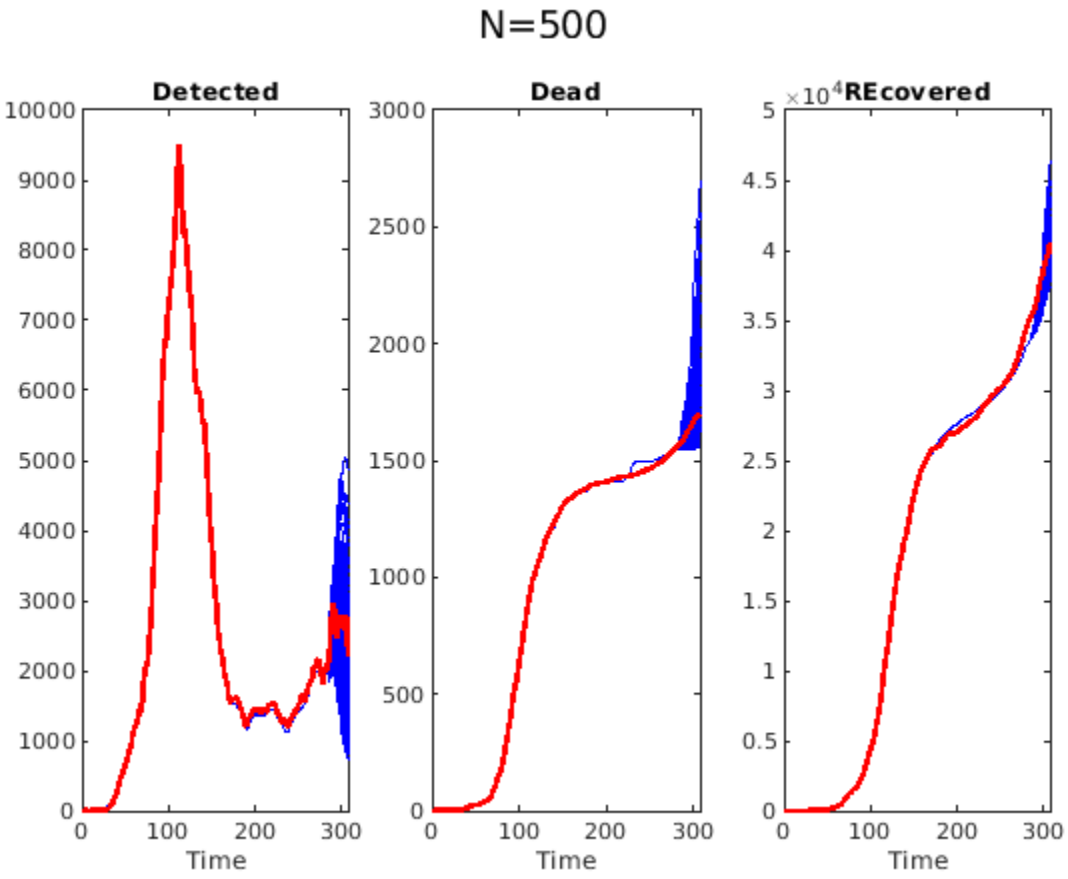
9.3. Identifiability analisys




λfq
ϑE
γL
kL
λqf
δ
ηL
ϑP
γH
z
ηϑ
aL
bL
aμ
bμ
μ
aH
bH
ν
BP
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
Identifiability Index
0.12
0.11
0.1
0.09
0.08
0.07
0.06

9.4. Uncertainty analisys



Chapter 10. Extension number10

10.1. Basic information

The extension to be validated consists of the time series from the data308 to the 327. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

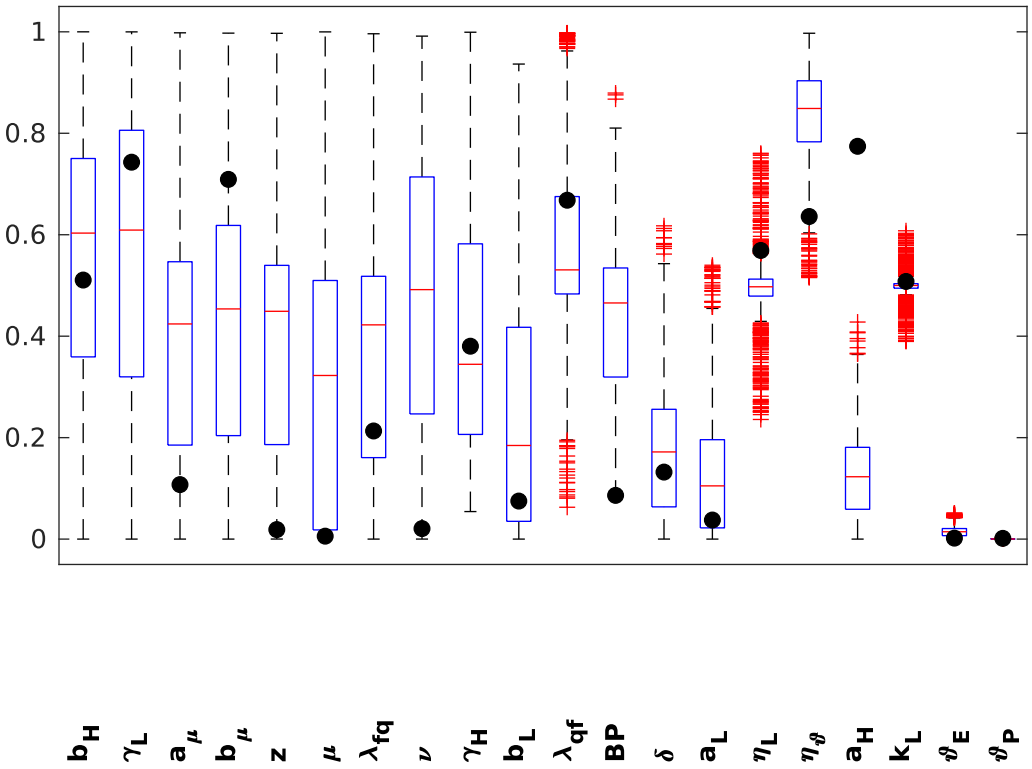
10.2. Estimated parameters with their intervals

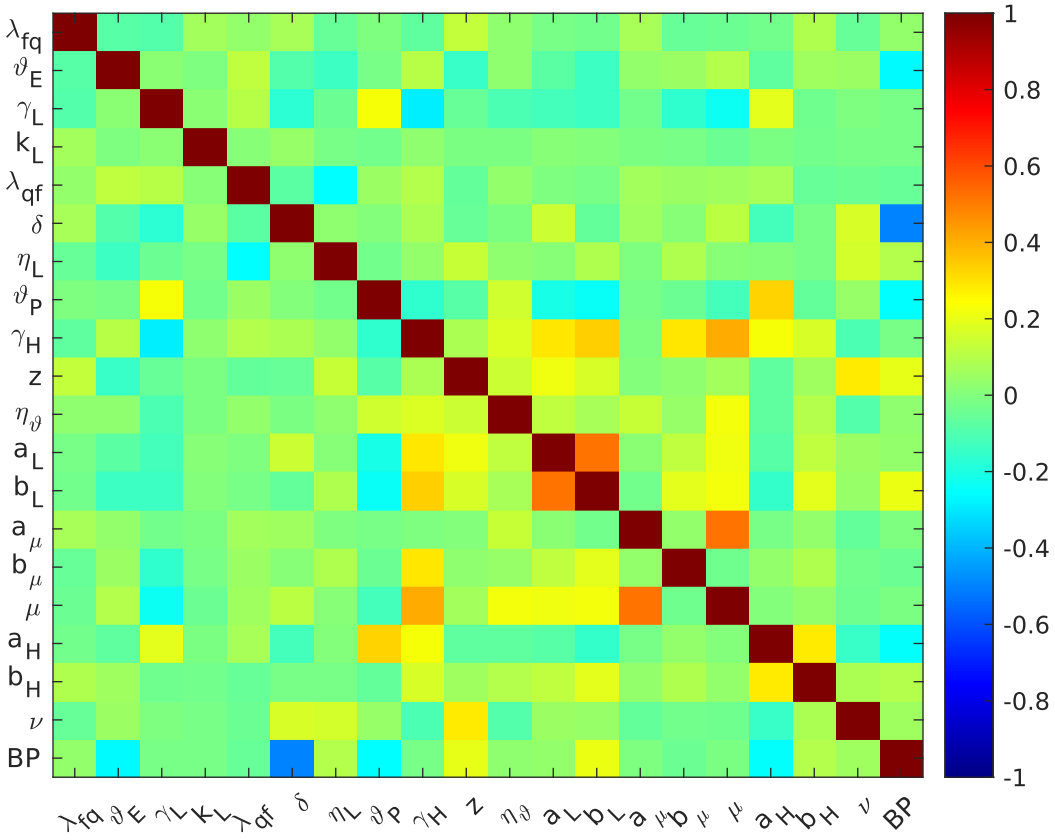
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

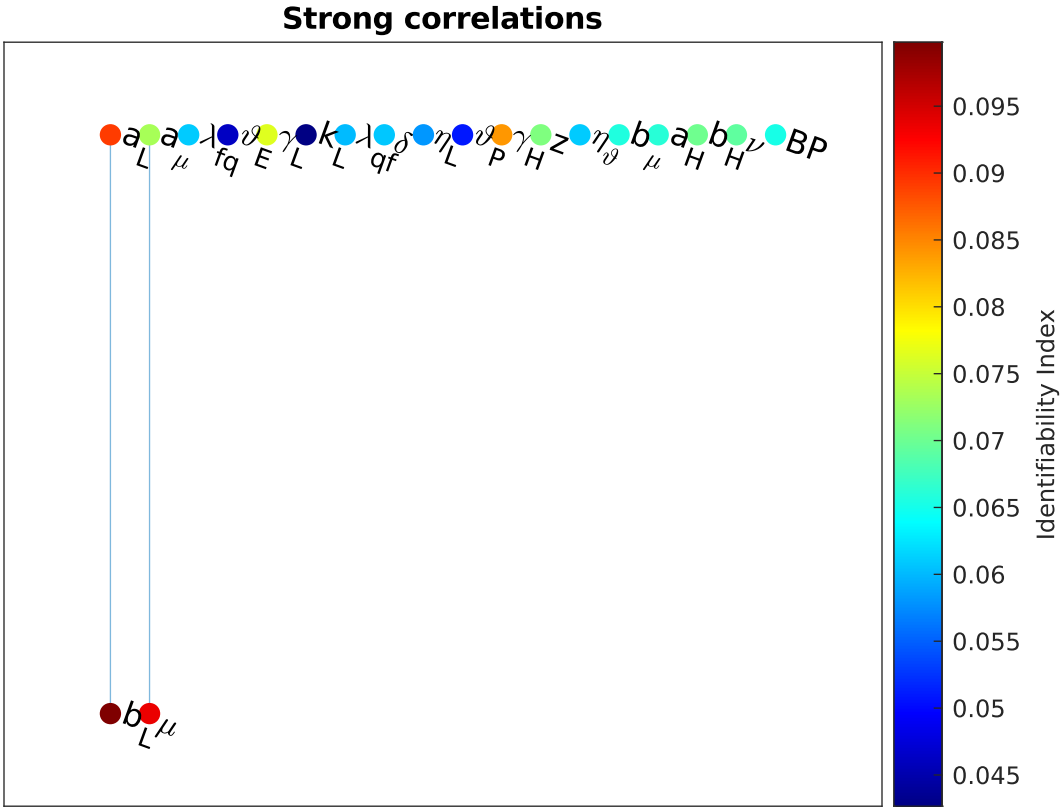
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.1992'	'0.5511'	'0.4223'	'0.2131'	'0.061'
\vartheta_E	'0.0003'	'0.0041'	'0.0145'	'0.0019'	'0.0463'
\gamma_L	'0.5486'	'0.9251'	'0.6092'	'0.743'	'0.0766'
k_L	'1.45'	'8.2651'	'5.4998'	'5.571'	'0.0427'
\lambda_{qf}	'0.4599'	'0.8108'	'0.5307'	'0.668'	'0.0603'
\delta	'0.0179'	'0.0288'	'0.0258'	'0.0198'	'0.0607'
\eta_L	'0.1998'	'0.8089'	'0.4974'	'0.569'	'0.0582'
\vartheta_P	'0.0002'	'0.0026'	'0.0002'	'0.0015'	'0.051'
\gamma_H	'0.2326'	'0.5923'	'0.3446'	'0.3802'	'0.084'
z	'0.3191'	'0.5725'	'13.472'	'0.563'	'0.0712'
\eta_\vartheta	'0.6183'	'0.8971'	'0.8489'	'0.6359'	'0.0611'
a_L	'1.0503'	'1.827'	'2.4689'	'1.5262'	'0.0891'
b_L	'1.2914'	'2.6558'	'3.5838'	'2.0496'	'0.0998'
a_\mu	'1.2053'	'10.864'	'6.9378'	'2.5041'	'0.0734'
b_\mu	'2.4664'	'13.8854'	'7.3524'	'10.9278'	'0.0657'
\mu	'0.0006'	'0.0112'	'0.3225'	'0.0058'	'0.0935'
a_H	'10.3593'	'13.7011'	'2.7208'	'11.8405'	'0.0662'
b_H	'5.8381'	'8.4833'	'9.4451'	'8.1491'	'0.0703'
\nu	'4.9949'	'17.8736'	'245.8924'	'10.3608'	'0.0693'
BP	'290.3037'	'292.2418'	'301.4995'	'290.4994'	'0.0653'

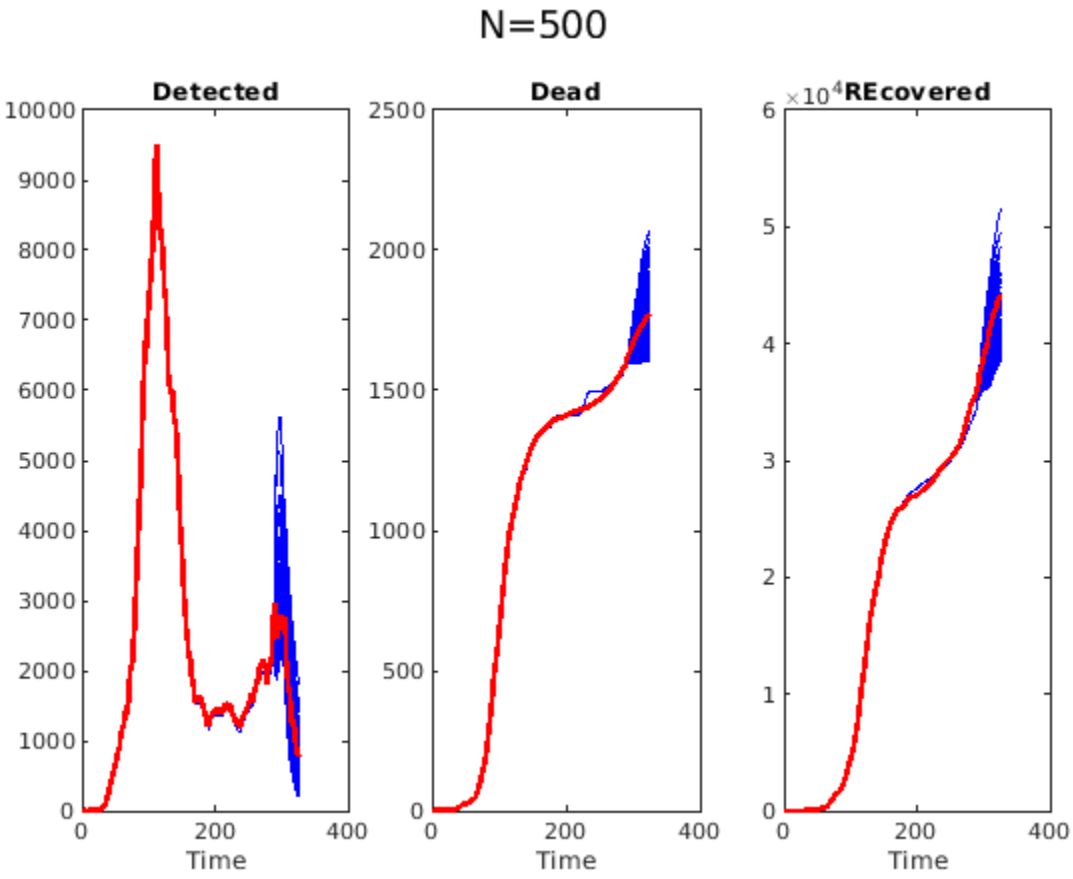
10.3. Identifiability analisys




λ_{fq}
ϑ_E
γ_L
k_L
λ_{qf}
δ
η_L
ϑ_P
γ_H
z
η_ϑ
a_L
b_L
a_μ
b_μ
μ
a_H
b_H
ν
BP
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
Identifiability Index
0.095
0.09
0.085
0.08
0.075
0.07
0.065
0.06
0.055
0.05
0.045

10.4. Uncertainty analisys



Chapter 11. Extension number11

11.1. Basic information

The extension to be validated consists of the time series from the data327 to the 374. The status of the validation is: COMPLETED.

