Validation process forPUERTO INIRIDA

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 87. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

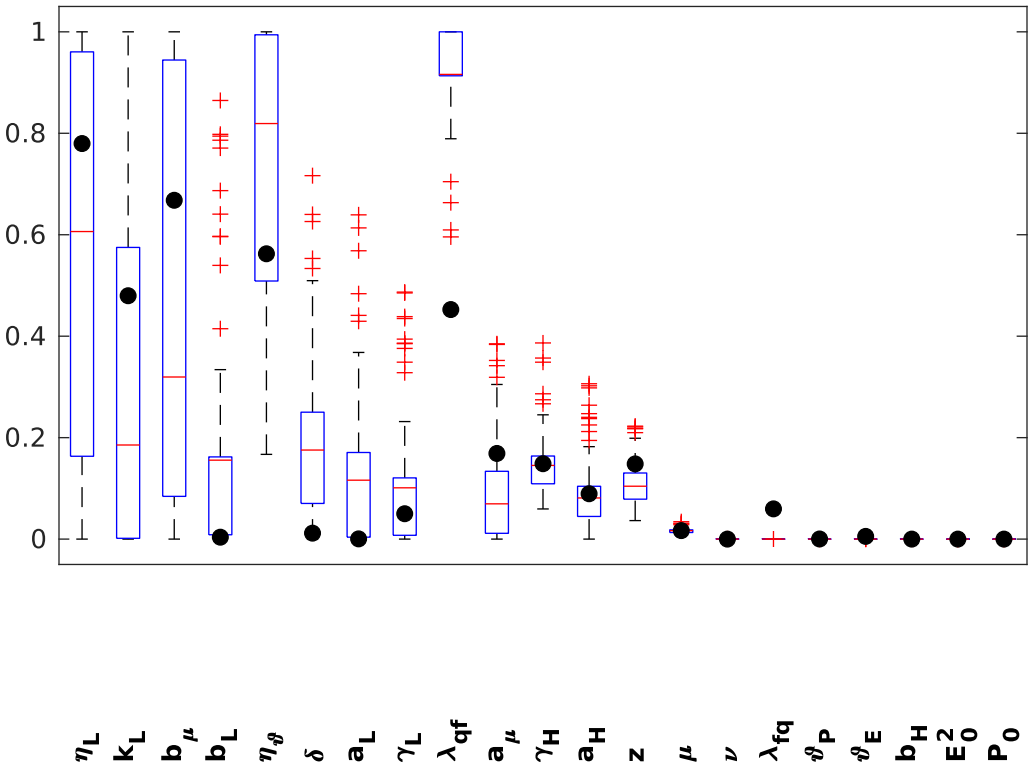
1.2. Estimated parameters with their intervals

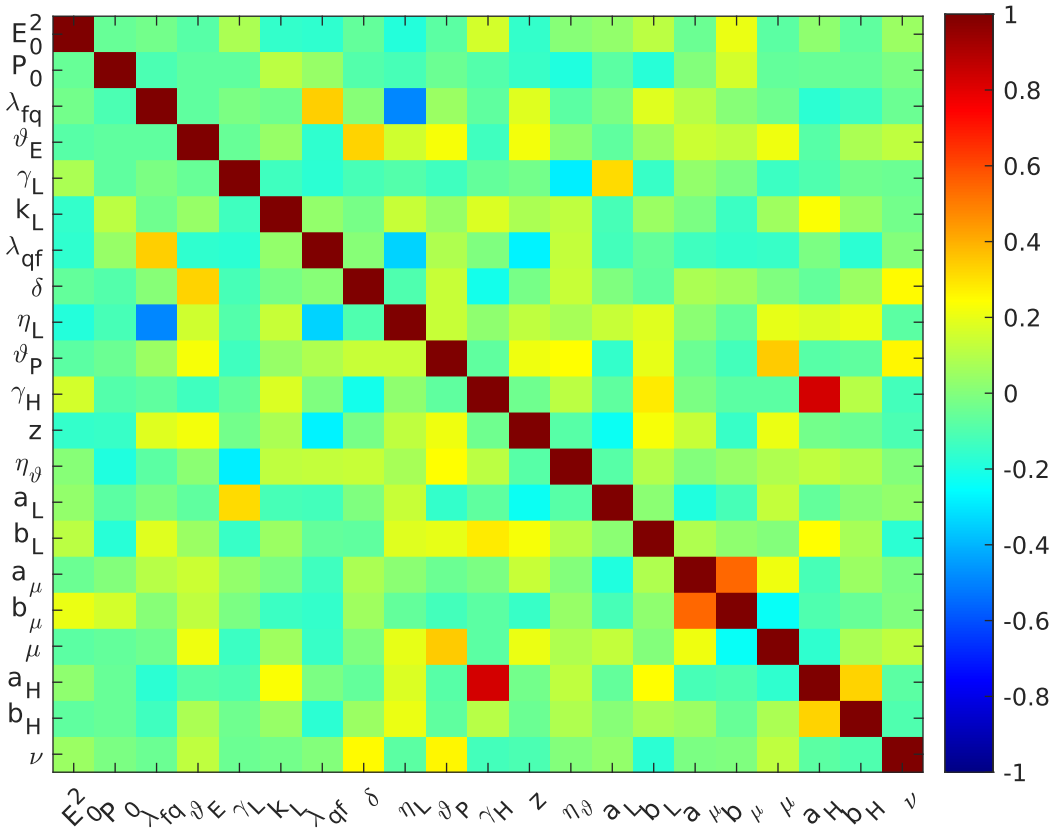
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
E^2_0	'0'	'0'	'0'	'0'	'0.0456'
P_0	'0'	'0'	'0'	'0'	'0.0441'
\lambda_{fq}	'0.0584'	'0.0654'	'0.0001'	'0.0596'	'0.0971'
\vartheta_E	'0.0033'	'0.0116'	'0'	'0.0054'	'0.0777'
\gamma_L	'0.0457'	'0.0668'	'0.1019'	'0.05'	'0.1298'
k_L	'2.0265'	'7.8241'	'2.6696'	'5.3178'	'0.1466'
\lambda_{qf}	'0.4226'	'0.4736'	'0.9133'	'0.4525'	'0.1544'
\delta	'0.0006'	'0.004'	'0.0264'	'0.0018'	'0.1289'
\eta_L	'0.7623'	'0.8568'	'0.6063'	'0.7798'	'0.1659'
\vartheta_P	'0.0002'	'0.0007'	'0'	'0.0002'	'0.058'
\gamma_H	'0.1209'	'0.1524'	'0.1457'	'0.1486'	'0.1445'
z	'4.3098'	'4.4473'	'3.1352'	'4.4469'	'0.109'
\eta_\vartheta	'0.5386'	'0.6273'	'0.8192'	'0.5625'	'0.1224'
a_L	'1'	'1.2108'	'2.6742'	'1.0061'	'0.1383'
b_L	'1'	'9.5344'	'3.2685'	'1.0526'	'0.1711'
a_\mu	'1.9695'	'3.5901'	'1.9993'	'3.3639'	'0.1309'
b_\mu	'8.6115'	'14.6728'	'5.4737'	'10.3512'	'0.1726'
\mu	'0.0151'	'0.0198'	'0.0167'	'0.0167'	'0.089'
a_H	'2.2468'	'2.705'	'2.146'	'2.2515'	'0.1422'
b_H	'1'	'1.1291'	'1'	'1'	'0.0709'
\nu	'0'	'0.0001'	'0.0541'	'0.0001'	'0.0748'

1.3. Identifiability analisys




E_0^2
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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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-0.6
-0.8
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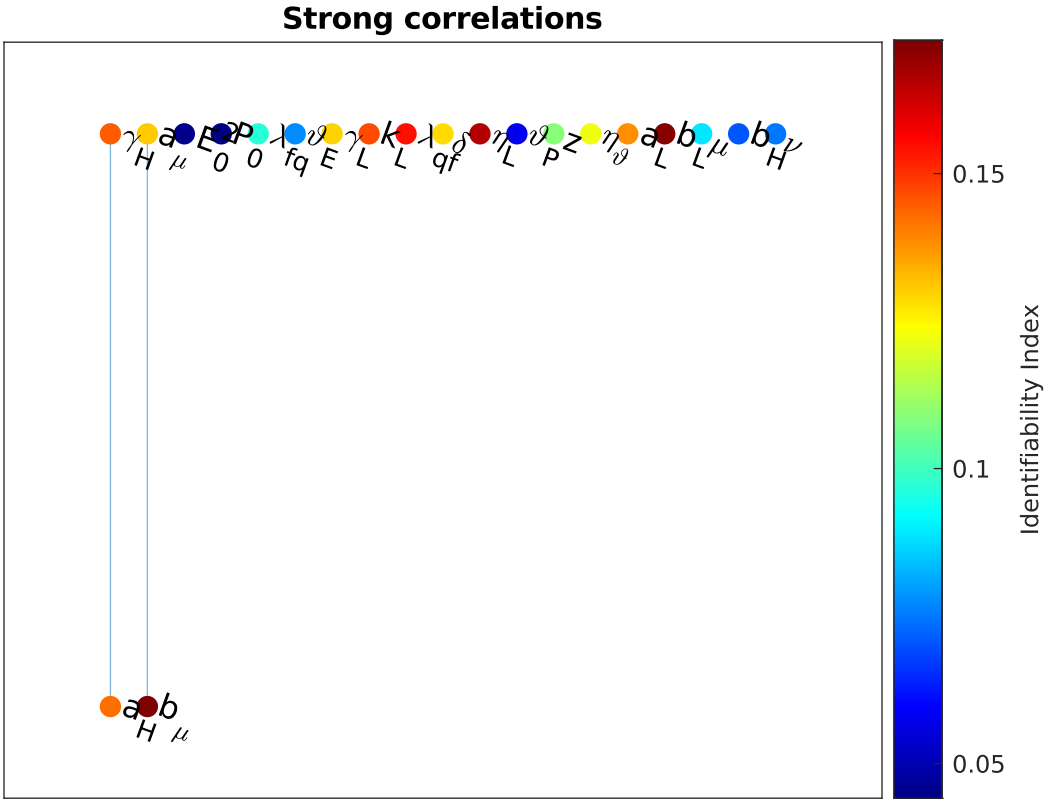
Strong correlations
Identifiability Index
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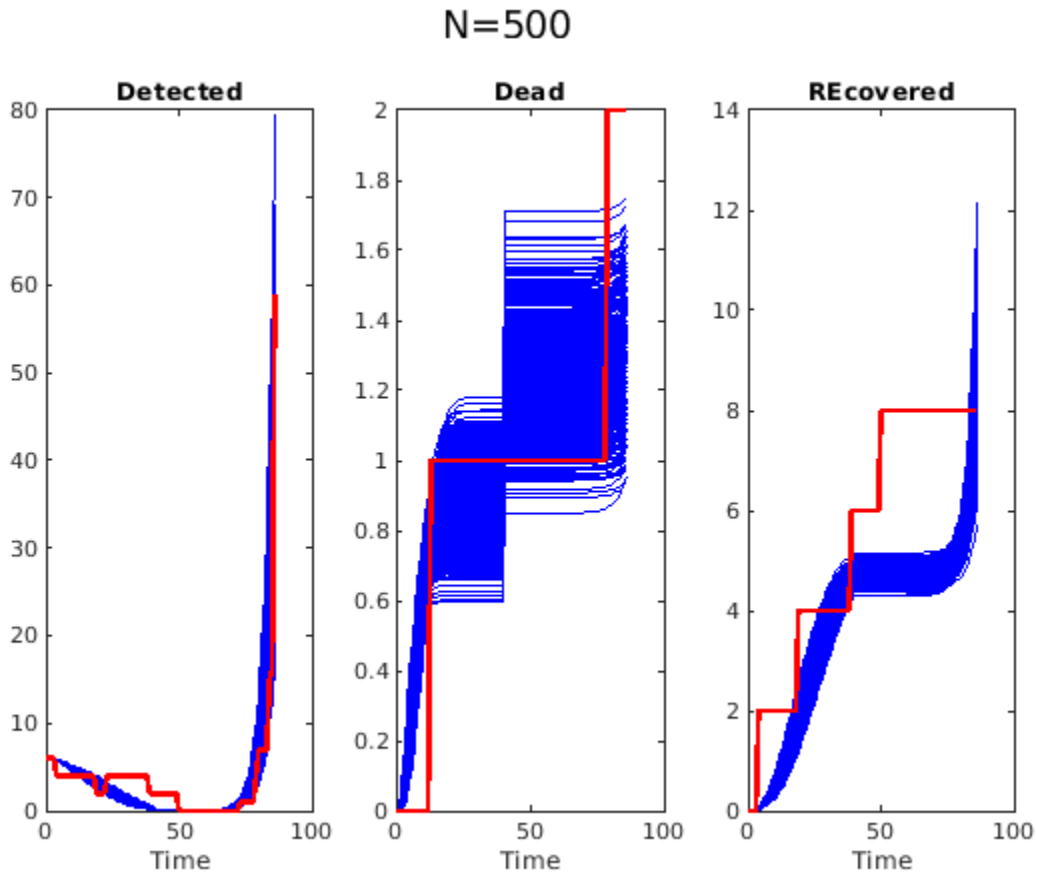
0.1
0.05

1.4. Uncertainty analisys



Chapter 2. Extension number2

2.1. Basic information

The extension to be validated consists of the time series from the data87 to the 110. The status of the validation is: COMPLETED.

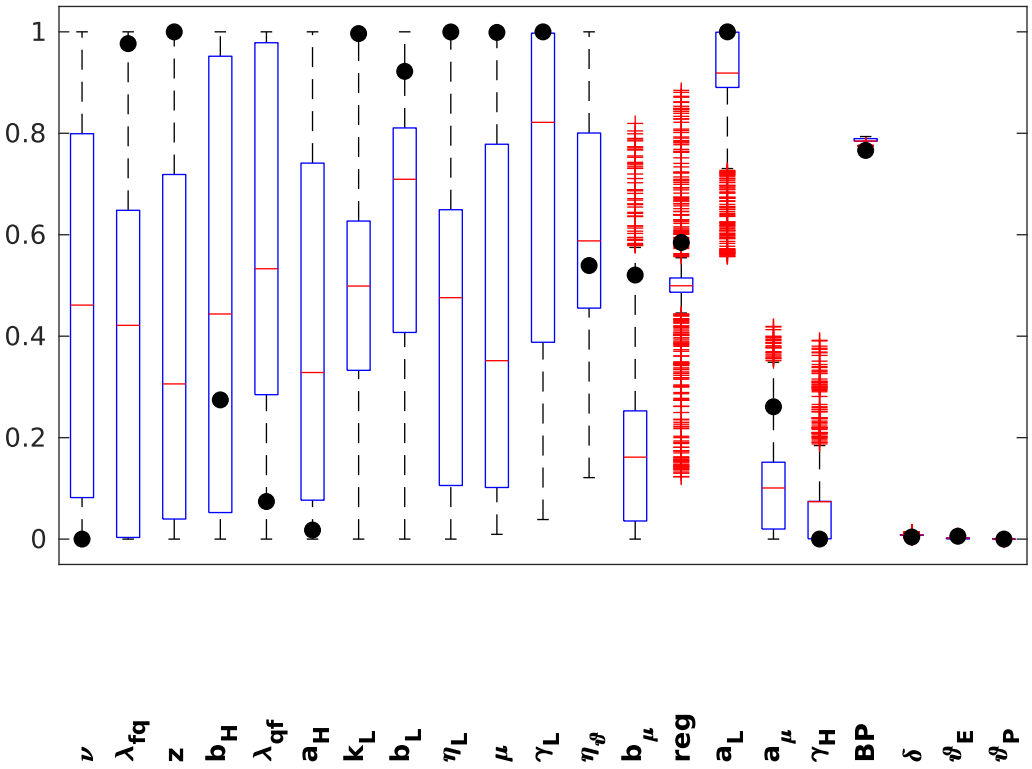
The number of estimations needed to perform the validation was1000.

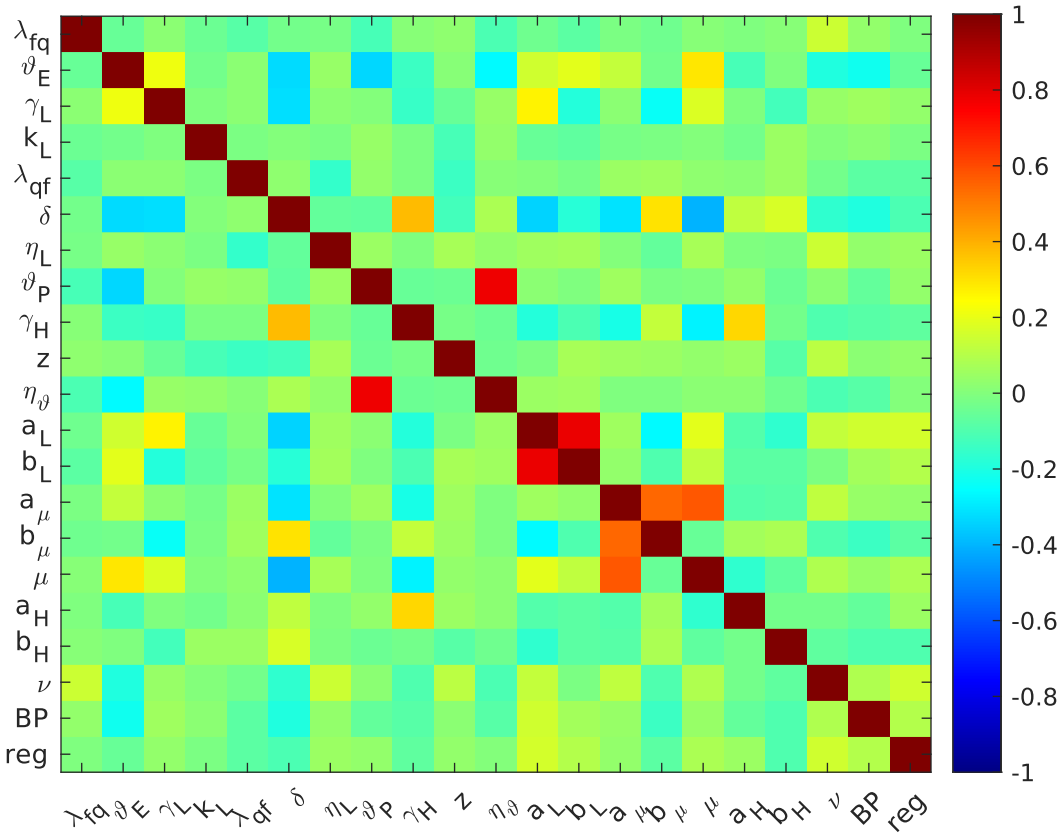
2.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.3863'	'0.4564'	'0.4214'	'0.9767'	'0.0694'
\vartheta_E	'0.0019'	'0.0022'	'0.0021'	'0.0057'	'0.0574'
\gamma_L	'0.7901'	'0.8521'	'0.8211'	'0.9999'	'0.0784'
k_L	'5.2564'	'5.7228'	'5.4896'	'9.9691'	'0.0564'
\lambda_{qf}	'0.4983'	'0.5675'	'0.5329'	'0.0741'	'0.0693'
\delta	'0.0009'	'0.0015'	'0.0012'	'0.0006'	'0.0699'
\eta_L	'0.4441'	'0.5077'	'0.4759'	'0.9997'	'0.0673'
\vartheta_P	'0'	'0.0001'	'0'	'0'	'0.0574'
\gamma_H	'0.0347'	'0.1142'	'0.0744'	'0.0001'	'0.0911'
z	'8.1296'	'10.2262'	'9.1779'	'29.997'	'0.0726'
\eta_\vartheta	'0.5676'	'0.6081'	'0.5879'	'0.5393'	'0.0775'
a_L	'13.4853'	'14.2308'	'13.858'	'14.9996'	'0.1'
b_L	'10.5317'	'11.33'	'10.9309'	'13.9094'	'0.0929'
a_\mu	'2.2556'	'2.5664'	'2.411'	'4.6521'	'0.0882'
b_\mu	'2.7842'	'3.7416'	'3.2629'	'8.2878'	'0.0979'
\mu	'0.3166'	'0.3868'	'0.3517'	'0.9988'	'0.1032'
a_H	'5.1043'	'6.0908'	'5.5975'	'1.2496'	'0.0753'
b_H	'6.654'	'7.772'	'7.213'	'4.8421'	'0.0799'
\nu	'212.8385'	'248.4403'	'230.6394'	'0'	'0.0815'
BP	'86.1176'	'86.9217'	'86.5196'	'84.5194'	'0.0472'
reg	'0.1185'	'0.1312'	'0.1249'	'0.1462'	'0.0647'

2.3. 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
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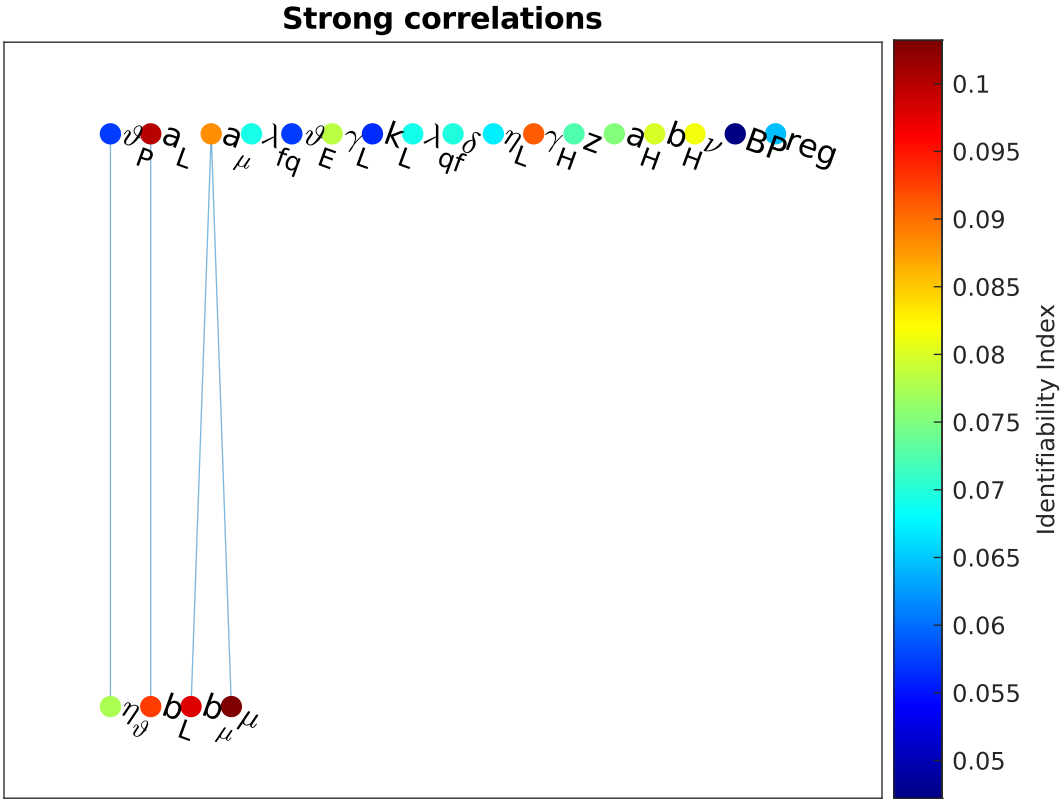
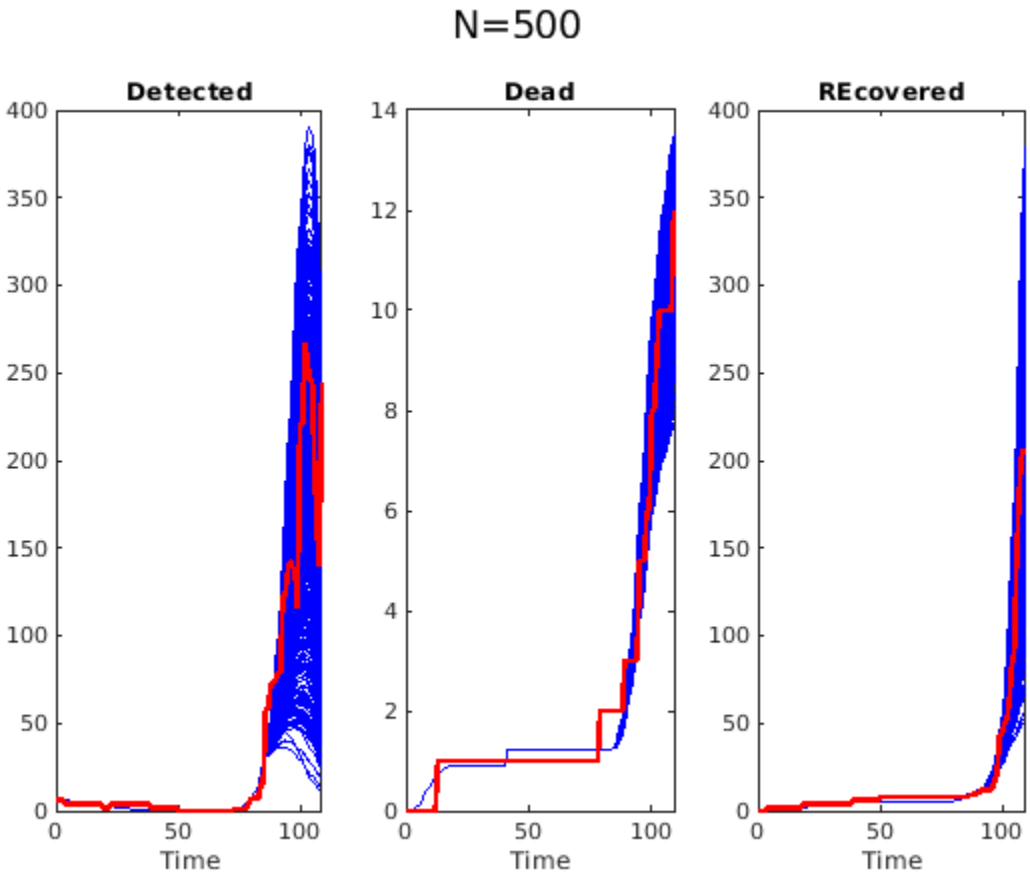

Strong correlations
Identifiability Index
0.1
0.095
0.09
0.085
0.08
0.075
0.07
0.065
0.06
0.055
0.05

2.4. Uncertainty analisys



Chapter 3. Extension number3

3.1. Basic information

The extension to be validated consists of the time series from the data110 to the 140. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

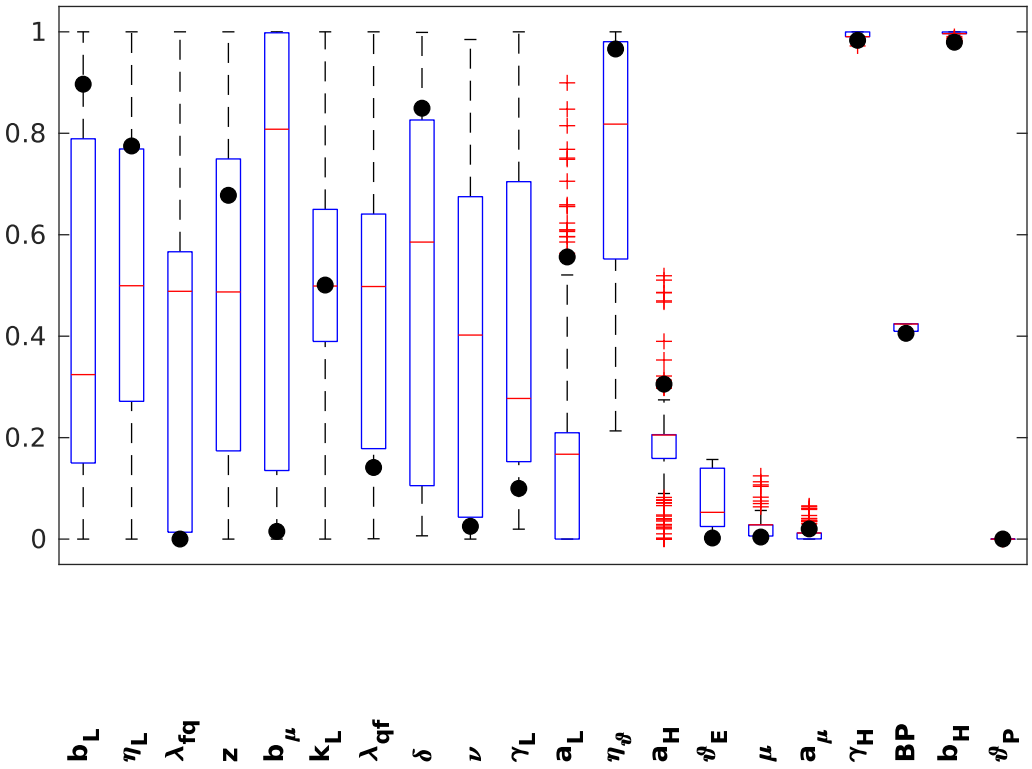
3.2. Estimated parameters with their intervals

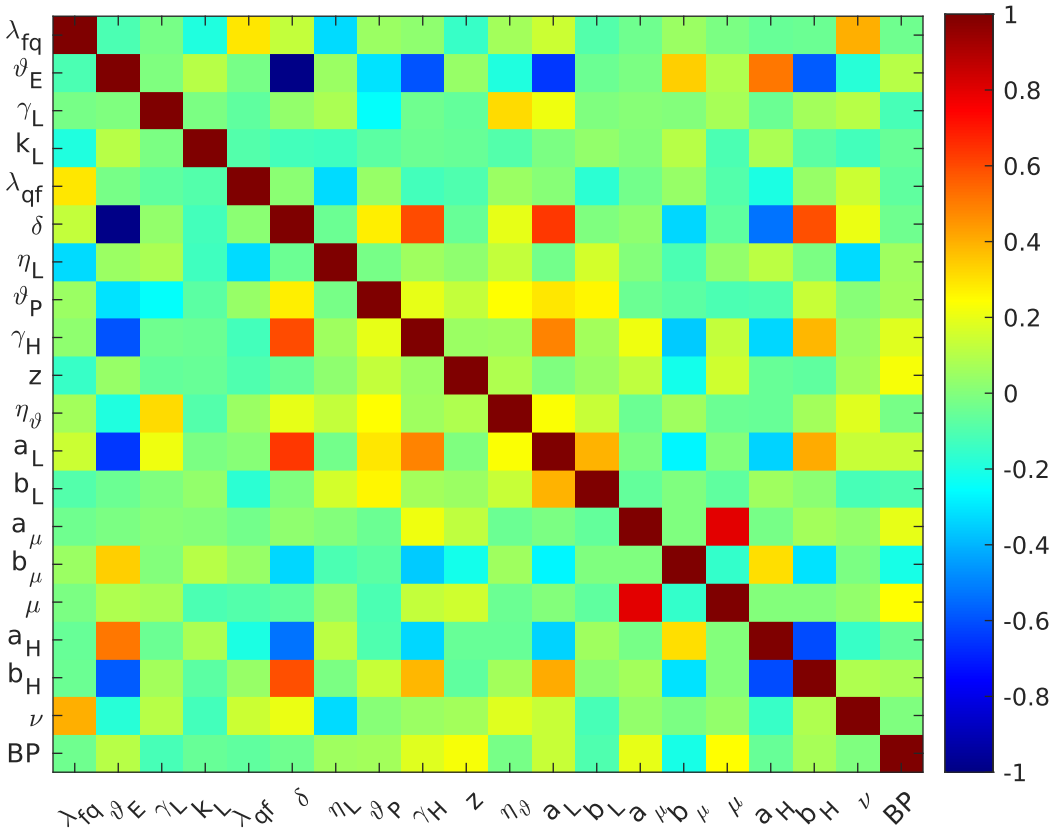
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0001'	'0.0001'	'0.4885'	'0.0001'	'0.1153'
\vartheta_E	'0.0012'	'0.003'	'0.0528'	'0.0022'	'0.1594'
\gamma_L	'0.0947'	'0.1594'	'0.2773'	'0.0999'	'0.1052'
k_L	'2.9115'	'5.7231'	'5.4899'	'5.5072'	'0.094'
\lambda_{qf}	'0.1105'	'0.2085'	'0.4979'	'0.1412'	'0.1089'
\delta	'0.1137'	'0.129'	'0.0878'	'0.1274'	'0.2159'
\eta_L	'0.5403'	'0.7905'	'0.4995'	'0.775'	'0.1108'
\vartheta_P	'0.0001'	'0.0002'	'0'	'0.0002'	'0.0585'
\gamma_H	'0.8096'	'0.9903'	'0.9905'	'0.9833'	'0.1478'
z	'8.9895'	'21.6282'	'14.6164'	'20.332'	'0.109'
\eta_\vartheta	'0.8842'	'0.9683'	'0.8181'	'0.9661'	'0.0961'
a_L	'6.7764'	'9.0231'	'3.3422'	'8.7867'	'0.1808'
b_L	'10.2722'	'13.5591'	'5.5398'	'13.5551'	'0.1134'
a_\mu	'1'	'4.2522'	'1.1689'	'1.2815'	'0.0775'
b_\mu	'1.1354'	'4.2217'	'12.3121'	'1.2126'	'0.1388'
\mu	'0.0014'	'0.0044'	'0.0282'	'0.004'	'0.1061'
a_H	'4.5461'	'5.3742'	'3.8721'	'5.2768'	'0.1682'
b_H	'11.7261'	'14.8363'	'14.9503'	'14.7128'	'0.1492'
\nu	'8.3988'	'81.3513'	'201.1131'	'12.6037'	'0.1137'
BP	'103.976'	'140'	'109.4699'	'108.5'	'0.0531'

3.3. 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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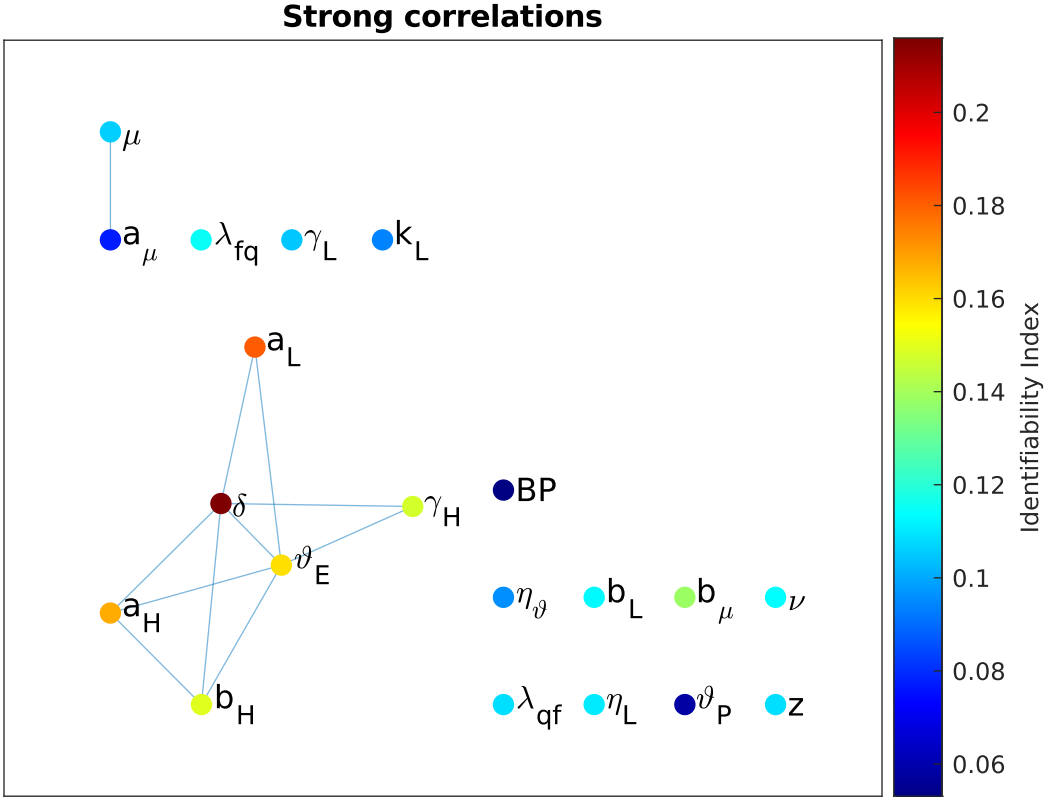
-0.4
-0.6
-0.8
-1


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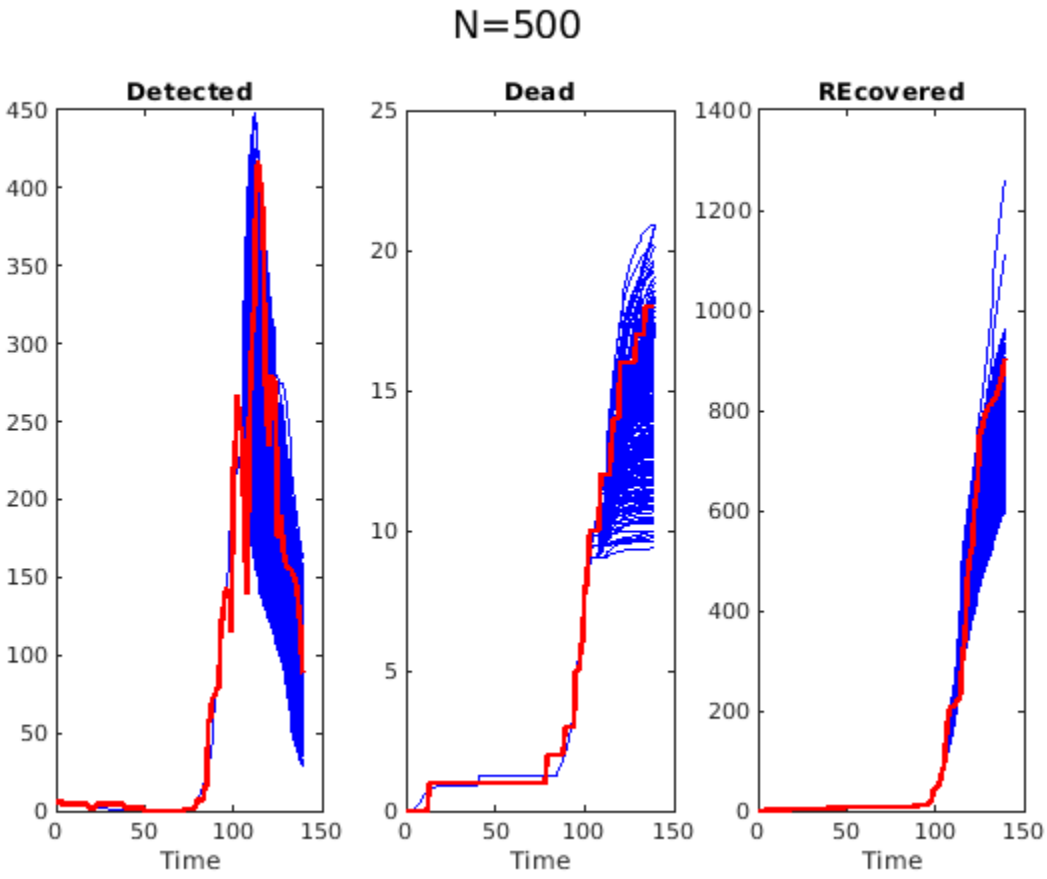
0.14
0.12
0.1
0.08
0.06
Identifiability Index

3.4. Uncertainty analisys



Chapter 4. Extension number4

4.1. Basic information

The extension to be validated consists of the time series from the data140 to the 174. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

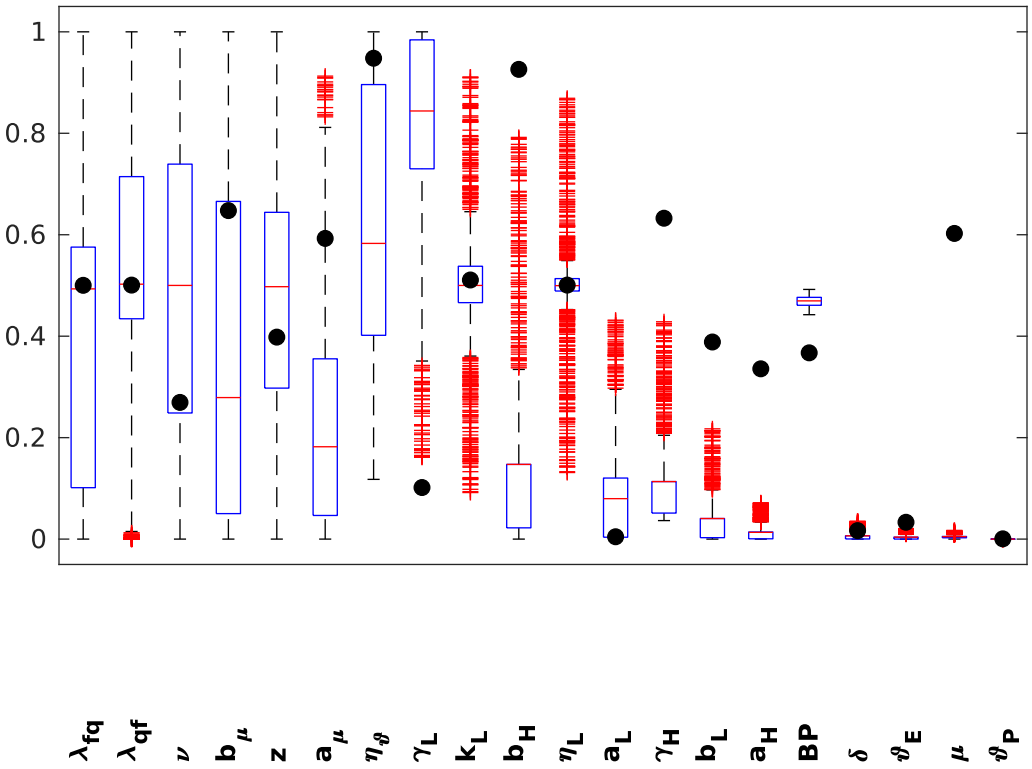
4.2. Estimated parameters with their intervals

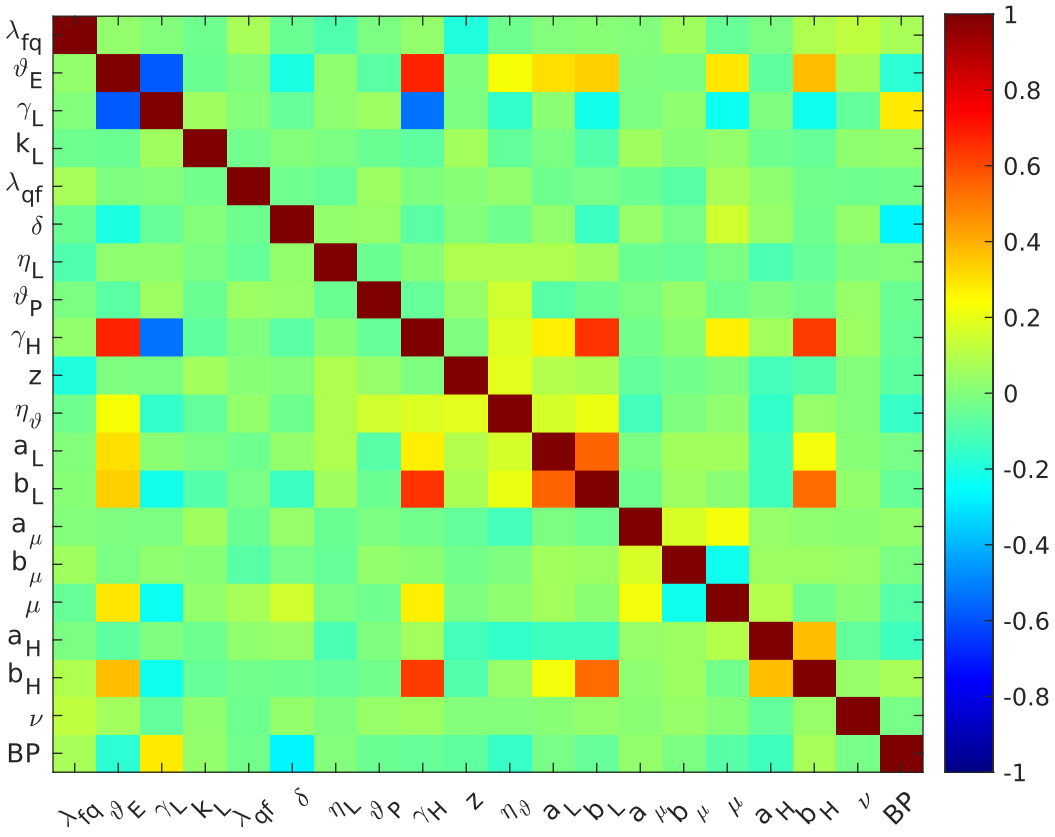
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0.96'	'0.4933'	'0.5003'	'0.0636'
\vartheta_E	'0.0211'	'0.0634'	'0.0038'	'0.0332'	'0.0957'
\gamma_L	'0.0658'	'0.1622'	'0.844'	'0.1017'	'0.1101'
k_L	'1'	'9.64'	'5.5003'	'5.5972'	'0.0545'
\lambda_{qf}	'0'	'0.95'	'0.5025'	'0.5007'	'0.0567'
\delta	'0.0001'	'0.0056'	'0.001'	'0.0025'	'0.0489'
\eta_L	'0'	'1'	'0.4996'	'0.5007'	'0.0576'
\vartheta_P	'0.0003'	'0.0008'	'0'	'0.0005'	'0.0359'
\gamma_H	'0.3614'	'1'	'0.1134'	'0.6325'	'0.1451'
z	'0'	'25.5329'	'14.9276'	'11.9452'	'0.0631'
\eta_\vartheta	'0.8894'	'0.994'	'0.5829'	'0.9479'	'0.0722'
a_L	'1'	'9.2898'	'2.1163'	'1.0648'	'0.0877'
b_L	'4.782'	'15'	'1.5679'	'6.4396'	'0.1309'
a_\mu	'7.9277'	'14.6288'	'3.5486'	'9.2988'	'0.0626'
b_\mu	'1'	'13.0033'	'4.9059'	'10.0661'	'0.0671'
\mu	'0'	'0.92'	'0.0049'	'0.6026'	'0.062'
a_H	'2.6846'	'5.7457'	'1.1862'	'5.6998'	'0.0565'
b_H	'8.5207'	'15'	'3.0616'	'13.9643'	'0.1217'
\nu	'36.1192'	'500'	'250.0398'	'134.7307'	'0.058'
BP	'130.6426'	'137.6543'	'140.0544'	'133.5'	'0.0461'

4.3. Identifiability analisys




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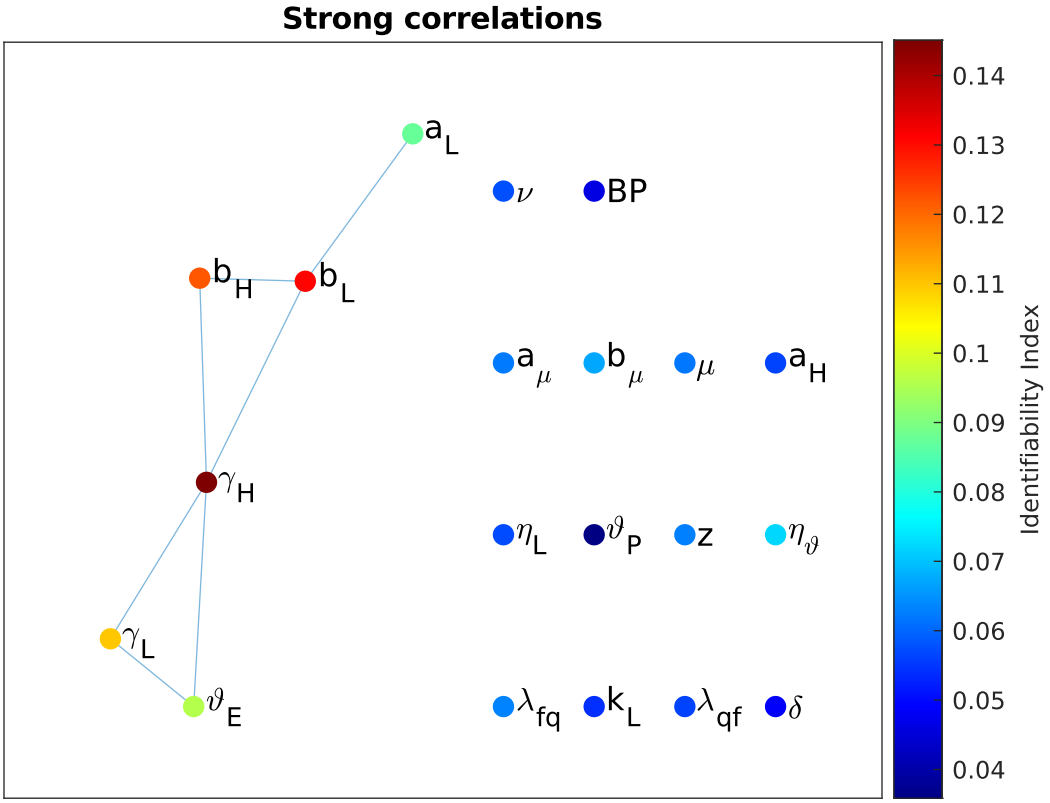
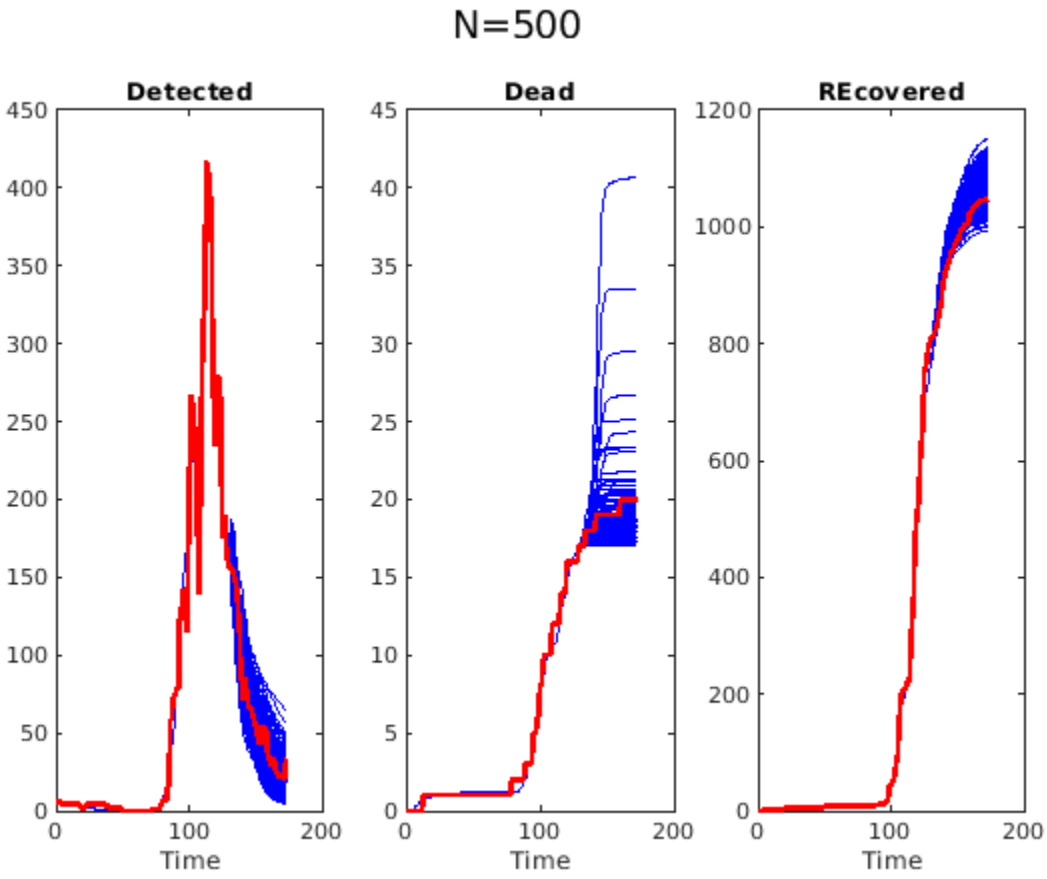
ηϑ
aL
bL
aμ
bμ
μ
aH
bH
ν
BP
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
a_L
ν
BP
b_H
b_L
a_μ
b_μ
μ
a_H
γ_H
η_L
ϑ_P
z
η_ϑ
γ_L
ϑ_E
λ_fq
k_L
λ_qf
δ
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
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 data174 to the 236. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

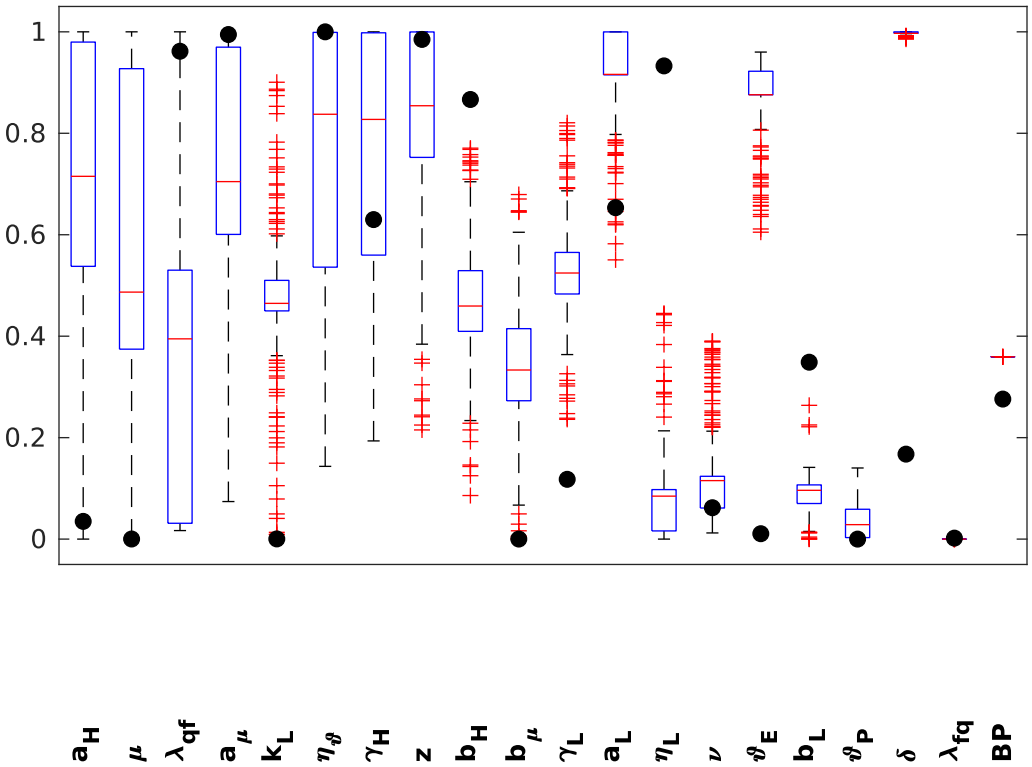
5.2. Estimated parameters with their intervals

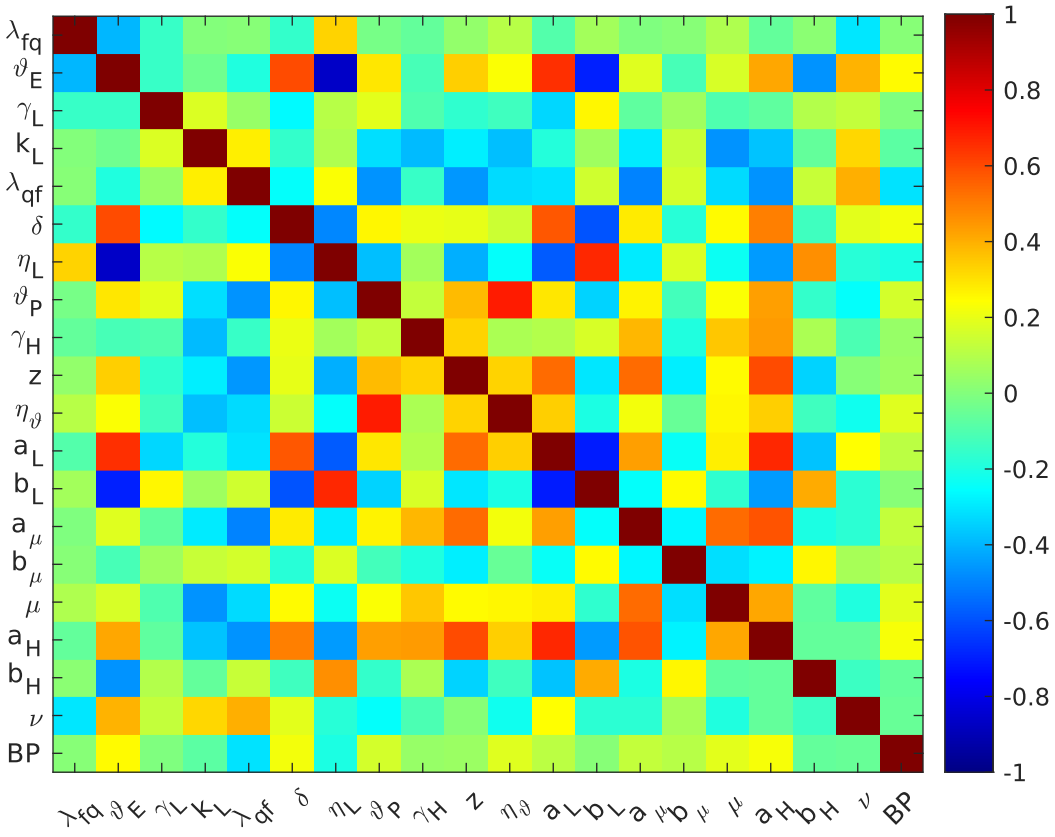
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

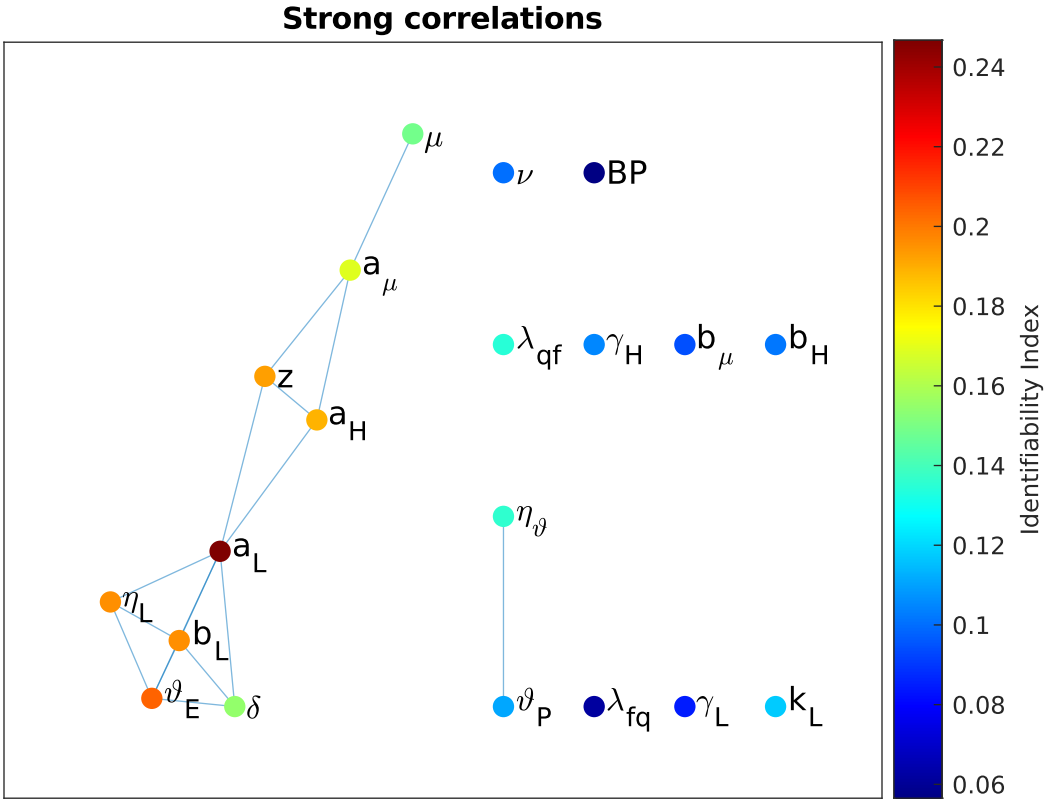
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0001'	'0.0035'	'0'	'0.0019'	'0.0624'
\vartheta_E	'0.0102'	'0.0145'	'0.8759'	'0.0106'	'0.2042'
\gamma_L	'0.0133'	'0.1638'	'0.5245'	'0.1179'	'0.0851'
k_L	'1'	'10'	'5.1823'	'1.0031'	'0.1176'
\lambda_{qf}	'0.2594'	'1'	'0.3948'	'0.9617'	'0.1349'
\delta	'0.0182'	'0.051'	'0.1496'	'0.0251'	'0.1547'
\eta_L	'0.3365'	'1'	'0.0847'	'0.9328'	'0.1959'
\vartheta_P	'0'	'0'	'0.0285'	'0'	'0.1109'
\gamma_H	'0.3156'	'0.8609'	'0.8273'	'0.6299'	'0.105'
z	'12.5252'	'30'	'25.629'	'29.5515'	'0.1928'
\eta_\vartheta	'0.5007'	'1'	'0.8375'	'1'	'0.1365'
a_L	'1'	'13.3025'	'13.8255'	'10.1457'	'0.2467'
b_L	'1.3325'	'14.3'	'2.3463'	'5.8819'	'0.1955'
a_\mu	'3.9435'	'15'	'10.8662'	'14.9255'	'0.1692'
b_\mu	'1'	'10.5982'	'5.6666'	'1.0016'	'0.0945'
\mu	'0'	'0.0003'	'0.4869'	'0.0002'	'0.1491'
a_H	'1.1421'	'3.8627'	'11.012'	'1.4893'	'0.1891'
b_H	'4.281'	'14.2662'	'7.4326'	'13.1329'	'0.1021'
\nu	'29.1753'	'47.4219'	'57.6491'	'30.9234'	'0.1005'
BP	'150.4574'	'167.4464'	'174.4999'	'166.5'	'0.0565'

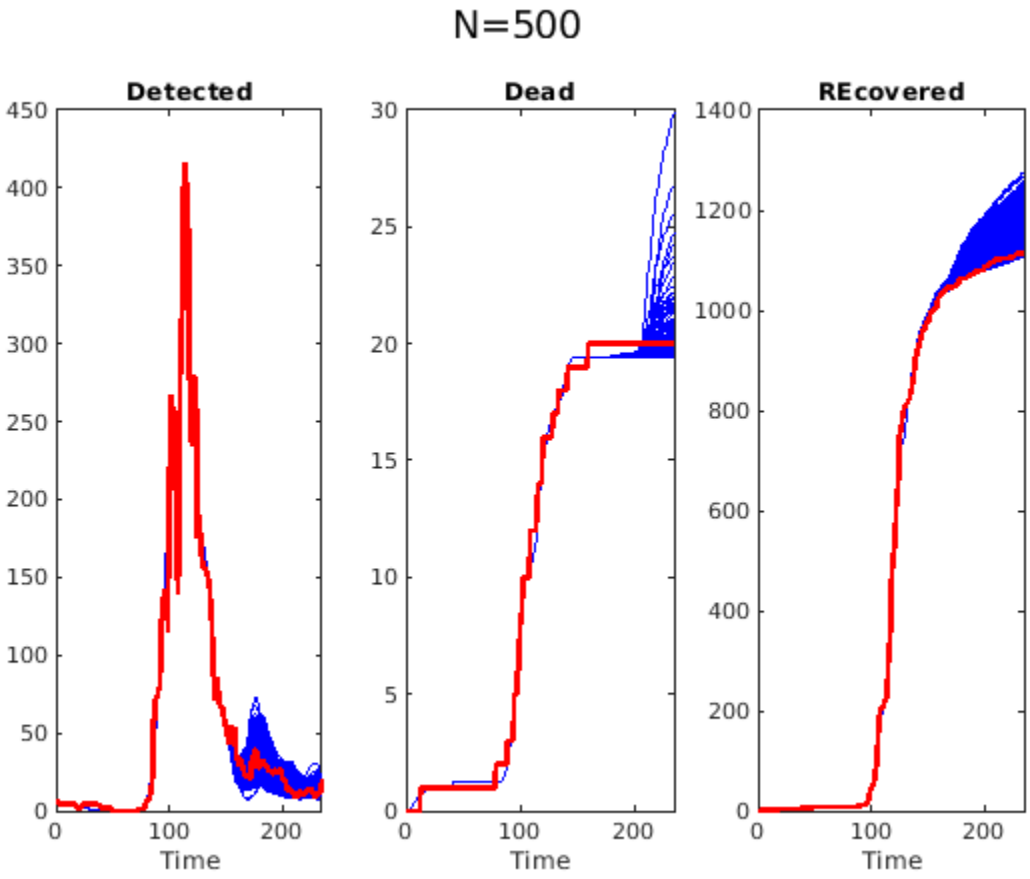
5.3. Identifiability analisys




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
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
μ
ν
BP
a μ
λ qf
γ H
b μ
b H
z
a H
η ϑ
a L
η L
b L
ϑ E
δ
ϑ P
λ fq
γ L
k L
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
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 data236 to the 278. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

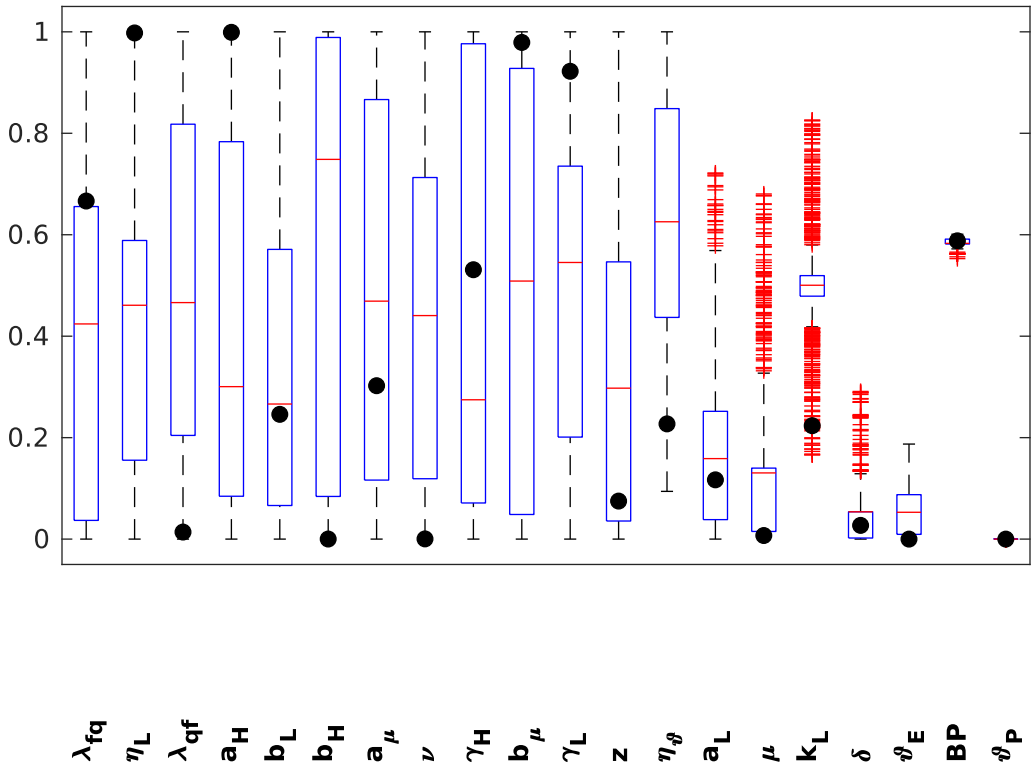
6.2. Estimated parameters with their intervals

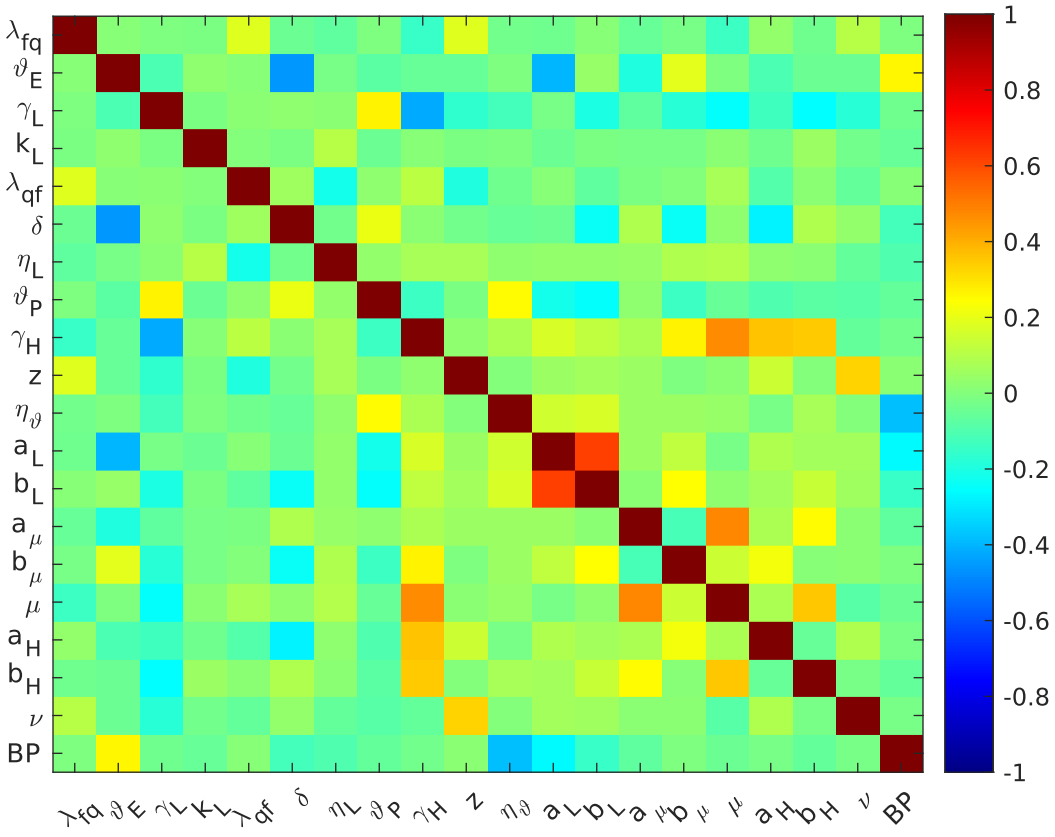
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

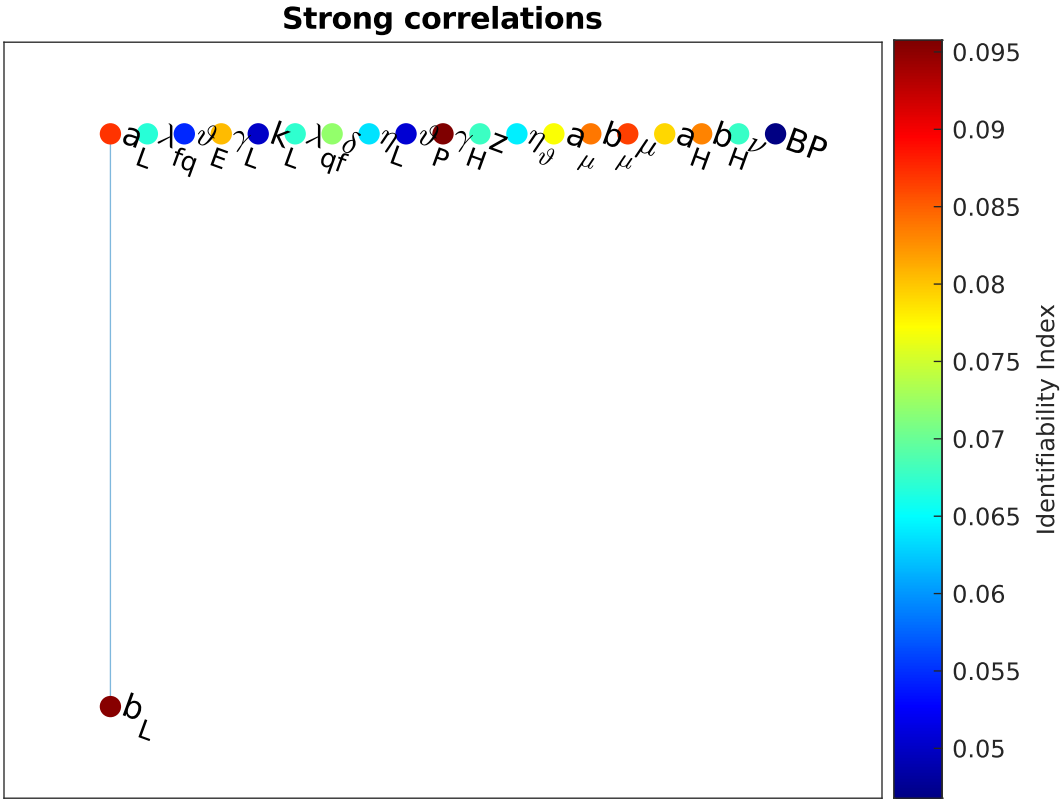
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4595'	'0.6805'	'0.4242'	'0.6664'	'0.0669'
\vartheta_E	'0'	'0'	'0.0529'	'0'	'0.0547'
\gamma_L	'0.9124'	'0.9765'	'0.5453'	'0.9222'	'0.0806'
k_L	'1.9537'	'3.8361'	'5.5039'	'3.0121'	'0.0502'
\lambda_{qf}	'0.0072'	'0.0204'	'0.4662'	'0.0139'	'0.0674'
\delta	'0.0006'	'0.0051'	'0.0081'	'0.0041'	'0.0722'
\eta_L	'0.732'	'1'	'0.461'	'0.9978'	'0.0638'
\vartheta_P	'0'	'0'	'0'	'0'	'0.0508'
\gamma_H	'0.1793'	'0.5403'	'0.2746'	'0.531'	'0.0958'
z	'1.5235'	'2.3311'	'8.9263'	'2.2483'	'0.0679'
\eta_\vartheta	'0.2268'	'0.2327'	'0.6256'	'0.2271'	'0.0643'
a_L	'2.4188'	'2.6482'	'3.2216'	'2.6356'	'0.0871'
b_L	'4.2857'	'4.4609'	'4.7279'	'4.4434'	'0.0952'
a_\mu	'3.7594'	'9.5593'	'7.5672'	'5.2336'	'0.0772'
b_\mu	'10.5589'	'15'	'8.1216'	'14.7072'	'0.0839'
\mu	'0.0047'	'0.0094'	'0.1305'	'0.0071'	'0.0864'
a_H	'10.8135'	'15'	'5.2075'	'14.9863'	'0.0792'
b_H	'1'	'6.0177'	'11.4797'	'1.0018'	'0.0832'
\nu	'0.1105'	'0.3599'	'220.3182'	'0.1969'	'0.0677'
BP	'233.5802'	'278'	'234.6343'	'235.153'	'0.0468'

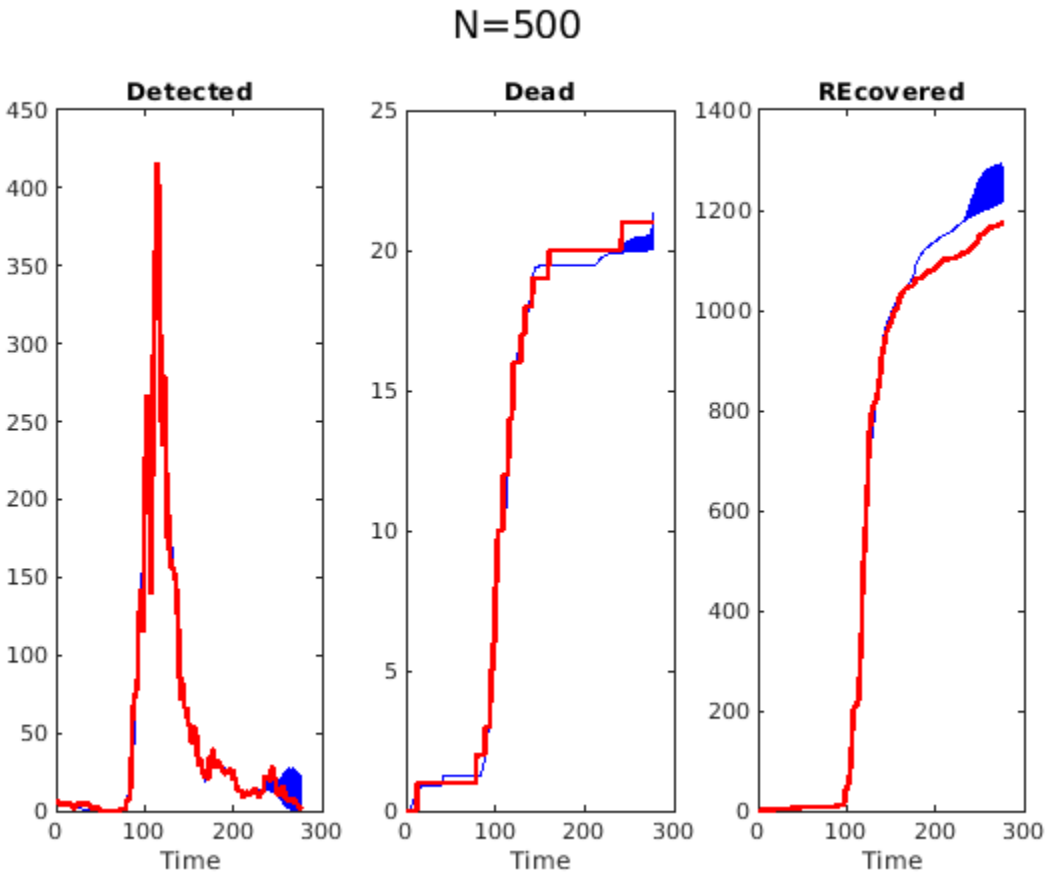
6.3. Identifiability analisys




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
0.095
0.09
0.085
0.08
0.075
0.07
0.065
0.06
0.055
0.05

6.4. Uncertainty analisys



Chapter 7. Extension number7

7.1. Basic information

The extension to be validated consists of the time series from the data278 to the 310. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

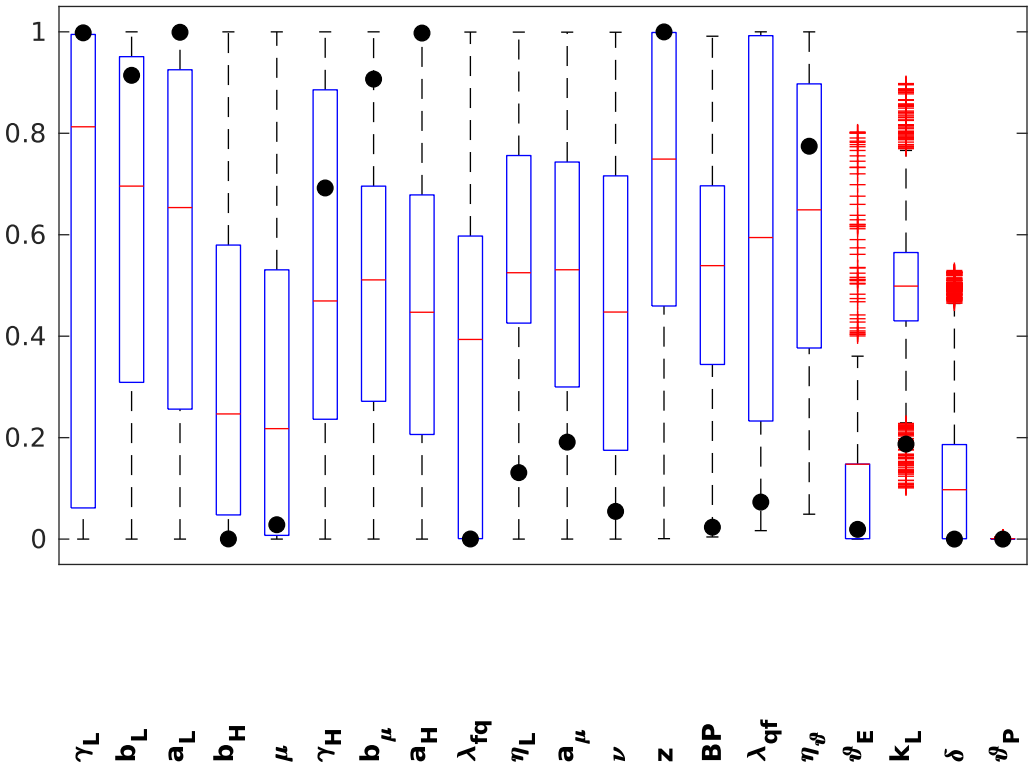
7.2. Estimated parameters with their intervals

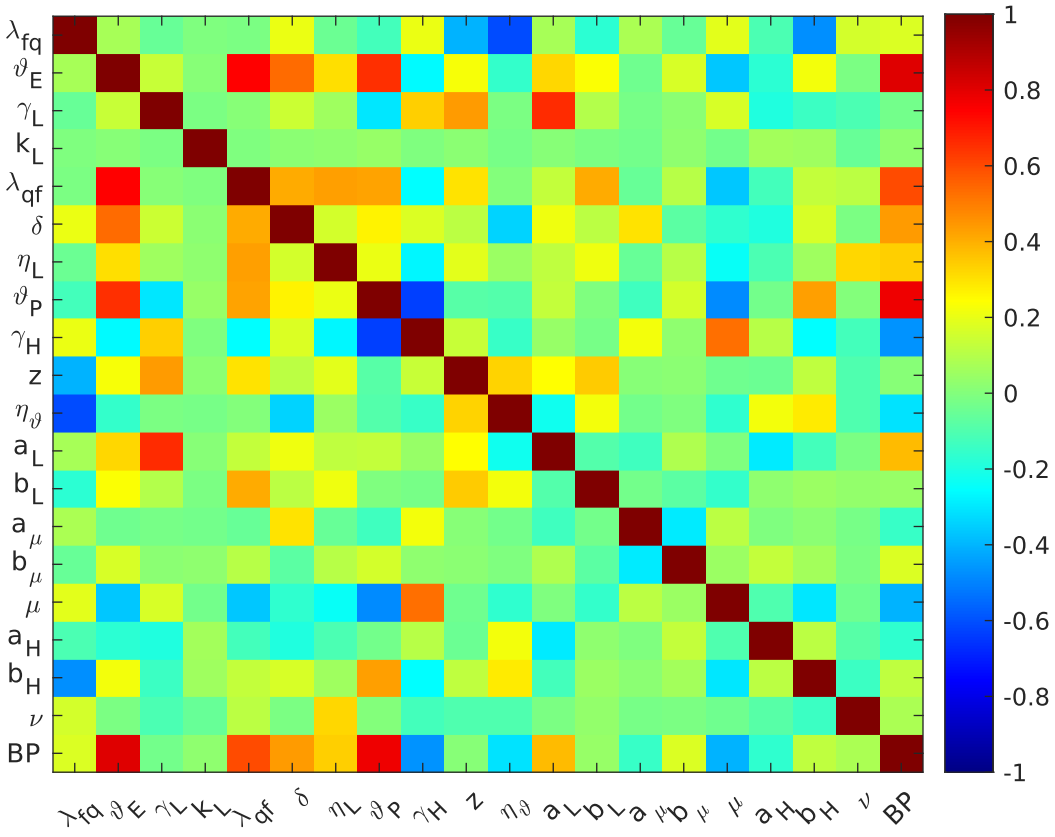
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