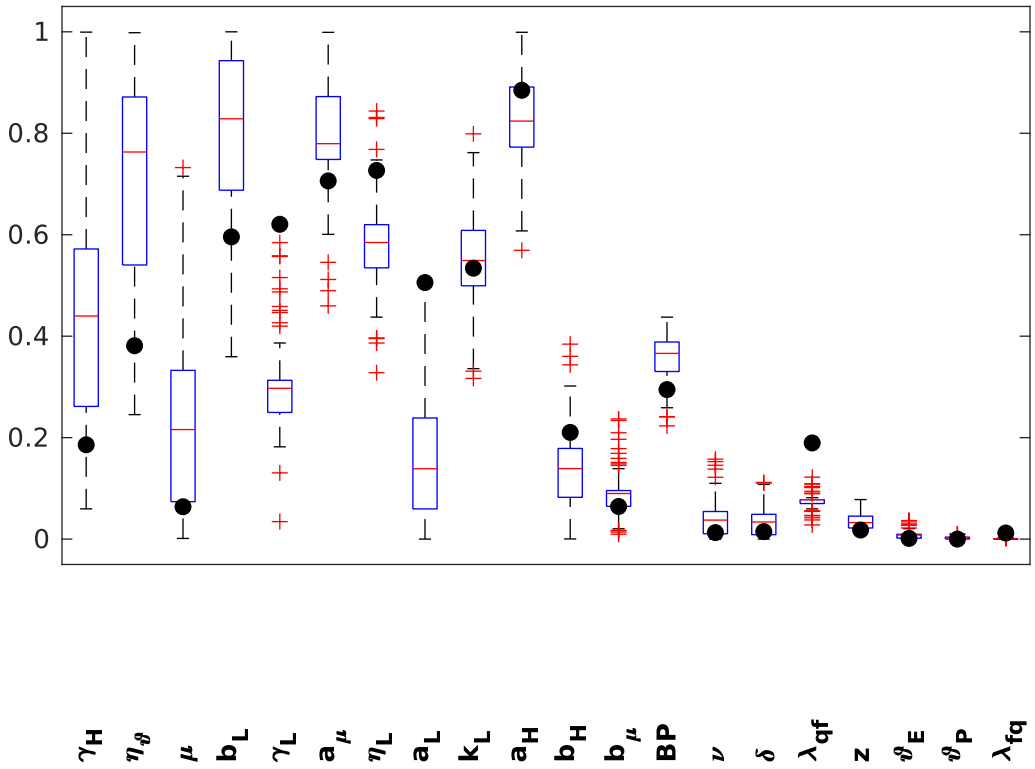
The number of estimations needed to perform the validation was2000.

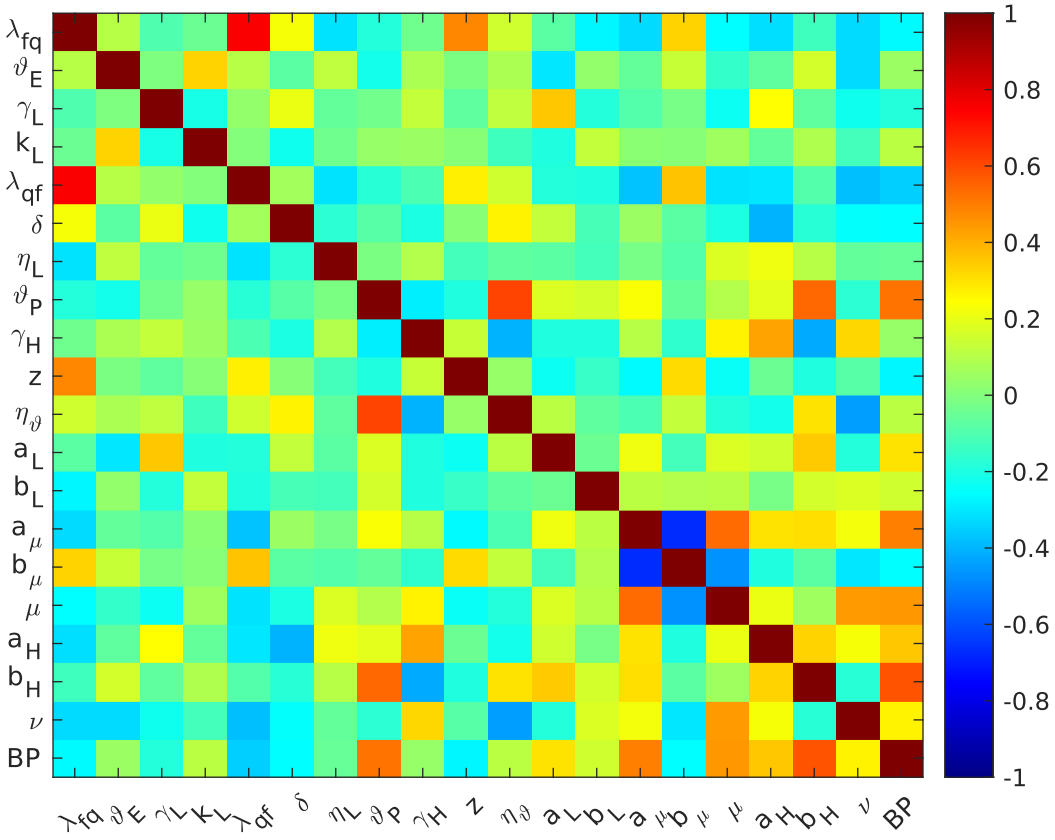
11.2. Estimated parameters with their intervals

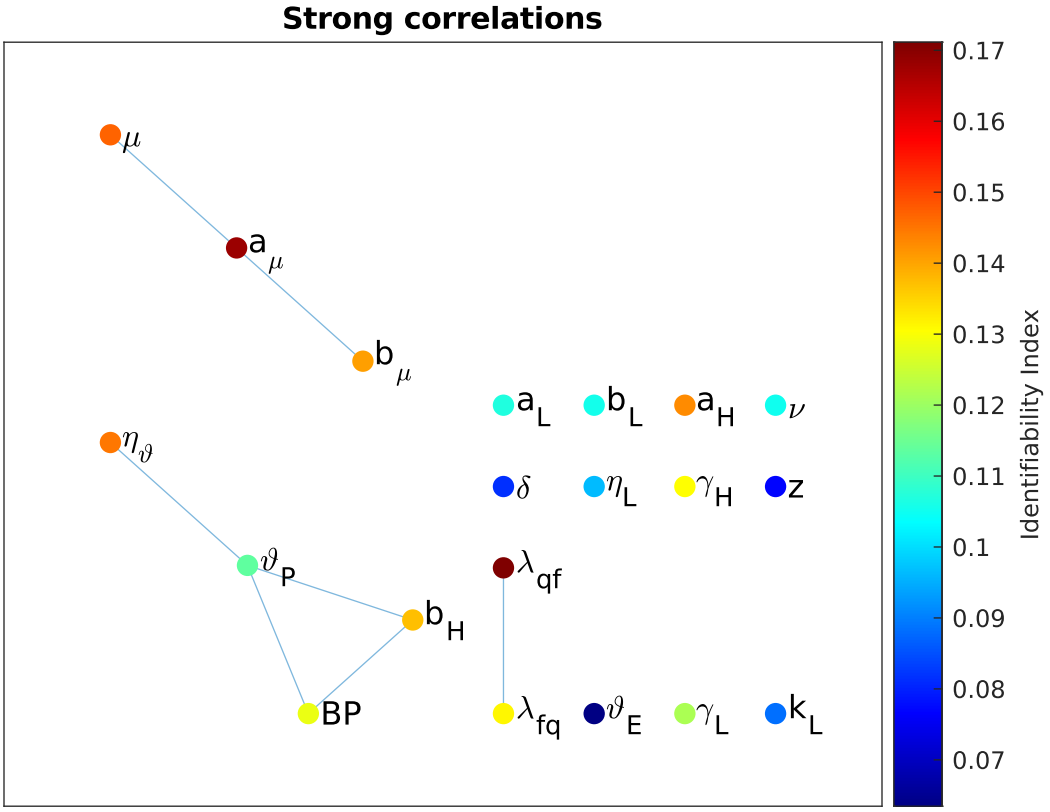
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0.0708'	'0.0006'	'0.012'	'0.1316'
\vartheta_E	'0'	'0.0161'	'0.008'	'0.0014'	'0.0635'
\gamma_L	'0.2322'	'0.3623'	'0.2972'	'0.6206'	'0.1219'
k_L	'5.5831'	'6.3023'	'5.9427'	'5.8057'	'0.0885'
\lambda_{qf}	'0.0009'	'0.1546'	'0.0777'	'0.1896'	'0.1711'
\delta	'0.0025'	'0.0076'	'0.0051'	'0.0022'	'0.0817'
\eta_L	'0.5408'	'0.6285'	'0.5847'	'0.7267'	'0.0965'
\vartheta_P	'0.0001'	'0.0037'	'0.0019'	'0'	'0.1139'
\gamma_H	'0.38'	'0.4994'	'0.4397'	'0.1859'	'0.1304'
z	'0.5936'	'1.36'	'0.9768'	'0.5364'	'0.0769'
\eta_\vartheta	'0.7019'	'0.8243'	'0.7631'	'0.3812'	'0.1449'
a_L	'2.4196'	'3.4632'	'2.9414'	'8.0805'	'0.1069'
b_L	'11.9002'	'13.3002'	'12.6002'	'9.3408'	'0.1058'
a_\mu	'11.0474'	'12.7793'	'11.9133'	'10.8856'	'0.1682'
b_\mu	'1.4917'	'3.0252'	'2.2584'	'1.9'	'0.1407'
\mu	'0.1641'	'0.2677'	'0.2159'	'0.0638'	'0.1468'
a_H	'11.6319'	'13.4404'	'12.5362'	'13.3862'	'0.1429'
b_H	'2.4775'	'3.4151'	'2.9463'	'3.9442'	'0.1372'
\nu	'7.9135'	'29.5319'	'18.7227'	'6.4011'	'0.1052'
BP	'327.6631'	'329.3369'	'328.5'	'324.5026'	'0.1285'

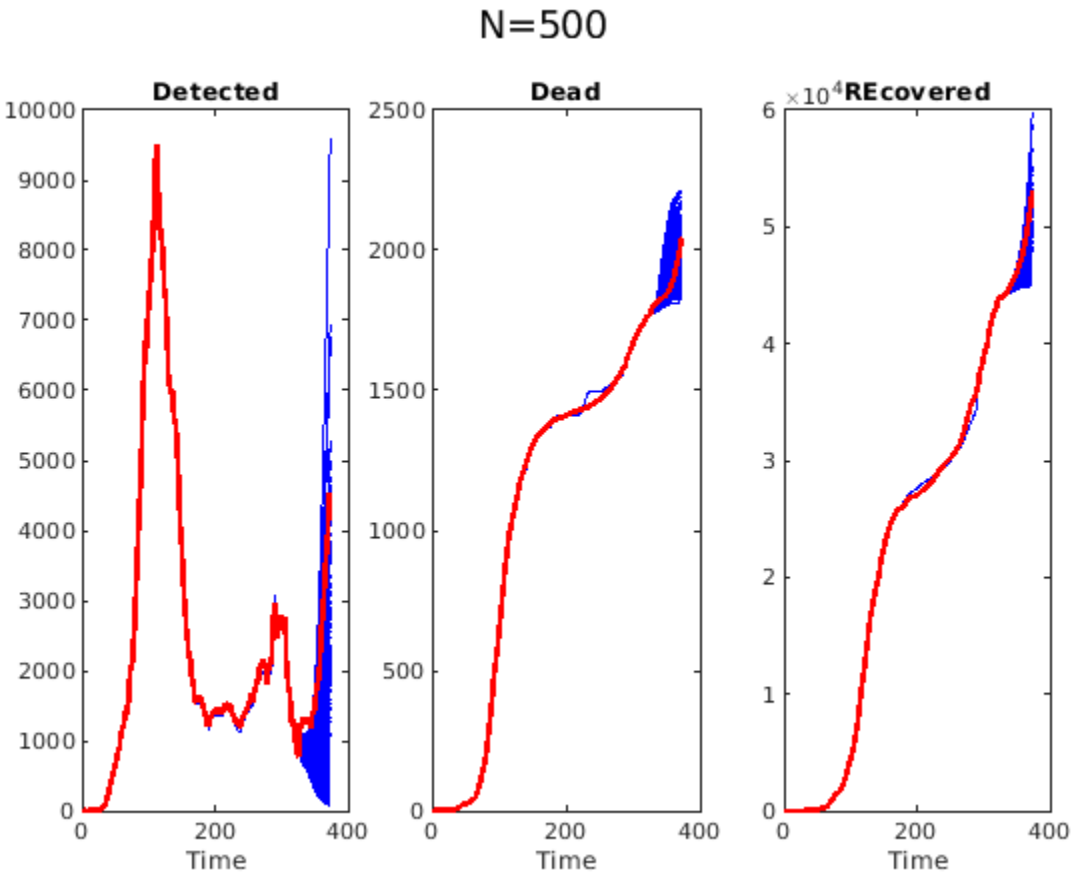
11.3. Identifiability analisys




λ_{fq}
ϑ_E
γ_L
k_L
λ_{qf}
δ
η_L
ϑ_P
γ_H
z
η_ϑ
a_L
b_L
a_μ
b_μ
μ
a_H
b_H
ν
BP
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
μ
a_μ
b_μ
η_ϑ
ϑ_P
b_H
BP
a_L
b_L
a_H
ν
δ
η_L
γ_H
z
λ_{qf}
λ_{fq}
ϑ_E
γ_L
k_L
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
Identifiability Index

11.4. Uncertainty analisys



Chapter 12. Extension number12

12.1. Basic information

The extension to be validated consists of the time series from the data374 to the 395. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

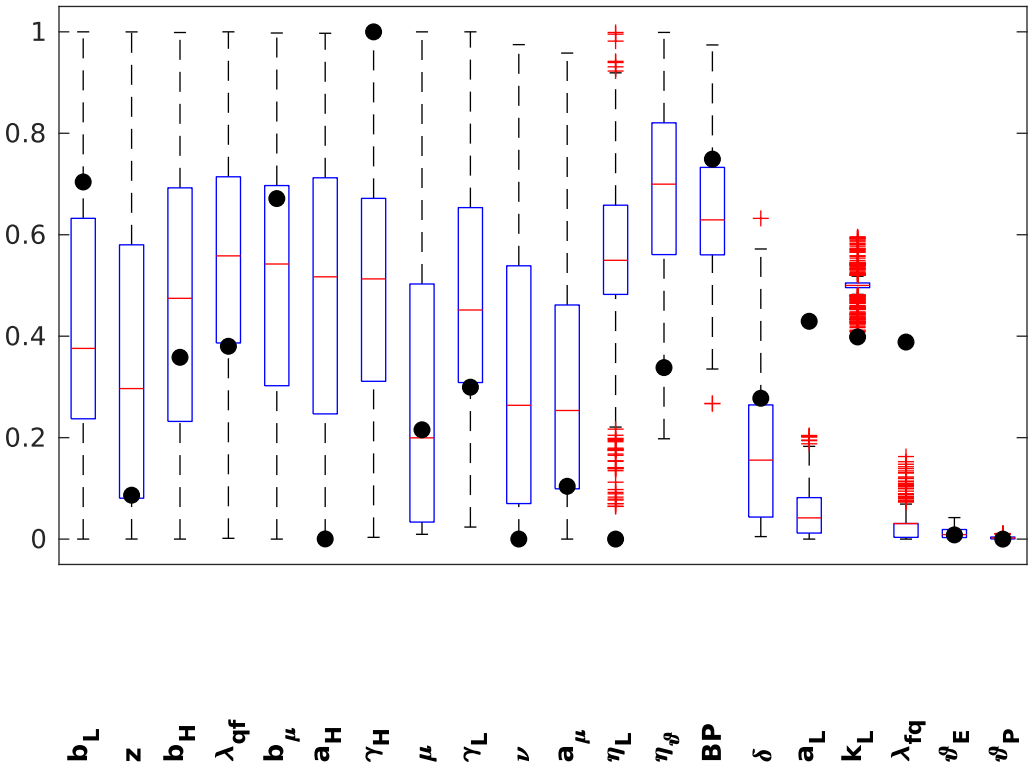
12.2. Estimated parameters with their intervals

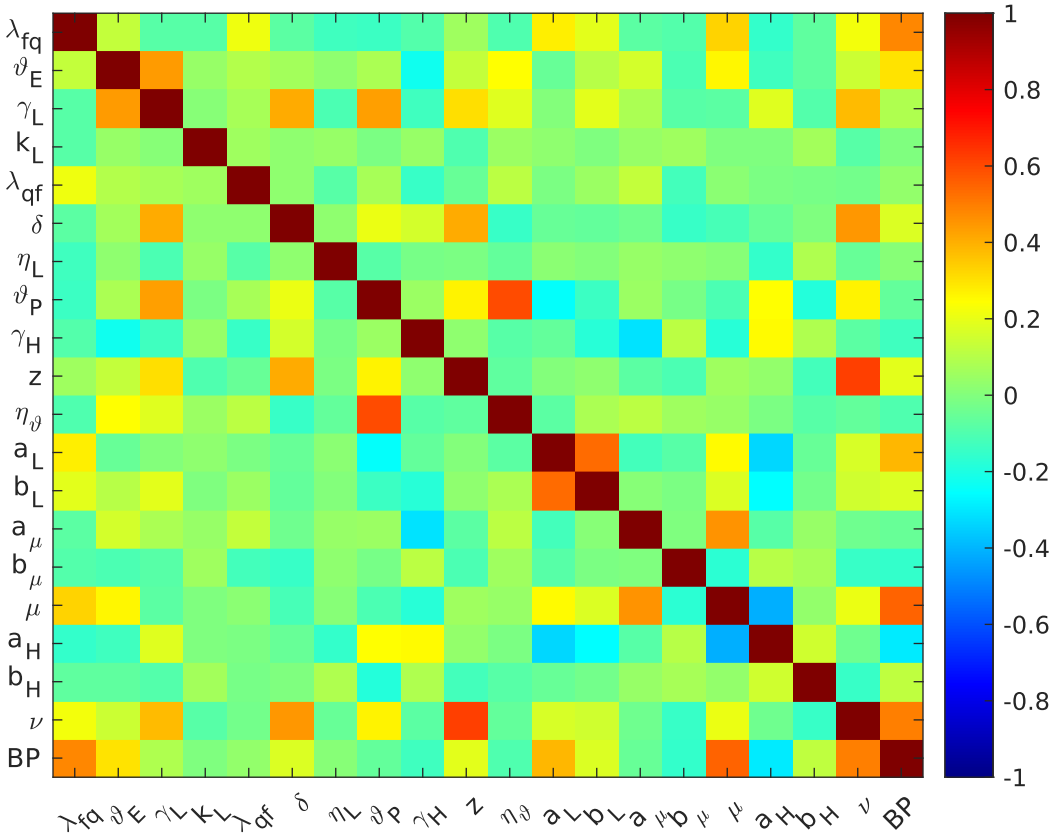
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

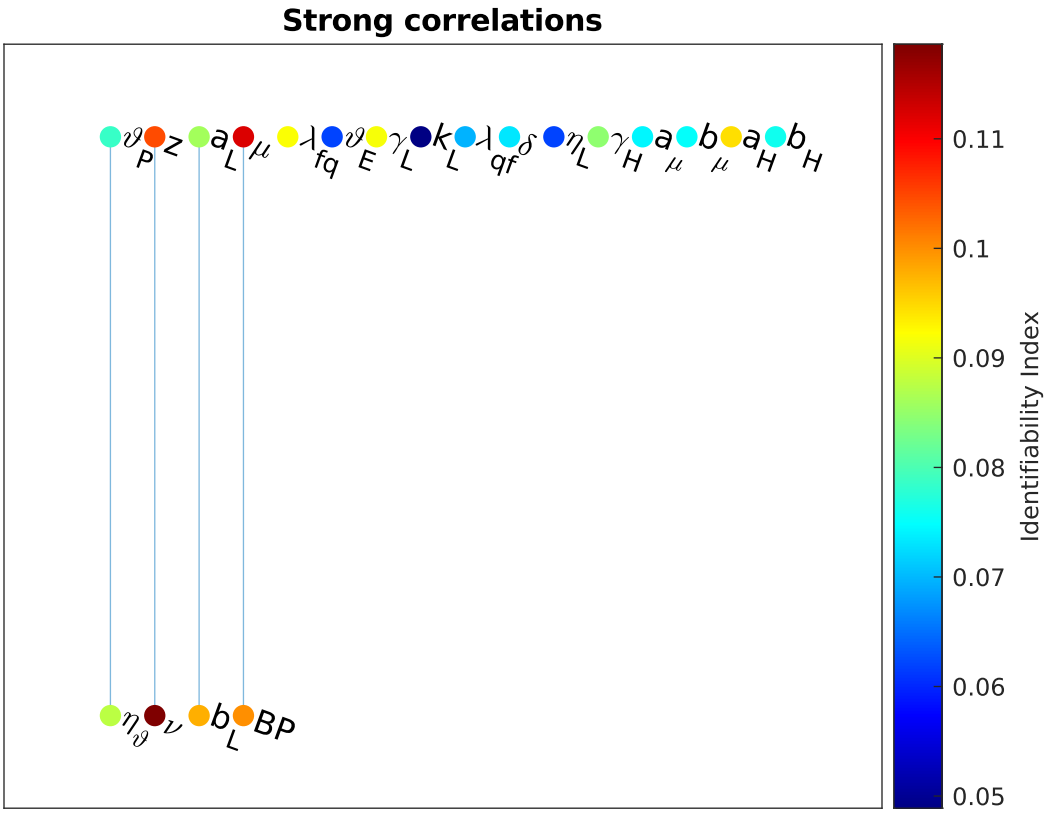
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.2846'	'1'	'0.0307'	'0.3884'	'0.0921'
\vartheta_E	'0.0038'	'0.0186'	'0.0089'	'0.0083'	'0.0621'
\gamma_L	'0.2769'	'0.3899'	'0.4516'	'0.2994'	'0.0918'
k_L	'1.225'	'9.2278'	'5.5008'	'4.5863'	'0.0489'
\lambda_{qf}	'0.1644'	'0.8167'	'0.5583'	'0.3801'	'0.0697'
\delta	'0.0355'	'0.0752'	'0.0234'	'0.0416'	'0.0733'
\eta_L	'0'	'0.0001'	'0.5495'	'0'	'0.0622'
\vartheta_P	'0'	'0'	'0.0021'	'0'	'0.0788'
\gamma_H	'0.549'	'1'	'0.5129'	'0.9999'	'0.0848'
z	'1.3506'	'2.7444'	'8.902'	'2.5973'	'0.1047'
\eta_\vartheta	'0.3175'	'0.3538'	'0.6997'	'0.3381'	'0.0877'
a_L	'4.0041'	'7.0961'	'1.5902'	'7.0115'	'0.086'
b_L	'9.8242'	'13.9112'	'6.2629'	'10.8566'	'0.0978'
a_\mu	'2.4343'	'4.0613'	'4.5494'	'2.4576'	'0.0743'
b_\mu	'1'	'10.7226'	'8.5922'	'10.3979'	'0.0753'
\mu	'0.0242'	'0.4034'	'0.1996'	'0.2155'	'0.1122'
a_H	'1'	'1.9665'	'8.2385'	'1.0044'	'0.0946'
b_H	'4.3307'	'12.7381'	'7.6454'	'6.0171'	'0.076'
\nu	'0.0021'	'0.1021'	'131.8715'	'0.057'	'0.1186'
BP	'370.3527'	'373.3701'	'363.5'	'370.4445'	'0.1001'

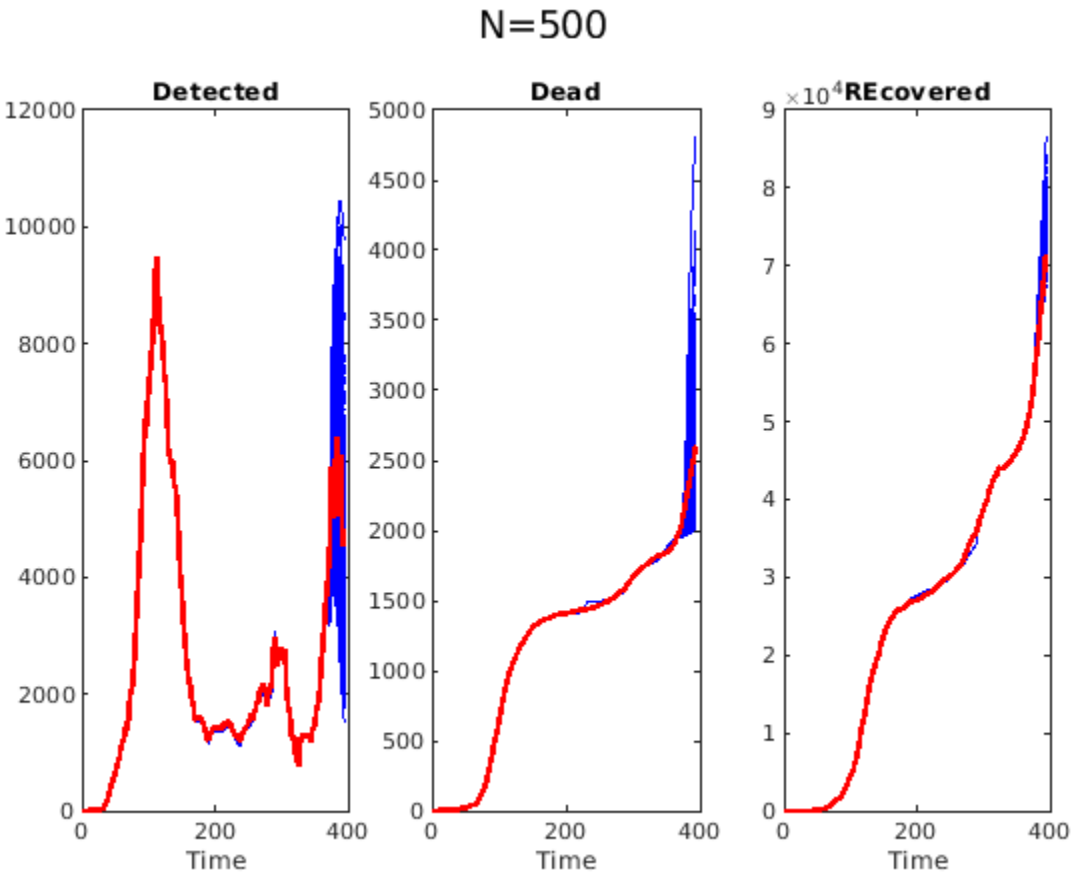
12.3. Identifiability analisys




λfq
ϑE
γL
kL
λqf
δ
ηL
ϑP
γH
z
ηϑ
aL
bL
aμ
bμ
μ
aH
bH
ν
BP
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
Identifiability Index
0.11
0.1
0.09
0.08
0.07
0.06
0.05

12.4. Uncertainty analisys



Chapter 13. Extension number13

13.1. Basic information

The extension to be validated consists of the time series from the data395 to the 425. The status of the validation is: COMPLETED.

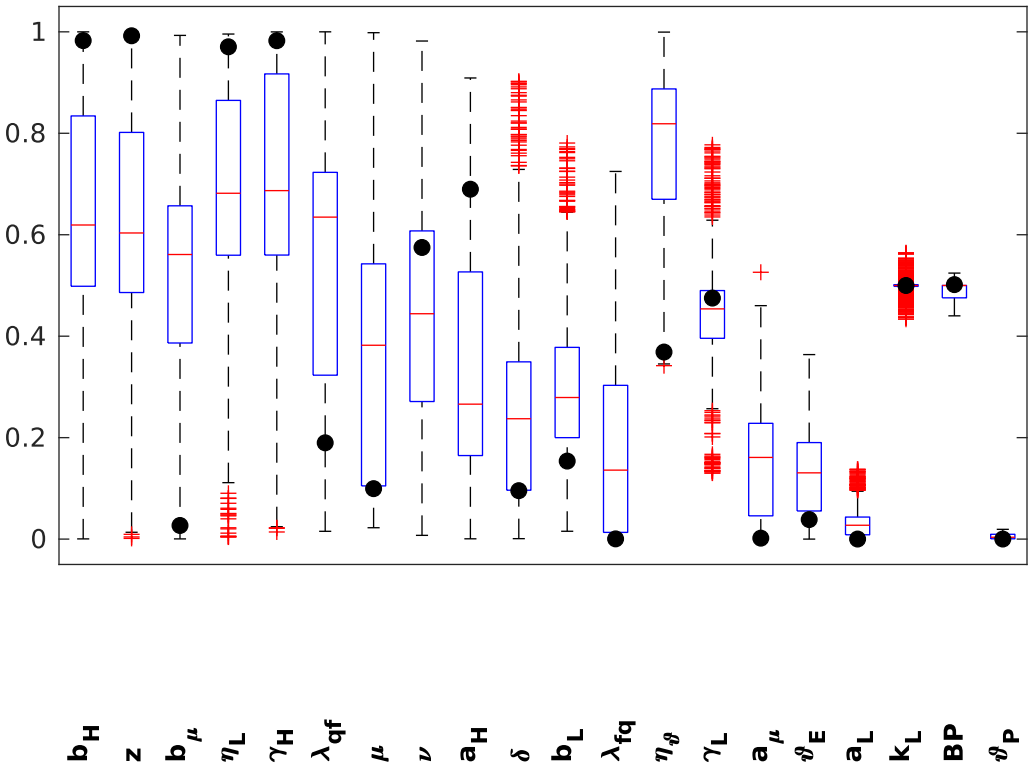
The number of estimations needed to perform the validation was1000.