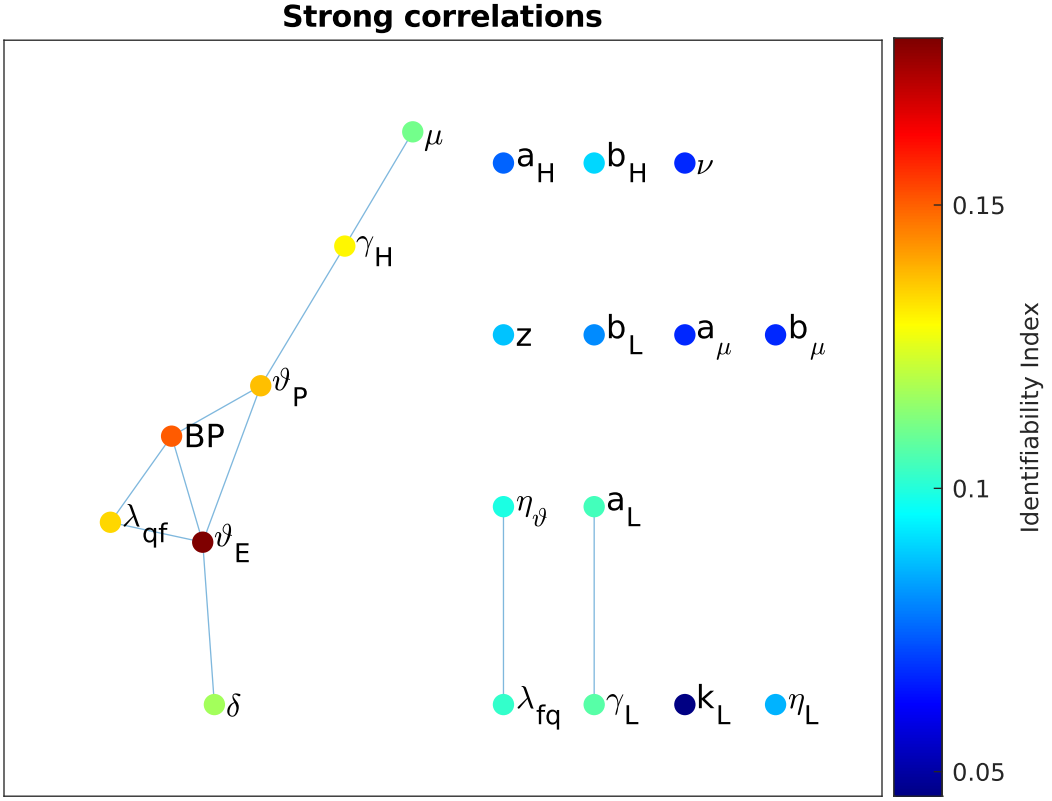
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0002'	'0.0065'	'0.3936'	'0.0002'	'0.1022'
\vartheta_E	'0.0163'	'0.0234'	'0.1479'	'0.0192'	'0.1794'
\gamma_L	'0.5173'	'1'	'0.8128'	'0.998'	'0.1072'
k_L	'1'	'10'	'5.4885'	'2.6854'	'0.0457'
\lambda_{qf}	'0.0722'	'0.1156'	'0.5945'	'0.073'	'0.1342'
\delta	'0'	'0'	'0.0146'	'0'	'0.1169'
\eta_L	'0.1291'	'0.2544'	'0.5251'	'0.131'	'0.0855'
\vartheta_P	'0'	'0'	'0.0008'	'0'	'0.1374'
\gamma_H	'0'	'1'	'0.4695'	'0.6922'	'0.1301'
z	'20.0258'	'30'	'22.4738'	'29.9946'	'0.0879'
\eta_\vartheta	'0.3996'	'0.9354'	'0.6491'	'0.7745'	'0.0992'
a_L	'13.0169'	'15'	'10.1499'	'14.9877'	'0.1046'
b_L	'11.9746'	'15'	'10.7421'	'13.7997'	'0.0804'
a_\mu	'1'	'15'	'8.4333'	'3.6765'	'0.0673'
b_\mu	'1'	'15'	'8.1538'	'13.6954'	'0.0674'
\mu	'0'	'0.0574'	'0.2177'	'0.0283'	'0.1109'
a_H	'1'	'15'	'7.2609'	'14.9658'	'0.0753'
b_H	'1'	'15'	'4.4544'	'1.0045'	'0.0906'
\nu	'20.8446'	'31.9404'	'223.8032'	'27.3218'	'0.0672'
BP	'236'	'244.2275'	'270.5'	'237.5'	'0.1502'

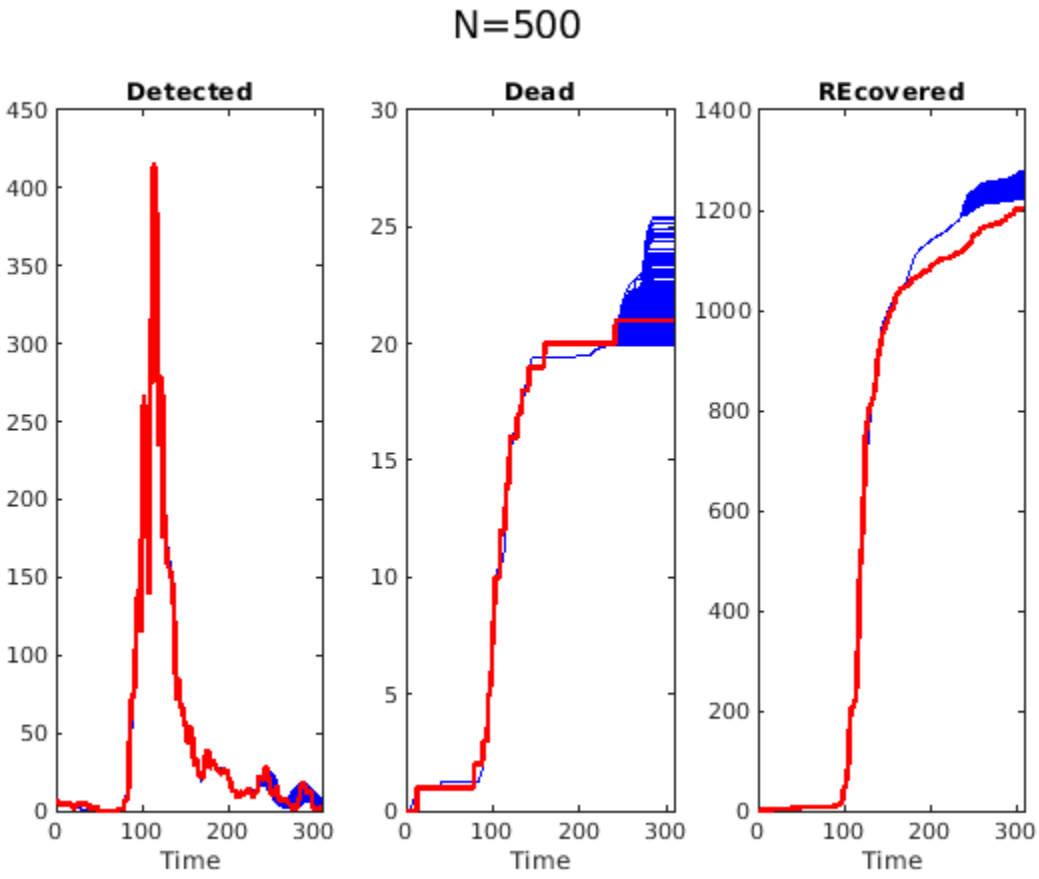
7.3. Identifiability analisys




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
μ
a_H
b_H
ν
γ_H
z
b_L
a_μ
b_μ
ϑ_P
BP
η_ϑ
a_L
λ_{qf}
ϑ_E
δ
λ_{fq}
γ_L
k_L
η_L
0.15
0.1
0.05
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 data310 to the 331. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

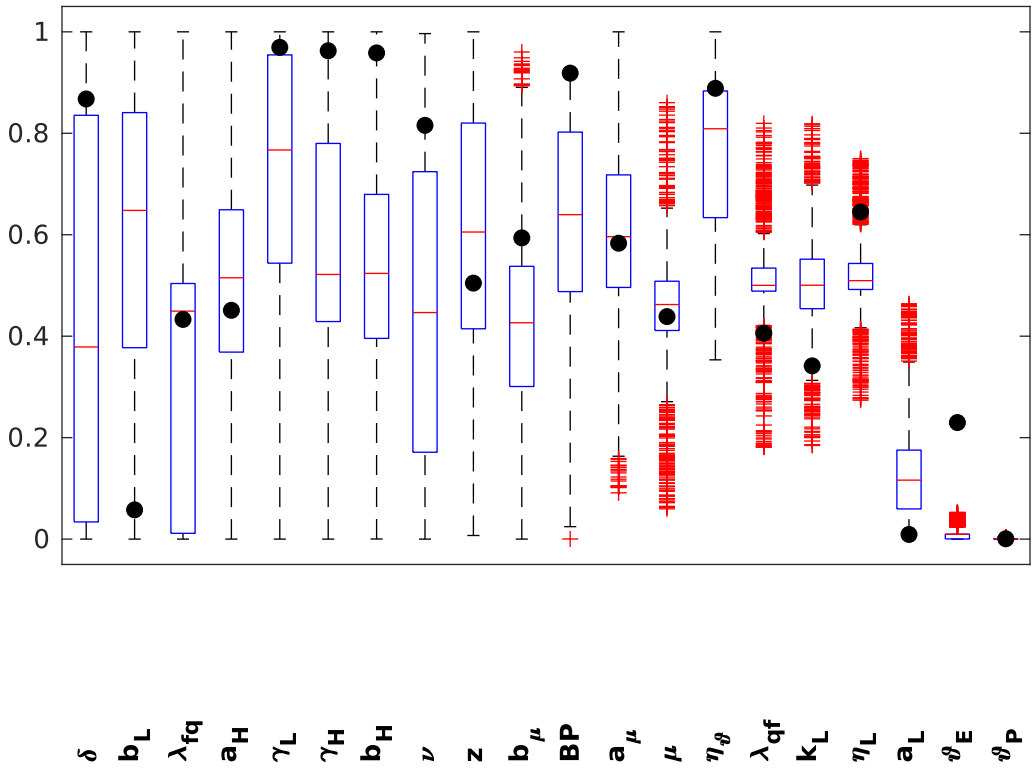
8.2. Estimated parameters with their intervals

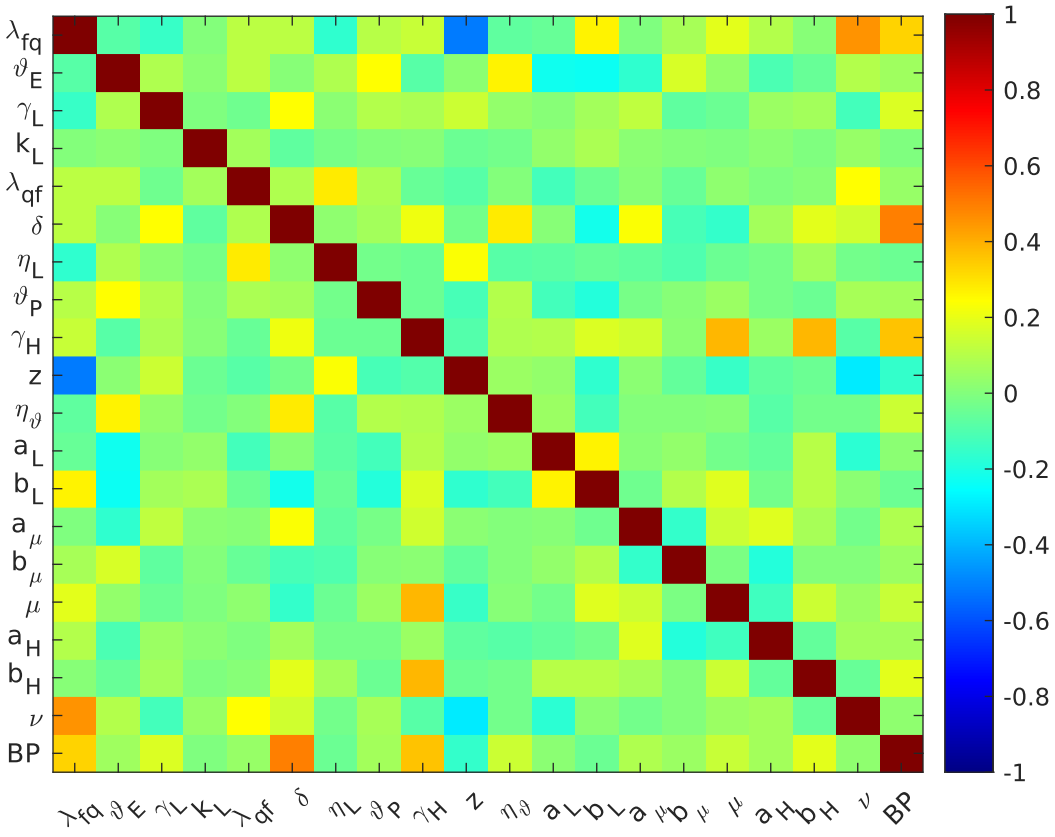
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

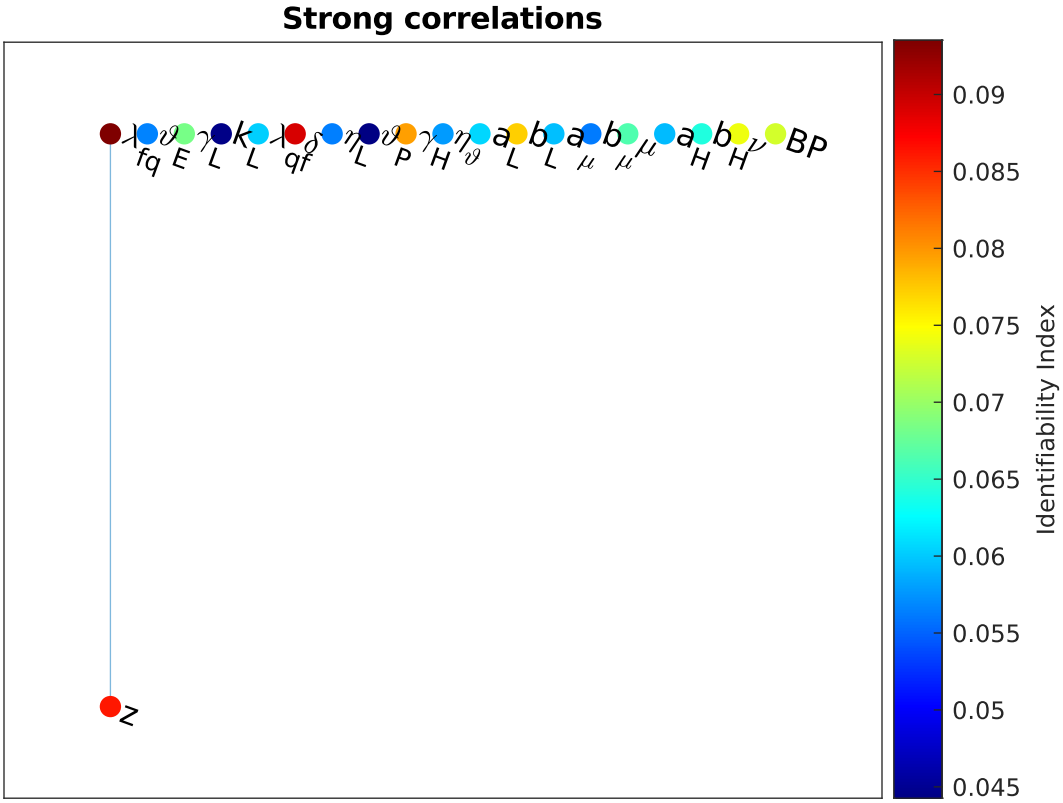
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0195'	'0.9745'	'0.4494'	'0.4331'	'0.0935'
\vartheta_E	'0.1177'	'0.2536'	'0.0097'	'0.2298'	'0.0568'
\gamma_L	'0.3519'	'1'	'0.767'	'0.9694'	'0.0685'
k_L	'1.18'	'10'	'5.5042'	'4.0738'	'0.0445'
\lambda_{qf}	'0'	'0.9128'	'0.5002'	'0.4057'	'0.0604'
\delta	'0.0667'	'0.1324'	'0.0568'	'0.1302'	'0.0892'
\eta_L	'0'	'1'	'0.5095'	'0.645'	'0.0565'
\vartheta_P	'0'	'0.0014'	'0.0006'	'0.0006'	'0.0443'
\gamma_H	'0'	'1'	'0.5217'	'0.9627'	'0.0796'
z	'0'	'30'	'18.1606'	'15.1384'	'0.086'
\eta_\vartheta	'0.6213'	'1'	'0.8089'	'0.8887'	'0.0578'
a_L	'1'	'2.1555'	'2.6273'	'1.1284'	'0.0606'
b_L	'1.5544'	'14.3277'	'10.0713'	'1.8074'	'0.0773'
a_\mu	'3.8478'	'15'	'9.3465'	'9.1658'	'0.0596'
b_\mu	'1'	'15'	'6.9706'	'9.3136'	'0.0563'
\mu	'0'	'0.9869'	'0.4624'	'0.4386'	'0.0665'
a_H	'2.3484'	'15'	'8.212'	'7.3144'	'0.0595'
b_H	'1'	'15'	'8.3331'	'14.4182'	'0.0641'
\nu	'34.4826'	'500'	'223.2803'	'407.8305'	'0.0741'
BP	'314.5'	'318.14'	'305.5'	'317.5'	'0.0728'

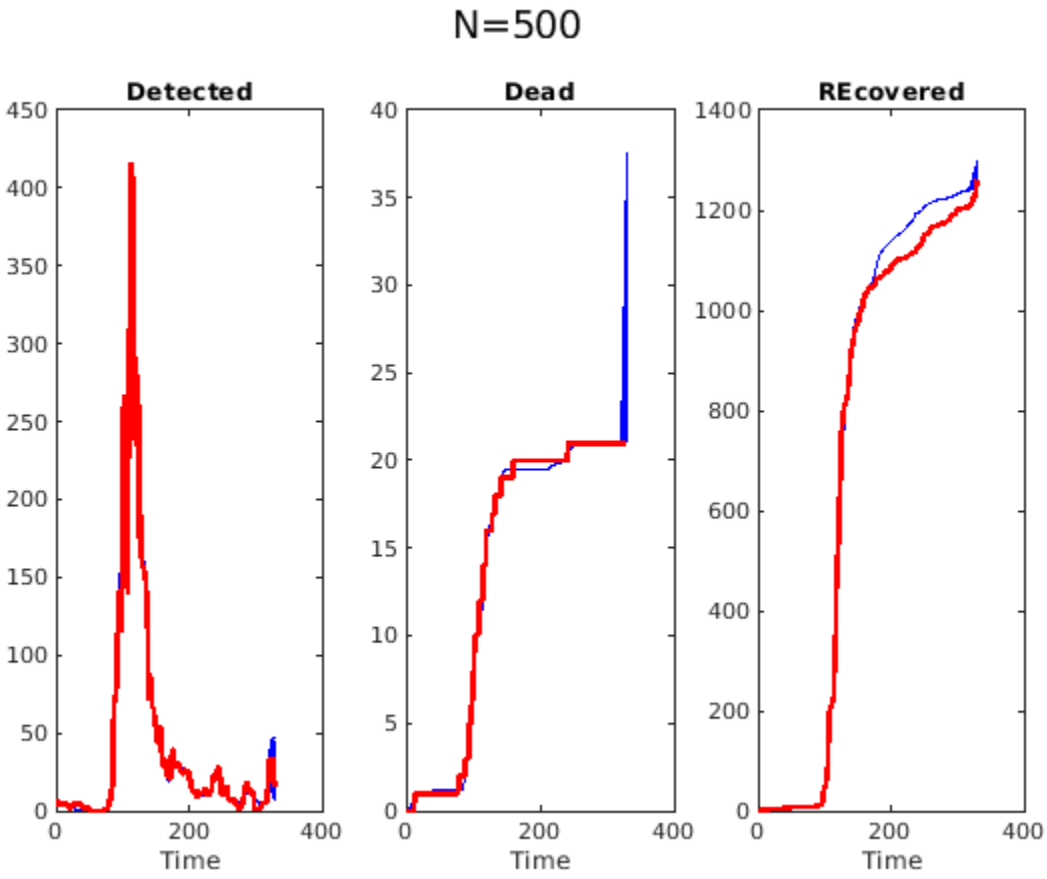
8.3. Identifiability analisys




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
0.09
0.085
0.08
0.075
0.07
0.065
0.06
0.055
0.05
0.045

8.4. Uncertainty analisys



Chapter 9. Extension number9

9.1. Basic information

The extension to be validated consists of the time series from the data331 to the 331. The status of the validation is: COMPLETED.

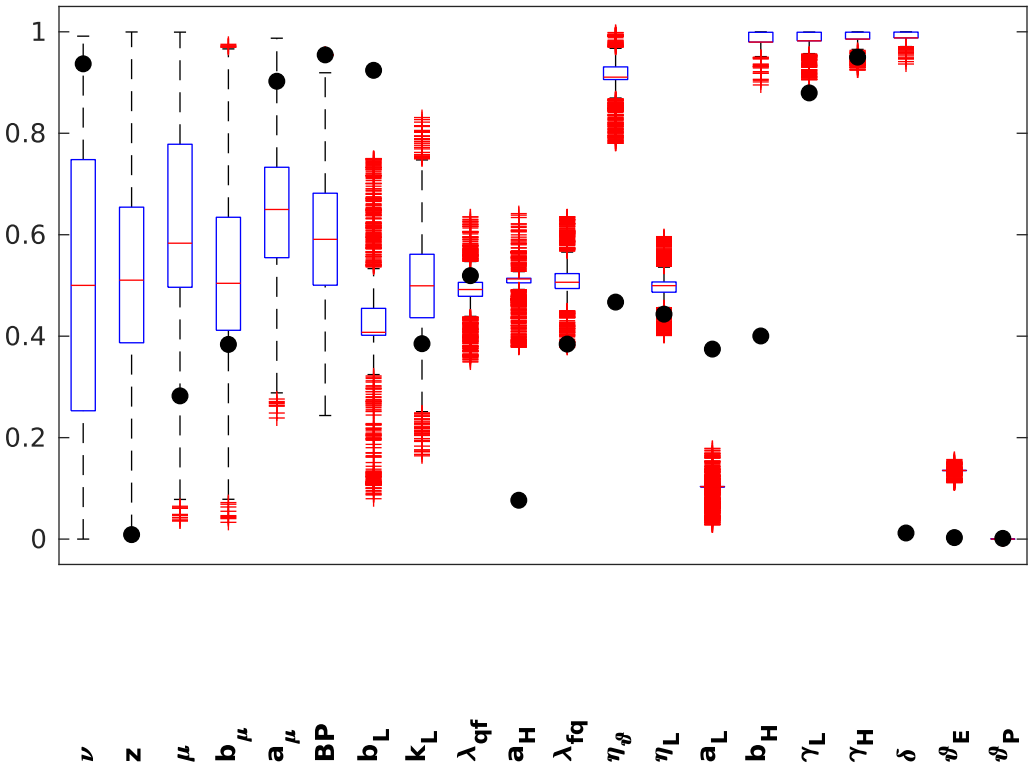
The number of estimations needed to perform the validation was1000.

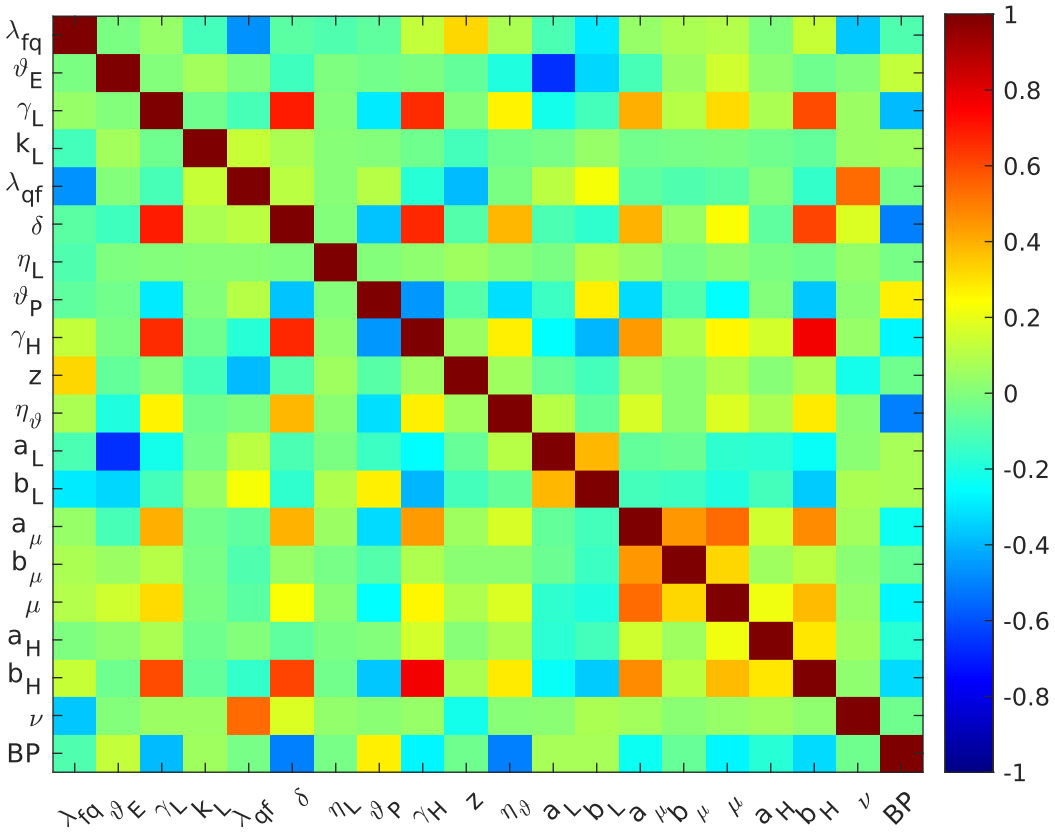
9.2. Estimated parameters with their intervals

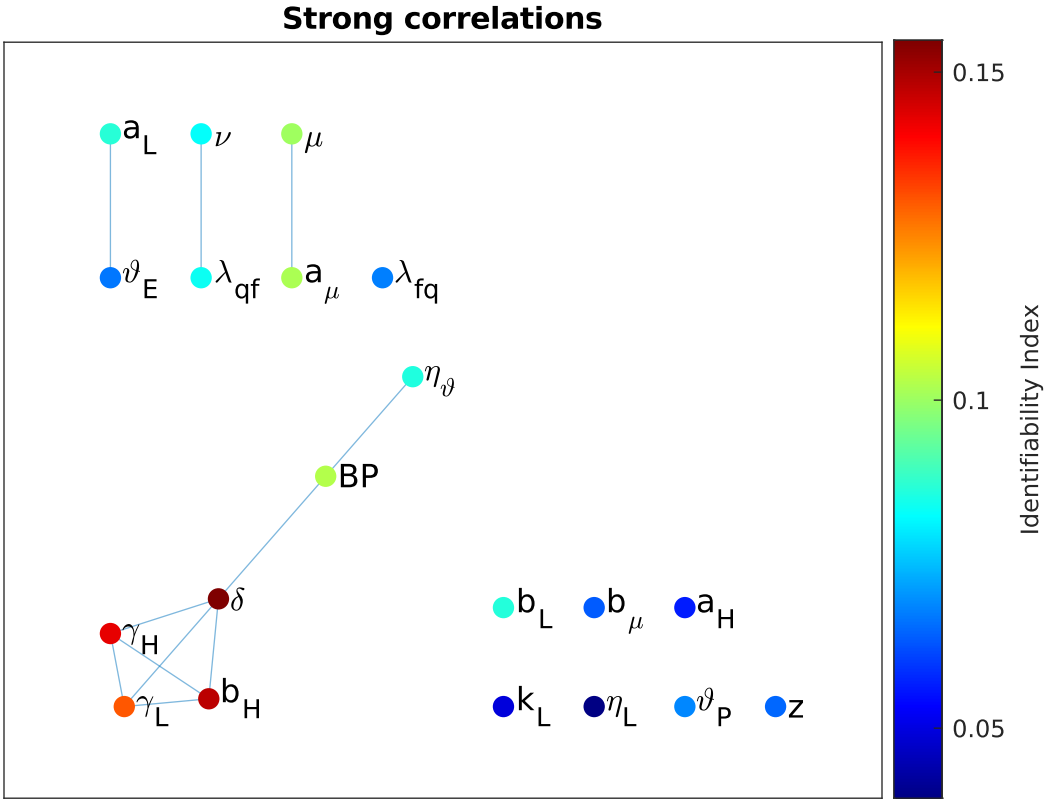
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4962'	'0.5164'	'0.5063'	'0.3844'	'0.068'
\vartheta_E	'0.1312'	'0.1394'	'0.1353'	'0.003'	'0.0669'
\gamma_L	'0.9695'	'0.9949'	'0.9822'	'0.8795'	'0.1302'
k_L	'5.3822'	'5.6053'	'5.4938'	'4.4668'	'0.0495'
\lambda_{qf}	'0.481'	'0.503'	'0.492'	'0.5193'	'0.0837'
\delta	'0.1445'	'0.15'	'0.1482'	'0.0018'	'0.1549'
\eta_L	'0.4922'	'0.507'	'0.4996'	'0.4434'	'0.0393'
\vartheta_P	'0'	'0.0013'	'0.0001'	'0.0014'	'0.069'
\gamma_H	'0.9693'	'1'	'0.9856'	'0.95'	'0.1427'
z	'14.8357'	'15.7888'	'15.3122'	'0.2654'	'0.0651'
\eta_\vartheta	'0.9004'	'0.9208'	'0.9106'	'0.4672'	'0.0862'
a_L	'2.2706'	'2.6292'	'2.4499'	'6.2438'	'0.0869'
b_L	'6.4745'	'6.9381'	'6.7063'	'13.9369'	'0.0865'
a_\mu	'9.9261'	'10.2674'	'10.0967'	'13.6356'	'0.1016'
b_\mu	'7.8399'	'8.2786'	'8.0593'	'6.3731'	'0.0637'
\mu	'0.5677'	'0.5989'	'0.5833'	'0.2823'	'0.1007'
a_H	'8.0348'	'8.3242'	'8.1795'	'2.0721'	'0.0568'
b_H	'14.4533'	'14.9797'	'14.7165'	'6.6059'	'0.1478'
\nu	'238.8471'	'261.3016'	'250.0744'	'468.4561'	'0.0831'
BP	'316.4046'	'316.5954'	'316.5'	'320.5'	'0.1027'

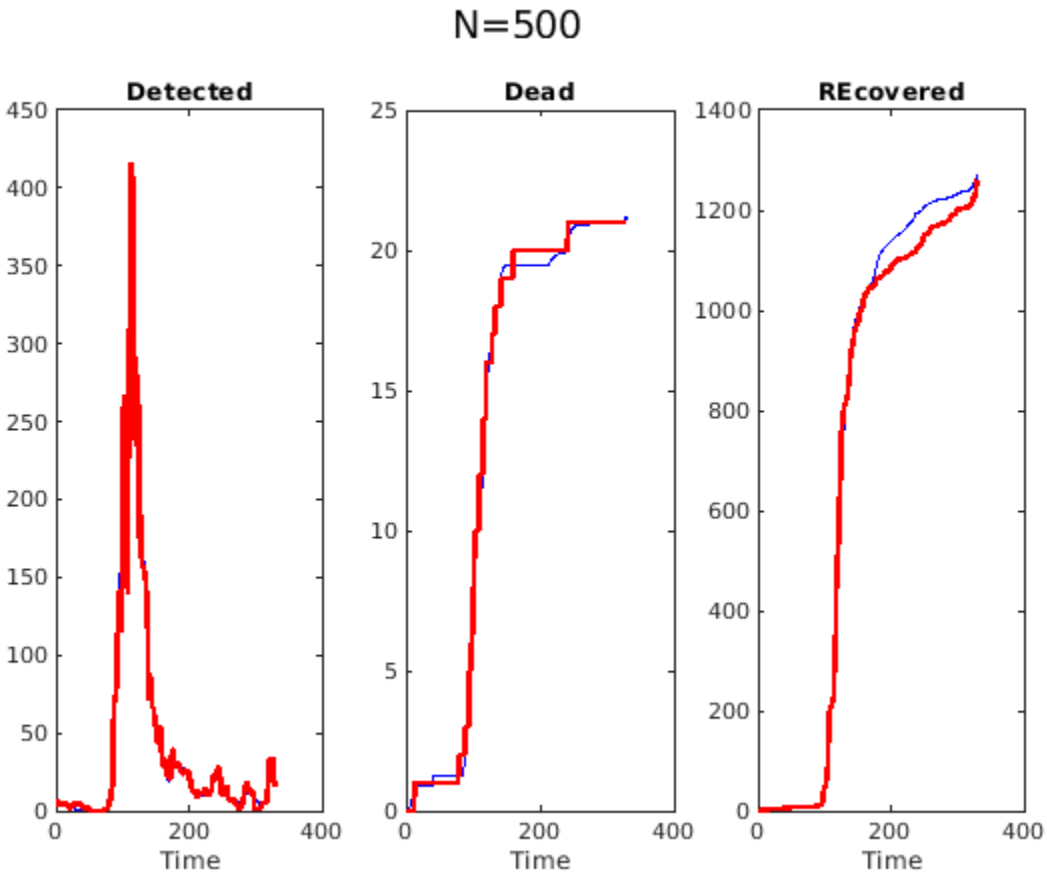
9.3. Identifiability analisys




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
a L
ν
μ
ϑ E
λ qf
a μ
λ fq
η ϑ
BP
δ
γ H
γ L
b H
b L
b μ
a H
k L
η L
ϑ P
z
0.15
0.1
0.05
Identifiability Index

9.4. Uncertainty analisys



Chapter 10. Extension number10

10.1. Basic information

The extension to be validated consists of the time series from the data331 to the 361. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

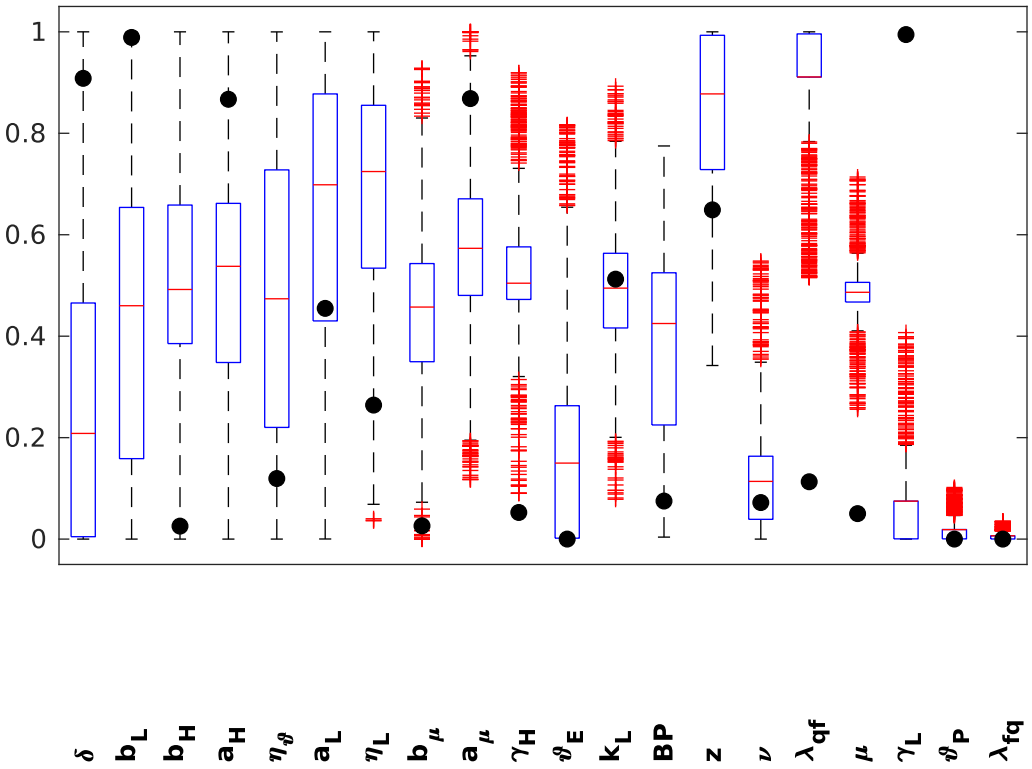
10.2. Estimated parameters with their intervals

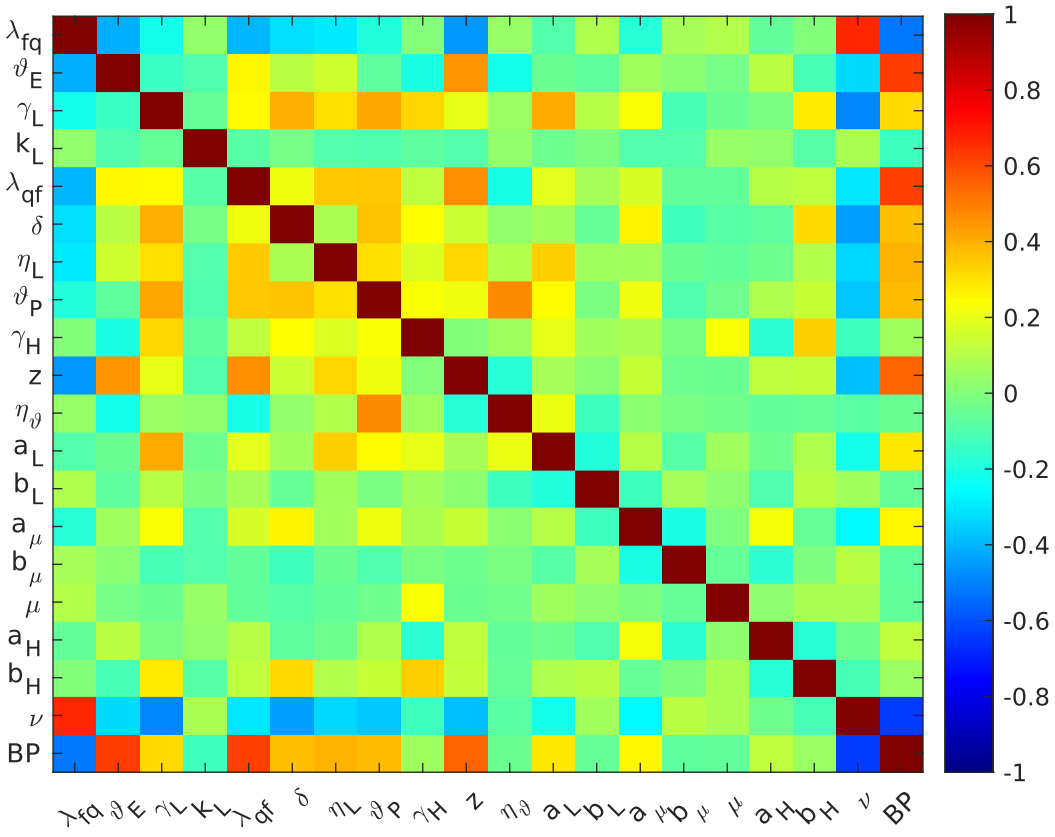
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0'	'0.0065'	'0'	'0.1135'
\vartheta_E	'0'	'0.0001'	'0.1504'	'0.0001'	'0.1129'
\gamma_L	'0.3106'	'1'	'0.0749'	'0.9946'	'0.1116'
k_L	'1'	'10'	'5.4527'	'5.6119'	'0.0574'
\lambda_{qf}	'0.1122'	'0.2971'	'0.9109'	'0.113'	'0.1156'
\delta	'0'	'0.15'	'0.0312'	'0.1362'	'0.1'
\eta_L	'0.0954'	'1'	'0.7245'	'0.2642'	'0.0888'
\vartheta_P	'0'	'0.0734'	'0.0187'	'0'	'0.0904'
\gamma_H	'0.0059'	'0.1181'	'0.5045'	'0.0525'	'0.0799'
z	'19.1803'	'26.1325'	'26.3222'	'19.4709'	'0.1102'
\eta_\vartheta	'0.0993'	'0.3485'	'0.4738'	'0.1194'	'0.0745'
a_L	'4.4523'	'7.4408'	'10.7787'	'7.3677'	'0.0866'
b_L	'7.511'	'15'	'7.4408'	'14.845'	'0.0665'
a_\mu	'1.7'	'15'	'9.025'	'13.1574'	'0.0769'
b_\mu	'1.35'	'15'	'7.4047'	'1.3658'	'0.0594'
\mu	'0'	'0.1017'	'0.4866'	'0.0502'	'0.0563'
a_H	'1'	'13.768'	'8.5285'	'13.1389'	'0.066'
b_H	'1'	'15'	'7.8892'	'1.3583'	'0.074'
\nu	'31.7266'	'46.6603'	'56.9451'	'36.0187'	'0.1373'
BP	'331.819'	'335.7969'	'339.5'	'332.4999'	'0.1716'

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
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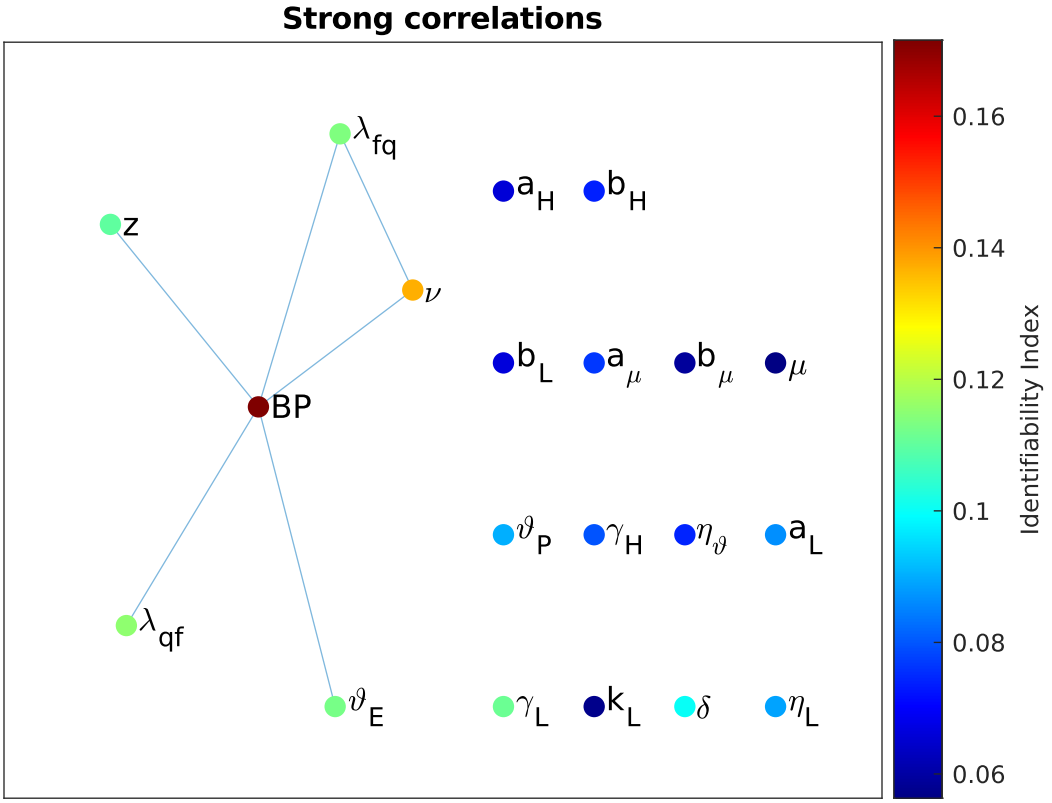
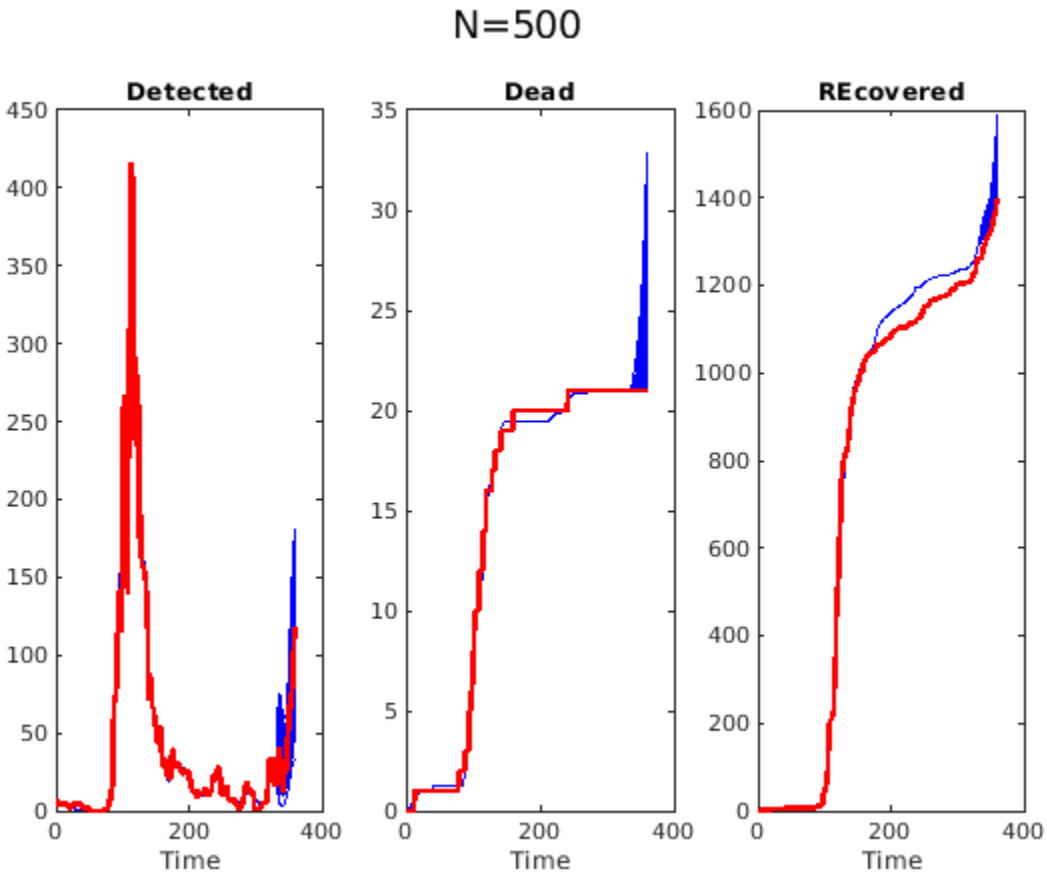
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


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

10.4. Uncertainty analisys



Chapter 11. Extension number11

11.1. Basic information

The extension to be validated consists of the time series from the data361 to the 382. The status of the validation is: COMPLETED.