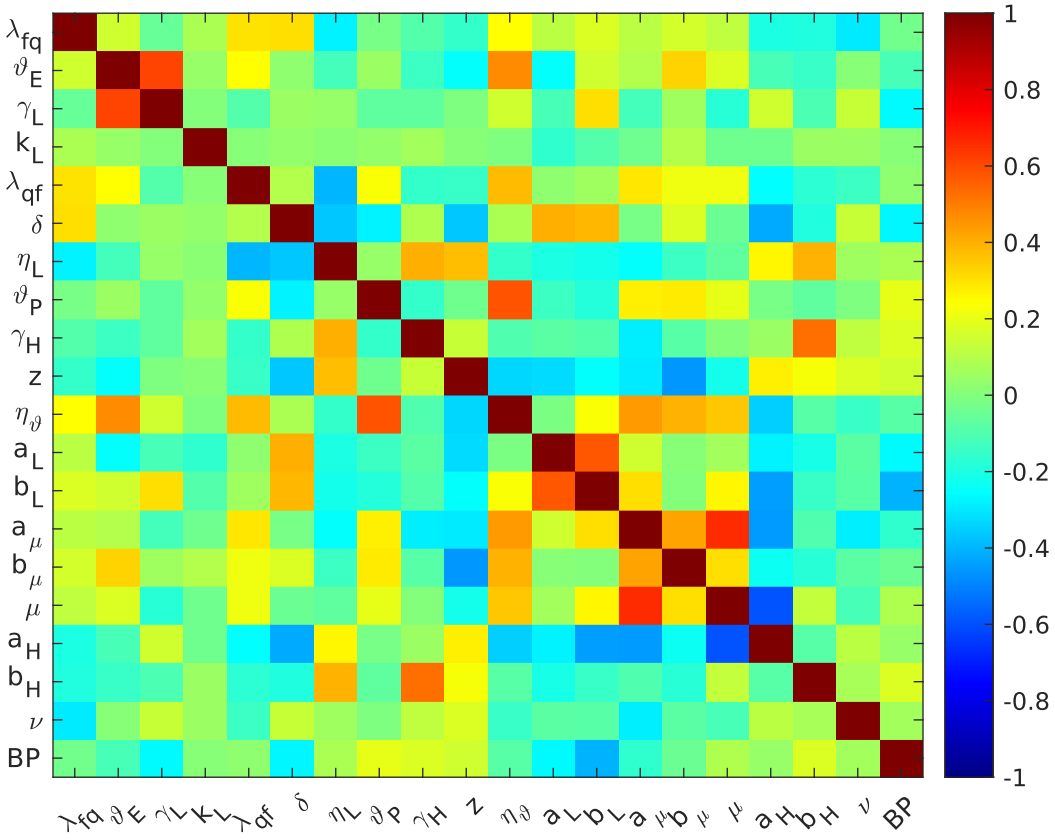
13.2. Estimated parameters with their intervals

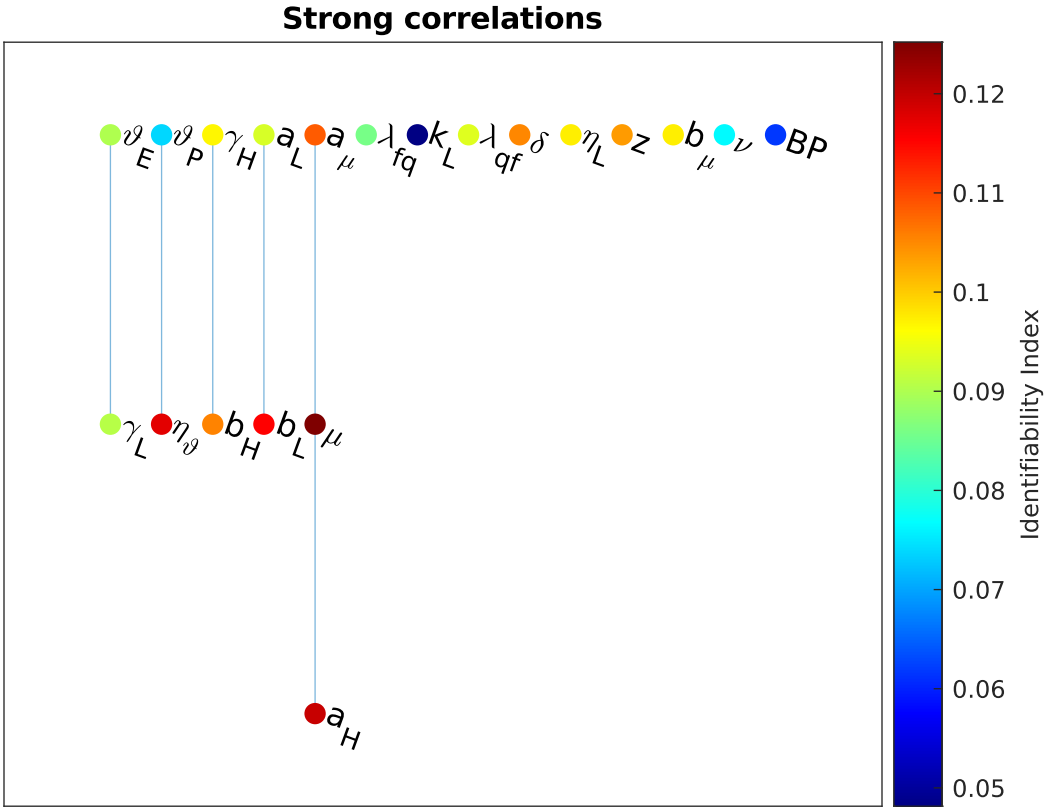
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.1143'	'0.1592'	'0.1367'	'0.0004'	'0.0858'
\vartheta_E	'0.1216'	'0.1396'	'0.1306'	'0.0385'	'0.0902'
\gamma_L	'0.4327'	'0.475'	'0.4538'	'0.4751'	'0.0908'
k_L	'5.389'	'5.6101'	'5.4995'	'5.4992'	'0.0482'
\lambda_{qf}	'0.6089'	'0.6605'	'0.6347'	'0.1898'	'0.0938'
\delta	'0.0306'	'0.0407'	'0.0356'	'0.0143'	'0.1053'
\eta_L	'0.6571'	'0.7059'	'0.6815'	'0.9705'	'0.0975'
\vartheta_P	'0.0031'	'0.0043'	'0.0037'	'0.0001'	'0.074'
\gamma_H	'0.6619'	'0.7106'	'0.6862'	'0.9825'	'0.0968'
z	'17.305'	'18.9037'	'18.1043'	'29.7664'	'0.1038'
\eta_\vartheta	'0.7964'	'0.8411'	'0.8187'	'0.3687'	'0.1174'
a_L	'1.2041'	'1.5606'	'1.3823'	'1.0015'	'0.0931'
b_L	'4.5799'	'5.237'	'4.9085'	'3.1531'	'0.1155'
a_\mu	'3.0934'	'3.4142'	'3.2538'	'1.0263'	'0.1084'
b_\mu	'8.4837'	'9.2253'	'8.8545'	'1.3761'	'0.0974'
\mu	'0.3548'	'0.4095'	'0.3821'	'0.0995'	'0.1252'
a_H	'4.3394'	'5.1127'	'4.726'	'10.6564'	'0.1197'
b_H	'9.2793'	'10.0583'	'9.6688'	'14.7579'	'0.1055'
\nu	'209.8737'	'234.3977'	'222.1357'	'287.4499'	'0.0765'
BP	'394.3472'	'394.6528'	'394.5'	'394.5684'	'0.0619'

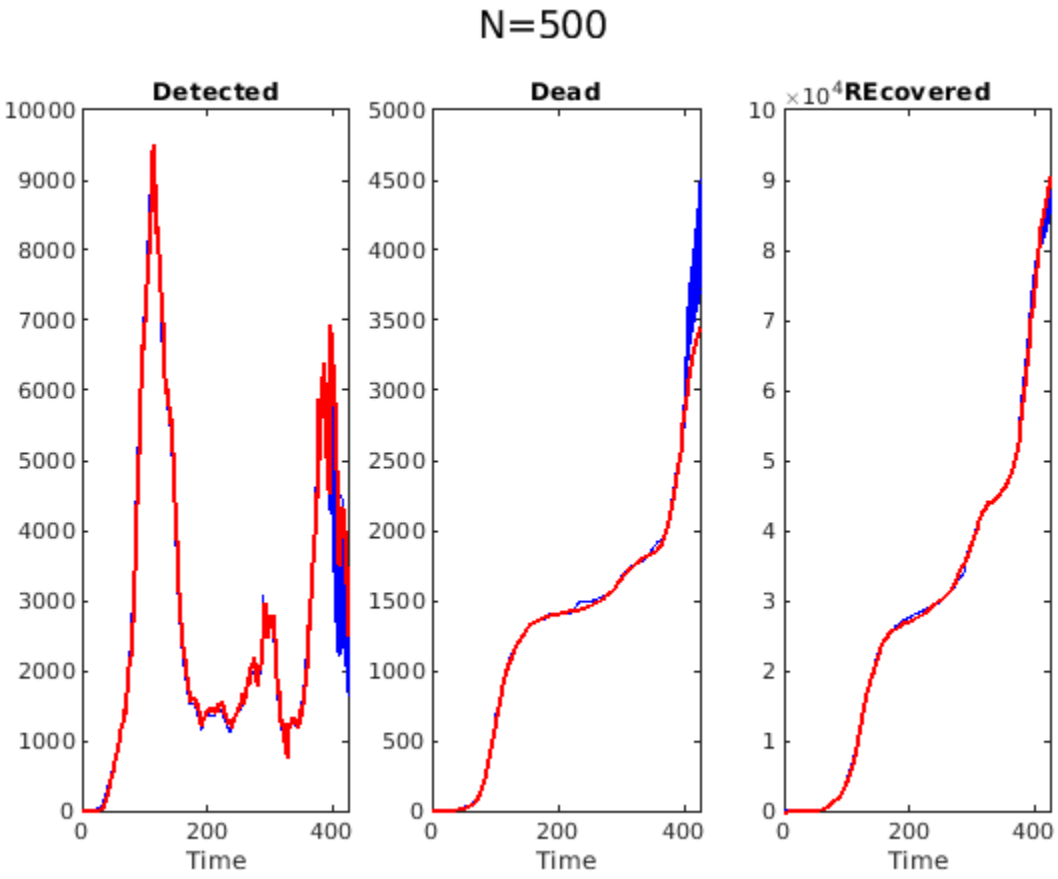
13.3. Identifiability analisys




λ_{fq}
ϑ_E
γ_L
k_L
λ_{qf}
δ
η_L
ϑ_P
γ_H
z
η_ϑ
a_L
b_L
a_μ
b_μ
μ
a_H
b_H
ν
BP
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
ϑ_E ϑ_P γ_H a_L a_μ λ_{fq} k_L λ_{qf} δ η_L z b_μ ν BP
γ_L η_ϑ b_H b_L μ
a_H
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
Identifiability Index

13.4. Uncertainty analisys



Chapter 14. Extension number14

14.1. Basic information

The extension to be validated consists of the time series from the data425 to the 445. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

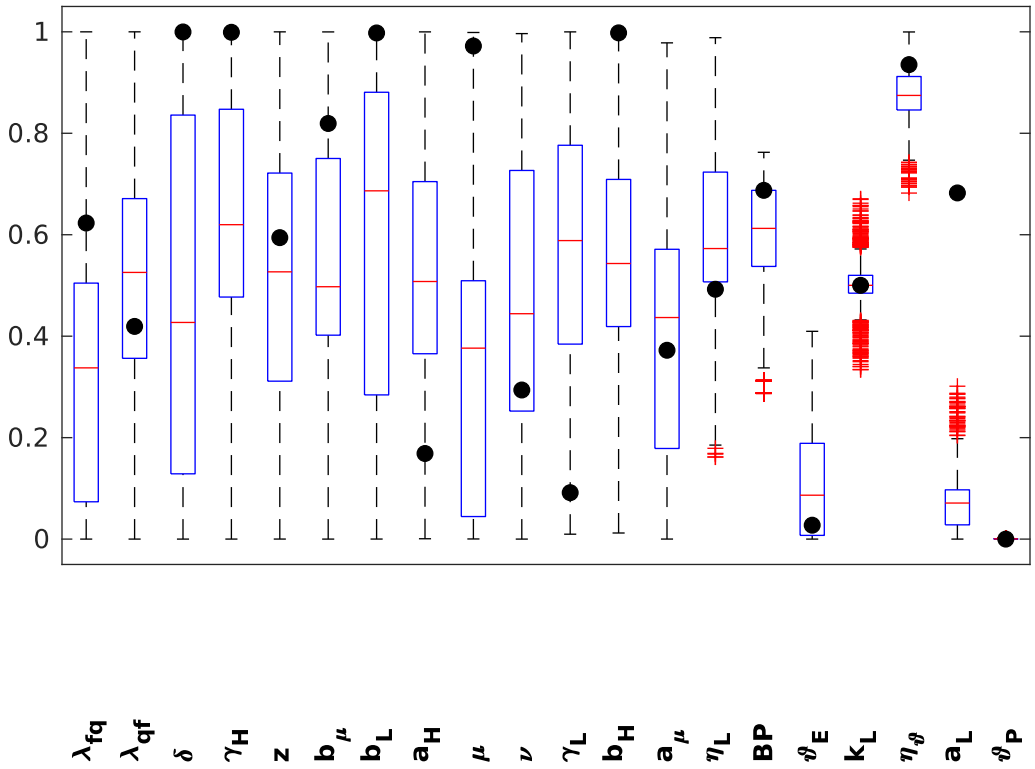
14.2. Estimated parameters with their intervals

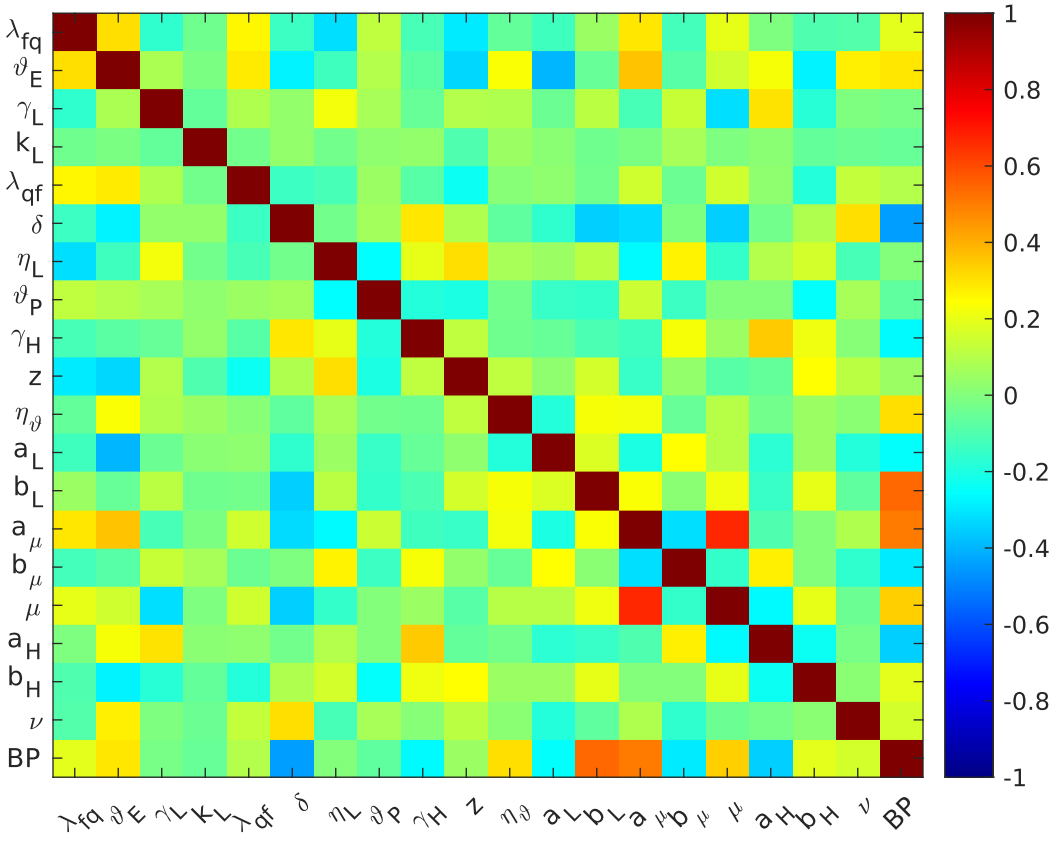
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0276'	'1'	'0.3375'	'0.6231'	'0.0852'
\vartheta_E	'0.0161'	'0.0519'	'0.0865'	'0.0274'	'0.0824'
\gamma_L	'0.009'	'0.1978'	'0.5885'	'0.0915'	'0.0758'
k_L	'1.4005'	'10'	'5.5023'	'5.5022'	'0.0455'
\lambda_{qf}	'0'	'0.9434'	'0.5257'	'0.4193'	'0.075'
\delta	'0.0644'	'0.15'	'0.0641'	'0.15'	'0.0982'
\eta_L	'0'	'1'	'0.5728'	'0.4925'	'0.08'
\vartheta_P	'0'	'0'	'0.0004'	'0'	'0.0512'
\gamma_H	'0.2895'	'1'	'0.6198'	'0.9991'	'0.0814'
z	'0'	'28.5'	'15.8053'	'17.8278'	'0.0861'
\eta_\vartheta	'0.5295'	'1'	'0.8746'	'0.9353'	'0.0634'
a_L	'5.0565'	'14.5722'	'1.995'	'10.5535'	'0.0744'
b_L	'1.9574'	'15'	'10.6115'	'14.9687'	'0.1048'
a_\mu	'5.0377'	'14.4898'	'7.1147'	'6.2114'	'0.1261'
b_\mu	'1'	'15'	'7.965'	'12.4703'	'0.0806'
\mu	'0'	'1'	'0.3764'	'0.972'	'0.1072'
a_H	'1.8605'	'5.6844'	'8.1091'	'3.3626'	'0.0818'
b_H	'5.2494'	'15'	'8.6058'	'14.9715'	'0.0786'
\nu	'146.8015'	'432.0057'	'222.1481'	'146.9554'	'0.0749'
BP	'415.8373'	'423.175'	'419.5'	'422.4998'	'0.1175'

14.3. Identifiability analisys




λfq
ϑE
γL
kL
λqf
δ
ηL
ϑP
γH
z
ηϑ
aL
bL
aμ
bμ
μ
aH
bH
ν
BP
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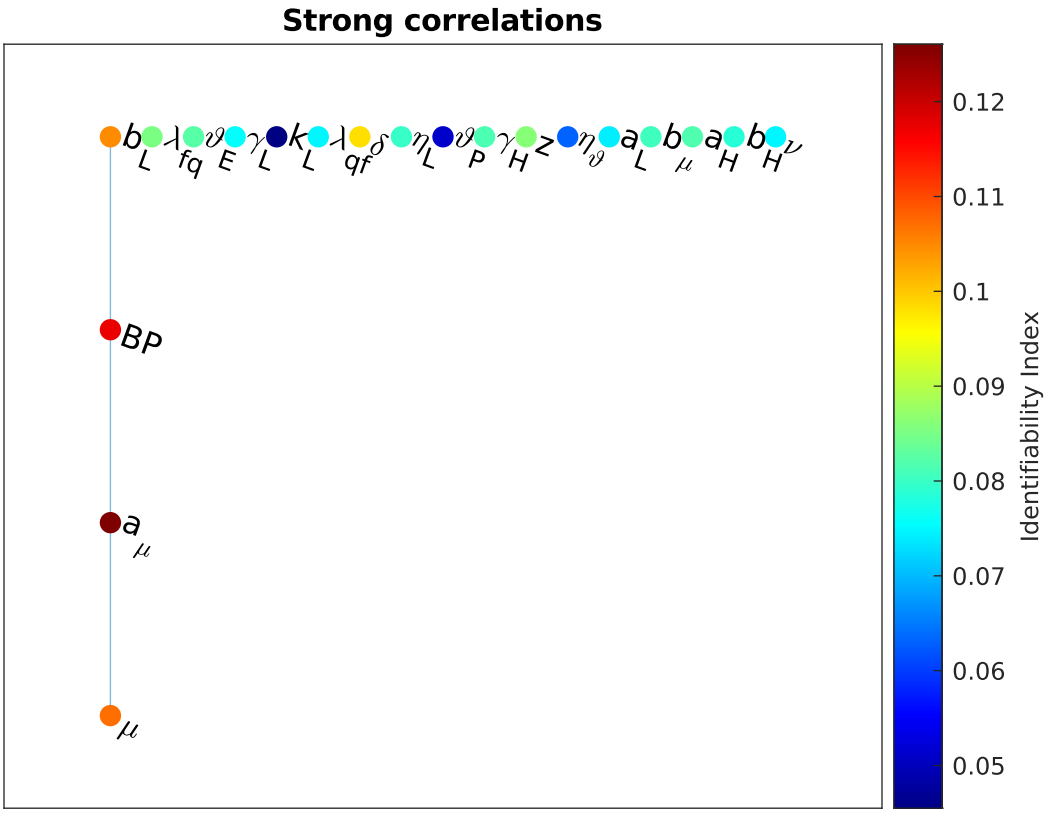
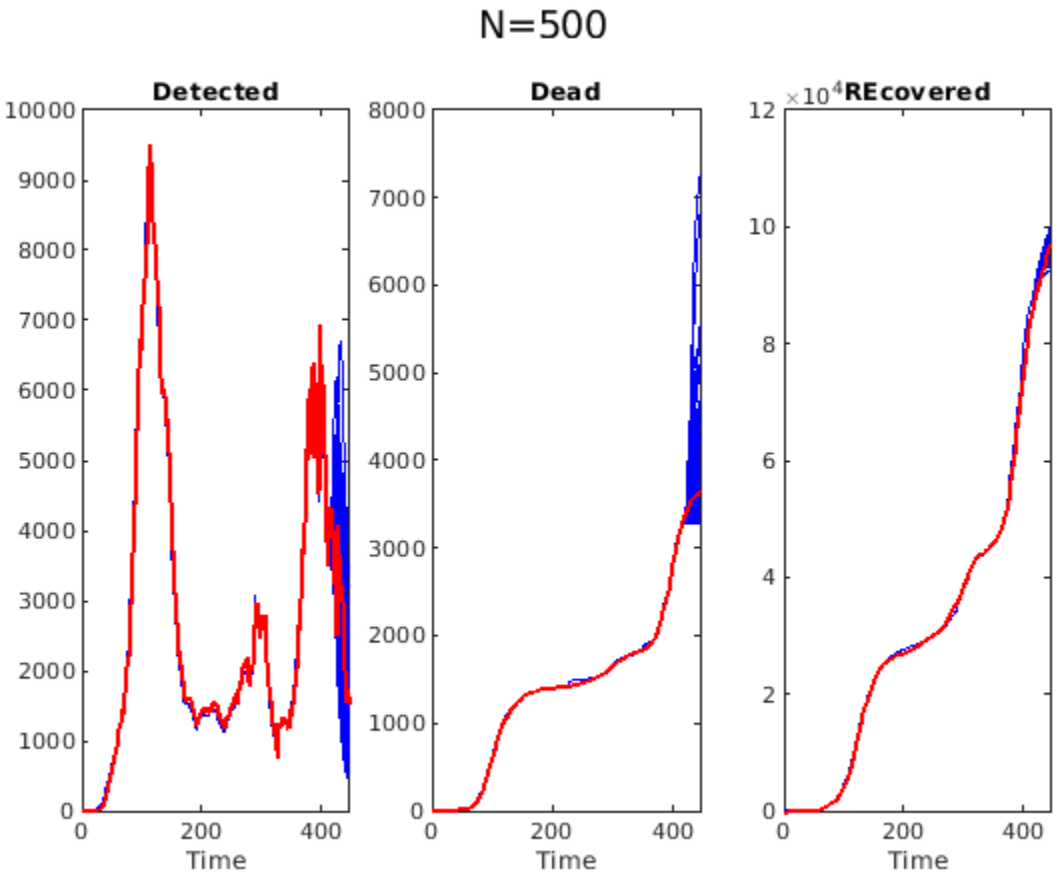
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
b_L λ_{fq} ϑ_E γ_L k_L λ_{qf} δ η_L ϑ_P γ_H z η_ϑ a_L b_μ a_H b_H ν
BP
a_μ
μ
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
Identifiability Index

14.4. Uncertainty analisys



Chapter 15. Extension number15

15.1. Basic information

The extension to be validated consists of the time series from the data445 to the 446. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

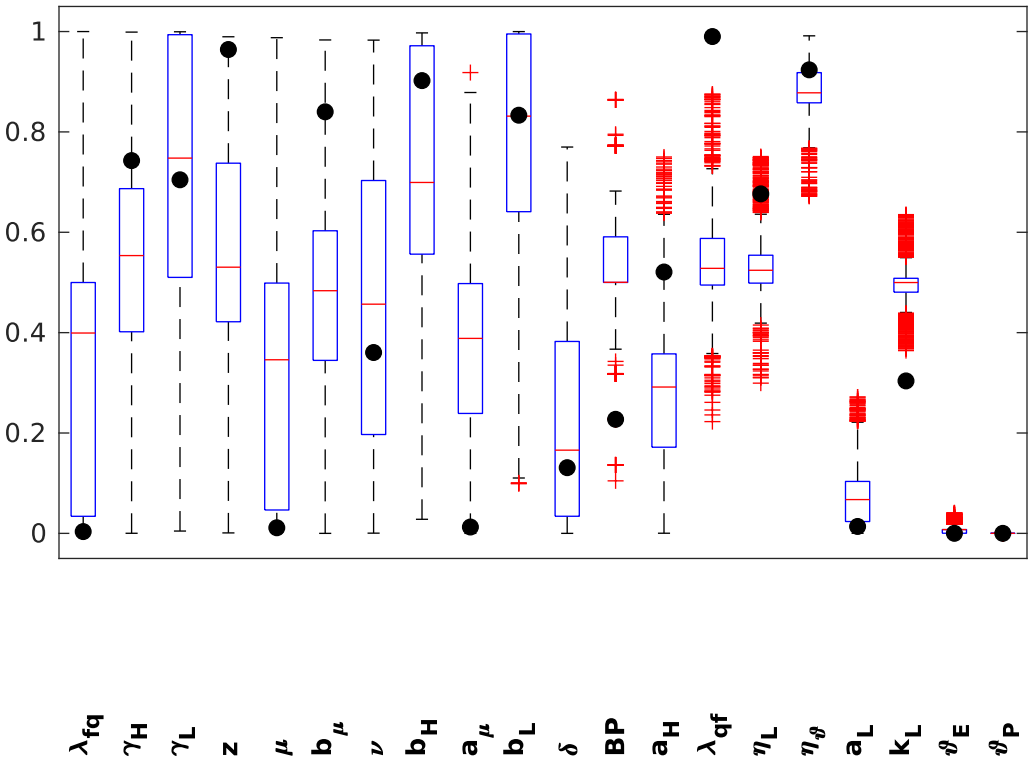
15.2. Estimated parameters with their intervals

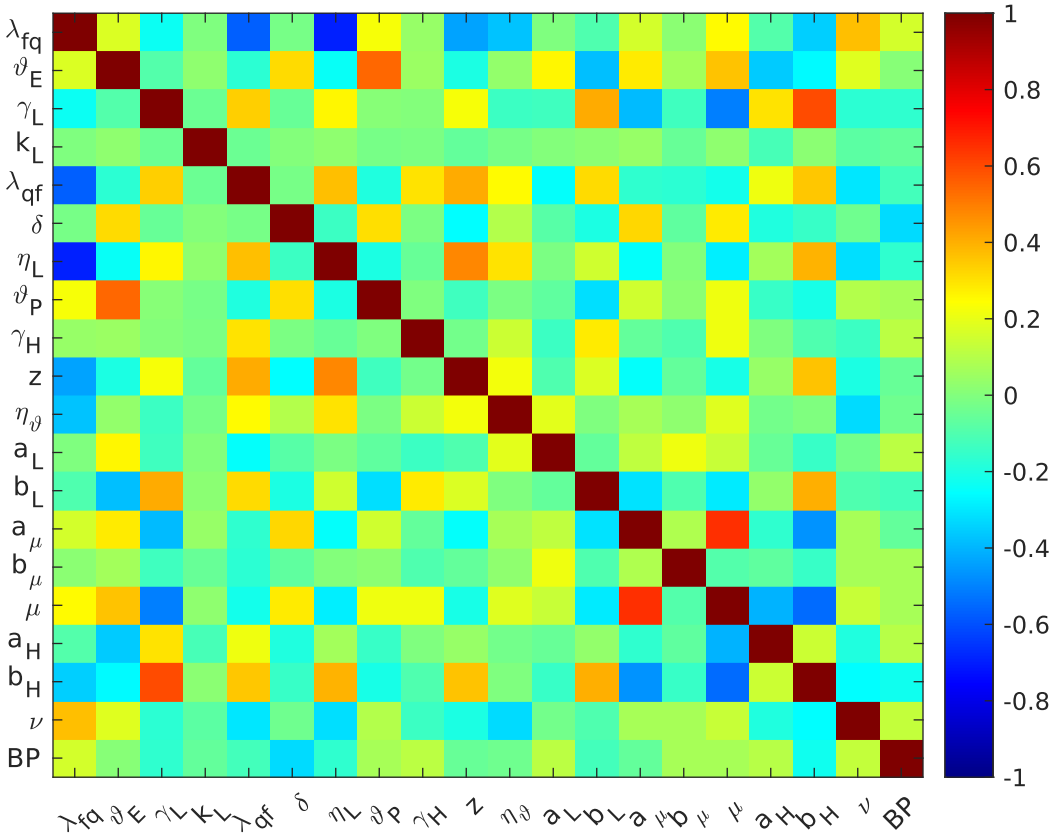
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0.008'	'0.3992'	'0.0036'	'0.1221'
\vartheta_E	'0'	'0.0002'	'0.0076'	'0.0001'	'0.092'
\gamma_L	'0.1984'	'0.9115'	'0.7478'	'0.7046'	'0.126'
k_L	'1.8722'	'9.6749'	'5.4985'	'3.734'	'0.042'
\lambda_{qf}	'0.3402'	'1'	'0.5281'	'0.99'	'0.1117'
\delta	'0.0158'	'0.0273'	'0.0249'	'0.0196'	'0.0756'
\eta_L	'0.1749'	'0.888'	'0.5243'	'0.6765'	'0.104'
\vartheta_P	'0'	'0.0001'	'0.0001'	'0'	'0.0746'
\gamma_H	'0.2807'	'0.7865'	'0.5536'	'0.7428'	'0.0646'
z	'14.6171'	'30'	'15.9127'	'28.9255'	'0.0934'
\eta_\vartheta	'0.6337'	'0.9661'	'0.8779'	'0.9237'	'0.067'
a_L	'1.0855'	'2.9211'	'1.9426'	'1.193'	'0.0647'
b_L	'6.9797'	'14.6113'	'12.6399'	'12.6657'	'0.093'
a_\mu	'1'	'12.34'	'6.4394'	'1.1773'	'0.102'
b_\mu	'1.3325'	'13.6516'	'7.7698'	'12.7607'	'0.0603'
\mu	'0.0027'	'0.0242'	'0.3459'	'0.0112'	'0.1443'
a_H	'5.9875'	'9.1965'	'5.0826'	'8.2915'	'0.0713'
b_H	'8.4015'	'13.7685'	'10.7896'	'13.6311'	'0.1336'
\nu	'139.335'	'198.1905'	'228.3611'	'180.1994'	'0.0874'
BP	'427.0279'	'436'	'430.5034'	'427.5'	'0.0612'