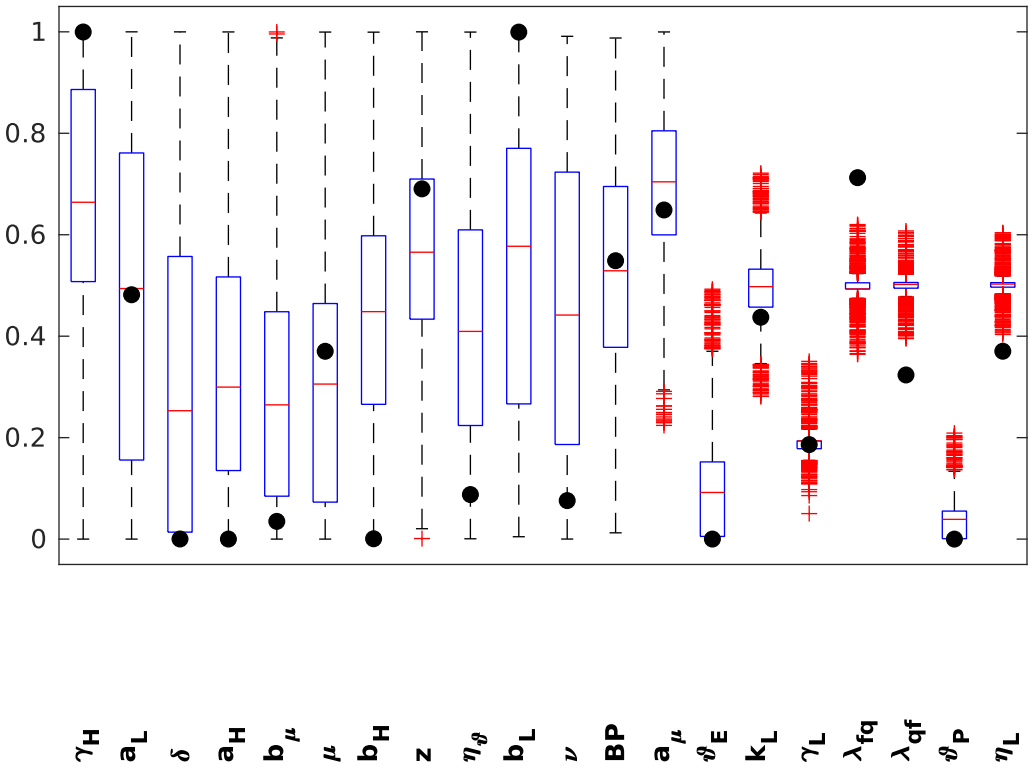
The number of estimations needed to perform the validation was1000.

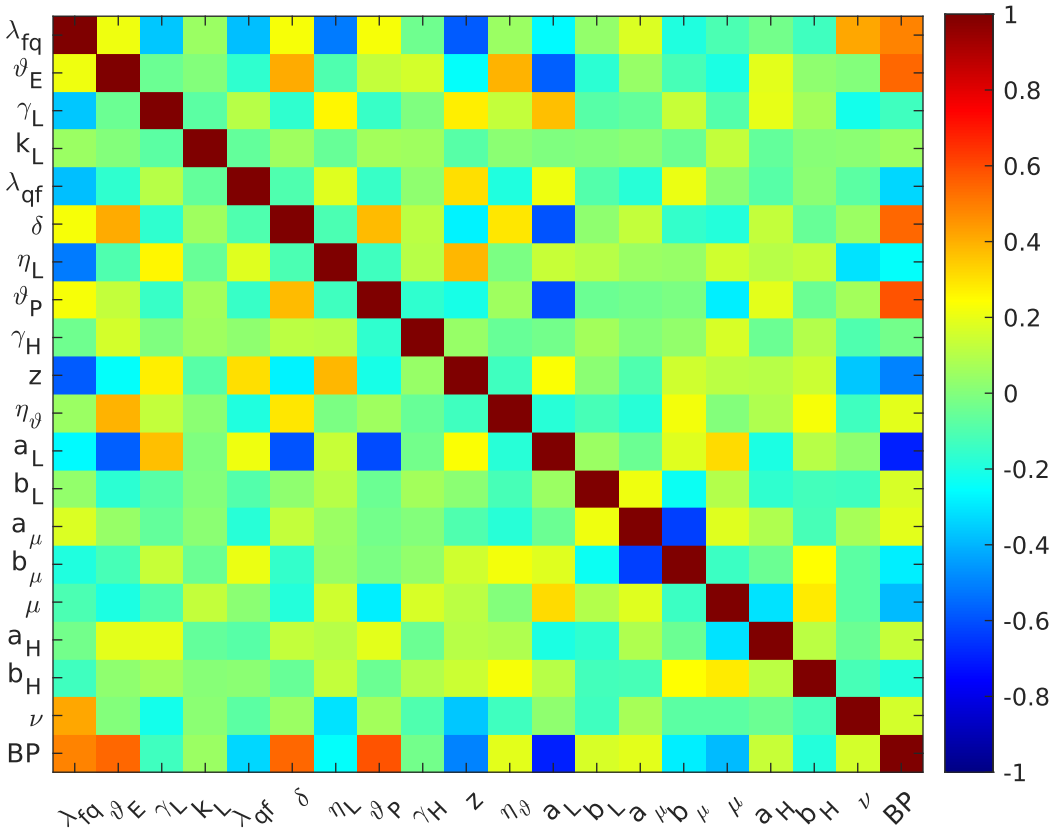
11.2. Estimated parameters with their intervals

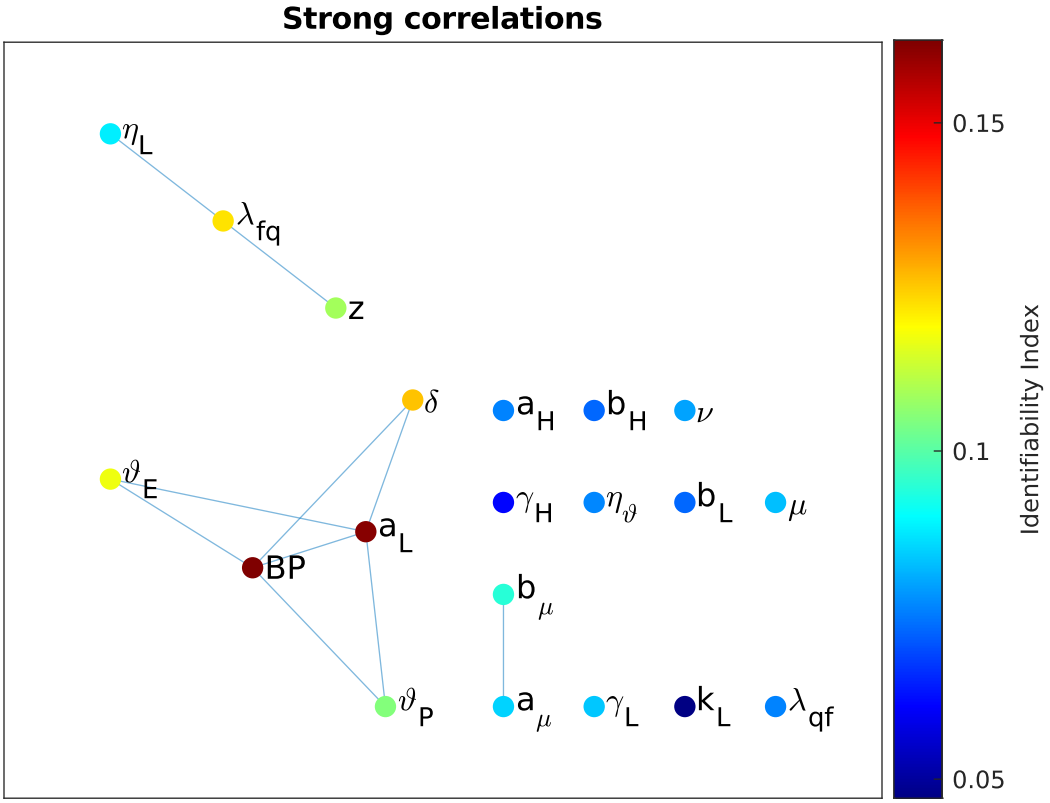
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4763'	'0.5097'	'0.493'	'0.7125'	'0.1224'
\vartheta_E	'0.0712'	'0.1129'	'0.0921'	'0.0001'	'0.1173'
\gamma_L	'0.171'	'0.2162'	'0.1936'	'0.1863'	'0.0838'
k_L	'5.3775'	'5.5804'	'5.4789'	'4.9362'	'0.0471'
\lambda_{qf}	'0.4865'	'0.5177'	'0.5021'	'0.3236'	'0.0764'
\delta	'0.034'	'0.0419'	'0.038'	'0'	'0.1259'
\eta_L	'0.4907'	'0.5148'	'0.5027'	'0.3703'	'0.0885'
\vartheta_P	'0.0277'	'0.0502'	'0.0389'	'0'	'0.1053'
\gamma_H	'0.6438'	'0.6842'	'0.664'	'0.9997'	'0.0616'
z	'16.4305'	'17.5039'	'16.9672'	'20.7142'	'0.1086'
\eta_\vartheta	'0.391'	'0.4279'	'0.4094'	'0.0878'	'0.0768'
a_L	'7.5442'	'8.2866'	'7.9154'	'7.7439'	'0.1616'
b_L	'8.7443'	'9.4195'	'9.0819'	'14.9926'	'0.0731'
a_\mu	'10.6286'	'11.0905'	'10.8595'	'10.0831'	'0.085'
b_\mu	'4.4499'	'4.9599'	'4.7049'	'1.4893'	'0.0948'
\mu	'0.2878'	'0.3234'	'0.3056'	'0.3703'	'0.0832'
a_H	'4.8834'	'5.5066'	'5.195'	'1.0008'	'0.076'
b_H	'6.9951'	'7.5599'	'7.2775'	'1.0092'	'0.073'
\nu	'208.5954'	'233.0951'	'220.8453'	'37.9504'	'0.0799'
BP	'352.095'	'353.2792'	'352.6871'	'353.5002'	'0.1626'

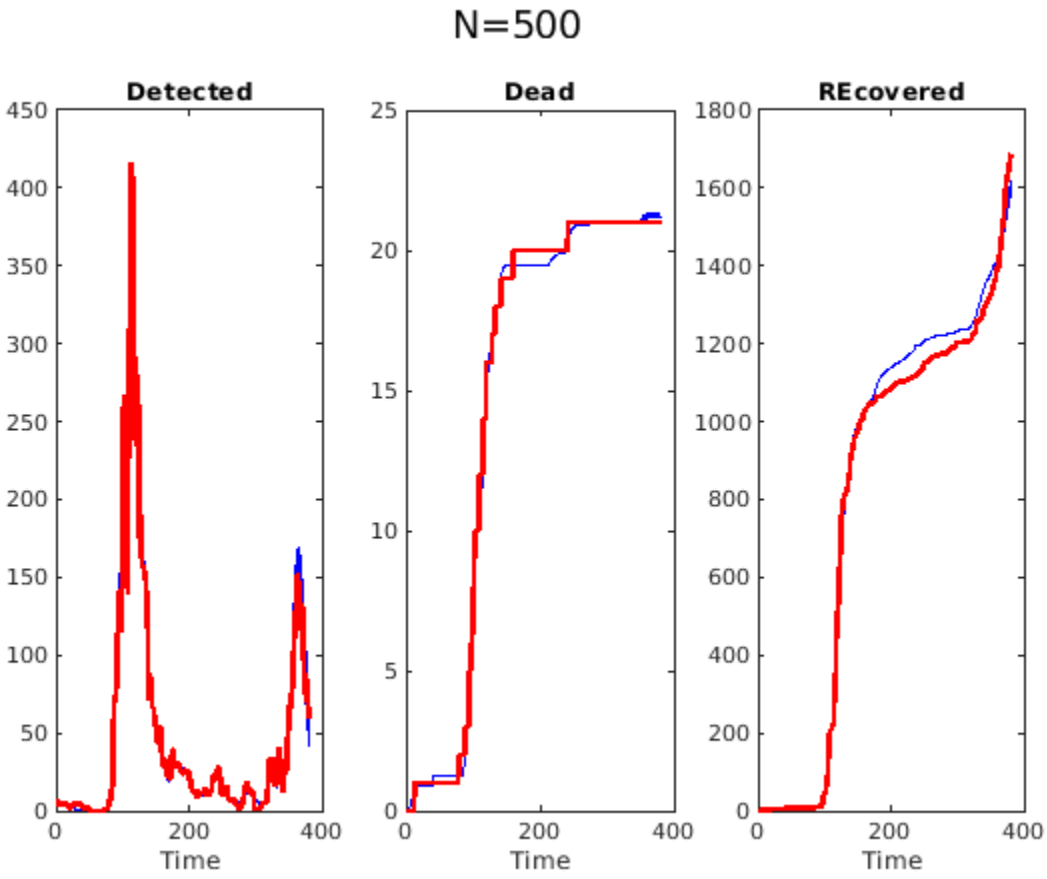
11.3. Identifiability analisys




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
η_L
λ_{fq}
z
δ
ϑ_E
a_L
BP
ϑ_P
a_H
b_H
ν
γ_H
η_ϑ
b_L
μ
b_μ
a_μ
γ_L
k_L
λ_{qf}
0.15
0.1
0.05
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 data382 to the 394. The status of the validation is: COMPLETED.

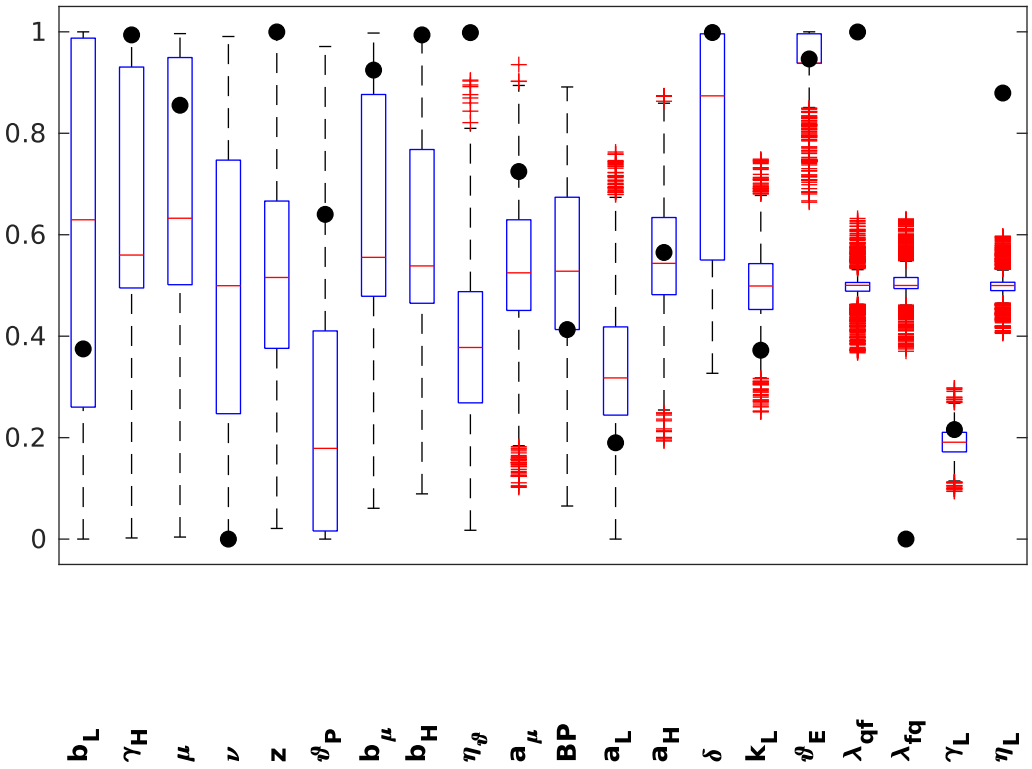
The number of estimations needed to perform the validation was1000.

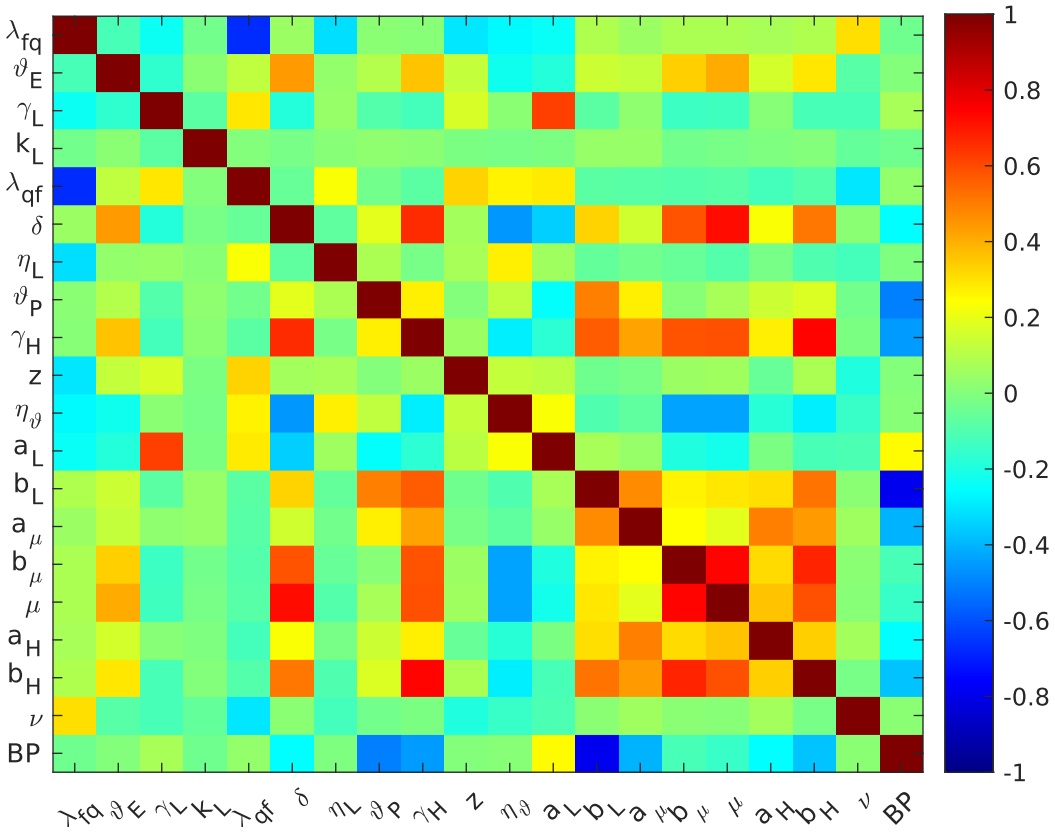
12.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.488'	'0.512'	'0.5'	'0.0001'	'0.0876'
\vartheta_E	'0.9145'	'0.9612'	'0.9379'	'0.9465'	'0.0915'
\gamma_L	'0.1775'	'0.2044'	'0.191'	'0.2159'	'0.0847'
k_L	'5.4004'	'5.5809'	'5.4906'	'4.3512'	'0.041'
\lambda_{qf}	'0.4874'	'0.5131'	'0.5002'	'0.9997'	'0.0909'
\delta	'0.1281'	'0.134'	'0.1311'	'0.1498'	'0.1612'
\eta_L	'0.4911'	'0.5086'	'0.4999'	'0.8793'	'0.0549'
\vartheta_P	'0.1509'	'0.2079'	'0.1794'	'0.6402'	'0.1021'
\gamma_H	'0.5414'	'0.5786'	'0.56'	'0.9939'	'0.1771'
z	'15.0178'	'15.9266'	'15.4722'	'29.9933'	'0.0634'
\eta_\vartheta	'0.3632'	'0.3925'	'0.3779'	'0.9984'	'0.0891'
a_L	'5.2144'	'5.6824'	'5.4484'	'3.6585'	'0.0983'
b_L	'9.4229'	'10.2025'	'9.8127'	'6.2489'	'0.1497'
a_\mu	'8.1478'	'8.5496'	'8.3487'	'11.1442'	'0.0849'
b_\mu	'8.5241'	'9.0277'	'8.7759'	'13.9442'	'0.1549'
\mu	'0.6144'	'0.6507'	'0.6325'	'0.8553'	'0.1588'
a_H	'8.4367'	'8.7835'	'8.6101'	'8.9105'	'0.0803'
b_H	'8.2855'	'8.7887'	'8.5371'	'14.9153'	'0.1746'
\nu	'238.4587'	'261.0562'	'249.7574'	'0.0048'	'0.0689'
BP	'372.8959'	'373.3959'	'373.1459'	'370.5'	'0.1077'

12.3. 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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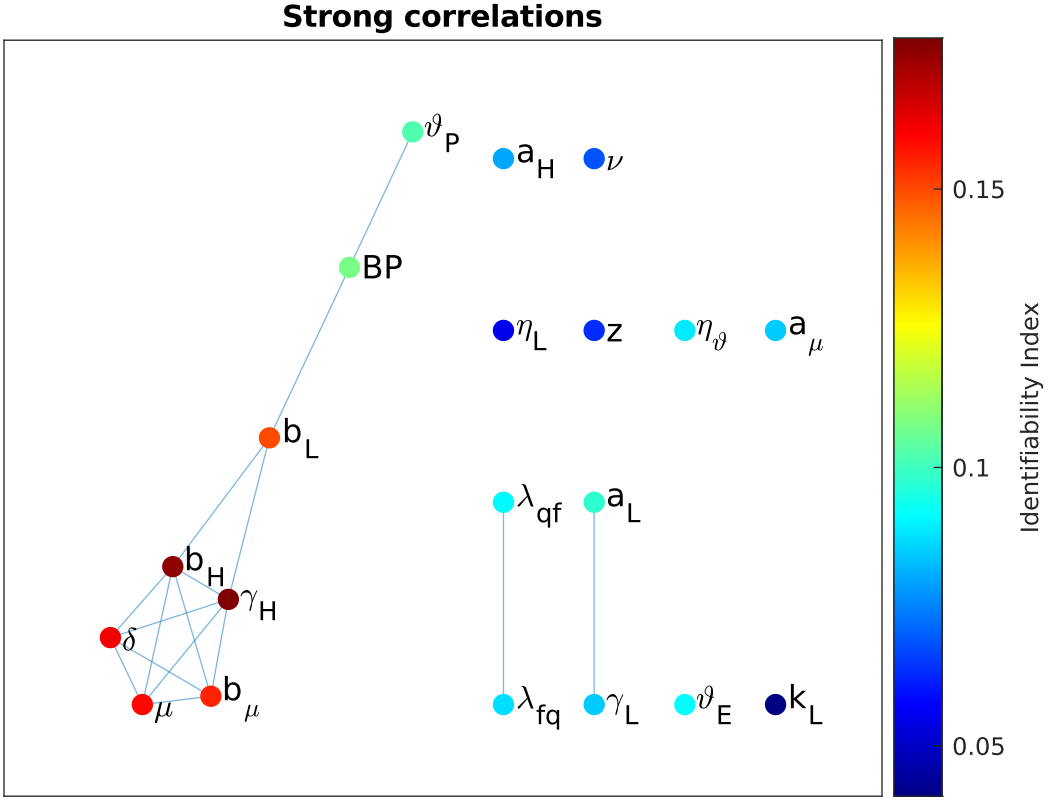
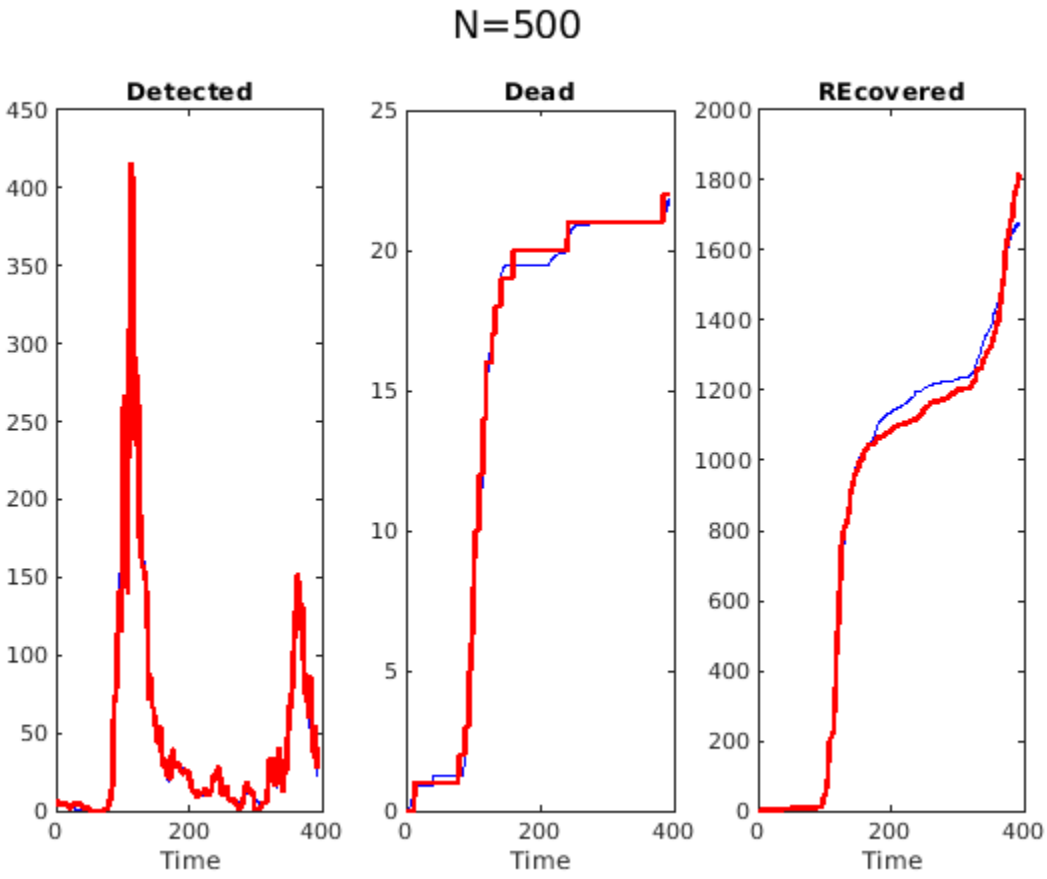
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
ϑ_P
a_H
ν
BP
η_L
z
η_ϑ
a_μ
b_L
λ_{qf}
a_L
b_H
γ_H
δ
b_μ
μ
λ_{fq}
γ_L
ϑ_E
k_L
0.15
0.1
0.05
Identifiability Index

12.4. Uncertainty analisys



Chapter 13. Extension number13

13.1. Basic information

The extension to be validated consists of the time series from the data394 to the 403. The status of the validation is: COMPLETED.

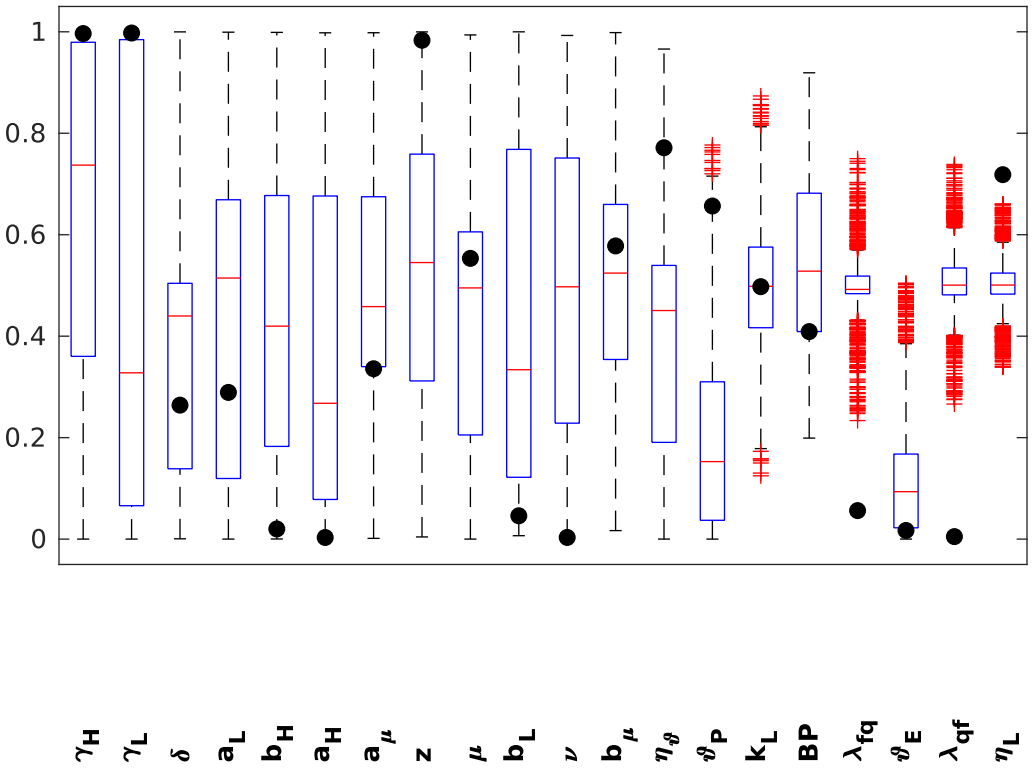
The number of estimations needed to perform the validation was1000.

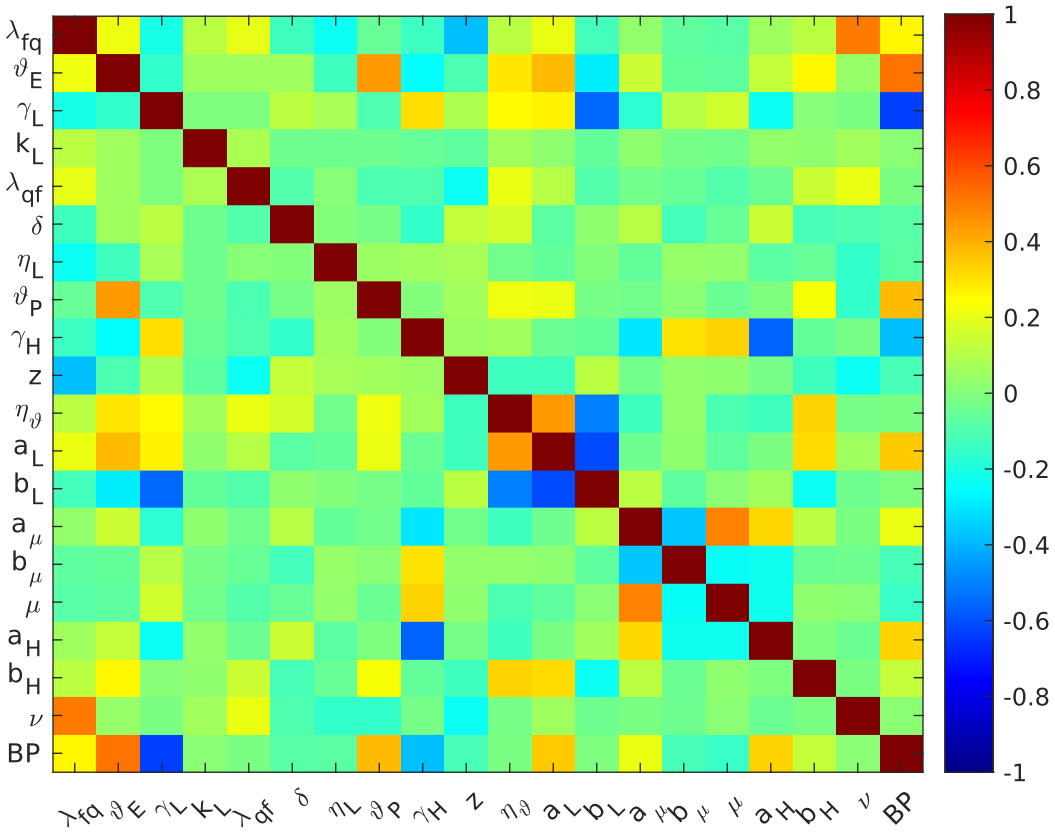
13.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4764'	'0.508'	'0.4922'	'0.0562'	'0.0937'
\vartheta_E	'0.0728'	'0.1142'	'0.0935'	'0.017'	'0.1038'
\gamma_L	'0.2961'	'0.3594'	'0.3278'	'0.9976'	'0.1244'
k_L	'5.3813'	'5.5885'	'5.4849'	'5.4784'	'0.0475'
\lambda_{qf}	'0.4869'	'0.5144'	'0.5006'	'0.0049'	'0.0619'
\delta	'0.0626'	'0.0693'	'0.066'	'0.0396'	'0.0686'
\eta_L	'0.4927'	'0.5088'	'0.5008'	'0.7184'	'0.0489'
\vartheta_P	'0.1303'	'0.1758'	'0.1531'	'0.6566'	'0.0748'
\gamma_H	'0.7102'	'0.7641'	'0.7372'	'0.9965'	'0.1048'
z	'15.7334'	'16.975'	'16.3542'	'29.4989'	'0.0726'
\eta_\vartheta	'0.4331'	'0.468'	'0.4506'	'0.7714'	'0.0955'
a_L	'7.857'	'8.5526'	'8.2048'	'5.0484'	'0.1051'
b_L	'5.3034'	'6.0458'	'5.6746'	'1.6437'	'0.1262'
a_\mu	'7.1504'	'7.6821'	'7.4163'	'5.7011'	'0.0778'
b_\mu	'8.1182'	'8.5639'	'8.3411'	'9.0905'	'0.0653'
\mu	'0.4739'	'0.5164'	'0.4951'	'0.5534'	'0.0743'
a_H	'4.4023'	'5.0938'	'4.748'	'1.0445'	'0.0954'
b_H	'6.5629'	'7.1904'	'6.8767'	'1.2799'	'0.0769'
\nu	'236.9891'	'260.3324'	'248.6607'	'1.6328'	'0.0826'
BP	'387.6801'	'387.9399'	'387.81'	'386.4996'	'0.1089'

13.3. 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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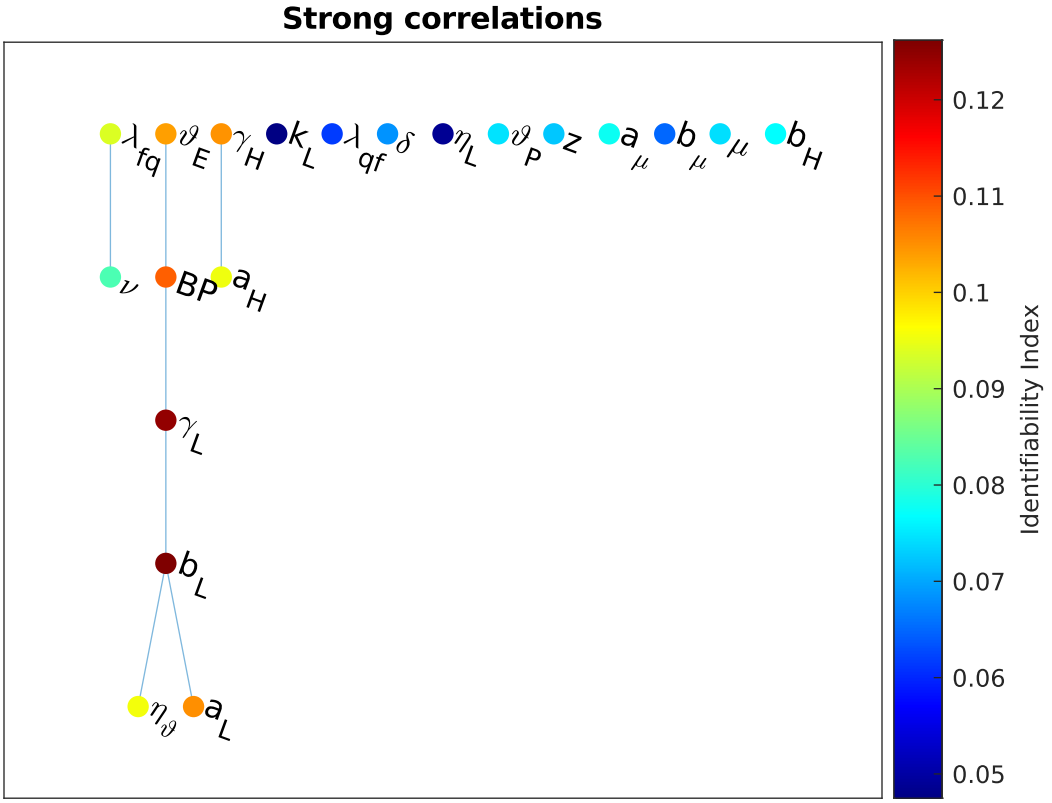
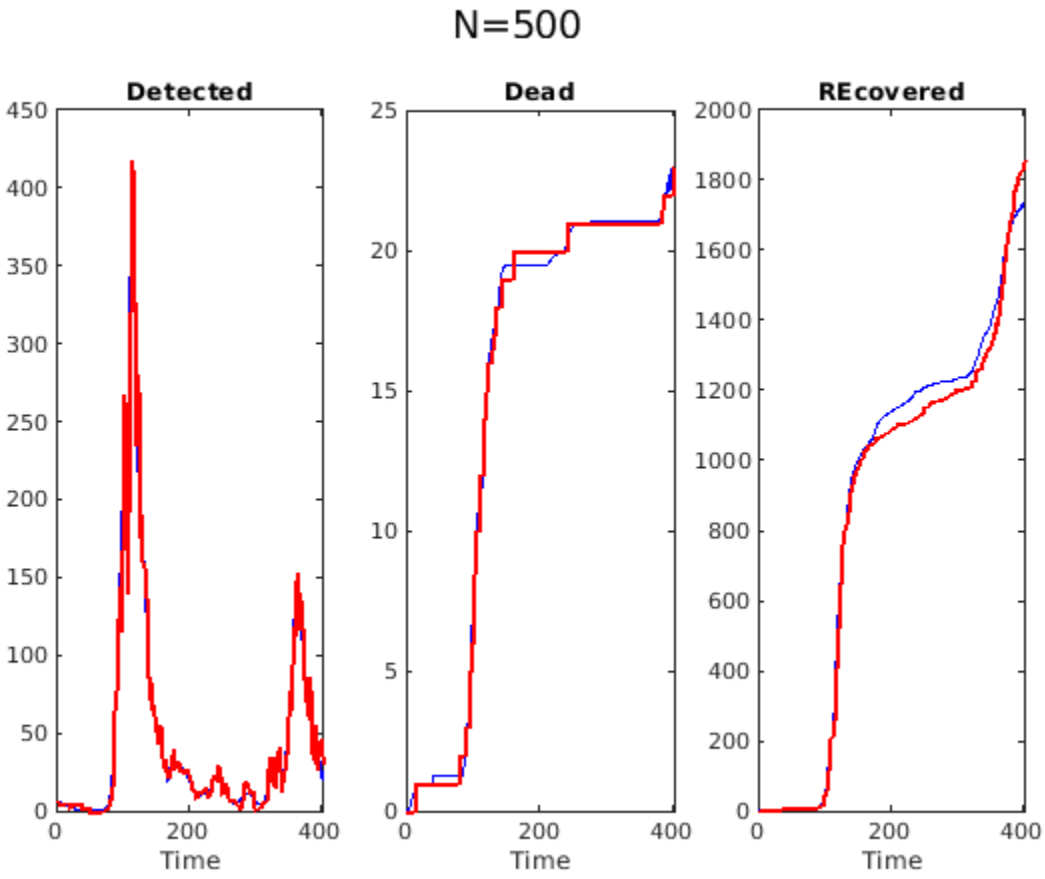
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
λ_{fq}
ϑ_E
γ_H
k_L
λ_{qf}
δ
η_L
ϑ_P
z
a_μ
b_μ
μ
b_H
ν
BP
a_H
γ_L
b_L
η_ϑ
a_L
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 data403 to the 410. The status of the validation is: COMPLETED.