15.3. Identifiability analisys




λfq
ϑE
γL
kL
λqf
δ
ηL
ϑP
γH
z
ηϑ
aL
bL
aμ
bμ
μ
aH
bH
ν
BP
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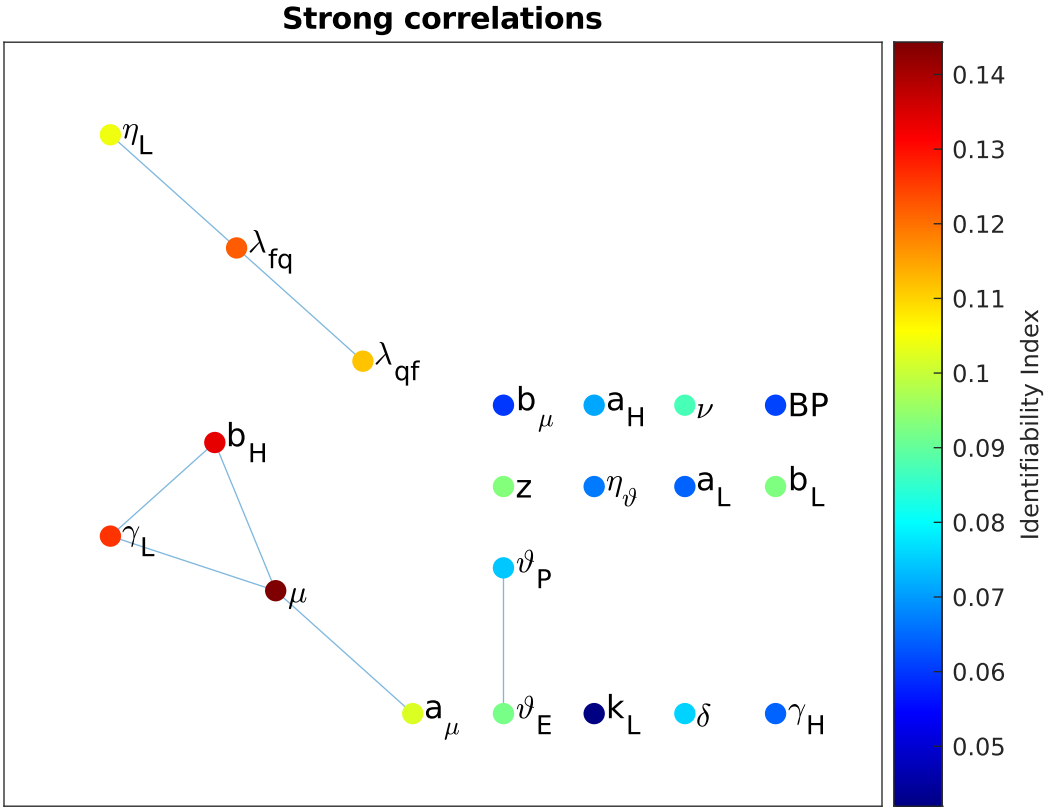
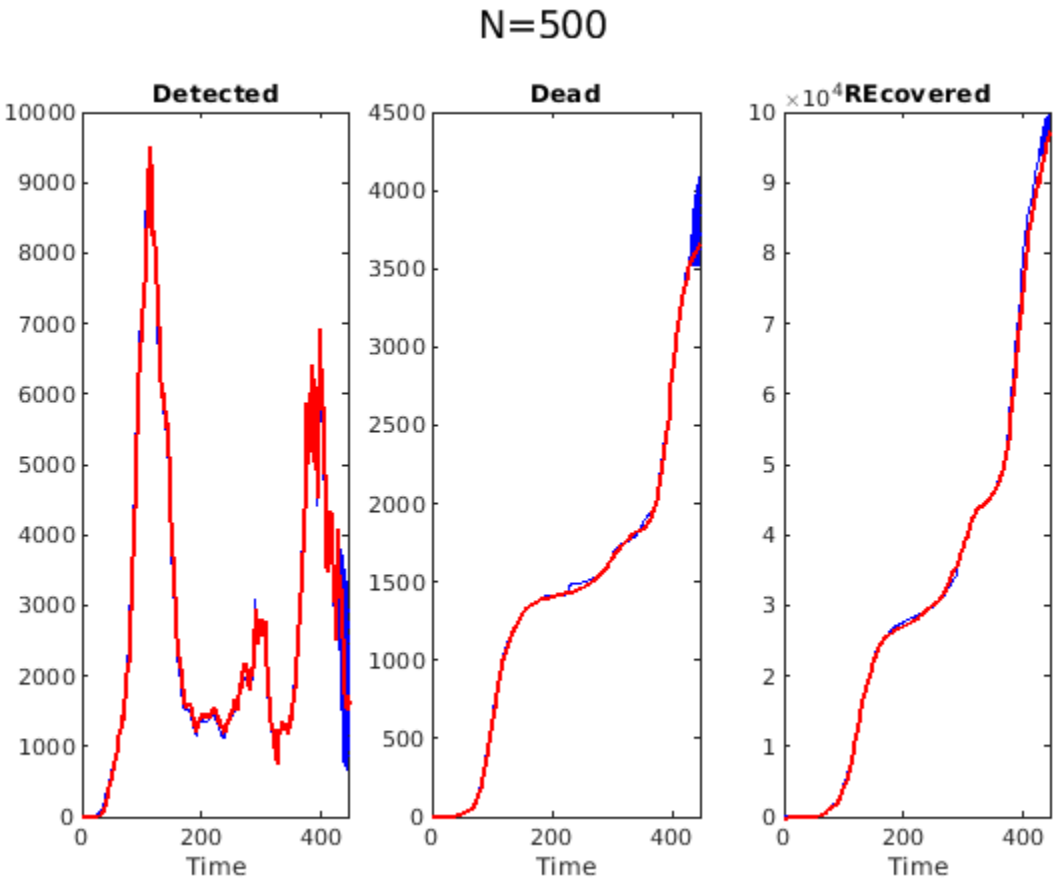
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
η_L
λ_{fq}
λ_{qf}
b_H
γ_L
μ
a_μ
b_μ
a_H
ν
BP
z
η_ϑ
a_L
b_L
ϑ_P
ϑ_E
k_L
δ
γ_H
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
Identifiability Index

15.4. Uncertainty analisys



Chapter 16. Extension number16

16.1. Basic information

The extension to be validated consists of the time series from the data446 to the 489. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

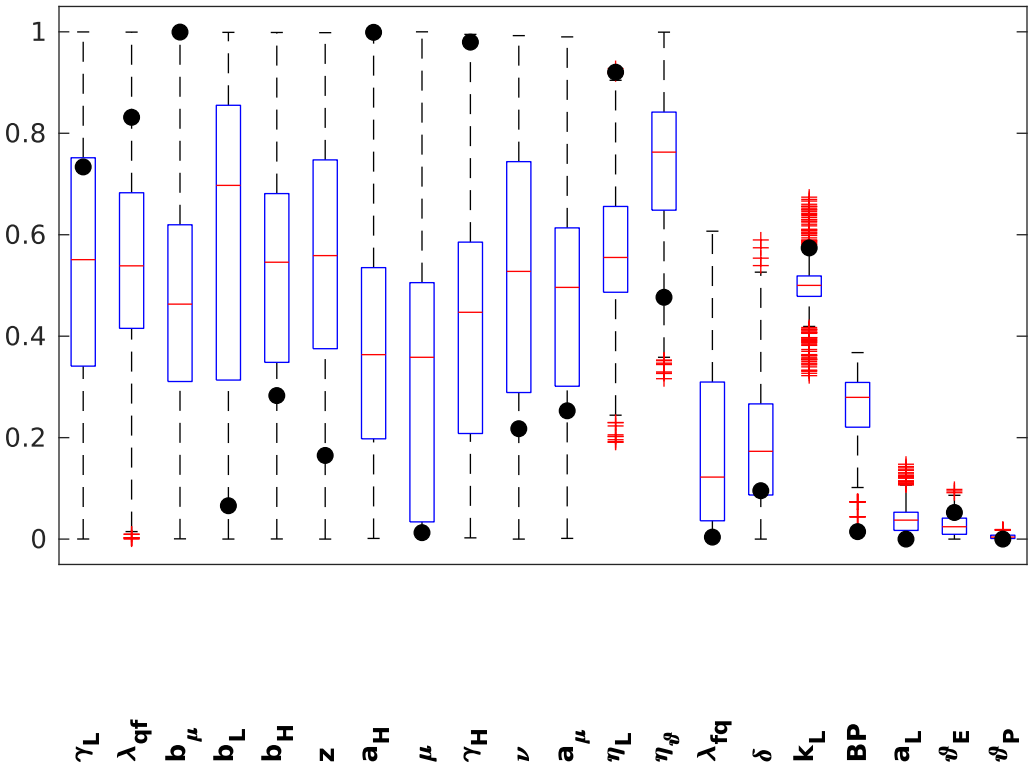
16.2. Estimated parameters with their intervals

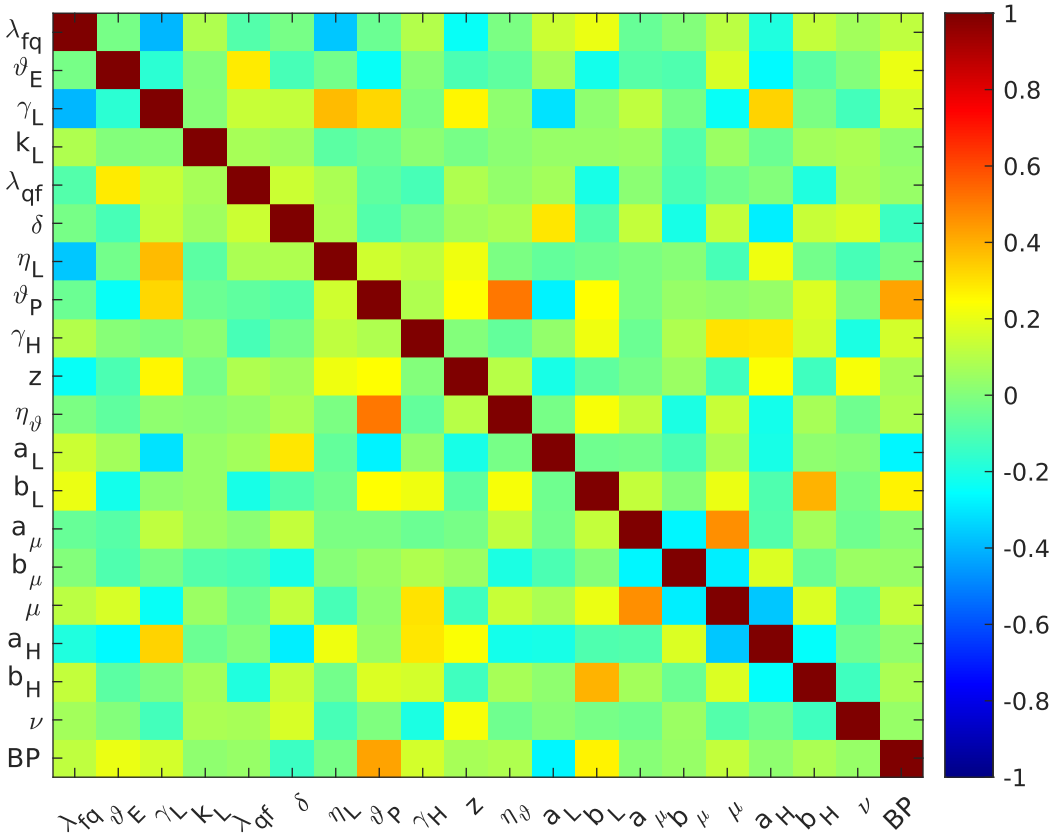
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0.0083'	'0.1225'	'0.0039'	'0.0858'
\vartheta_E	'0.0412'	'0.083'	'0.0244'	'0.0524'	'0.0555'
\gamma_L	'0.36'	'1'	'0.5509'	'0.7337'	'0.0951'
k_L	'1'	'10'	'5.5013'	'6.1662'	'0.0503'
\lambda_{qf}	'0.0682'	'0.962'	'0.5387'	'0.8315'	'0.0729'
\delta	'0.0062'	'0.0203'	'0.026'	'0.0143'	'0.073'
\eta_L	'0.1627'	'1'	'0.5552'	'0.9204'	'0.0709'
\vartheta_P	'0'	'0.0001'	'0.0041'	'0'	'0.0764'
\gamma_H	'0.2076'	'1'	'0.4471'	'0.9797'	'0.0805'
z	'4.5474'	'11.8788'	'16.7656'	'4.9476'	'0.0848'
\eta_\vartheta	'0.4712'	'1'	'0.7628'	'0.4767'	'0.0837'
a_L	'1'	'2.1115'	'1.5238'	'1.0003'	'0.0678'
b_L	'1'	'14.7462'	'10.7618'	'1.9208'	'0.0972'
a_\mu	'1.5981'	'14.44'	'7.9467'	'4.5409'	'0.0739'
b_\mu	'1'	'15'	'7.4847'	'14.9928'	'0.0779'
\mu	'0.0011'	'0.0285'	'0.3584'	'0.0127'	'0.0947'
a_H	'6.9611'	'15'	'6.0906'	'14.986'	'0.0975'
b_H	'2.1983'	'10.7625'	'8.6413'	'4.9611'	'0.0845'
\nu	'106.5616'	'159.7584'	'263.8608'	'108.8074'	'0.0737'
BP	'445'	'452.1873'	'454.5'	'445.5'	'0.0631'