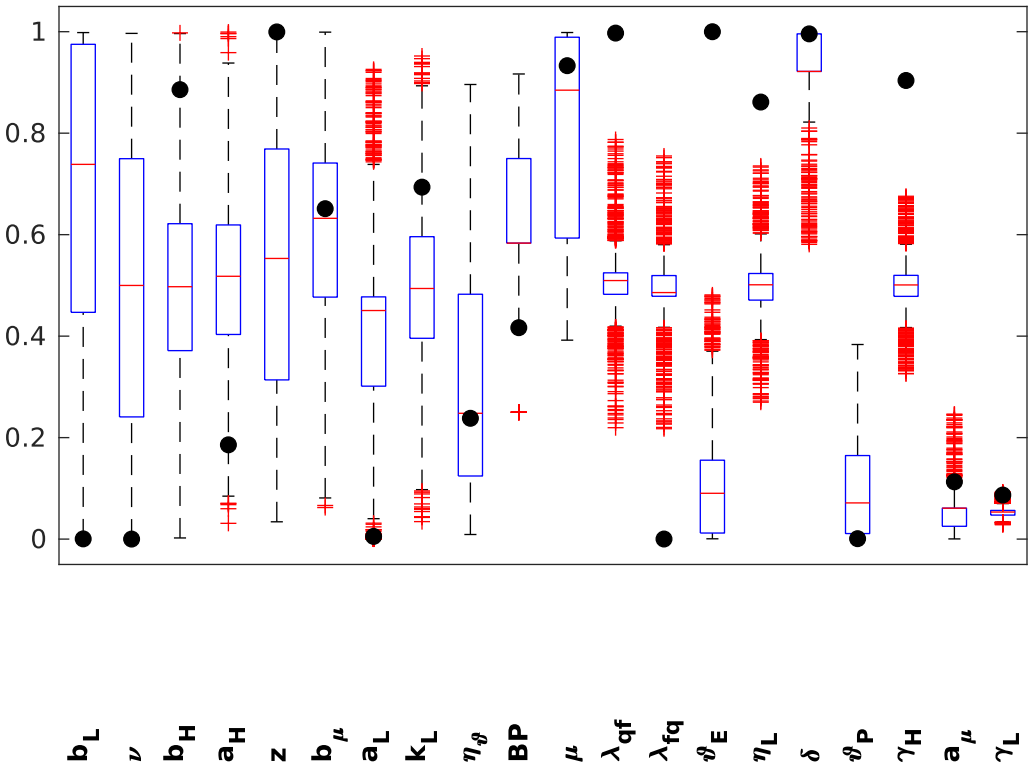
The number of estimations needed to perform the validation was1000.

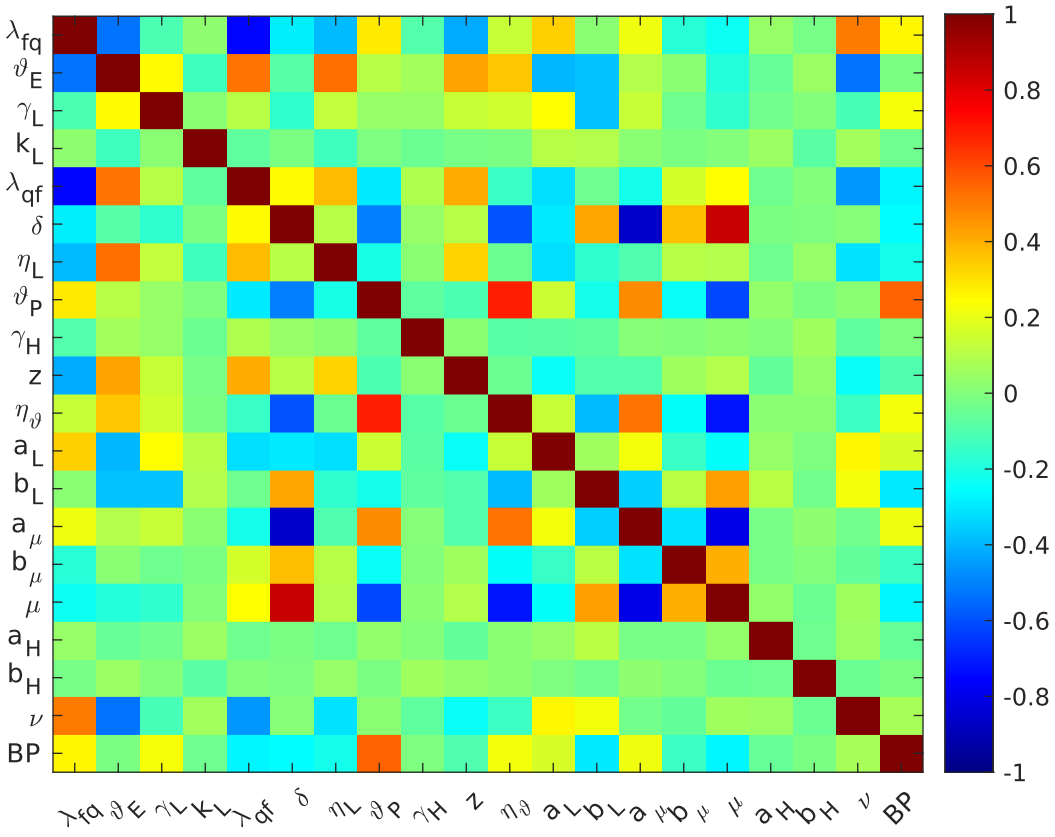
14.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4696'	'0.5021'	'0.4859'	'0.0002'	'0.139'
\vartheta_E	'0.0672'	'0.1134'	'0.0903'	'0.9999'	'0.157'
\gamma_L	'0.0441'	'0.0626'	'0.0533'	'0.0868'	'0.0651'
k_L	'5.319'	'5.5715'	'5.4452'	'7.2427'	'0.0505'
\lambda_{qf}	'0.4931'	'0.526'	'0.5095'	'0.9972'	'0.1257'
\delta	'0.1353'	'0.1412'	'0.1383'	'0.1494'	'0.1598'
\eta_L	'0.4893'	'0.513'	'0.5012'	'0.8613'	'0.0947'
\vartheta_P	'0.0605'	'0.0823'	'0.0714'	'0.0008'	'0.1433'
\gamma_H	'0.4908'	'0.511'	'0.5009'	'0.9038'	'0.0459'
z	'15.9669'	'17.2194'	'16.5931'	'29.9865'	'0.0839'
\eta_\vartheta	'0.2331'	'0.2628'	'0.2479'	'0.2381'	'0.1479'
a_L	'7.0819'	'7.5317'	'7.3068'	'1.0744'	'0.0878'
b_L	'11.008'	'11.6704'	'11.3392'	'1.006'	'0.0968'
a_\mu	'1.5435'	'2.1649'	'1.8542'	'2.5805'	'0.1434'
b_\mu	'9.6282'	'10.0711'	'9.8496'	'10.1165'	'0.0734'
\mu	'0.8686'	'0.9008'	'0.8847'	'0.933'	'0.16'
a_H	'8.0493'	'8.4497'	'8.2495'	'3.6012'	'0.0485'
b_H	'7.7539'	'8.1735'	'7.9637'	'13.4011'	'0.0464'
\nu	'238.2603'	'261.6352'	'249.9477'	'0.0279'	'0.1142'
BP	'397.4428'	'397.5572'	'397.5'	'396.5'	'0.0894'

14.3. 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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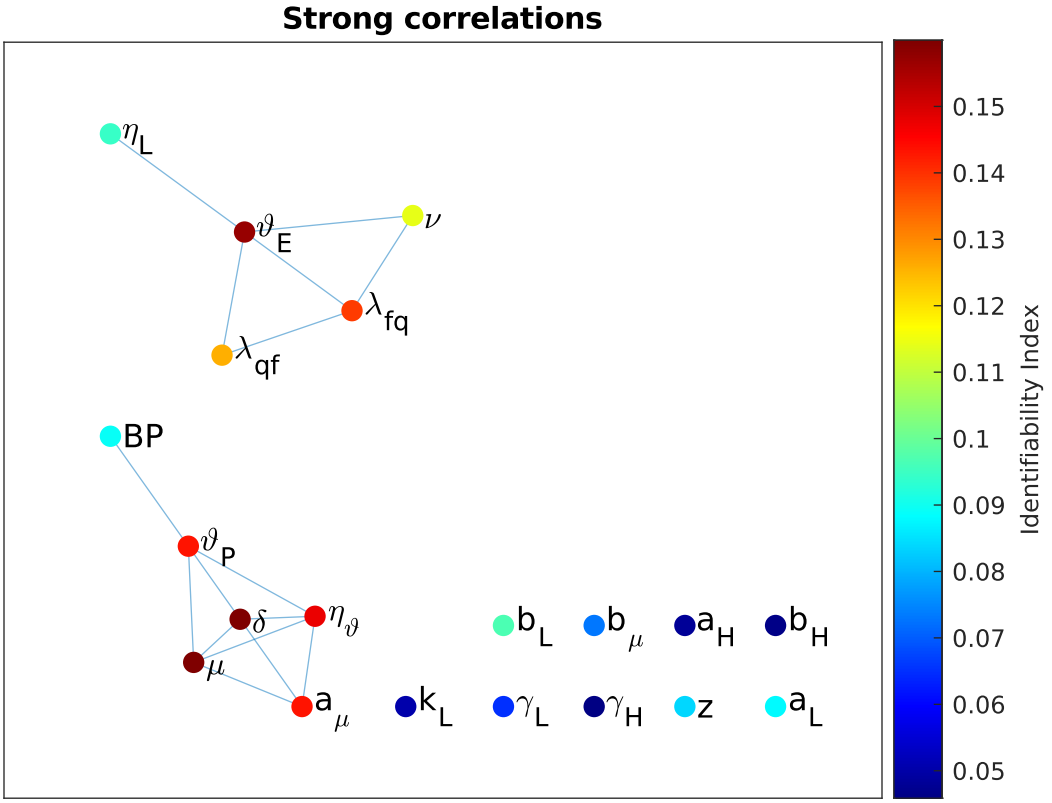
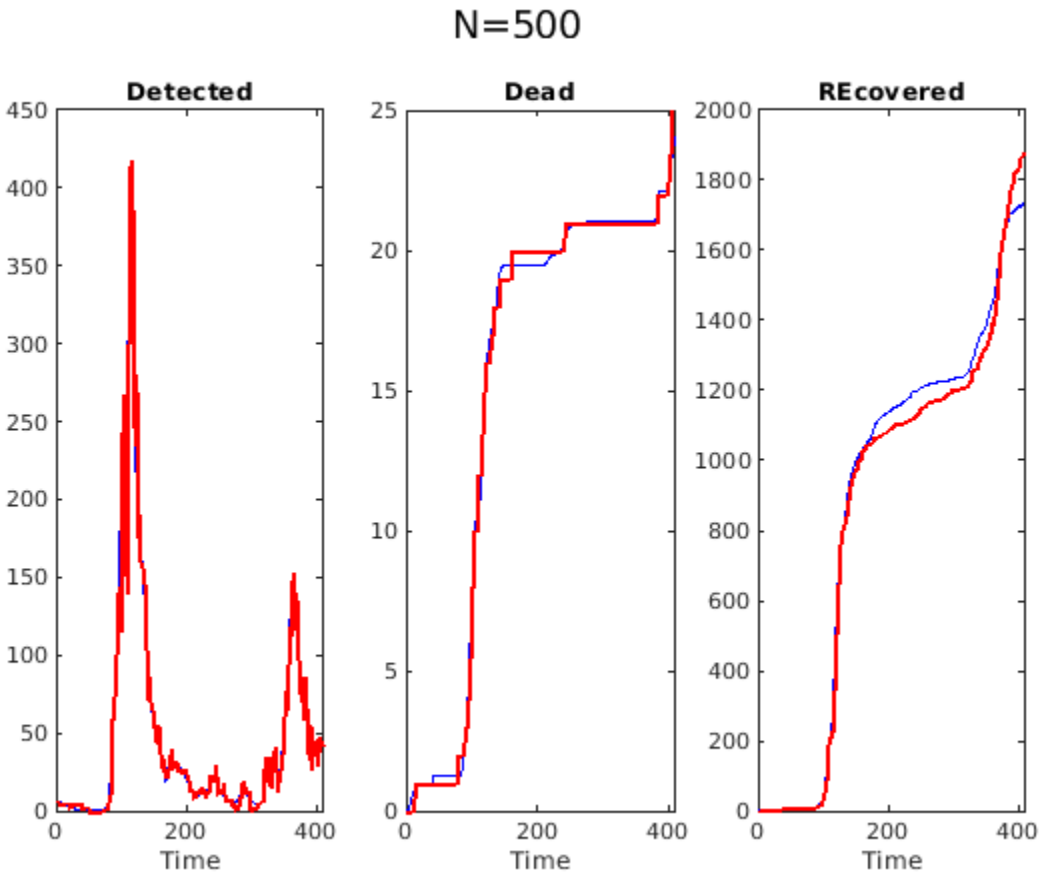
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
η_L
ϑ_E
ν
λ_{fq}
λ_{qf}
BP
ϑ_P
δ
η_ϑ
μ
a_μ
b_L
b_μ
a_H
b_H
k_L
γ_L
γ_H
z
a_L
0.15
0.14
0.13
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 data410 to the 418. The status of the validation is: COMPLETED.

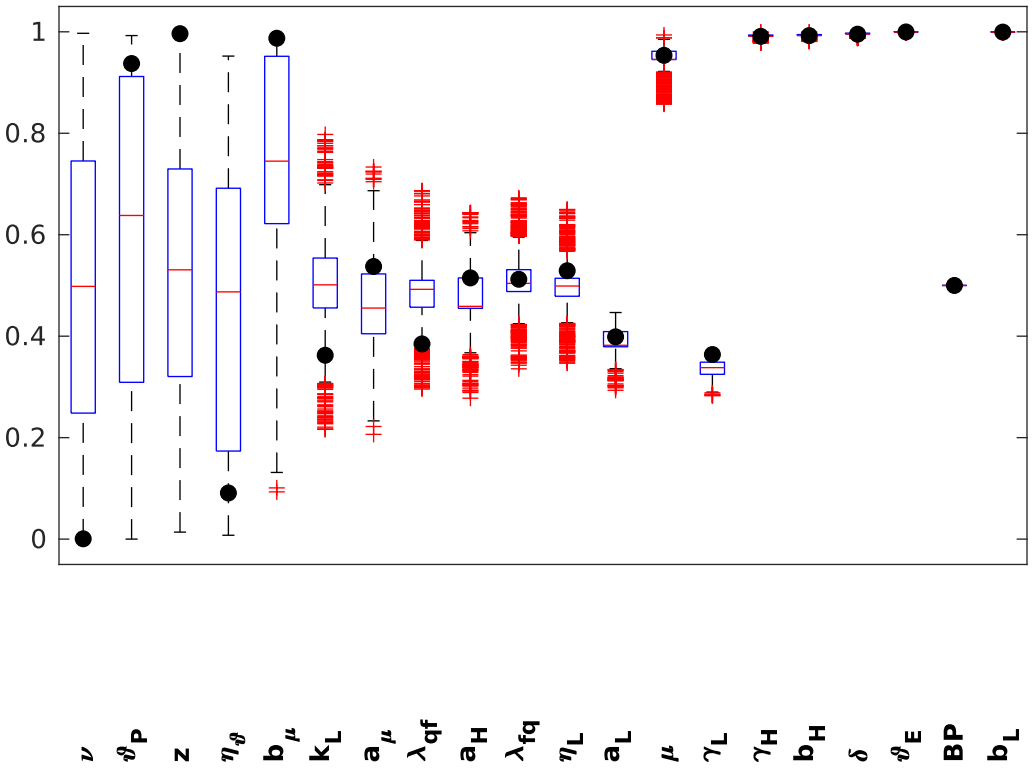
The number of estimations needed to perform the validation was1000.

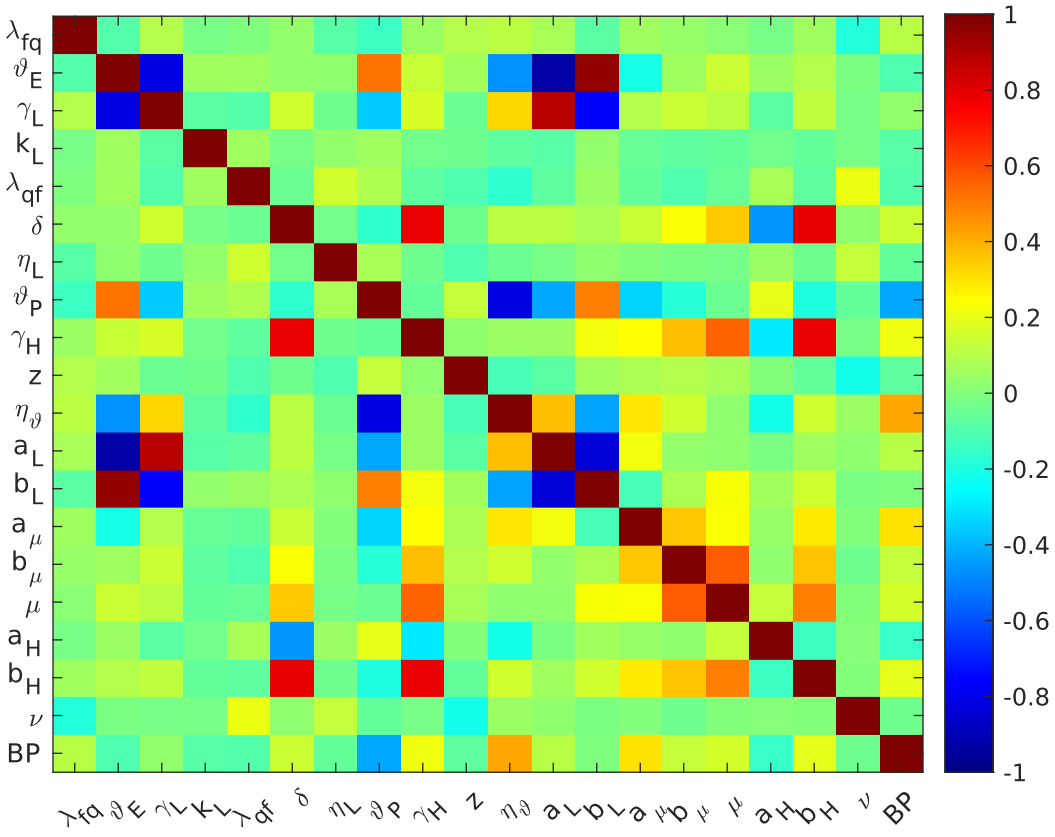
15.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4957'	'0.5126'	'0.5041'	'0.5122'	'0.0506'
\vartheta_E	'0.9824'	'1'	'0.9995'	'0.9997'	'0.144'
\gamma_L	'0.3261'	'0.3499'	'0.338'	'0.3638'	'0.1294'
k_L	'5.4084'	'5.6138'	'5.5111'	'4.2618'	'0.048'
\lambda_{qf}	'0.4829'	'0.5018'	'0.4924'	'0.3847'	'0.0541'
\delta	'0.1459'	'0.15'	'0.1493'	'0.1493'	'0.1107'
\eta_L	'0.4902'	'0.5076'	'0.4989'	'0.529'	'0.0459'
\vartheta_P	'0.6129'	'0.663'	'0.638'	'0.9374'	'0.1343'
\gamma_H	'0.9787'	'1'	'0.9912'	'0.9911'	'0.1254'
z	'15.3665'	'16.4832'	'15.9249'	'29.8897'	'0.0622'
\eta_\vartheta	'0.4659'	'0.5088'	'0.4874'	'0.0909'	'0.1137'
a_L	'6.1823'	'6.5152'	'6.3487'	'6.5817'	'0.1294'
b_L	'14.7198'	'15'	'14.9919'	'14.9923'	'0.1315'
a_\mu	'7.2755'	'7.4769'	'7.3762'	'8.5231'	'0.0713'
b_\mu	'11.2193'	'11.642'	'11.4306'	'14.8222'	'0.0907'
\mu	'0.9336'	'0.9574'	'0.9455'	'0.9536'	'0.1031'
a_H	'7.3231'	'7.5239'	'7.4235'	'8.2082'	'0.0577'
b_H	'14.6436'	'15'	'14.8981'	'14.8952'	'0.1141'
\nu	'237.9234'	'260.2725'	'249.098'	'0.291'	'0.0609'
BP	'405.46'	'405.54'	'405.5'	'405.5'	'0.0681'

15.3. 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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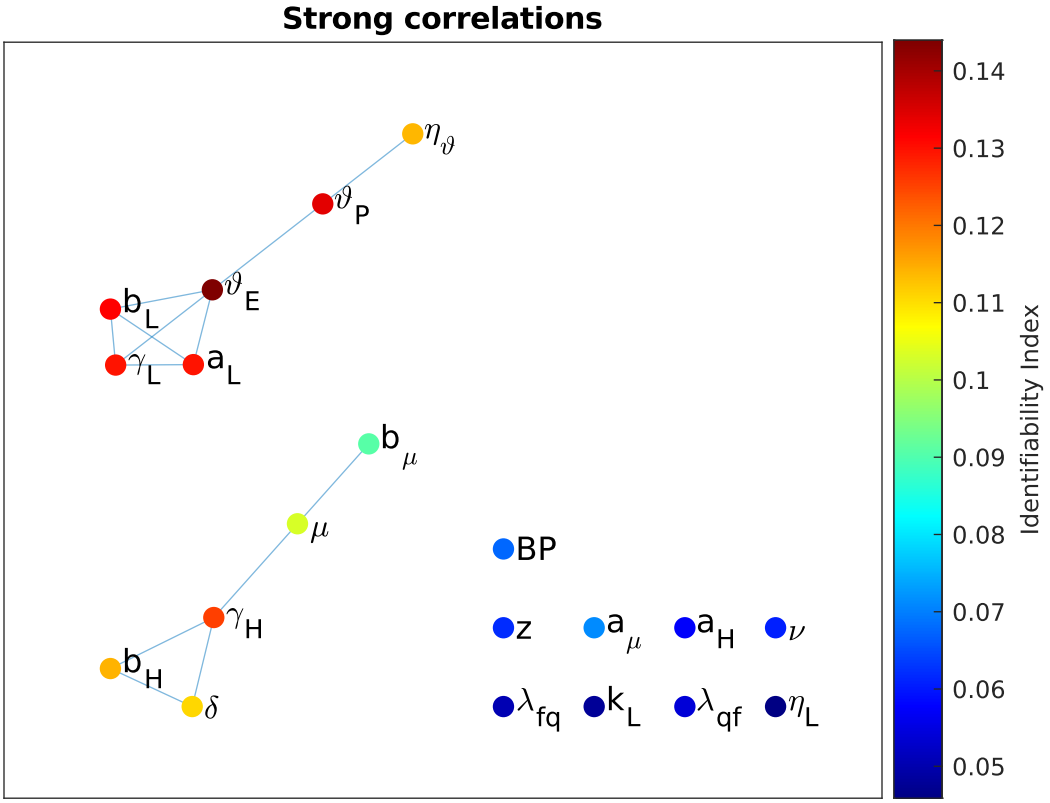
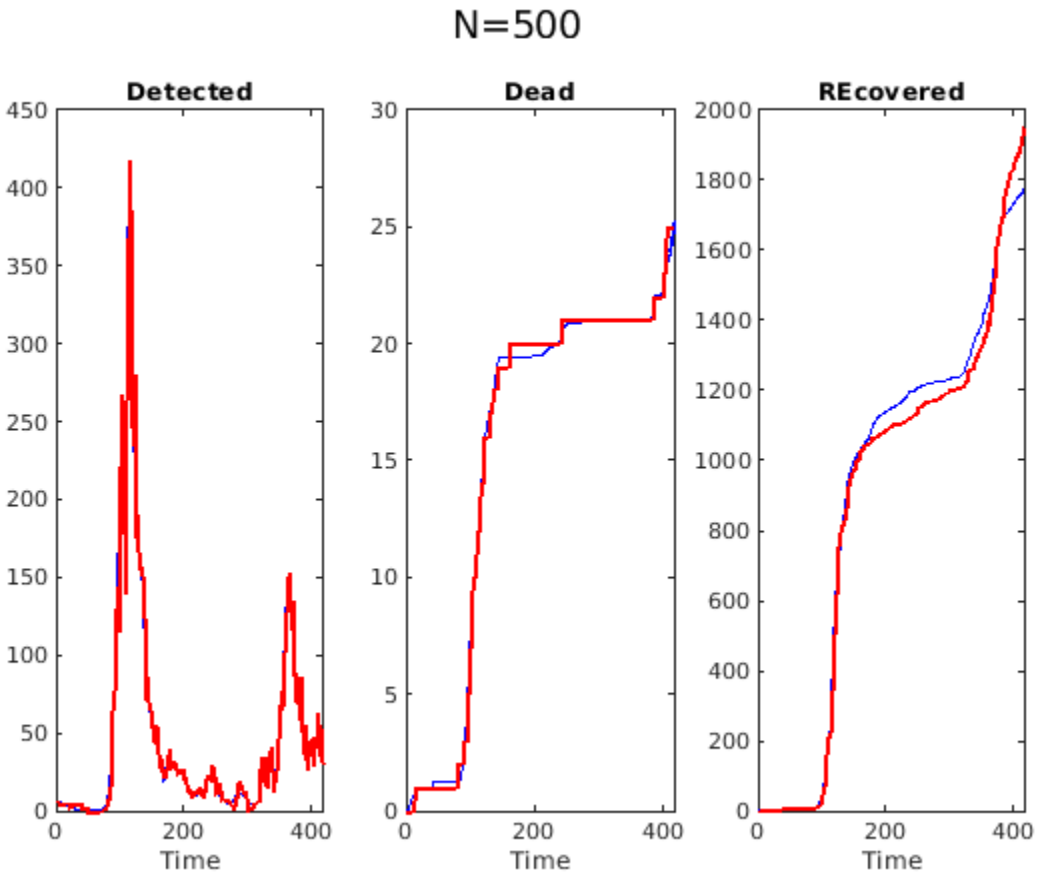
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
η_ϑ
ϑ_P
ϑ_E
b_L
γ_L
a_L
b_μ
μ
γ_H
b_H
δ
BP
z
a_μ
a_H
ν
λ_{fq}
k_L
λ_{qf}
η_L
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 data418 to the 425. The status of the validation is: COMPLETED.

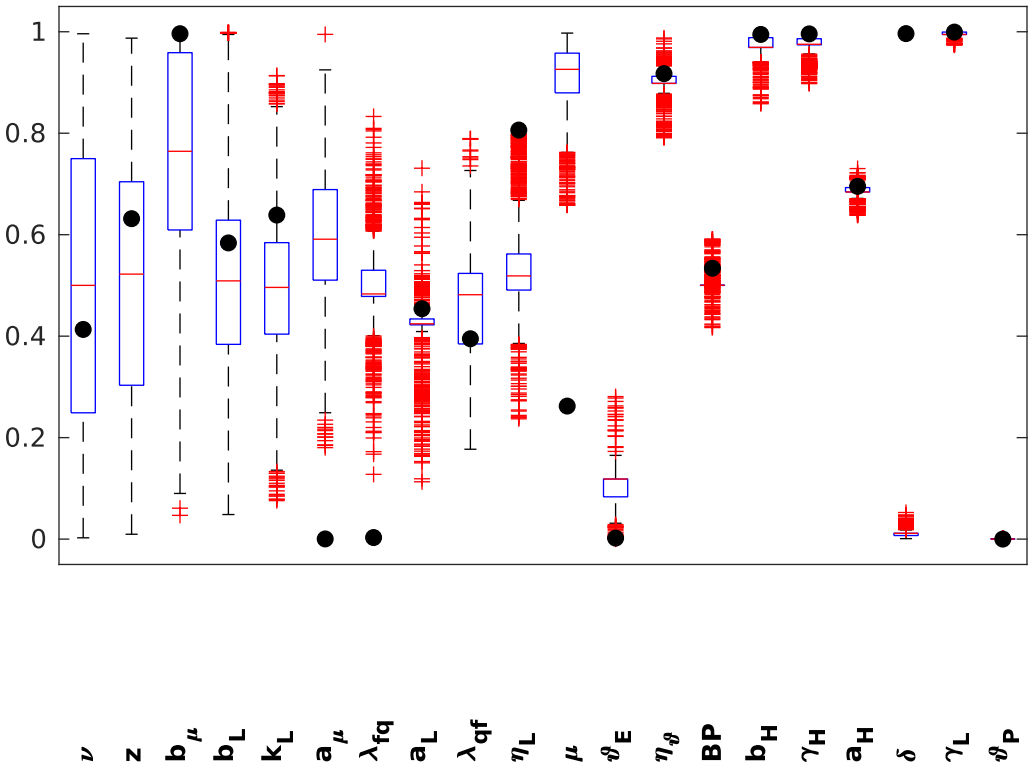
The number of estimations needed to perform the validation was1000.

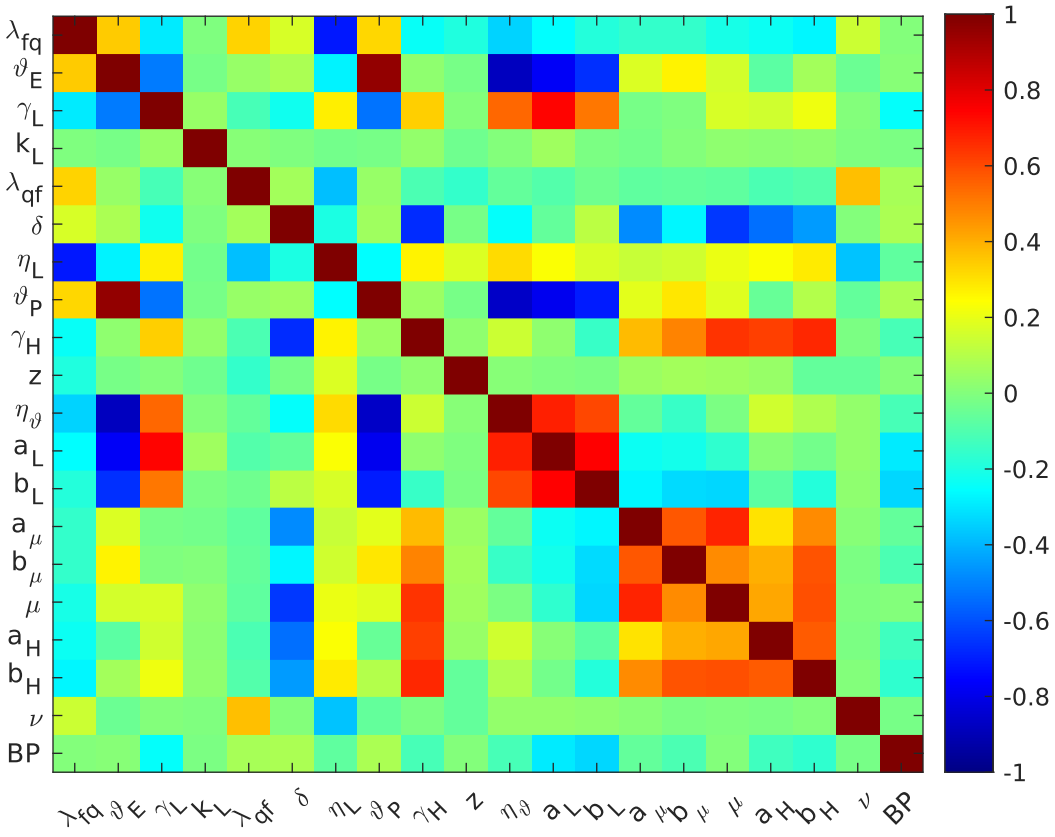
16.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4654'	'0.501'	'0.4832'	'0.0031'	'0.112'
\vartheta_E	'0.0889'	'0.1479'	'0.1184'	'0.002'	'0.1845'
\gamma_L	'0.9777'	'1'	'0.9946'	'0.9993'	'0.1603'
k_L	'5.3427'	'5.5867'	'5.4647'	'6.7483'	'0.0432'
\lambda_{qf}	'0.4712'	'0.4921'	'0.4816'	'0.3949'	'0.0635'
\delta	'0'	'0.004'	'0.0017'	'0.1495'	'0.1304'
\eta_L	'0.5064'	'0.5312'	'0.5188'	'0.8062'	'0.1091'
\vartheta_P	'0'	'0.0225'	'0.0001'	'0'	'0.1681'
\gamma_H	'0.9612'	'0.9892'	'0.9752'	'0.9958'	'0.1515'
z	'15.1257'	'16.2119'	'15.6688'	'18.9467'	'0.0558'
\eta_\vartheta	'0.8834'	'0.913'	'0.8982'	'0.9174'	'0.1685'
a_L	'6.7955'	'7.086'	'6.9407'	'7.3571'	'0.1656'
b_L	'7.9414'	'8.3094'	'8.1254'	'9.173'	'0.1684'
a_\mu	'9.1137'	'9.4371'	'9.2754'	'1.0046'	'0.1157'
b_\mu	'11.4787'	'11.9237'	'11.7012'	'14.9461'	'0.1231'
\mu	'0.9096'	'0.9417'	'0.9257'	'0.2622'	'0.1541'
a_H	'10.4277'	'10.7299'	'10.5788'	'10.7338'	'0.125'
b_H	'14.3181'	'14.8136'	'14.5658'	'14.9261'	'0.1539'
\nu	'238.8546'	'261.2391'	'250.0468'	'206.6251'	'0.0631'
BP	'412.4538'	'412.5494'	'412.5016'	'412.6693'	'0.0583'

16.3. 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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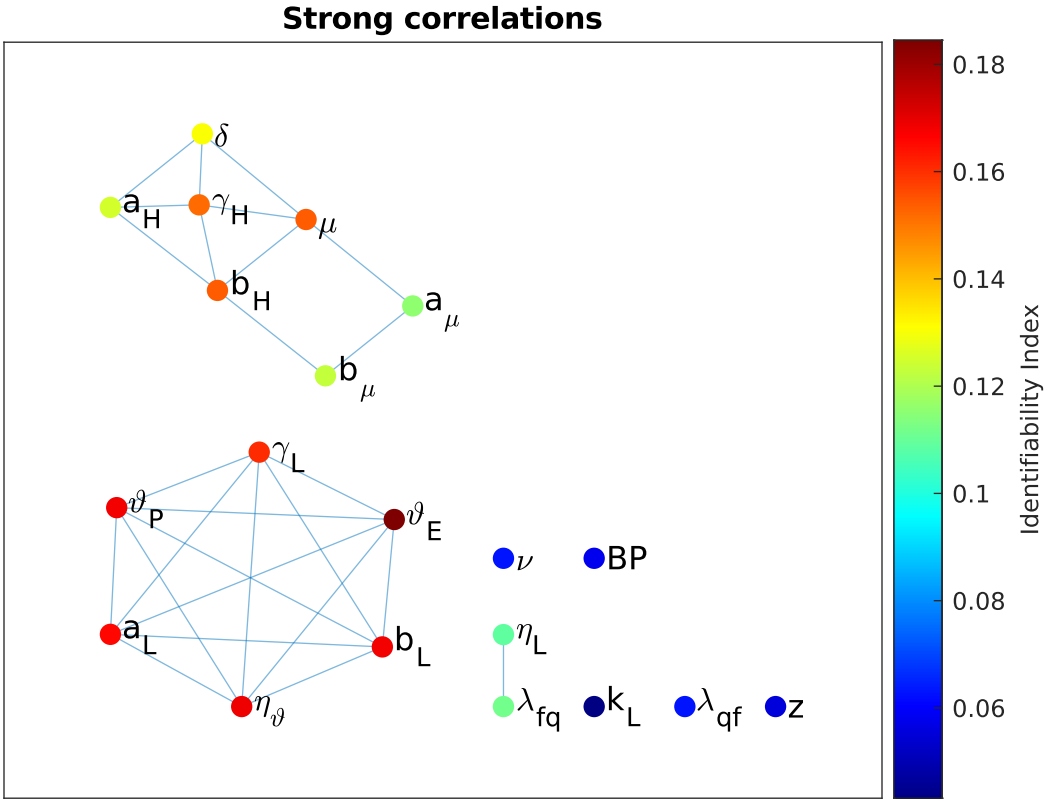
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
δ
a H
γ H
μ
b H
a μ
b μ
γ L
ϑ P
ϑ E
a L
b L
η ϑ
ν
BP
η L
λ fq
k L
λ qf
z
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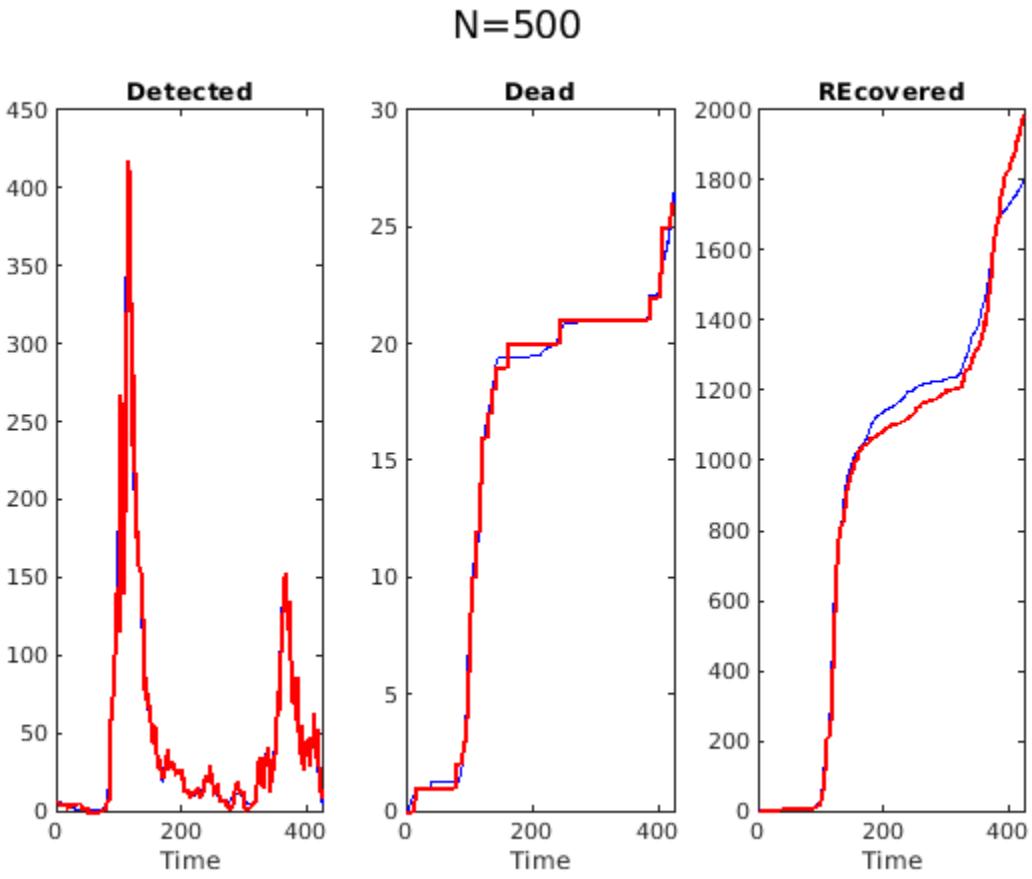
0.16
0.14
0.12
0.1
0.08
0.06
Identifiability Index

16.4. Uncertainty analisys



Chapter 17. Extension number17

17.1. Basic information

The extension to be validated consists of the time series from the data425 to the 439. The status of the validation is: COMPLETED.

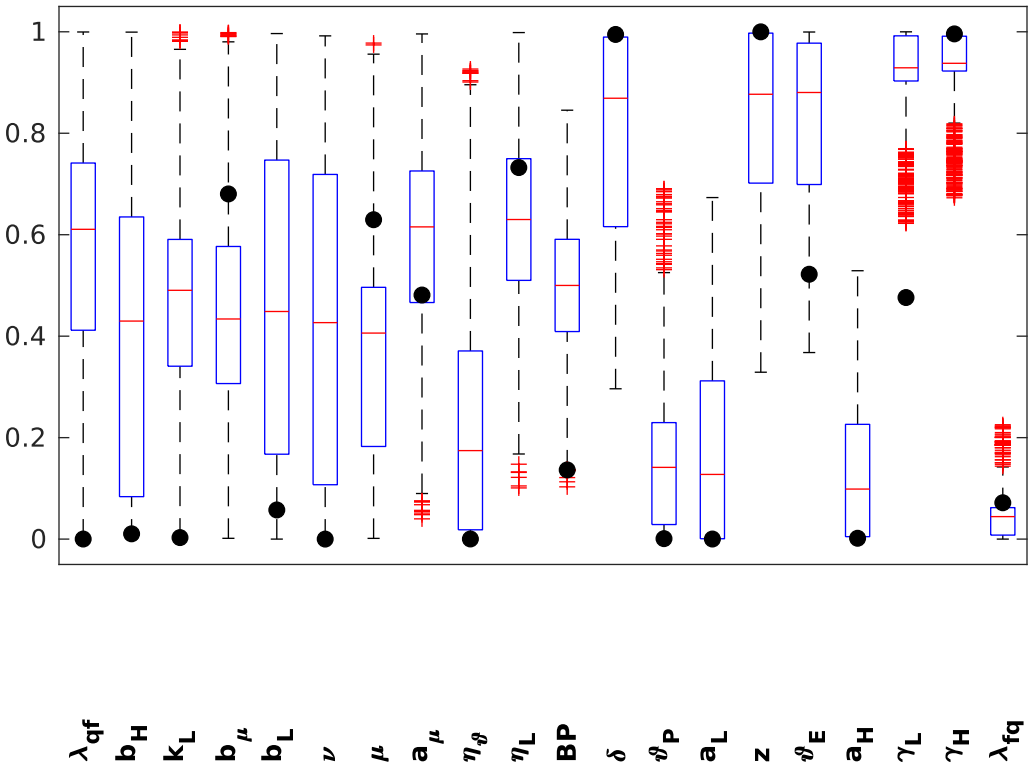
The number of estimations needed to perform the validation was1000.

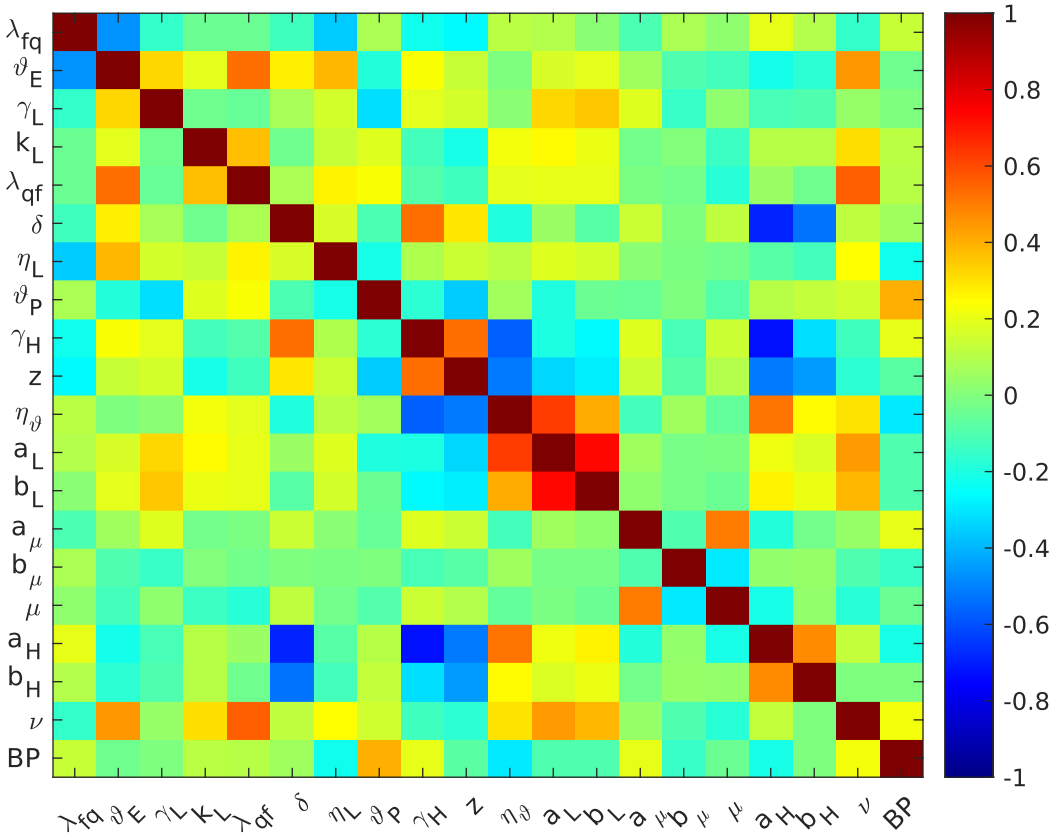
17.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0272'	'0.0618'	'0.0445'	'0.0716'	'0.077'
\vartheta_E	'0.8624'	'0.8974'	'0.8799'	'0.5221'	'0.1079'
\gamma_L	'0.9131'	'0.9447'	'0.9289'	'0.4762'	'0.0754'
k_L	'5.2473'	'5.5801'	'5.4137'	'1.0268'	'0.0786'
\lambda_{qf}	'0.588'	'0.6333'	'0.6106'	'0.0001'	'0.1147'
\delta	'0.1261'	'0.1345'	'0.1303'	'0.1492'	'0.1365'
\eta_L	'0.6161'	'0.6428'	'0.6294'	'0.7324'	'0.0773'
\vartheta_P	'0.1245'	'0.1588'	'0.1417'	'0.0009'	'0.0804'
\gamma_H	'0.922'	'0.953'	'0.9375'	'0.9958'	'0.1532'
z	'25.6505'	'26.9191'	'26.2848'	'29.9963'	'0.1445'
\eta_\vartheta	'0.1551'	'0.1938'	'0.1745'	'0.0003'	'0.1525'
a_L	'2.5815'	'2.9932'	'2.7873'	'1.002'	'0.1195'
b_L	'6.932'	'7.6303'	'7.2811'	'1.8042'	'0.1126'
a_\mu	'9.3939'	'9.8365'	'9.6152'	'7.7355'	'0.0805'
b_\mu	'6.8531'	'7.2958'	'7.0744'	'10.5252'	'0.0578'
\mu	'0.3896'	'0.4226'	'0.4061'	'0.6296'	'0.0833'
a_H	'2.1223'	'2.6395'	'2.3809'	'1.0231'	'0.1563'
b_H	'6.7037'	'7.3297'	'7.0167'	'1.1455'	'0.1007'
\nu	'200.7753'	'225.9312'	'213.3533'	'0.0117'	'0.114'
BP	'423.387'	'423.613'	'423.5'	'419.4999'	'0.0688'

17.3. 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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0.6
0.4
0.2
0
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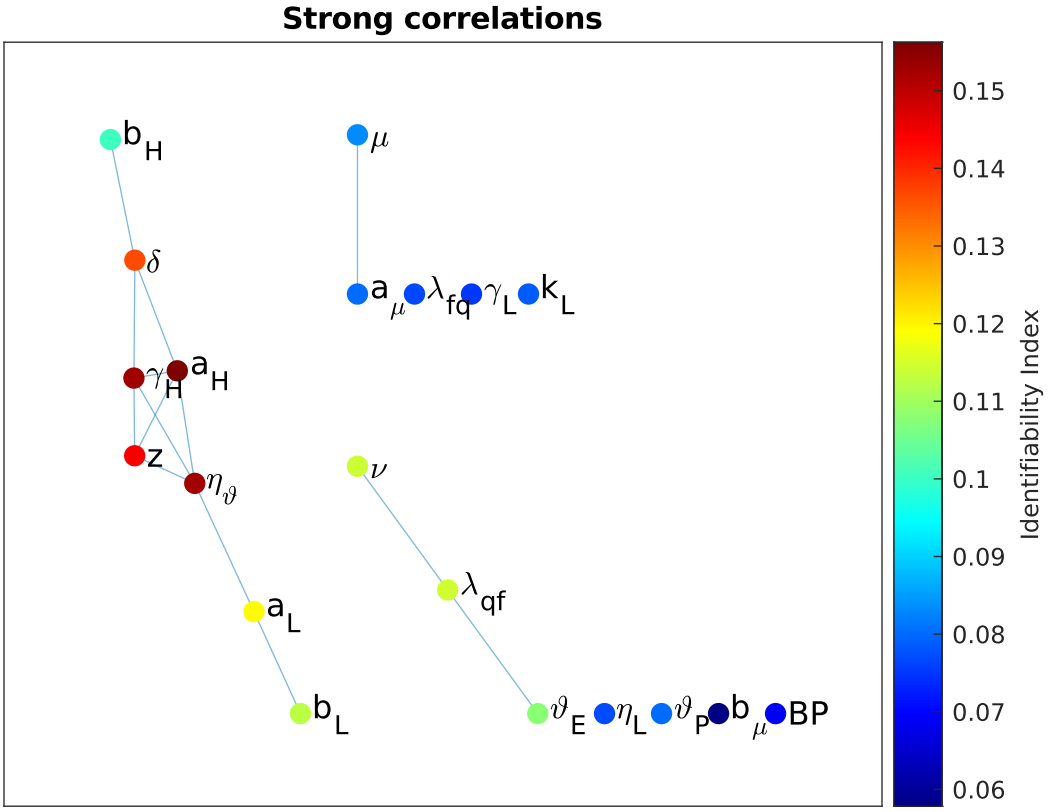
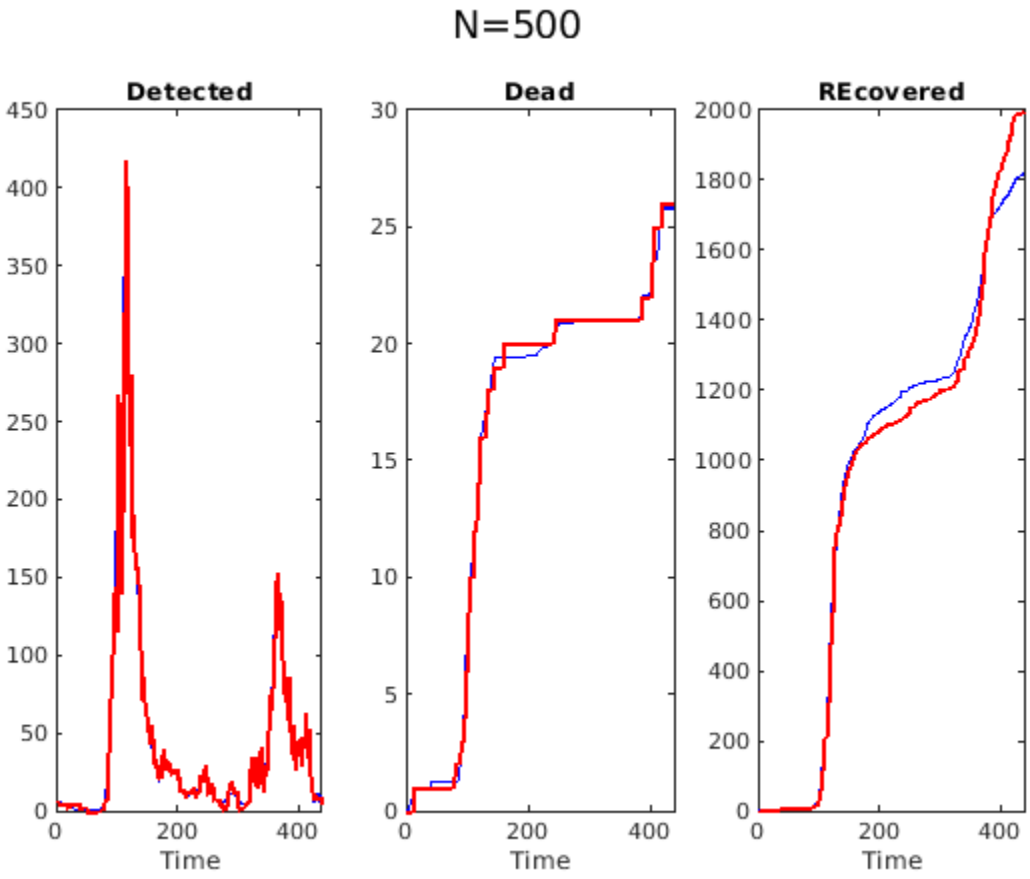
-0.4
-0.6
-0.8
-1


Strong correlations
b H
δ
γ H
a H
z
η ϑ
a L
b L
μ
a μ
λ fq
γ L
k L
ν
λ qf
ϑ E
η L
ϑ P
b μ
BP
Identifiability Index
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06

17.4. Uncertainty analisys



Chapter 18. Extension number18

18.1. Basic information

The extension to be validated consists of the time series from the data439 to the 450. The status of the validation is: COMPLETED.

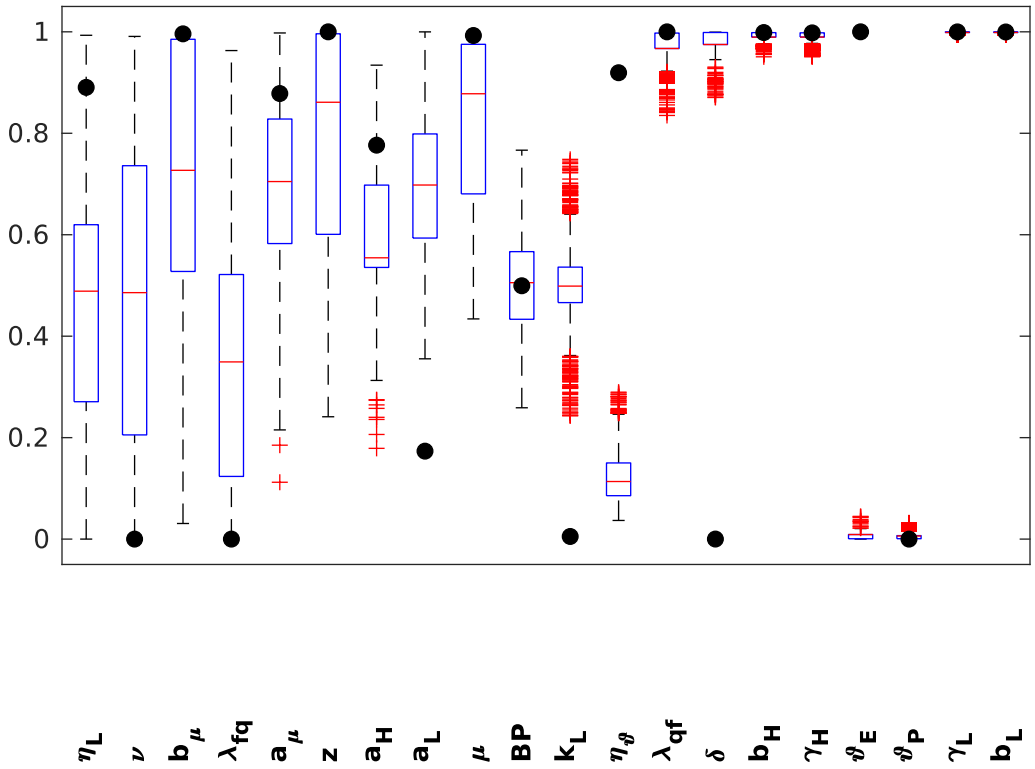
The number of estimations needed to perform the validation was1000.

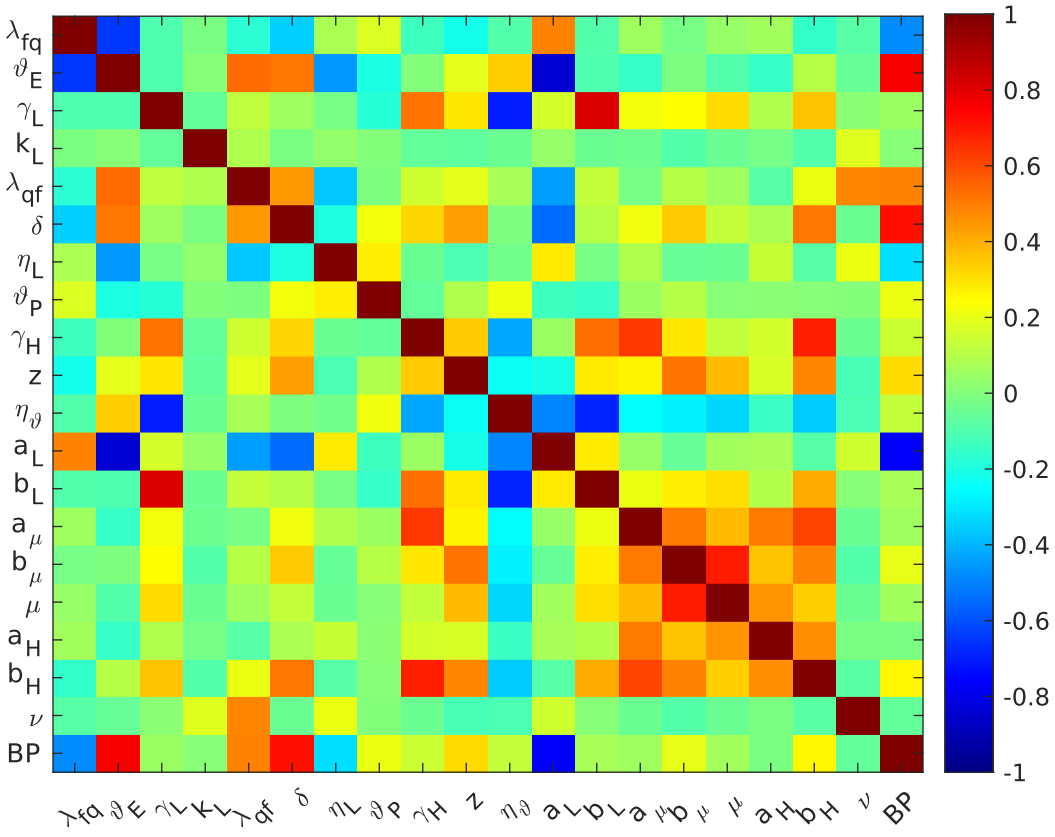
18.2. Estimated parameters with their intervals

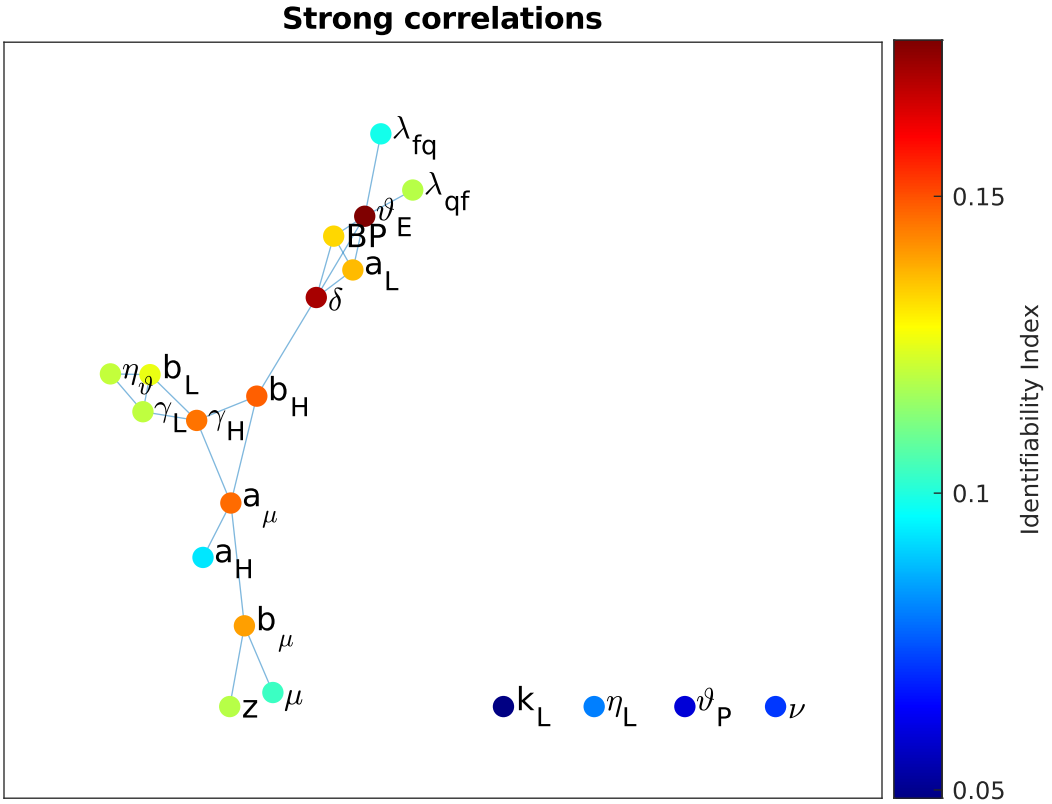
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.3311'	'0.3674'	'0.3493'	'0'	'0.0988'
\vartheta_E	'0'	'0.0469'	'0.009'	'1'	'0.1763'
\gamma_L	'0.995'	'1'	'0.9987'	'0.9998'	'0.1204'
k_L	'5.3803'	'5.5968'	'5.4886'	'1.0467'	'0.0486'
\lambda_{qf}	'0.9372'	'0.997'	'0.9671'	'0.9999'	'0.1194'
\delta	'0.1409'	'0.15'	'0.1462'	'0'	'0.1709'
\eta_L	'0.4689'	'0.5086'	'0.4887'	'0.8905'	'0.0803'
\vartheta_P	'0'	'0.0158'	'0.0061'	'0'	'0.0593'
\gamma_H	'0.9772'	'1'	'0.9897'	'0.9979'	'0.1454'
z	'25.1804'	'26.411'	'25.7957'	'29.9994'	'0.1194'
\eta_\vartheta	'0.1043'	'0.1228'	'0.1136'	'0.9194'	'0.1207'
a_L	'10.6429'	'10.9'	'10.7715'	'3.4273'	'0.1365'
b_L	'14.8557'	'15'	'14.9815'	'14.9954'	'0.1255'
a_\mu	'10.6226'	'11.1123'	'10.8675'	'13.2968'	'0.1465'
b_\mu	'10.9161'	'11.4391'	'11.1776'	'14.9442'	'0.1401'
\mu	'0.8604'	'0.8953'	'0.8779'	'0.9927'	'0.1039'
a_H	'8.5218'	'9.0048'	'8.7633'	'11.8721'	'0.0934'
b_H	'14.6289'	'15'	'14.8534'	'14.9798'	'0.1481'
\nu	'231.0638'	'254.7754'	'242.9196'	'0.0053'	'0.0712'
BP	'432.4847'	'432.6798'	'432.5823'	'432.4911'	'0.1329'

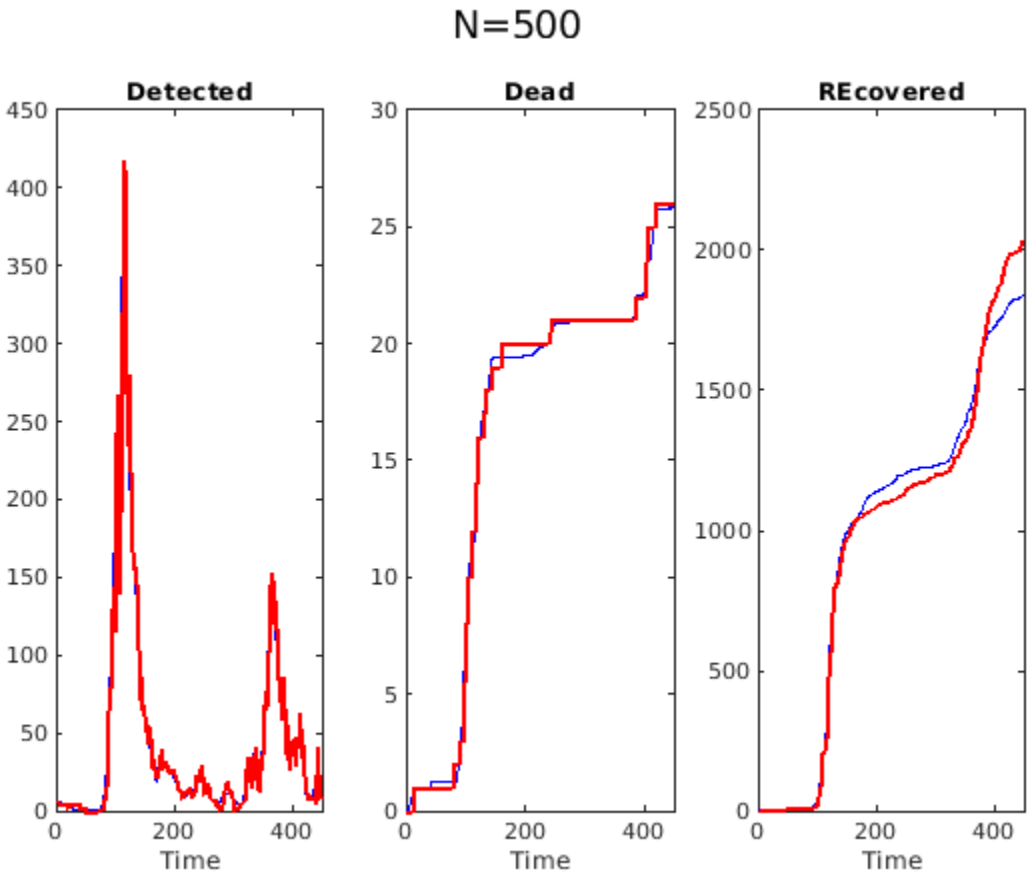
18.3. Identifiability analisys




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
λ_{fq}
λ_{qf}
ϑ_E
BP
a_L
δ
η_ϑ
b_L
γ_L
γ_H
b_H
a_μ
a_H
b_μ
z
μ
k_L
η_L
ϑ_P
ν
0.15
0.1
0.05
Identifiability Index

18.4. Uncertainty analisys



Chapter 19. Extension number19

19.1. Basic information

The extension to be validated consists of the time series from the data450 to the 463. The status of the validation is: COMPLETED.

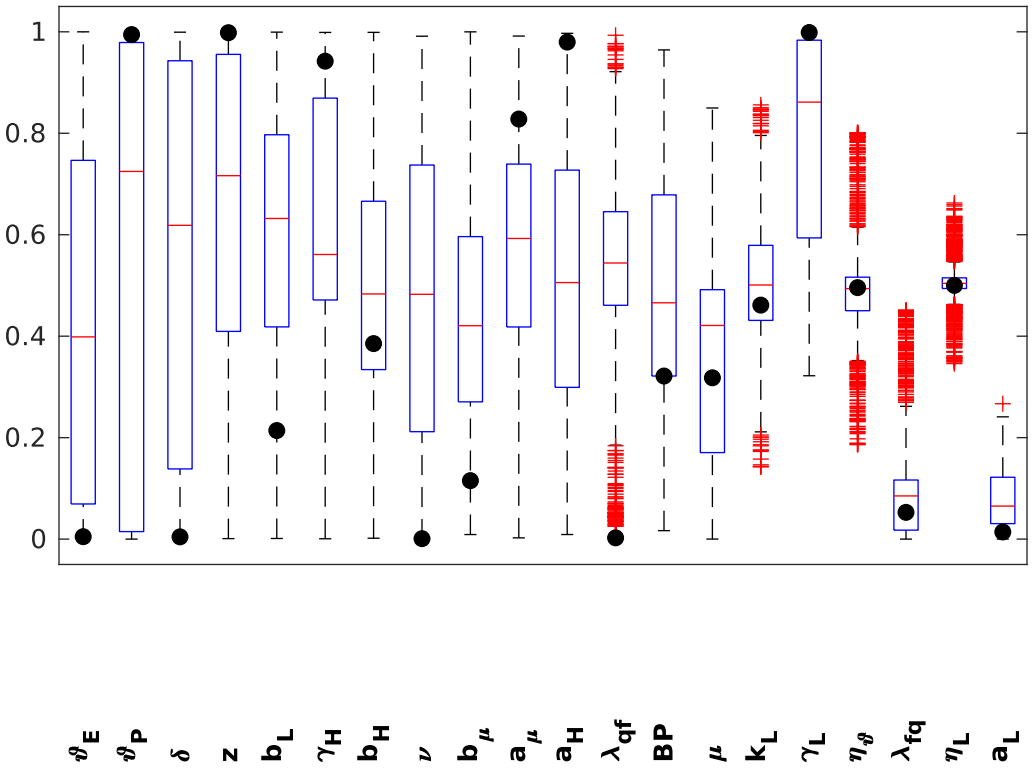
The number of estimations needed to perform the validation was1000.

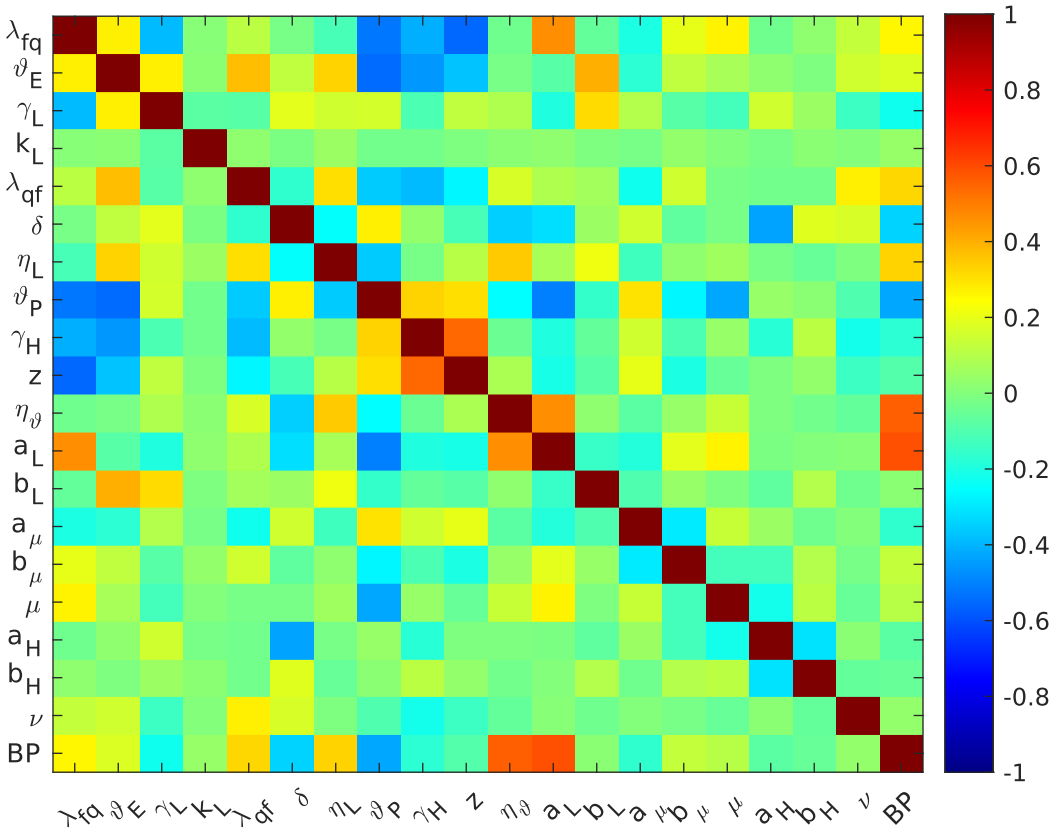
19.2. Estimated parameters with their intervals

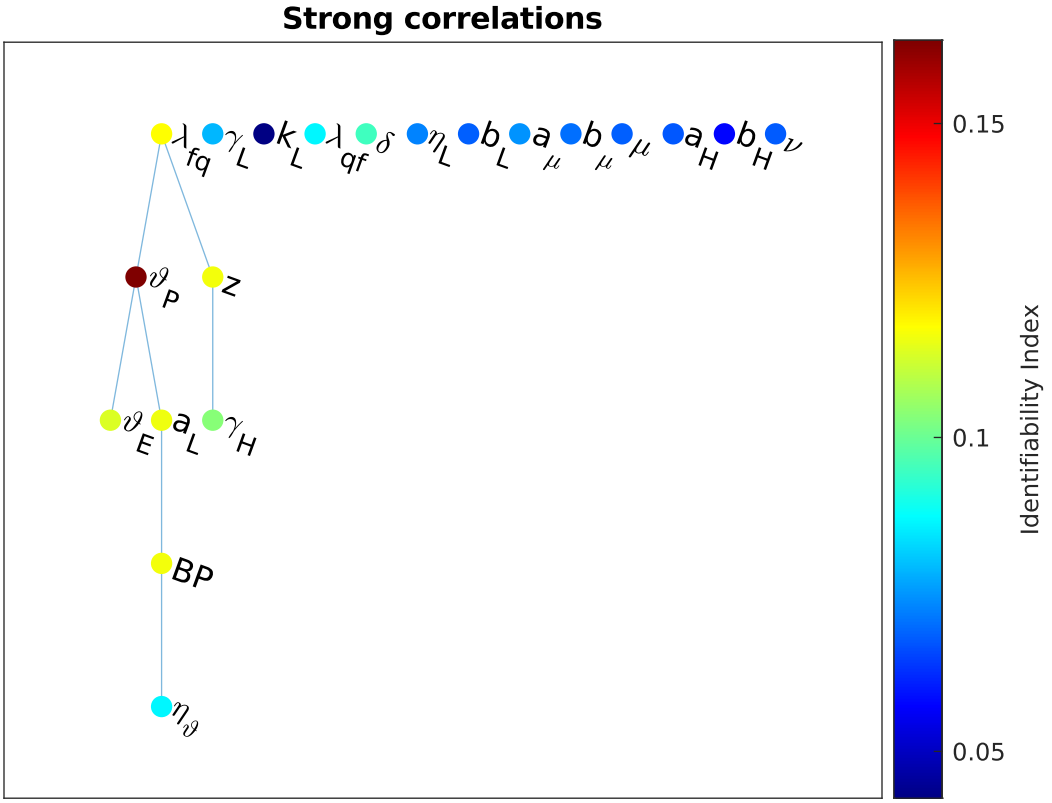
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0682'	'0.1021'	'0.0852'	'0.0527'	'0.1178'
\vartheta_E	'0.3725'	'0.4247'	'0.3986'	'0.0048'	'0.1134'
\gamma_L	'0.8448'	'0.878'	'0.8614'	'0.9986'	'0.0793'
k_L	'5.4021'	'5.6144'	'5.5083'	'5.1513'	'0.0425'
\lambda_{qf}	'0.5256'	'0.5625'	'0.5441'	'0.0025'	'0.0867'
\delta	'0.0884'	'0.0972'	'0.0928'	'0.0007'	'0.095'
\eta_L	'0.4931'	'0.5151'	'0.5041'	'0.5001'	'0.0729'
\vartheta_P	'0.6912'	'0.7583'	'0.7248'	'0.9945'	'0.1633'
\gamma_H	'0.5397'	'0.5824'	'0.561'	'0.9421'	'0.1036'
z	'20.8046'	'22.1784'	'21.4915'	'29.9476'	'0.1164'
\eta_\vartheta	'0.4798'	'0.5079'	'0.4938'	'0.4957'	'0.0866'
a_L	'1.6914'	'2.1312'	'1.9113'	'1.197'	'0.1159'
b_L	'9.5728'	'10.1246'	'9.8487'	'3.9959'	'0.0689'
a_\mu	'9.0681'	'9.5264'	'9.2973'	'12.5925'	'0.0748'
b_\mu	'6.6555'	'7.1221'	'6.8888'	'2.6134'	'0.0707'
\mu	'0.4053'	'0.4369'	'0.4211'	'0.318'	'0.0686'
a_H	'7.7994'	'8.3597'	'8.0796'	'14.7174'	'0.0677'
b_H	'7.5394'	'7.9914'	'7.7654'	'6.3954'	'0.0577'
\nu	'229.6997'	'252.8823'	'241.291'	'0.4244'	'0.0682'
BP	'445.3114'	'445.7311'	'445.5212'	'443.5'	'0.1162'

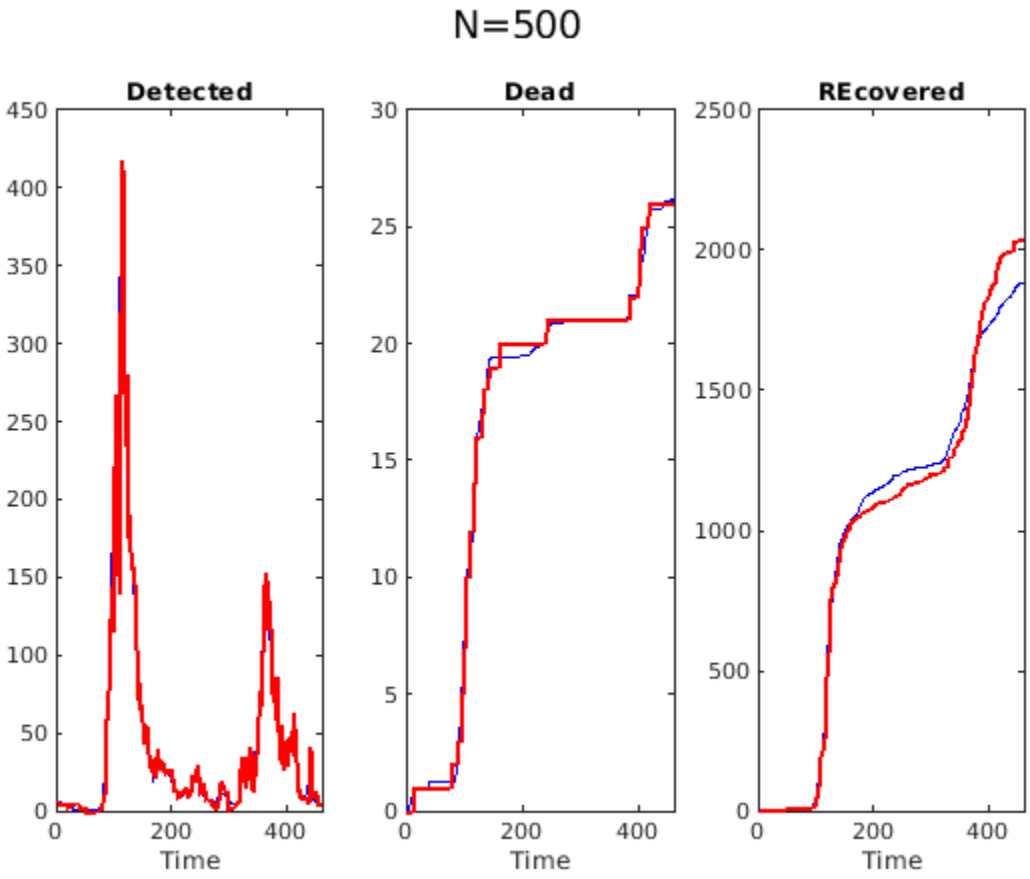
19.3. Identifiability analisys




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
λ_{fq} γ_L k_L λ_{qf} δ η_L b_L a_μ b_μ μ a_H b_H ν
ϑ_P z
ϑ_E a_L γ_H
BP
η_ϑ
0.15
0.1
0.05
Identifiability Index

19.4. Uncertainty analisys



Chapter 20. Extension number20

20.1. Basic information

The extension to be validated consists of the time series from the data463 to the 463. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

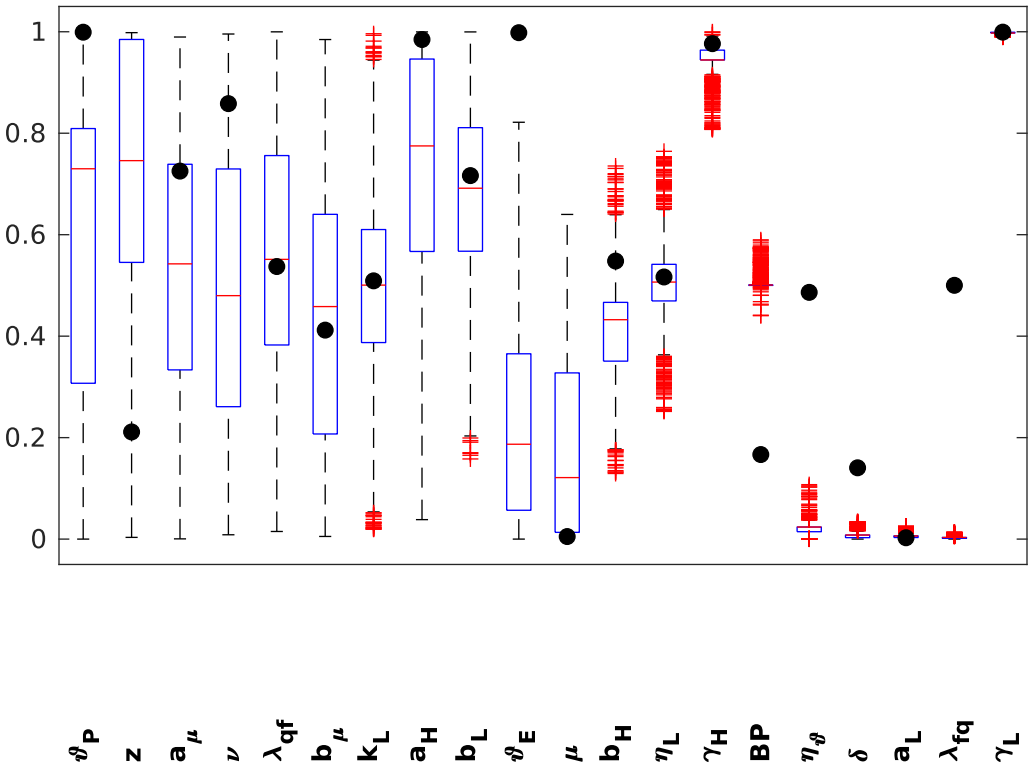
20.2. Estimated parameters with their intervals