16.3. Identifiability analisys




λfq
ϑE
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kL
λqf
δ
ηL
ϑP
γH
z
ηϑ
aL
bL
aμ
bμ
μ
aH
bH
ν
BP
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0.8
0.6
0.4
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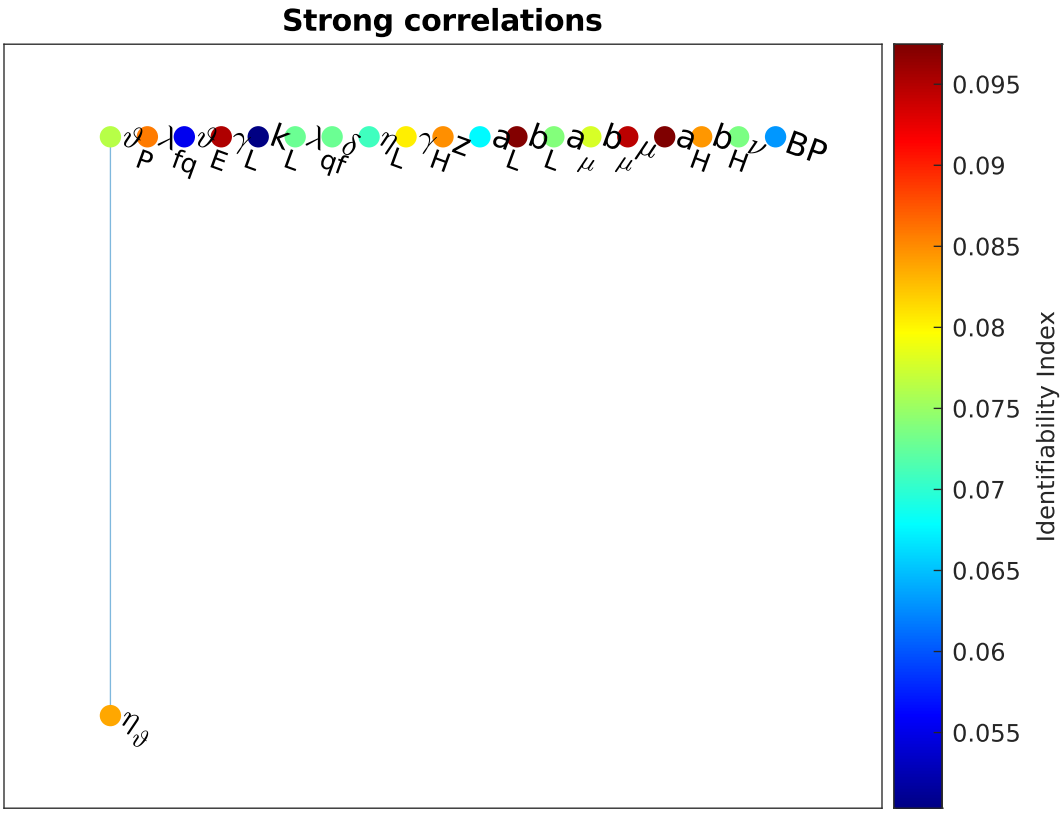
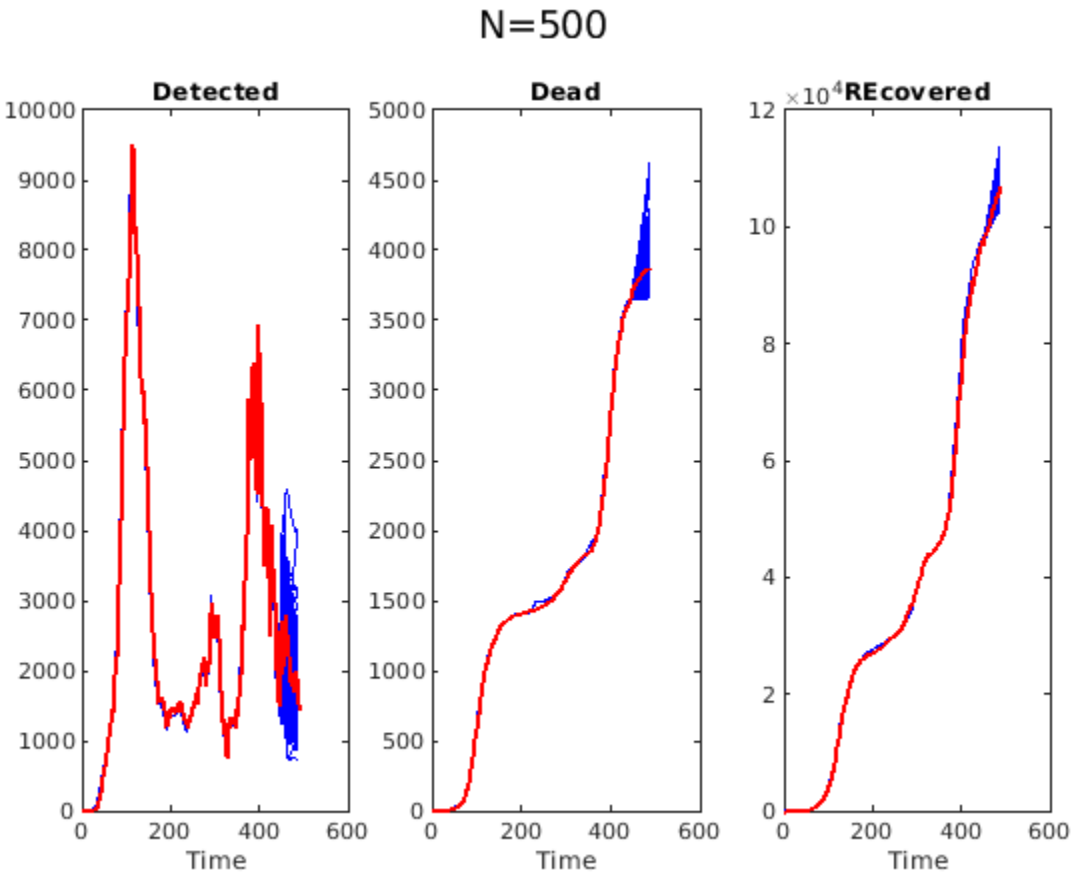
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
Identifiability Index
0.095
0.09
0.085
0.08
0.075
0.07
0.065
0.06
0.055

16.4. Uncertainty analisys



Chapter 17. Extension number17

17.1. Basic information

The extension to be validated consists of the time series from the data489 to the 547. The status of the validation is: COMPLETED.

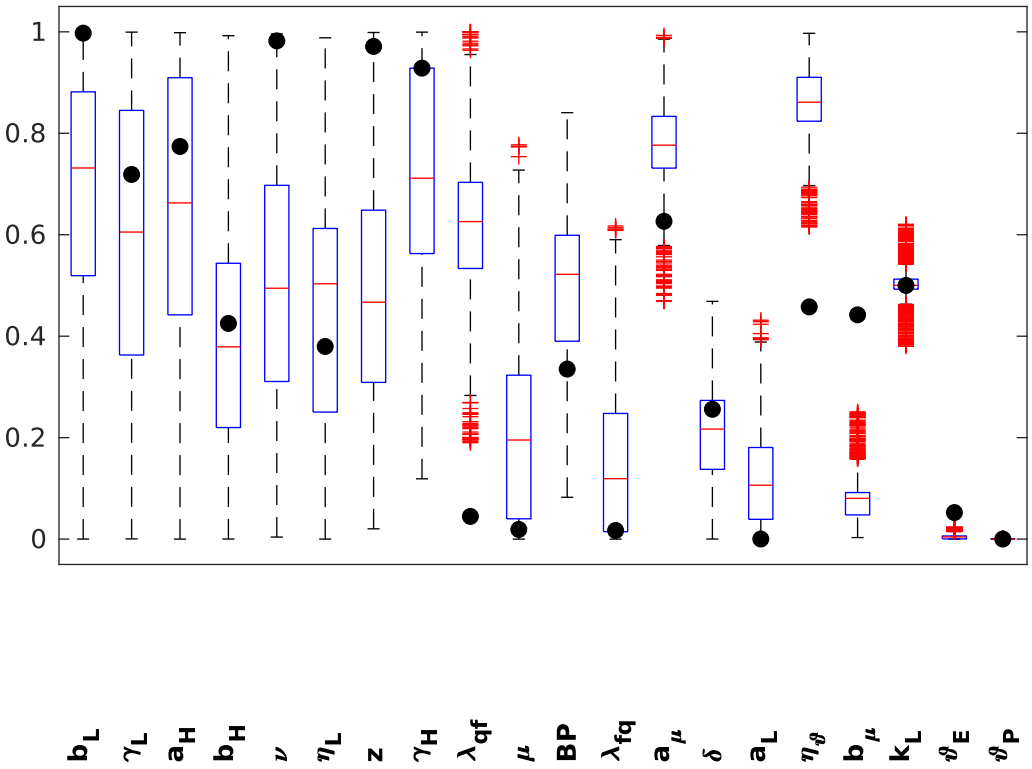
The number of estimations needed to perform the validation was1000.

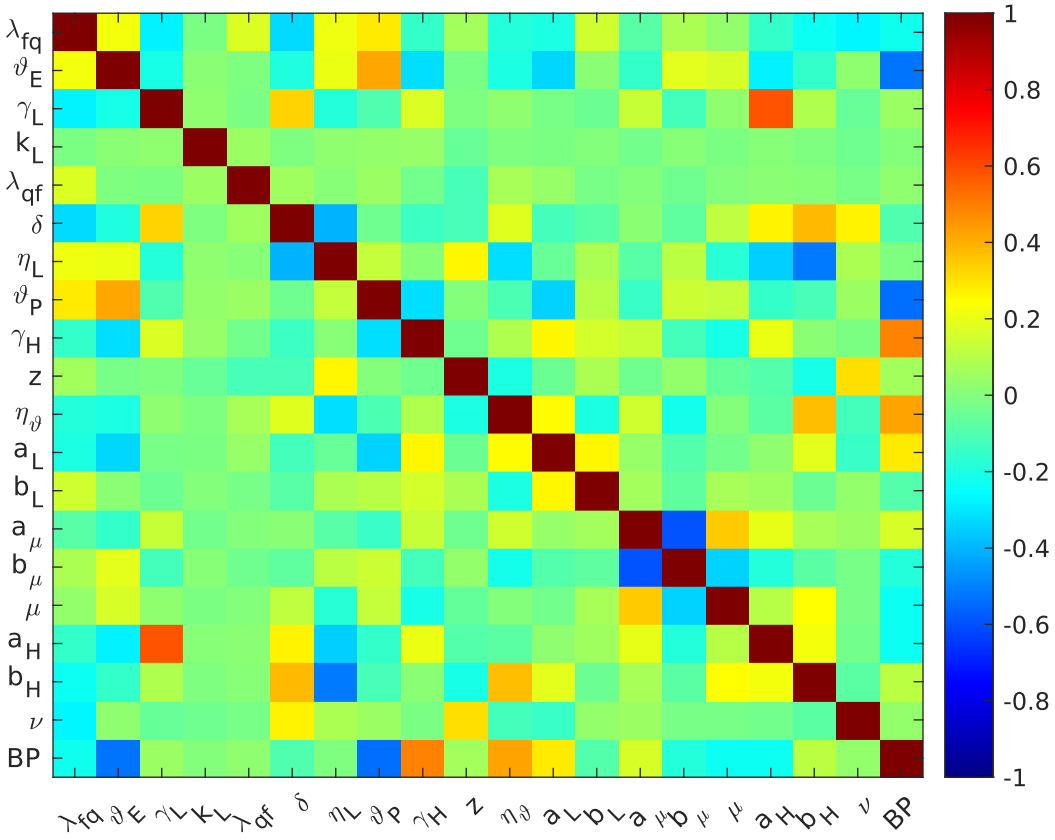
17.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.1033'	'0.1352'	'0.1193'	'0.017'	'0.0828'
\vartheta_E	'0.0031'	'0.0056'	'0.0044'	'0.0523'	'0.0845'
\gamma_L	'0.5818'	'0.6288'	'0.6053'	'0.7189'	'0.0918'
k_L	'5.4208'	'5.5834'	'5.5021'	'5.5002'	'0.039'
\lambda_{qf}	'0.6112'	'0.6406'	'0.6259'	'0.0447'	'0.0493'
\delta	'0.0312'	'0.0338'	'0.0325'	'0.0384'	'0.0737'
\eta_L	'0.4838'	'0.5228'	'0.5033'	'0.3797'	'0.0973'
\vartheta_P	'0'	'0.0004'	'0.0002'	'0.0001'	'0.0778'
\gamma_H	'0.6943'	'0.7286'	'0.7114'	'0.9284'	'0.0787'
z	'13.42'	'14.5988'	'14.0094'	'29.1355'	'0.0671'
\eta_\vartheta	'0.8496'	'0.8725'	'0.8611'	'0.4577'	'0.0765'
a_L	'2.3657'	'2.6173'	'2.4915'	'1.003'	'0.0685'
b_L	'10.9507'	'11.5336'	'11.2422'	'14.9639'	'0.0664'
a_\mu	'11.6644'	'12.0758'	'11.8701'	'9.7719'	'0.0835'
b_\mu	'1.8959'	'2.3527'	'2.1243'	'7.1897'	'0.0874'
\mu	'0.1809'	'0.2113'	'0.1961'	'0.019'	'0.0696'
a_H	'9.9637'	'10.5945'	'10.2791'	'11.836'	'0.1003'
b_H	'6.0665'	'6.5445'	'6.3055'	'6.9521'	'0.0935'
\nu	'237.3021'	'257.2331'	'247.2676'	'491.1094'	'0.0655'
BP	'492.3064'	'494.6936'	'493.5'	'476.4997'	'0.1104'

17.3. Identifiability analisys




λfq
ϑE
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kL
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ηL
ϑP
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ηϑ
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bL
aμ
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aH
bH
ν
BP
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0.6
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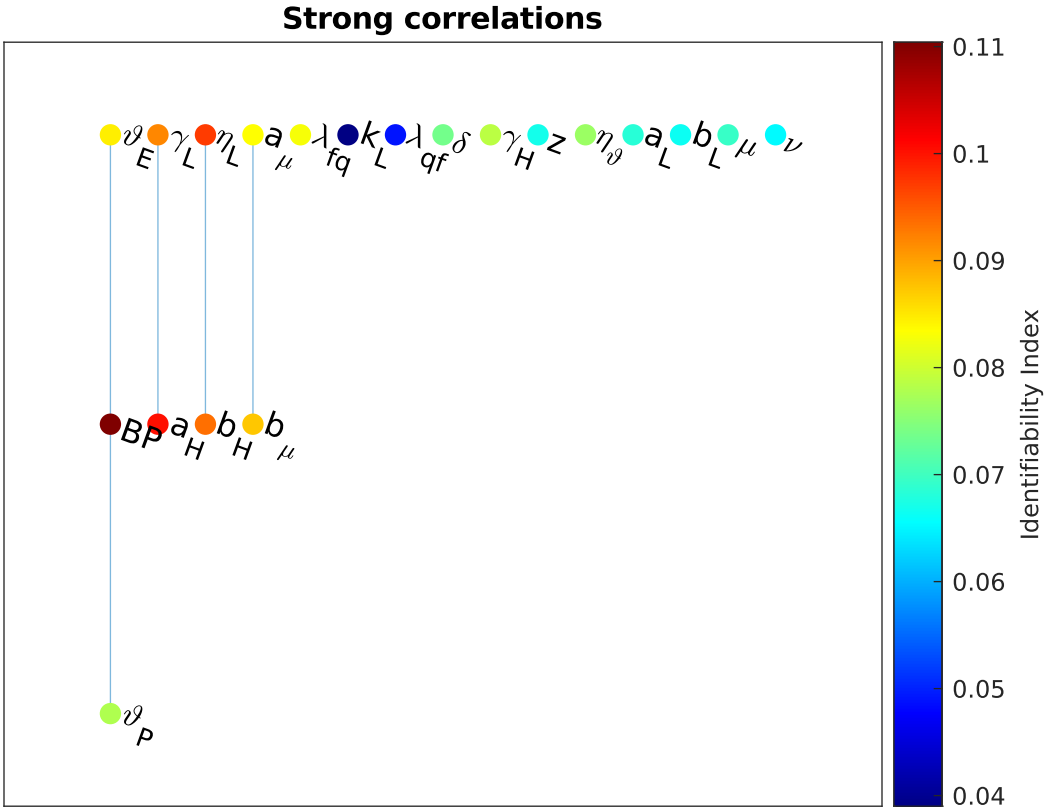
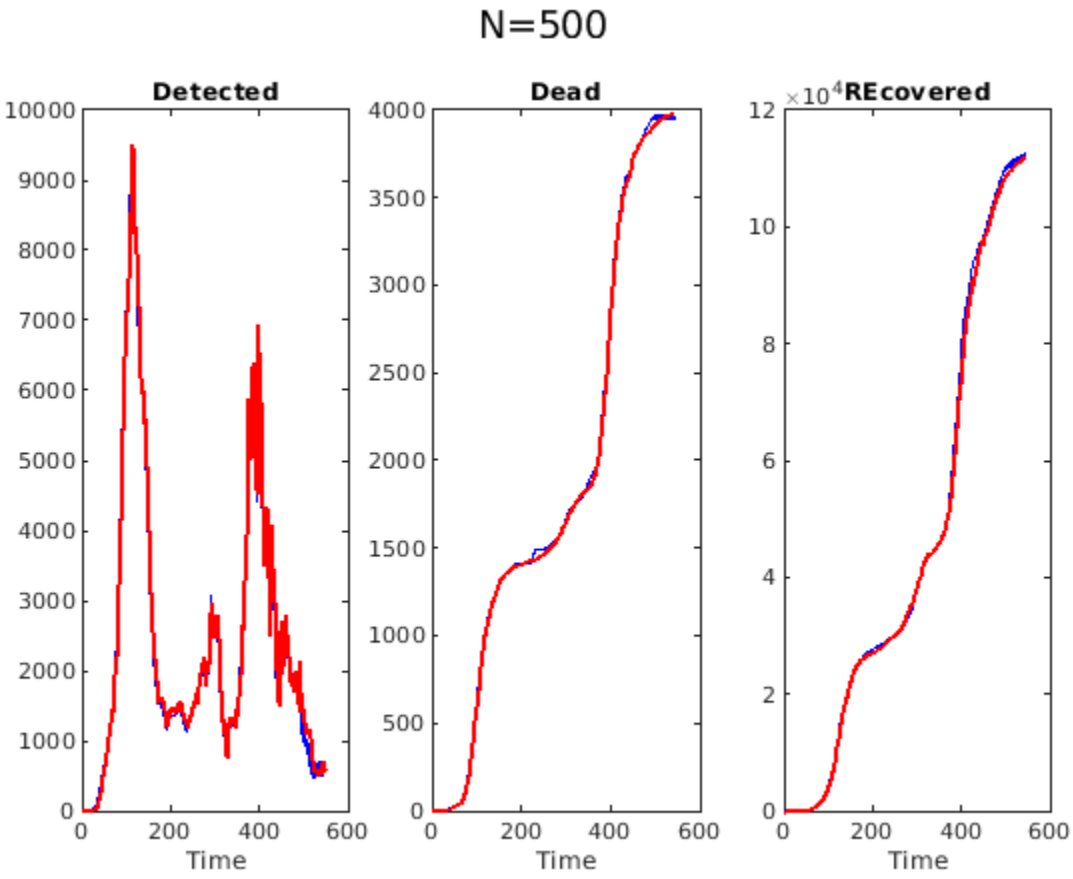
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
Identifiability Index
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04