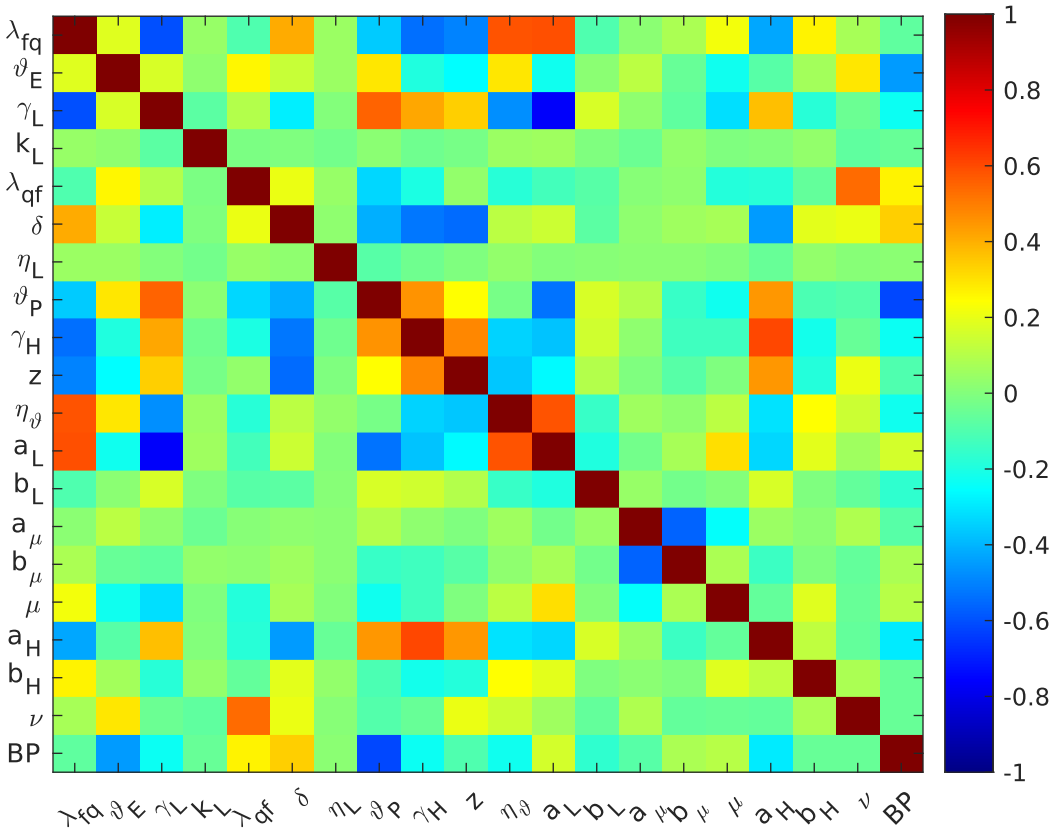
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

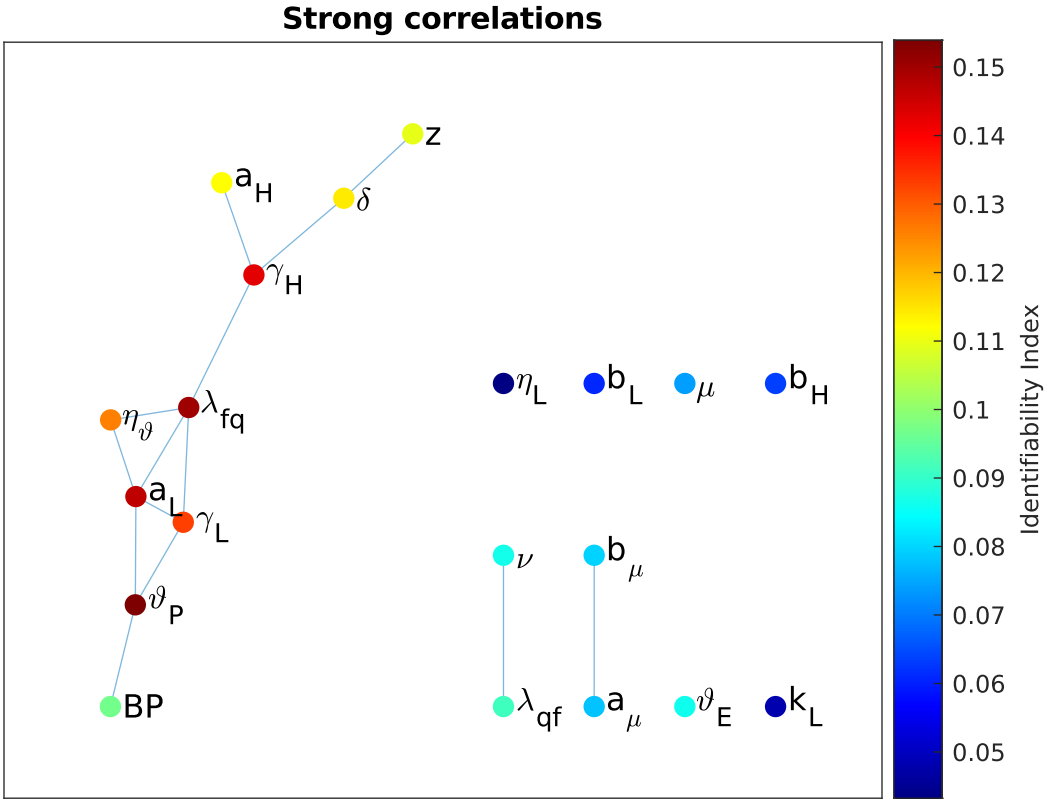
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.5002'	'0.5002'	'0.0032'	'0.5002'	'0.1503'
\vartheta_E	'0.6987'	'0.9987'	'0.1873'	'0.9981'	'0.0865'
\gamma_L	'0.6995'	'1'	'0.9975'	'0.9992'	'0.1331'
k_L	'3.9069'	'8.372'	'5.5054'	'5.5813'	'0.0482'
\lambda_{qf}	'0.3761'	'0.8058'	'0.5514'	'0.5372'	'0.0916'
\delta	'0.0148'	'0.0316'	'0.0012'	'0.0211'	'0.1145'
\eta_L	'0.3617'	'0.775'	'0.5066'	'0.5167'	'0.0433'
\vartheta_P	'0.6994'	'1'	'0.7299'	'0.9991'	'0.1539'
\gamma_H	'0.6836'	'1'	'0.9443'	'0.9765'	'0.1428'
z	'4.4356'	'9.5048'	'22.3788'	'6.3365'	'0.1098'
\eta_\vartheta	'0.3404'	'0.7295'	'0.0238'	'0.4863'	'0.1261'
a_L	'1'	'1.5556'	'1.0863'	'1.0371'	'0.1468'
b_L	'7.7214'	'15'	'10.6825'	'11.0306'	'0.061'
a_\mu	'7.8082'	'15'	'8.595'	'11.1546'	'0.0782'
b_\mu	'4.7368'	'10.1502'	'7.4163'	'6.7668'	'0.0798'
\mu	'0.0035'	'0.0075'	'0.1213'	'0.005'	'0.0743'
a_H	'10.3501'	'15'	'11.8495'	'14.7859'	'0.1121'
b_H	'6.0707'	'13.0087'	'7.0541'	'8.6725'	'0.0636'
\nu	'300.4093'	'500'	'239.9288'	'429.1561'	'0.0869'
BP	'450'	'453'	'451.5024'	'450.5'	'0.097'

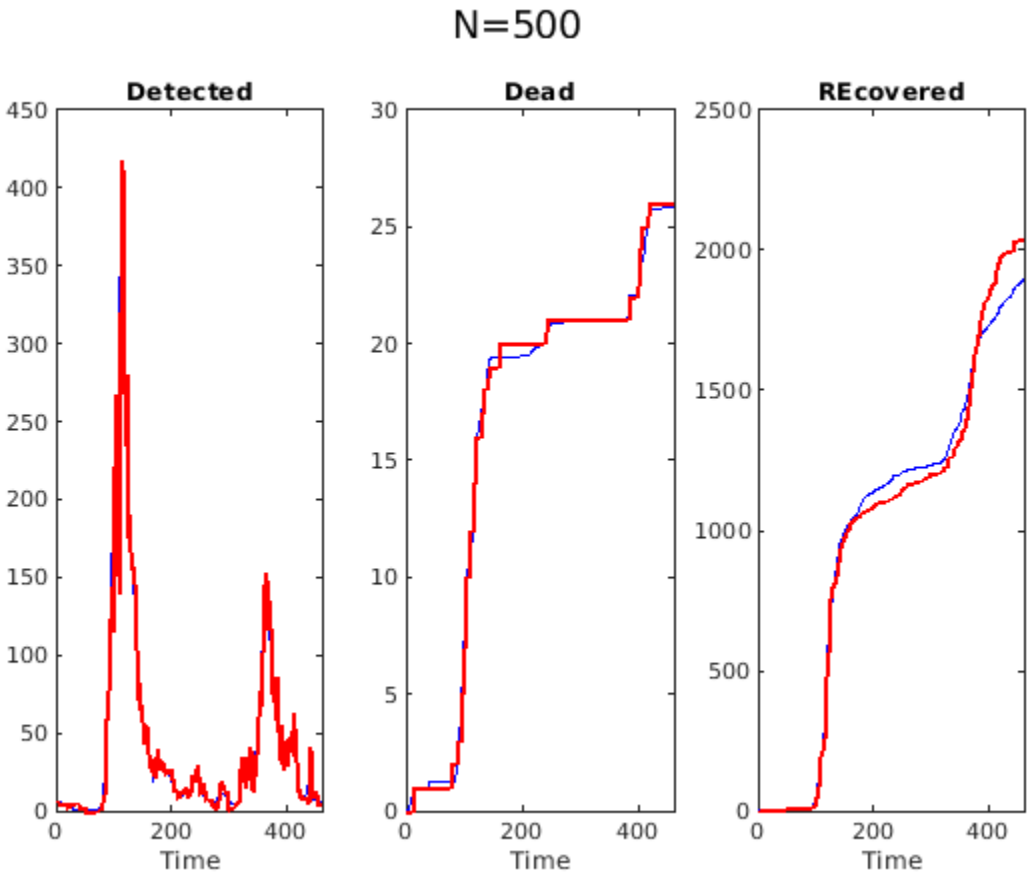
20.3. Identifiability analisys




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
z
a_H
δ
γ_H
η_L
b_L
μ
b_H
η_ϑ
λ_{fq}
a_L
γ_L
ν
b_μ
ϑ_P
BP
λ_{qf}
a_μ
ϑ_E
k_L
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
Identifiability Index

20.4. Uncertainty analisys



Chapter 21. Extension number21

21.1. Basic information

The extension to be validated consists of the time series from the data463 to the 483. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

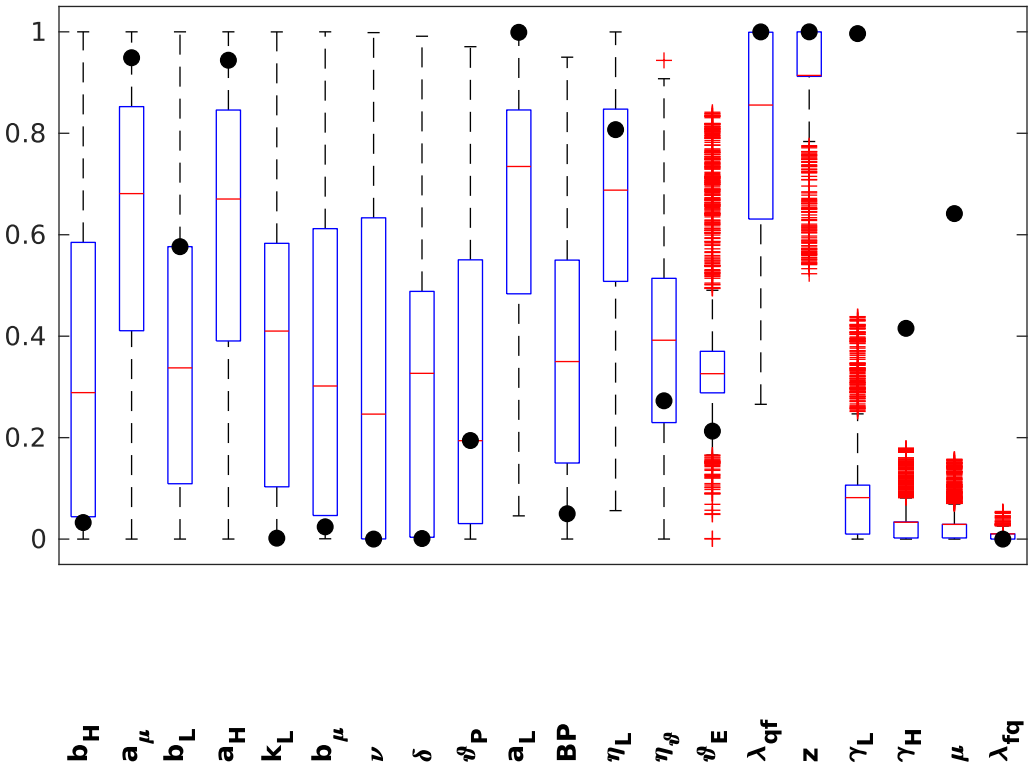
21.2. Estimated parameters with their intervals

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

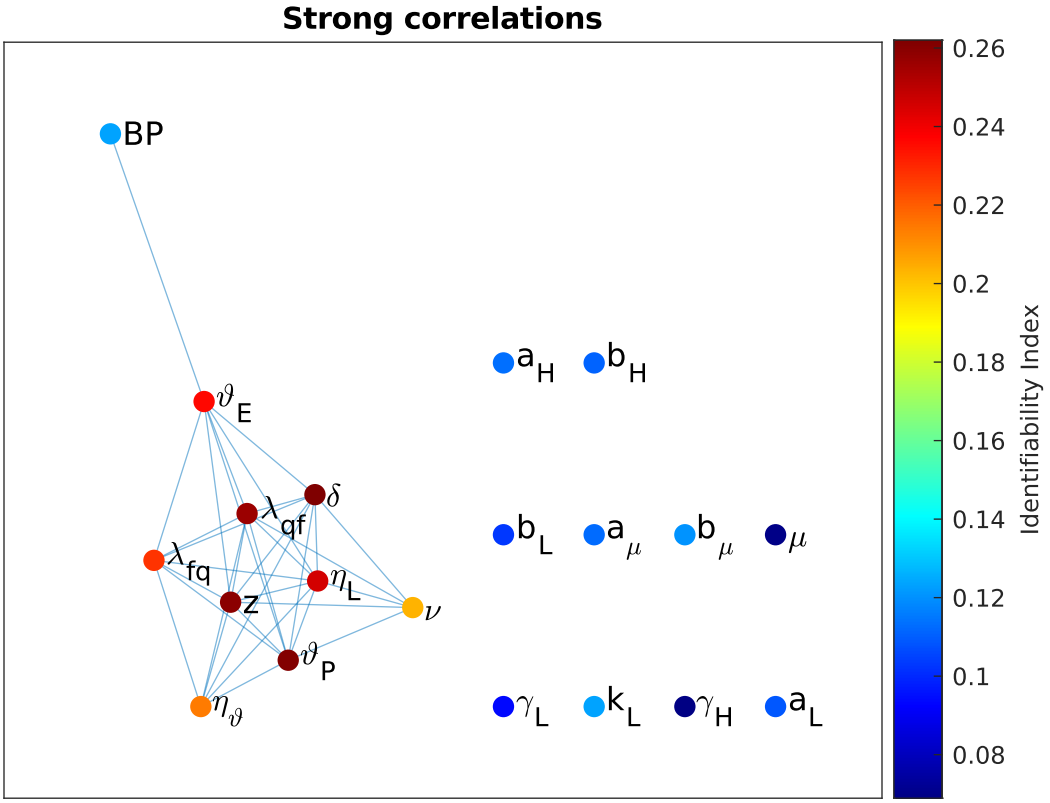
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0'	'0.0104'	'0'	'0.2274'
\vartheta_E	'0'	'0.2682'	'0.3262'	'0.2129'	'0.2358'
\gamma_L	'0'	'1'	'0.0818'	'0.9965'	'0.0939'
k_L	'1'	'10'	'4.6908'	'1.0164'	'0.1233'
\lambda_{qf}	'0.3568'	'1'	'0.8552'	'0.9999'	'0.2567'
\delta	'0'	'0.0004'	'0.049'	'0.0002'	'0.262'
\eta_L	'0'	'1'	'0.6879'	'0.8072'	'0.246'
\vartheta_P	'0.041'	'0.2383'	'0.194'	'0.1943'	'0.2605'
\gamma_H	'0'	'0.9348'	'0.0333'	'0.4155'	'0.0689'
z	'23.6818'	'30'	'27.3648'	'29.9995'	'0.2595'
\eta_\vartheta	'0.0613'	'0.6135'	'0.3921'	'0.2726'	'0.214'
a_L	'6.1144'	'15'	'11.2824'	'14.9864'	'0.1092'
b_L	'1'	'12.2'	'5.7254'	'9.0706'	'0.1032'
a_\mu	'1'	'15'	'10.535'	'14.2849'	'0.113'
b_\mu	'1'	'15'	'5.2254'	'1.3387'	'0.1206'
\mu	'0'	'1'	'0.0291'	'0.6417'	'0.0697'
a_H	'1'	'15'	'10.3858'	'14.2163'	'0.1138'
b_H	'1'	'15'	'5.0424'	'1.4566'	'0.1118'
\nu	'0'	'0.037'	'123.1982'	'0.0164'	'0.2032'
BP	'463.12'	'463.62'	'466.5'	'463.5'	'0.1233'

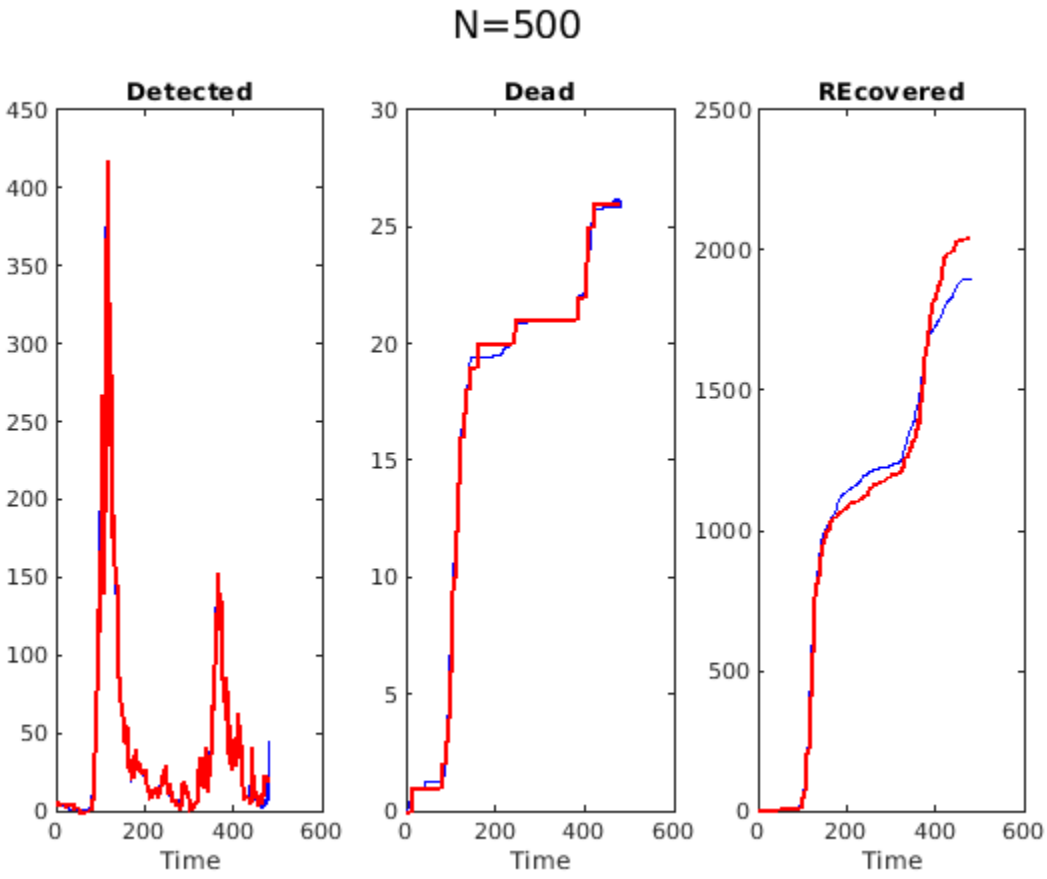
21.3. Identifiability analisys



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

21.4. Uncertainty analisys



Chapter 22. Extension number22

22.1. Basic information

The extension to be validated consists of the time series from the data483 to the 485. The status of the validation is: COMPLETED.

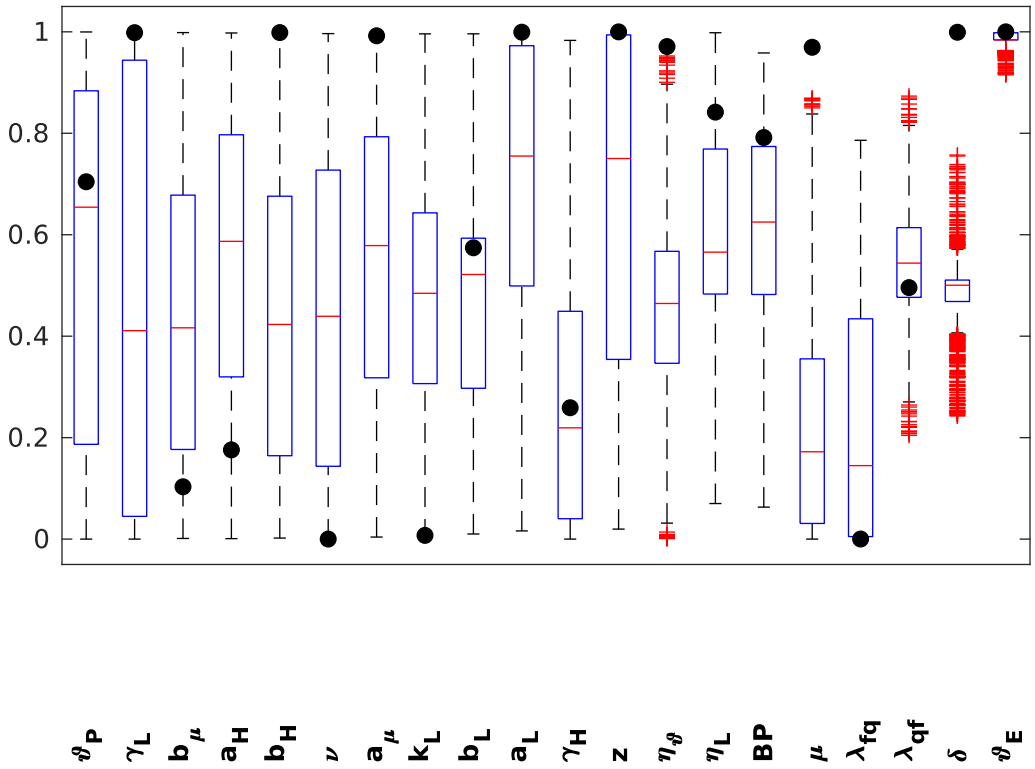
The number of estimations needed to perform the validation was1000.

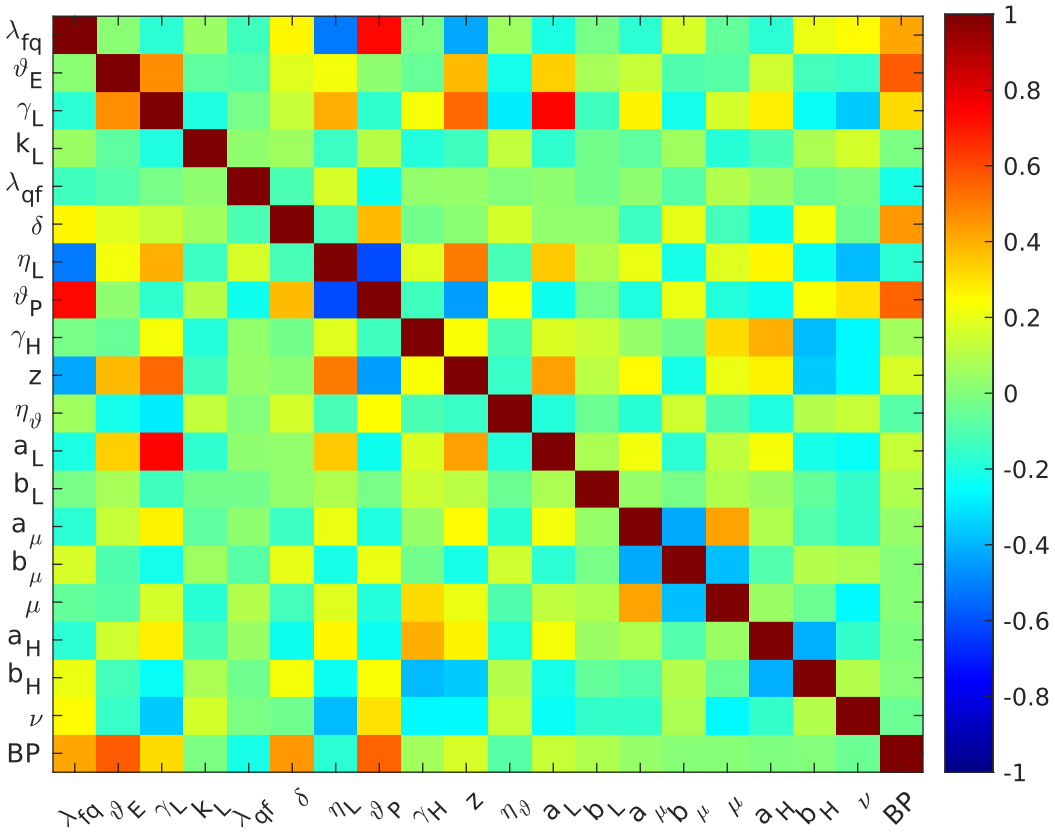
22.2. Estimated parameters with their intervals

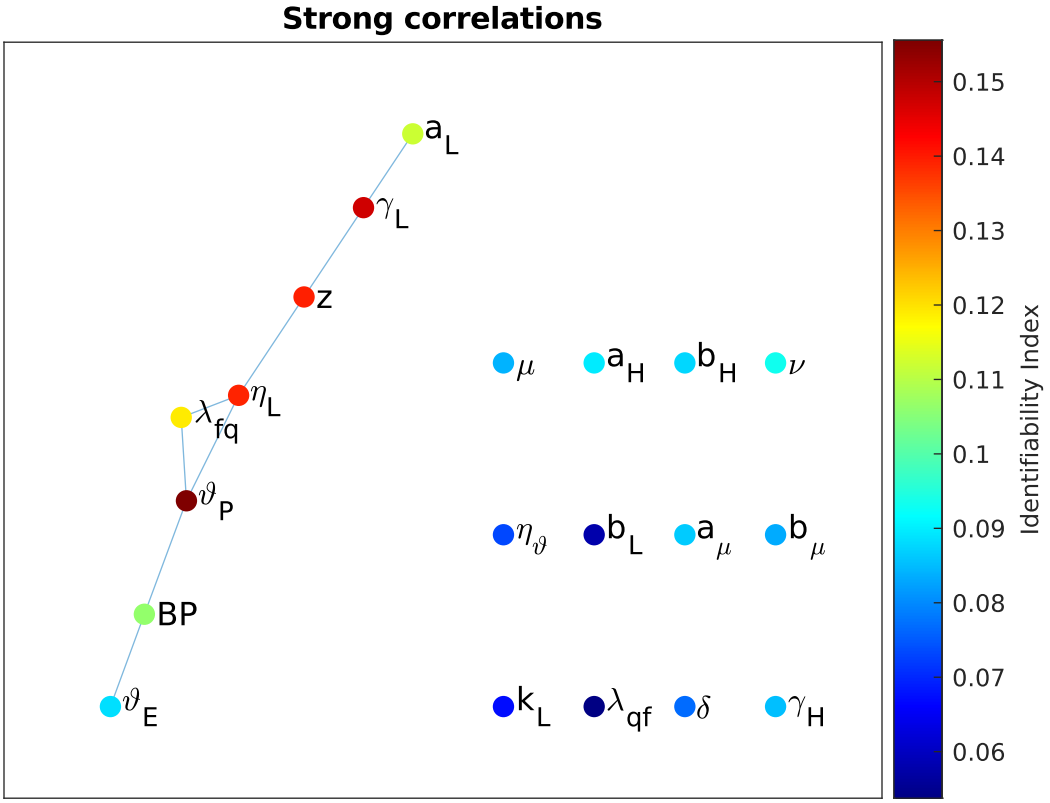
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.1274'	'0.1643'	'0.1459'	'0.0002'	'0.119'
\vartheta_E	'0.976'	'0.9923'	'0.9841'	'1'	'0.0886'
\gamma_L	'0.3798'	'0.442'	'0.4109'	'0.9983'	'0.1473'
k_L	'5.1957'	'5.5257'	'5.3607'	'1.066'	'0.0673'
\lambda_{qf}	'0.5328'	'0.5553'	'0.5441'	'0.4958'	'0.0537'
\delta	'0.0727'	'0.0774'	'0.0751'	'0.1499'	'0.0771'
\eta_L	'0.5518'	'0.5796'	'0.5657'	'0.8417'	'0.1392'
\vartheta_P	'0.626'	'0.6826'	'0.6543'	'0.7044'	'0.1556'
\gamma_H	'0.1971'	'0.2416'	'0.2193'	'0.2589'	'0.0853'
z	'21.7499'	'23.2656'	'22.5077'	'29.9962'	'0.1396'
\eta_\vartheta	'0.4492'	'0.4803'	'0.4647'	'0.971'	'0.0734'
a_L	'11.2749'	'11.8687'	'11.5718'	'14.9901'	'0.1121'
b_L	'8.073'	'8.5341'	'8.3036'	'9.0392'	'0.058'
a_\mu	'8.7946'	'9.4063'	'9.1005'	'14.8907'	'0.0864'
b_\mu	'6.5223'	'7.1402'	'6.8313'	'2.4444'	'0.0834'
\mu	'0.1511'	'0.1931'	'0.1721'	'0.9695'	'0.0844'
a_H	'8.9079'	'9.5267'	'9.2173'	'3.4622'	'0.0896'
b_H	'6.6112'	'7.2379'	'6.9245'	'14.9789'	'0.0877'
\nu	'207.2458'	'232.0344'	'219.6401'	'0.0428'	'0.0933'
BP	'470.3246'	'470.6754'	'470.5'	'472.5'	'0.1066'

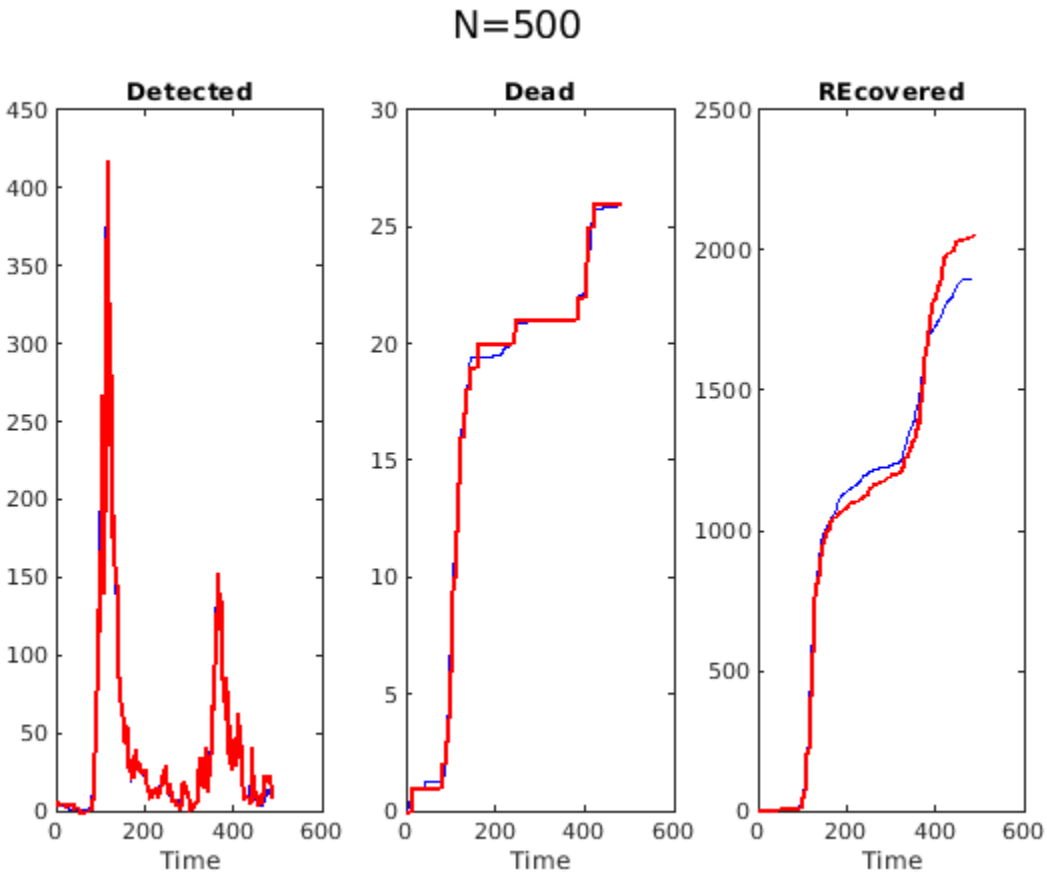
22.3. Identifiability analisys




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
a L
γ L
z
η L
λ fq
ϑ P
BP
ϑ E
μ
a H
b H
ν
η ϑ
b L
a μ
b μ
k L
λ qf
δ
γ H
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
Identifiability Index

22.4. Uncertainty analisys



Chapter 23. Extension number23

23.1. Basic information

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

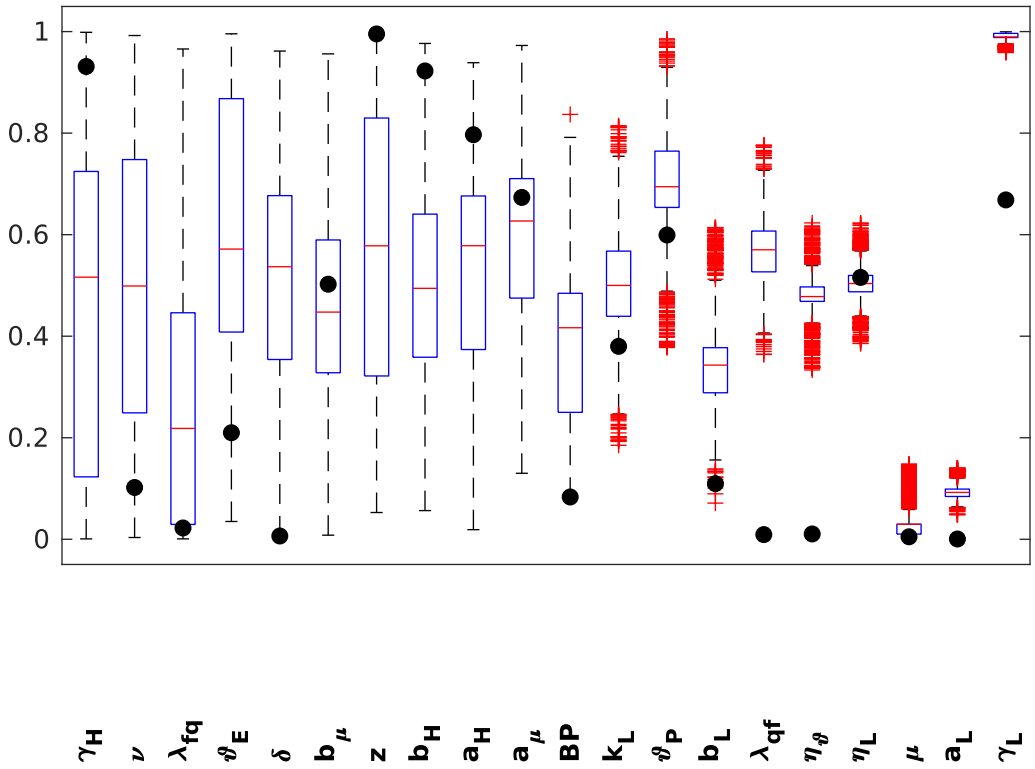
The number of estimations needed to perform the validation was1000.