17.4. Uncertainty analisys



Chapter 18. Extension number18

18.1. Basic information

The extension to be validated consists of the time series from the data547 to the 709. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

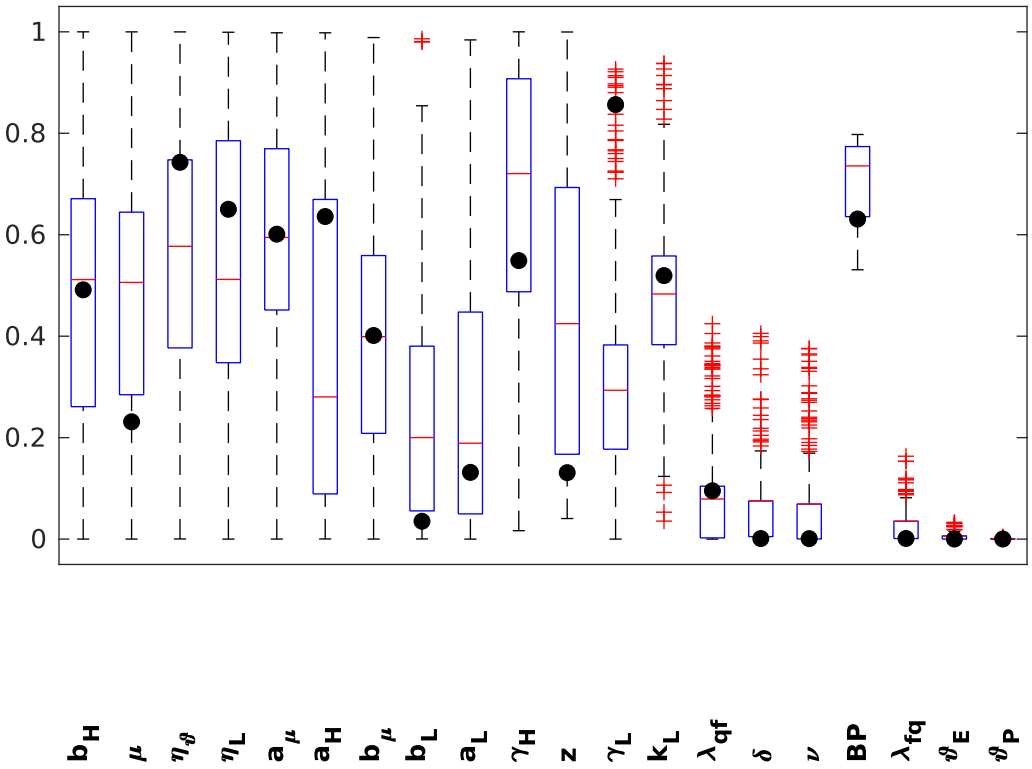
18.2. Estimated parameters with their intervals

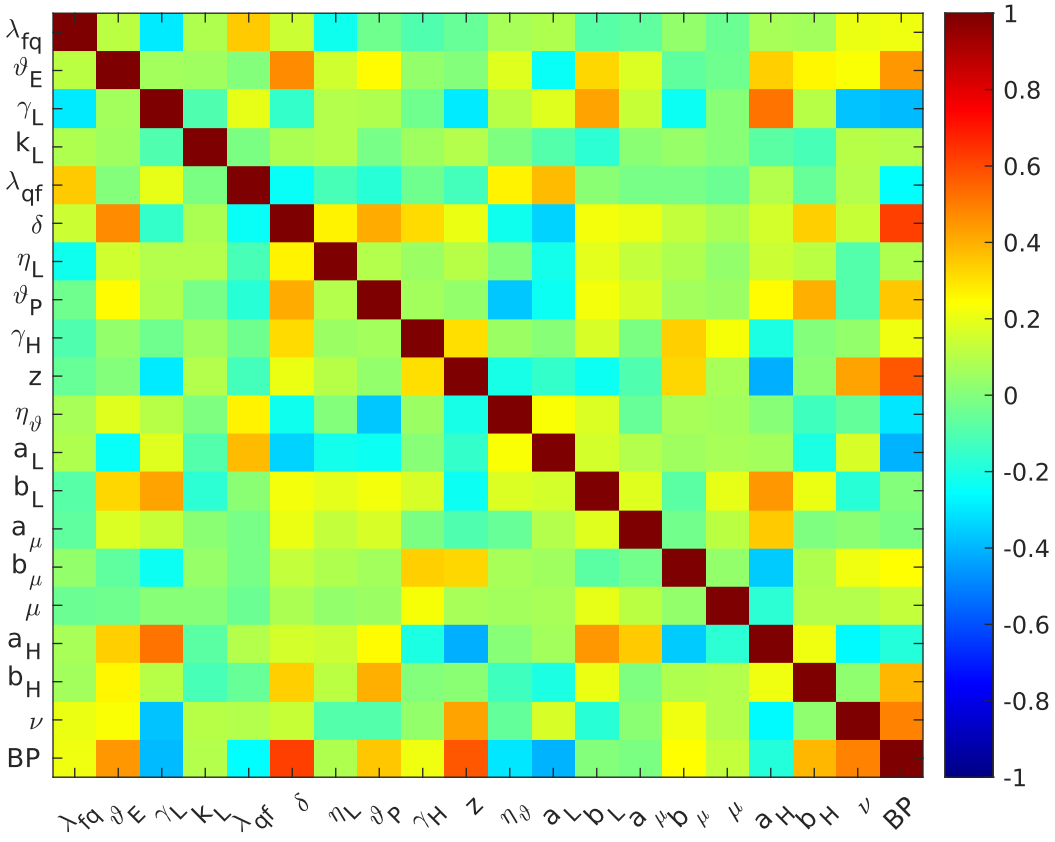
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0006'	'0.0015'	'0.0353'	'0.0012'	'0.0943'
\vartheta_E	'0.0001'	'0.0001'	'0.0064'	'0.0001'	'0.092'
\gamma_L	'0.7115'	'0.8682'	'0.2934'	'0.8565'	'0.1469'
k_L	'3.8423'	'5.8863'	'5.3489'	'5.6748'	'0.0819'
\lambda_{qf}	'0.069'	'0.1363'	'0.0791'	'0.0952'	'0.1116'
\delta	'0.0001'	'0.0002'	'0.0113'	'0.0002'	'0.1681'
\eta_L	'0.4622'	'0.7202'	'0.5119'	'0.6502'	'0.1073'
\vartheta_P	'0.0001'	'0.0002'	'0.0009'	'0.0002'	'0.0798'
\gamma_H	'0.2829'	'0.627'	'0.7205'	'0.549'	'0.1035'
z	'3.8793'	'4.6968'	'12.7414'	'3.9297'	'0.1428'
\eta_\vartheta	'0.7411'	'0.7712'	'0.5772'	'0.7427'	'0.1081'
a_L	'2.6385'	'2.8475'	'3.6467'	'2.8416'	'0.1236'
b_L	'1.491'	'1.7213'	'3.8016'	'1.4919'	'0.1231'
a_\mu	'6.0964'	'9.6122'	'9.3256'	'9.4155'	'0.0935'
b_\mu	'3.6736'	'6.9868'	'6.5871'	'6.6193'	'0.1005'
\mu	'0.1278'	'0.3687'	'0.506'	'0.2312'	'0.0914'
a_H	'5.661'	'10.0109'	'4.9242'	'9.9028'	'0.1528'
b_H	'5.8664'	'8.1062'	'8.1627'	'7.8797'	'0.1114'
\nu	'0.2585'	'0.5094'	'34.5284'	'0.457'	'0.123'
BP	'615.5'	'699'	'643.5'	'621.5'	'0.1324'

18.3. Identifiability analisys




λfq
ϑE
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kL
λqf
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ηL
ϑP
γH
z
ηϑ
aL
bL
aμ
bμ
μ
aH
bH
ν
BP
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0.8
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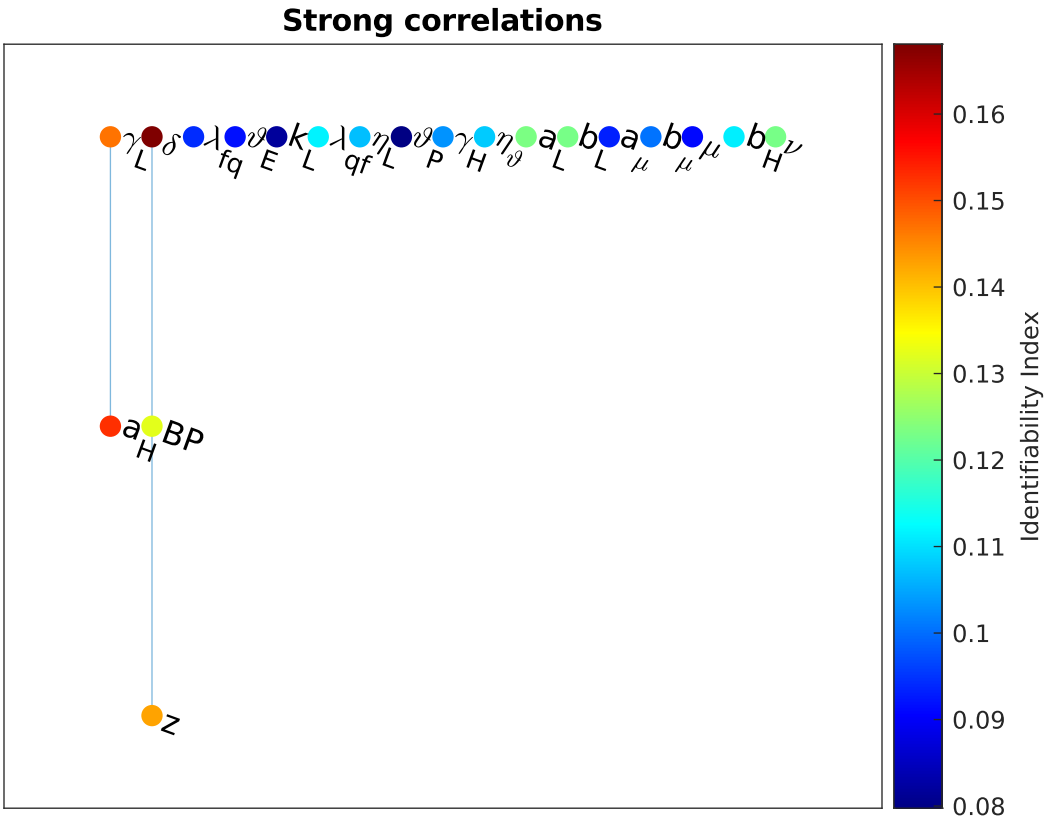
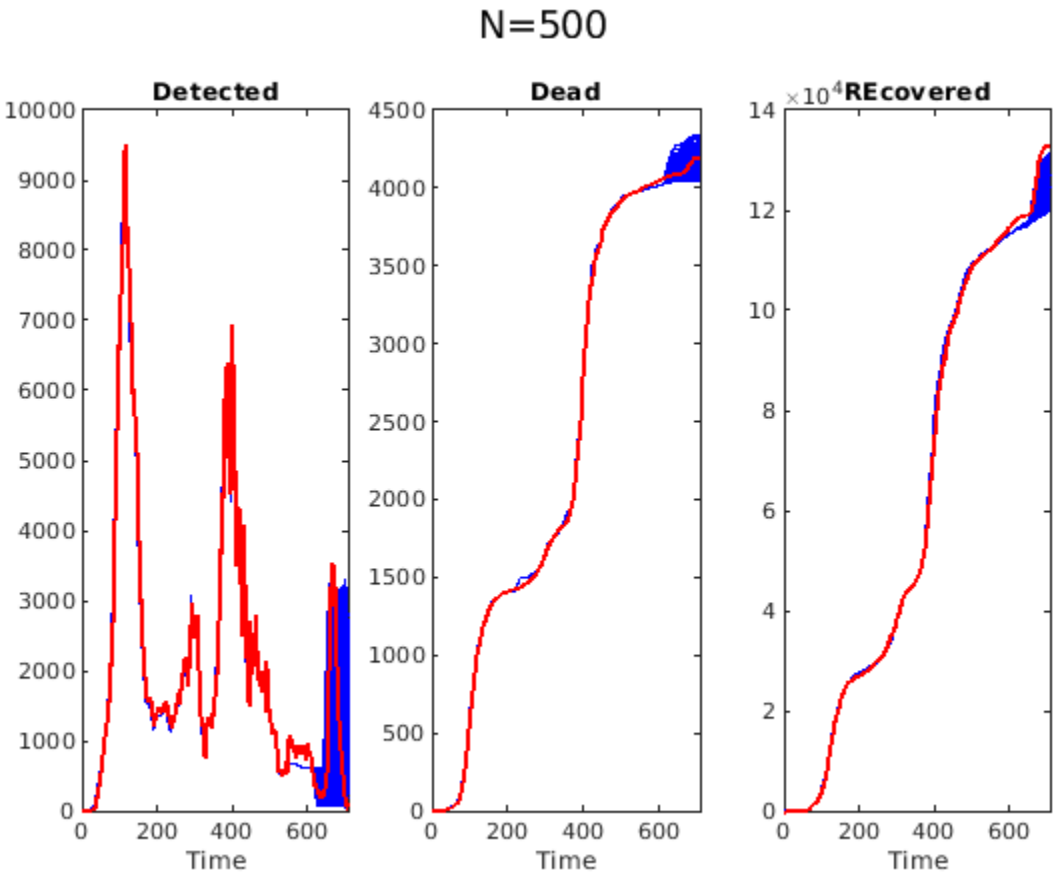
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
Identifiability Index
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08

18.4. Uncertainty analisys