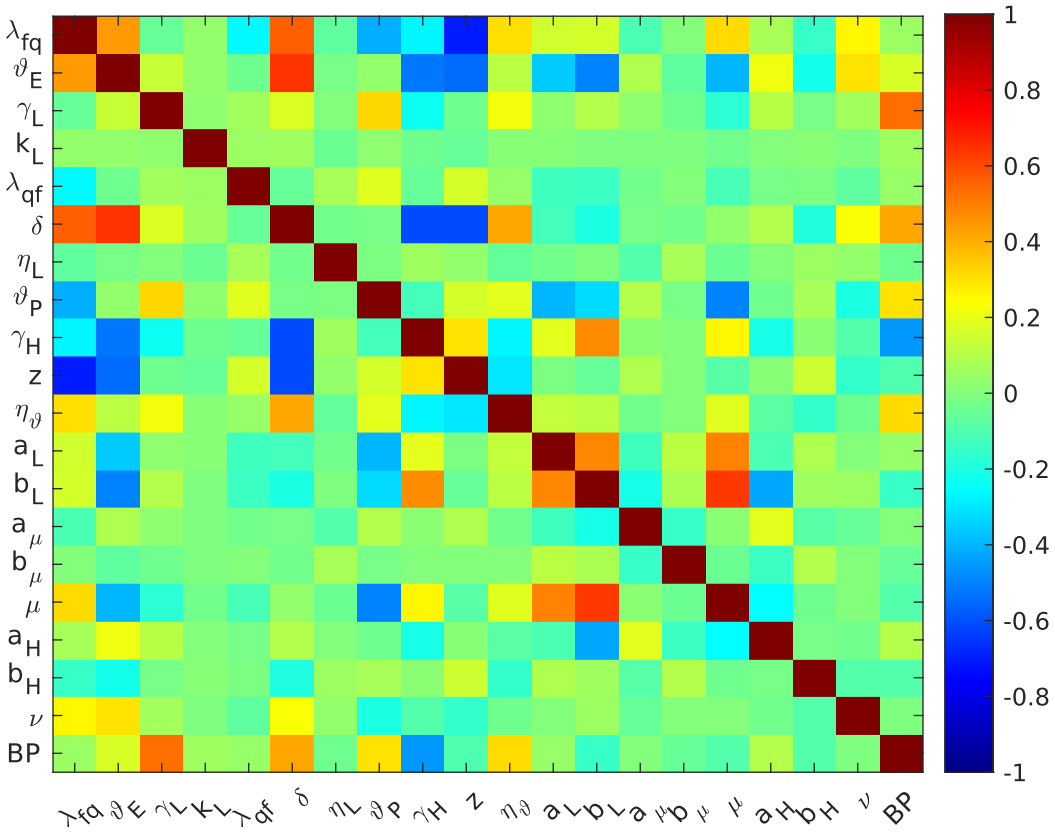
23.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.2014'	'0.2353'	'0.2184'	'0.0223'	'0.1215'
\vartheta_E	'0.5517'	'0.5915'	'0.5716'	'0.2099'	'0.1426'
\gamma_L	'0.9837'	'0.9952'	'0.9895'	'0.6684'	'0.0726'
k_L	'5.4036'	'5.5963'	'5.5'	'4.4202'	'0.042'
\lambda_{qf}	'0.5617'	'0.5787'	'0.5702'	'0.0092'	'0.0528'
\delta	'0.0777'	'0.0833'	'0.0805'	'0.001'	'0.1498'
\eta_L	'0.497'	'0.5104'	'0.5037'	'0.5158'	'0.0412'
\vartheta_P	'0.6819'	'0.7069'	'0.6944'	'0.5993'	'0.0805'
\gamma_H	'0.4918'	'0.5407'	'0.5163'	'0.9313'	'0.1265'
z	'16.6909'	'17.9904'	'17.3406'	'29.8609'	'0.1283'
\eta_\vartheta	'0.4677'	'0.4884'	'0.4781'	'0.0105'	'0.0726'
a_L	'2.2217'	'2.3632'	'2.2924'	'1.0075'	'0.0678'
b_L	'5.6418'	'5.9643'	'5.803'	'2.5336'	'0.1009'
a_\mu	'9.5771'	'9.9758'	'9.7765'	'10.4268'	'0.057'
b_\mu	'7.0622'	'7.4672'	'7.2647'	'8.0337'	'0.0508'
\mu	'0.0164'	'0.043'	'0.0297'	'0.0049'	'0.0972'
a_H	'8.8545'	'9.3269'	'9.0907'	'12.1561'	'0.0681'
b_H	'7.7195'	'8.1202'	'7.9198'	'13.9144'	'0.0592'
\nu	'238.2696'	'260.6229'	'249.4463'	'51.0115'	'0.0685'
BP	'485.4325'	'485.5675'	'485.5'	'483.5'	'0.0861'

23.3. 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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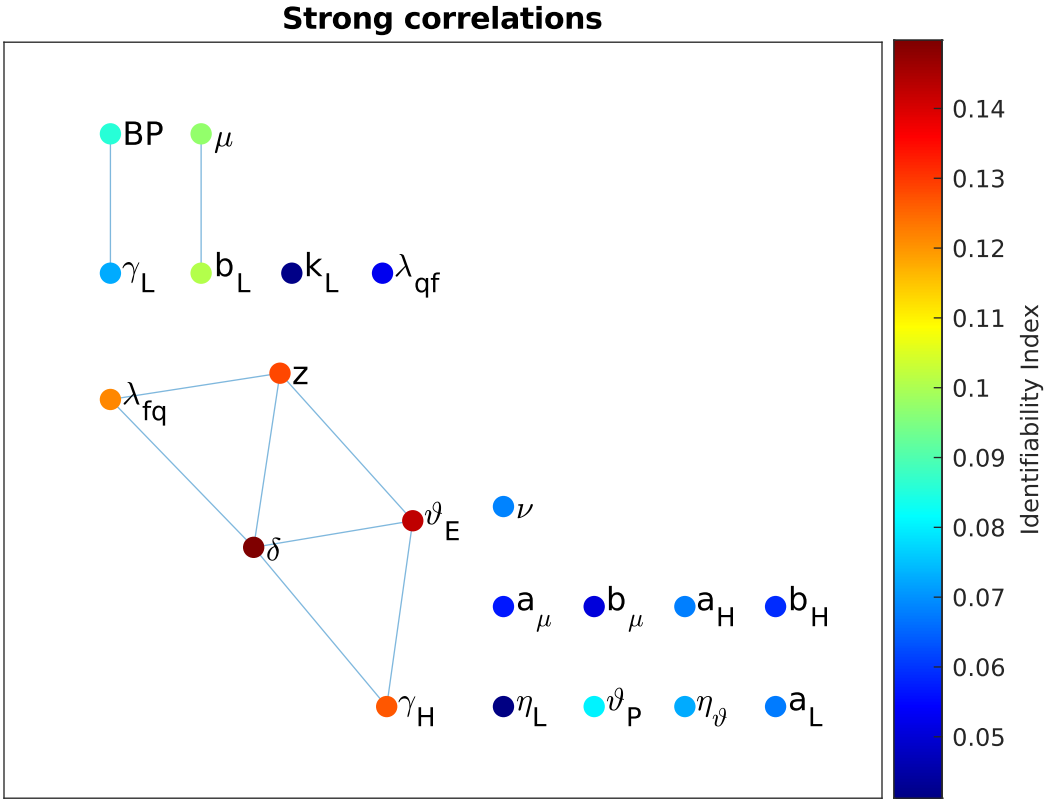
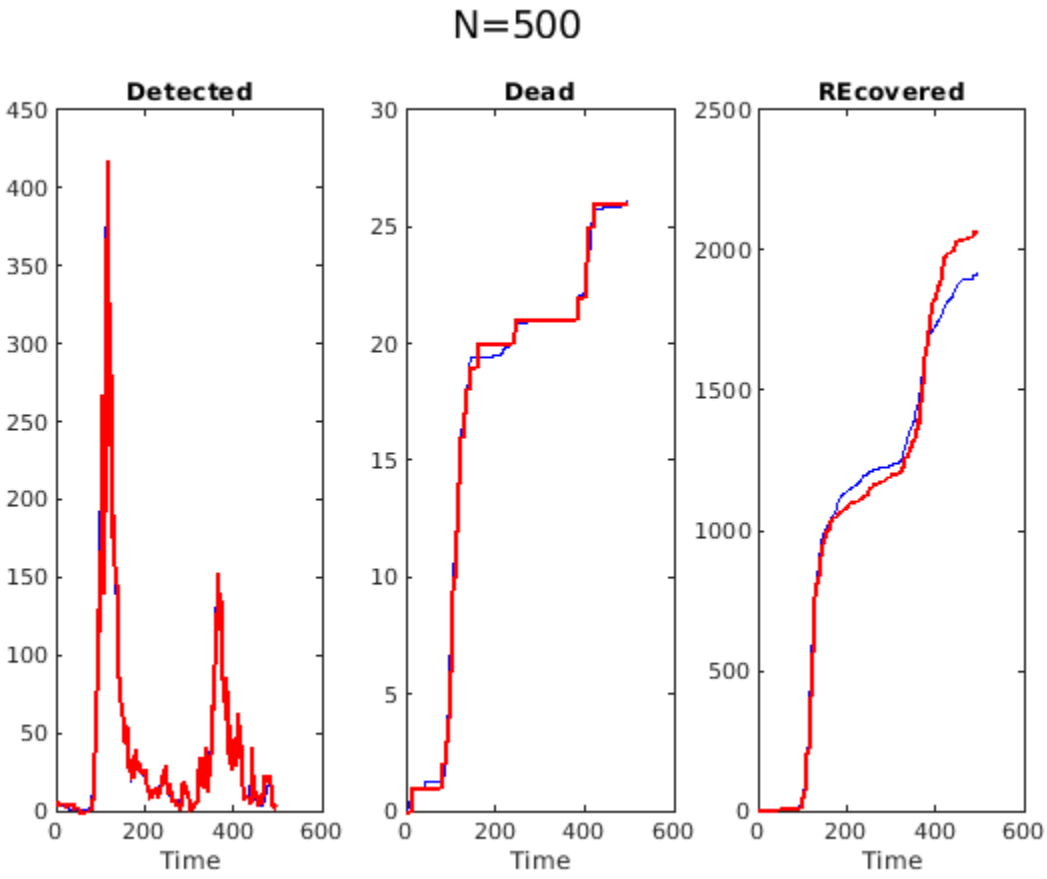
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


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

23.4. Uncertainty analisys



Chapter 24. Extension number24

24.1. Basic information

The extension to be validated consists of the time series from the data499 to the 499. The status of the validation is: COMPLETED.

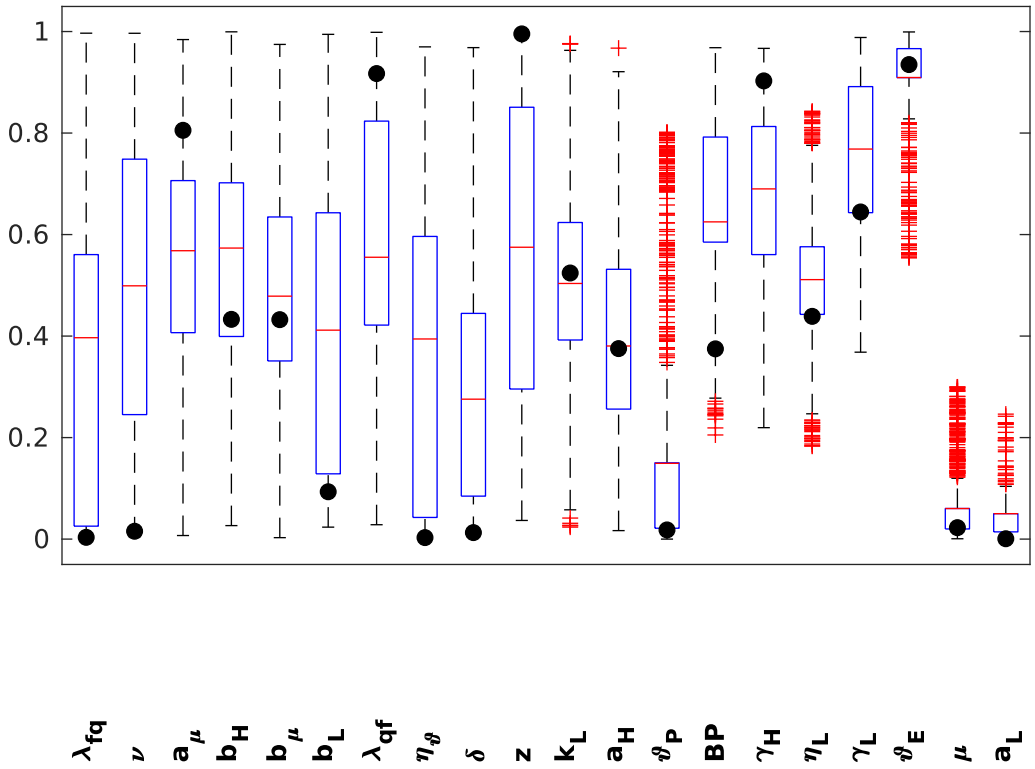
The number of estimations needed to perform the validation was1000.

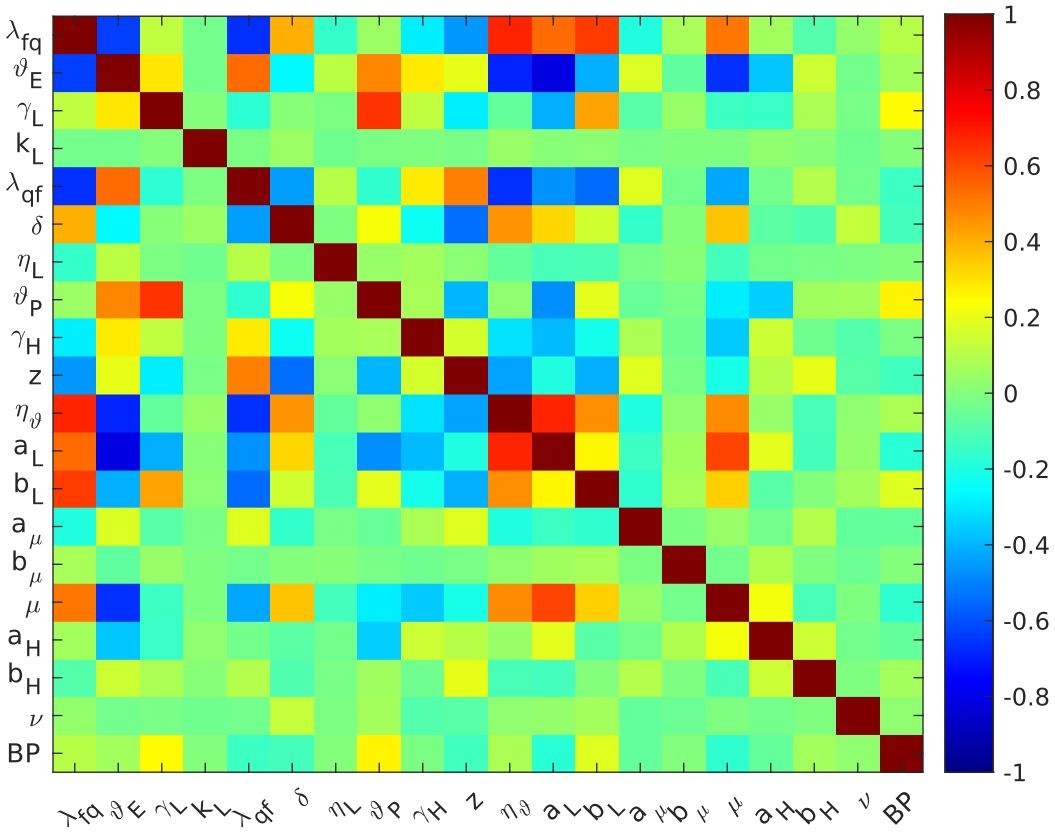
24.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.3761'	'0.4175'	'0.3968'	'0.0035'	'0.1919'
\vartheta_E	'0.8816'	'0.9368'	'0.9092'	'0.9349'	'0.1929'
\gamma_L	'0.7571'	'0.7798'	'0.7685'	'0.6445'	'0.0903'
k_L	'5.399'	'5.6665'	'5.5328'	'5.7184'	'0.0444'
\lambda_{qf}	'0.5367'	'0.5739'	'0.5553'	'0.9172'	'0.1619'
\delta	'0.0388'	'0.0439'	'0.0414'	'0.0019'	'0.1051'
\eta_L	'0.4997'	'0.5227'	'0.5112'	'0.4389'	'0.0495'
\vartheta_P	'0.1197'	'0.1809'	'0.1503'	'0.0181'	'0.1165'
\gamma_H	'0.6777'	'0.7022'	'0.69'	'0.9028'	'0.077'
z	'16.549'	'17.9522'	'17.2506'	'29.8606'	'0.1176'
\eta_\vartheta	'0.3714'	'0.4172'	'0.3943'	'0.003'	'0.1664'
a_L	'1.3945'	'2.009'	'1.7017'	'1.0099'	'0.1719'
b_L	'6.4761'	'7.0504'	'6.7632'	'2.3057'	'0.1296'
a_\mu	'8.727'	'9.1818'	'8.9544'	'12.2759'	'0.0653'
b_\mu	'7.4805'	'7.9215'	'7.701'	'7.053'	'0.049'
\mu	'0.0436'	'0.077'	'0.0603'	'0.0225'	'0.1425'
a_H	'6.1169'	'6.5363'	'6.3266'	'6.2546'	'0.0677'
b_H	'8.7955'	'9.2597'	'9.0276'	'7.0613'	'0.0604'
\nu	'238.2555'	'260.7635'	'249.5095'	'7.7312'	'0.0575'
BP	'487.4494'	'487.5506'	'487.5'	'486.4993'	'0.0615'

24.3. 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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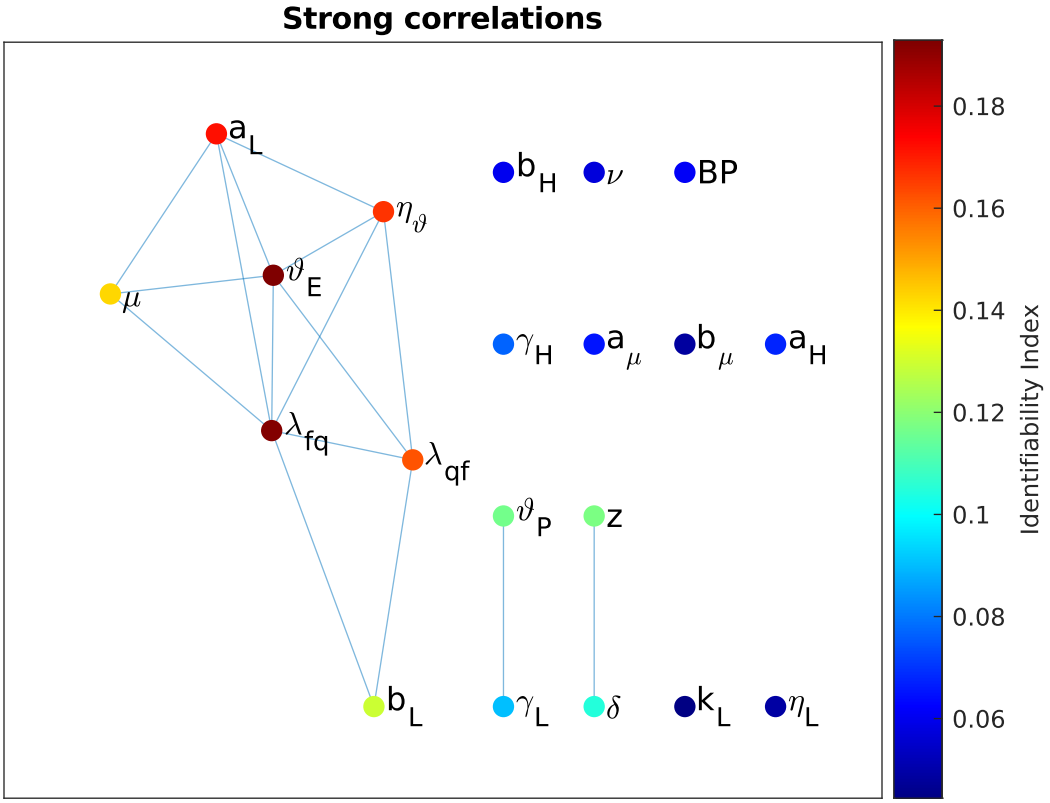
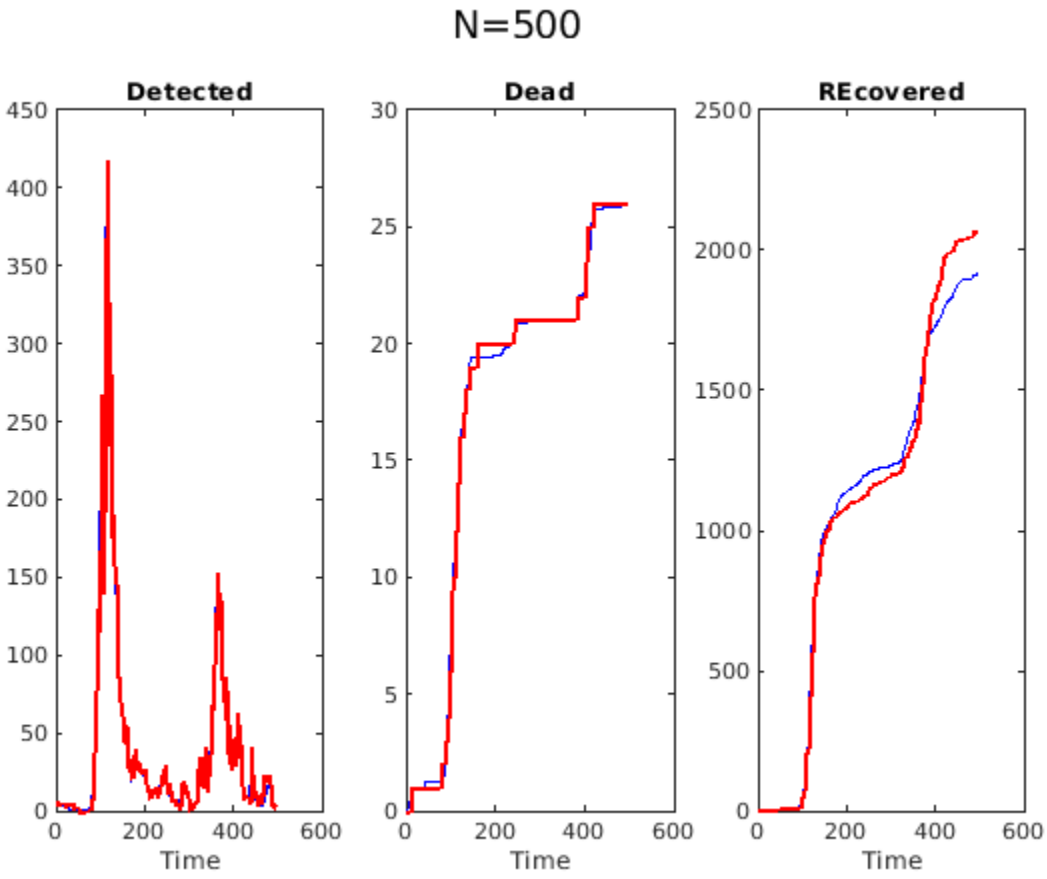
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
a_L
η_ϑ
ϑ_E
μ
λ_fq
λ_qf
b_L
b_H
ν
BP
γ_H
a_μ
b_μ
a_H
ϑ_P
z
γ_L
δ
k_L
η_L
0.18
0.16
0.14
0.12
0.1
0.08
0.06
Identifiability Index

24.4. Uncertainty analisys



Chapter 25. Extension number25

25.1. Basic information

The extension to be validated consists of the time series from the data499 to the 524. The status of the validation is: COMPLETED.

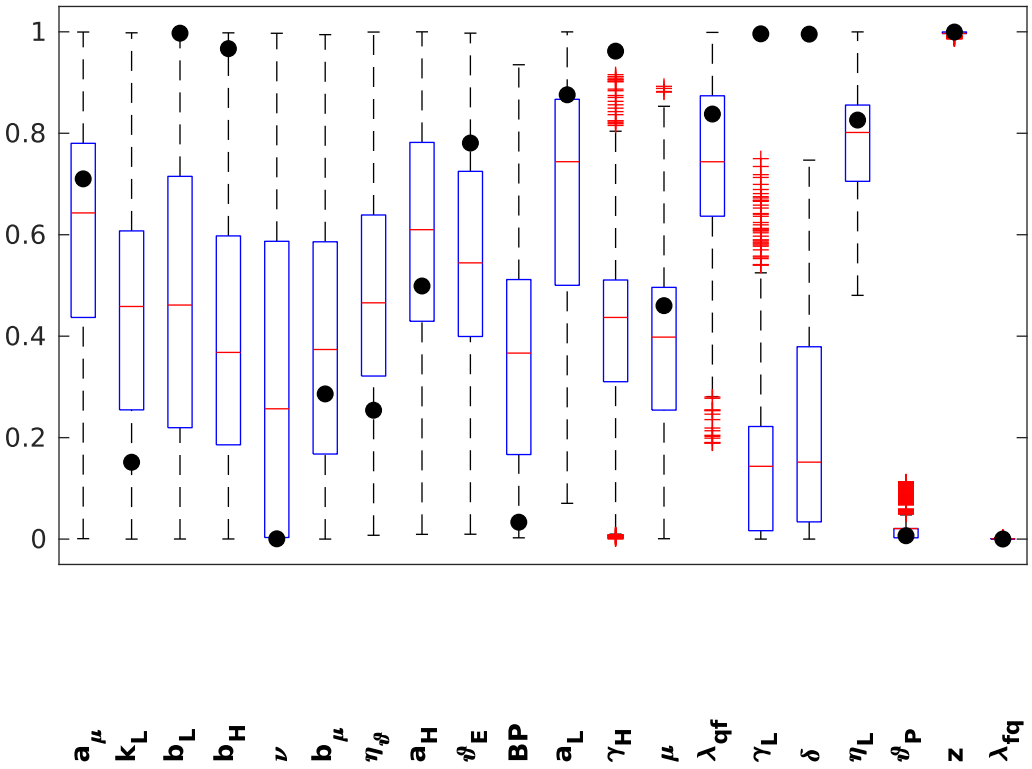
The number of estimations needed to perform the validation was1000.

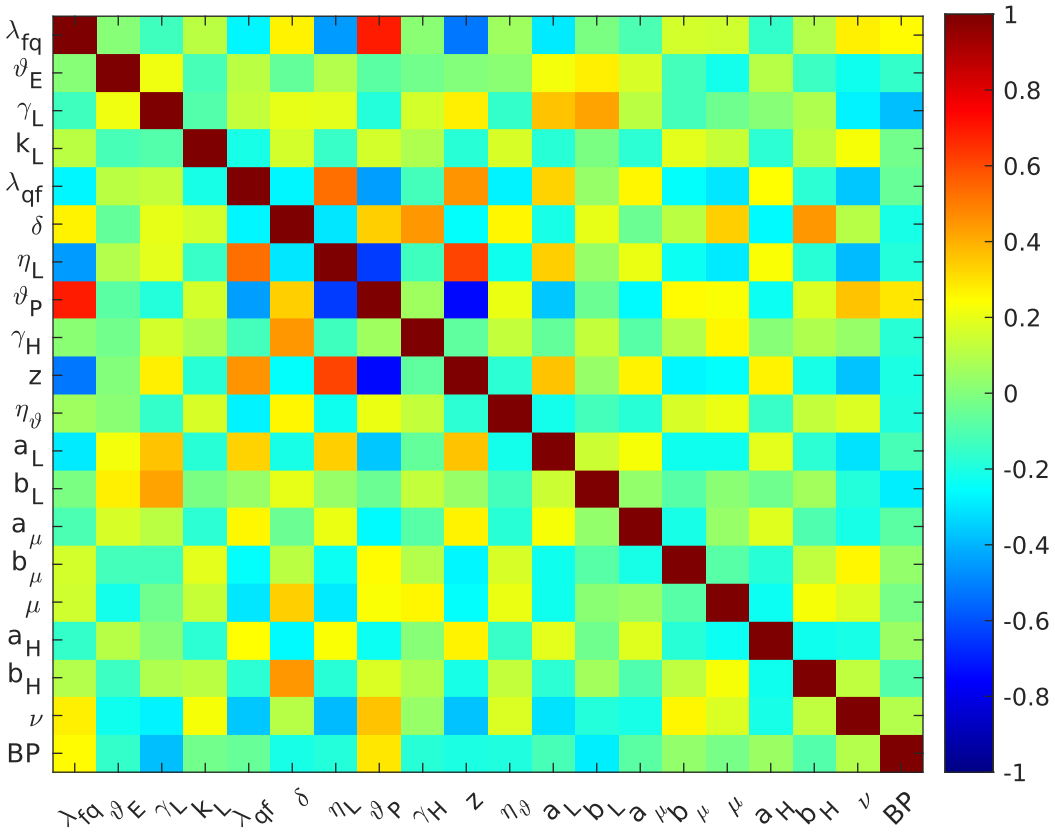
25.2. Estimated parameters with their intervals

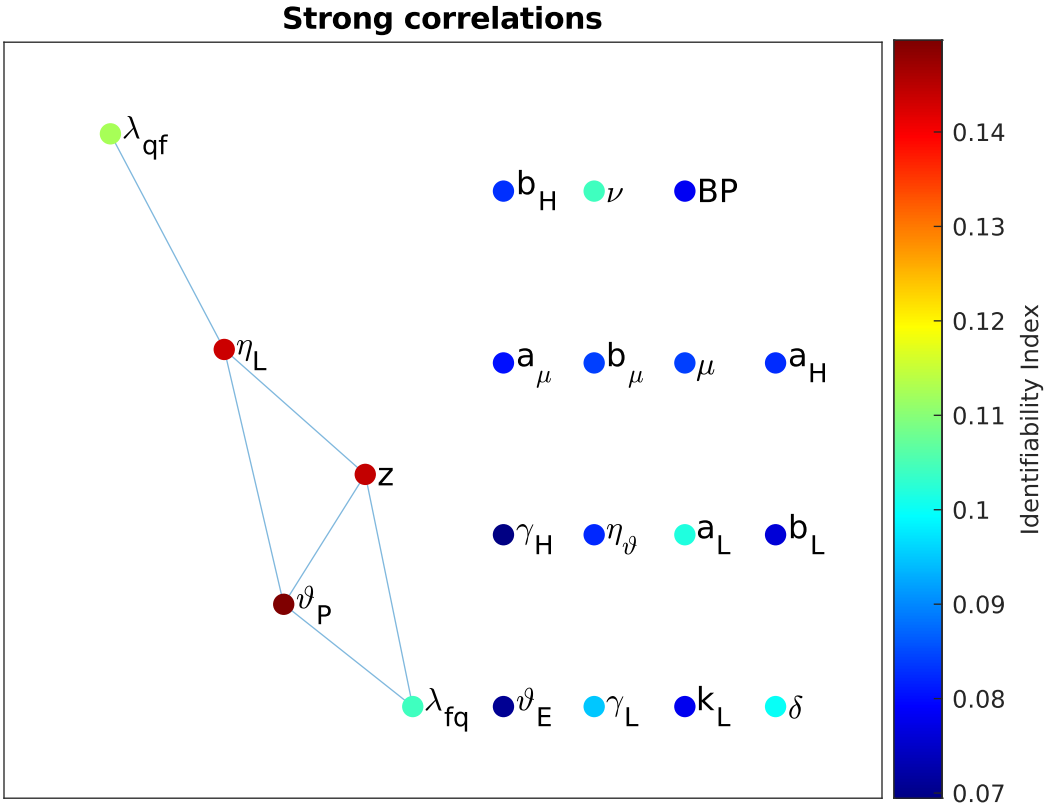
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0.0078'	'0.0005'	'0.0002'	'0.1043'
\vartheta_E	'0.5283'	'0.5607'	'0.5445'	'0.7808'	'0.0708'
\gamma_L	'0.1178'	'0.1693'	'0.1436'	'0.996'	'0.0952'
k_L	'4.9478'	'5.3061'	'5.127'	'2.3637'	'0.0781'
\lambda_{qf}	'0.7289'	'0.7584'	'0.7437'	'0.8379'	'0.1126'
\delta	'0.0199'	'0.0256'	'0.0228'	'0.1493'	'0.1001'
\eta_L	'0.7878'	'0.8149'	'0.8013'	'0.826'	'0.1437'
\vartheta_P	'0.0055'	'0.0361'	'0.0208'	'0.0066'	'0.1497'
\gamma_H	'0.4197'	'0.4542'	'0.4369'	'0.9619'	'0.0695'
z	'29.2227'	'30'	'29.9005'	'29.9861'	'0.1444'
\eta_\vartheta	'0.4484'	'0.4831'	'0.4658'	'0.254'	'0.0824'
a_L	'11.1317'	'11.6989'	'11.4153'	'13.2619'	'0.1019'
b_L	'7.1277'	'7.7913'	'7.4595'	'14.9622'	'0.0763'
a_\mu	'9.74'	'10.2638'	'10.0019'	'10.9418'	'0.0804'
b_\mu	'5.9532'	'6.5121'	'6.2327'	'5.0067'	'0.0845'
\mu	'0.382'	'0.4145'	'0.3982'	'0.4602'	'0.0843'
a_H	'9.2807'	'9.7977'	'9.5392'	'7.9852'	'0.0827'
b_H	'5.8577'	'6.4465'	'6.1521'	'14.5351'	'0.083'
\nu	'116.2288'	'140.6517'	'128.4402'	'0.2842'	'0.1043'
BP	'504.241'	'504.7589'	'504.5'	'499.5'	'0.0784'

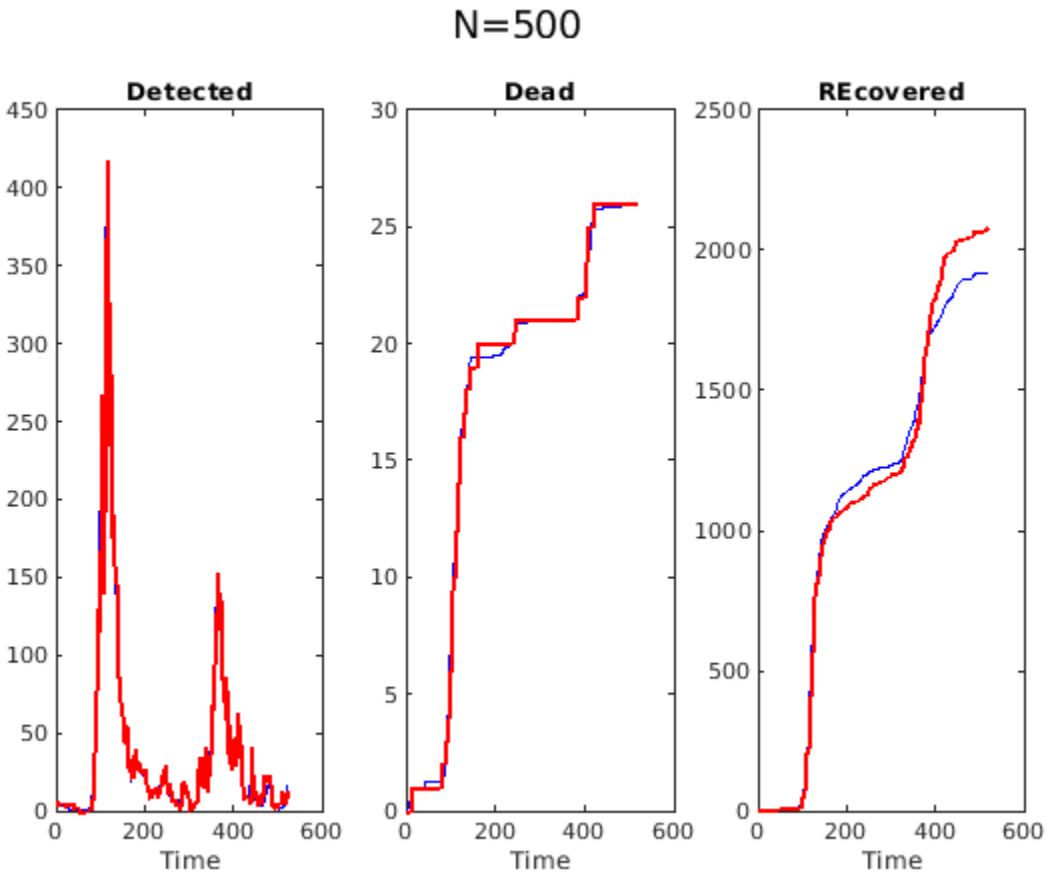
25.3. Identifiability analisys




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

25.4. Uncertainty analisys



Chapter 26. Extension number26

26.1. Basic information

The extension to be validated consists of the time series from the data524 to the 531. The status of the validation is: COMPLETED.

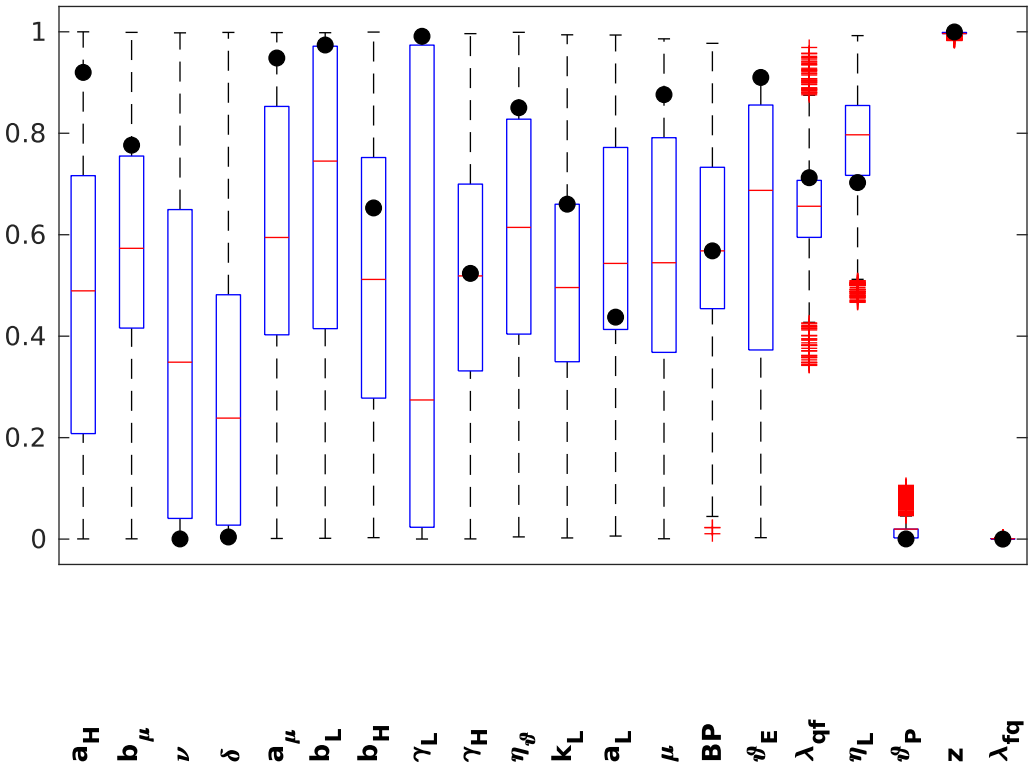
The number of estimations needed to perform the validation was1000.

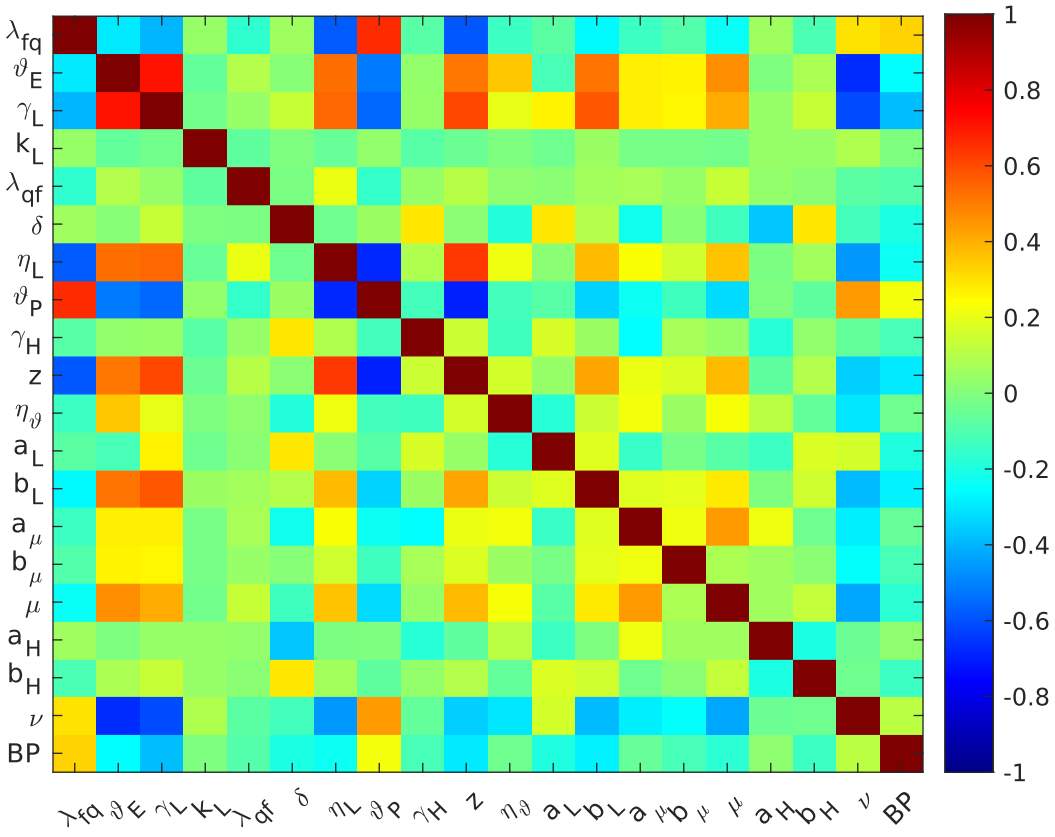
26.2. Estimated parameters with their intervals

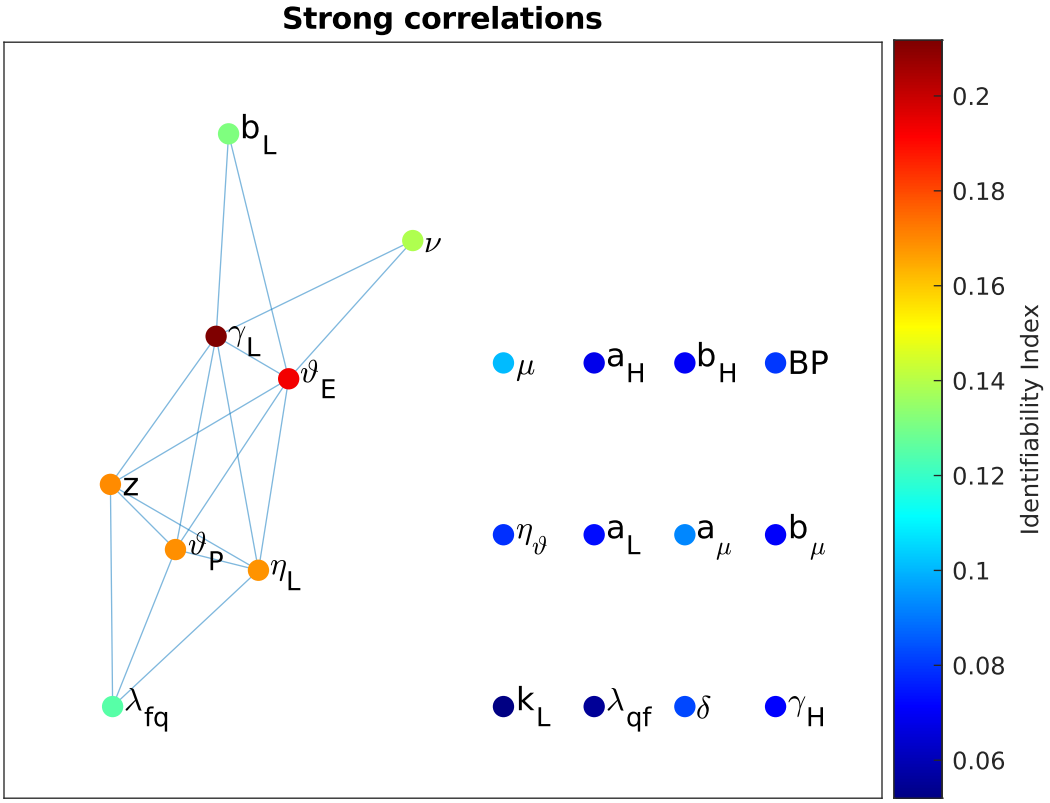
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0'	'0.0118'	'0.0006'	'0'	'0.1256'
\vartheta_E	'0.6662'	'0.7086'	'0.6874'	'0.91'	'0.1932'
\gamma_L	'0.2403'	'0.3082'	'0.2743'	'0.9912'	'0.2117'
k_L	'5.3026'	'5.6233'	'5.4629'	'6.9418'	'0.052'
\lambda_{qf}	'0.6438'	'0.6684'	'0.6561'	'0.7124'	'0.0555'
\delta	'0.0318'	'0.0398'	'0.0358'	'0.0006'	'0.0831'
\eta_L	'0.7843'	'0.8094'	'0.7968'	'0.7028'	'0.1685'
\vartheta_P	'0.0059'	'0.0335'	'0.0197'	'0.0003'	'0.1688'
\gamma_H	'0.4974'	'0.5402'	'0.5188'	'0.5238'	'0.0718'
z	'29.1904'	'30'	'29.8948'	'29.9901'	'0.1698'
\eta_\vartheta	'0.5956'	'0.6332'	'0.6144'	'0.8503'	'0.0794'
a_L	'8.3436'	'8.8726'	'8.6081'	'7.1257'	'0.0737'
b_L	'11.0872'	'11.7764'	'11.4318'	'14.6354'	'0.1318'
a_\mu	'9.0204'	'9.6276'	'9.324'	'14.2765'	'0.0931'
b_\mu	'8.7684'	'9.2811'	'9.0247'	'11.871'	'0.071'
\mu	'0.5241'	'0.5654'	'0.5448'	'0.8762'	'0.1008'
a_H	'7.53'	'8.1719'	'7.8509'	'13.8794'	'0.0688'
b_H	'7.8524'	'8.48'	'8.1662'	'10.1389'	'0.0707'
\nu	'162.0437'	'186.6995'	'174.3716'	'0.1518'	'0.1391'
BP	'511.1592'	'511.8407'	'511.5'	'511.4999'	'0.0807'

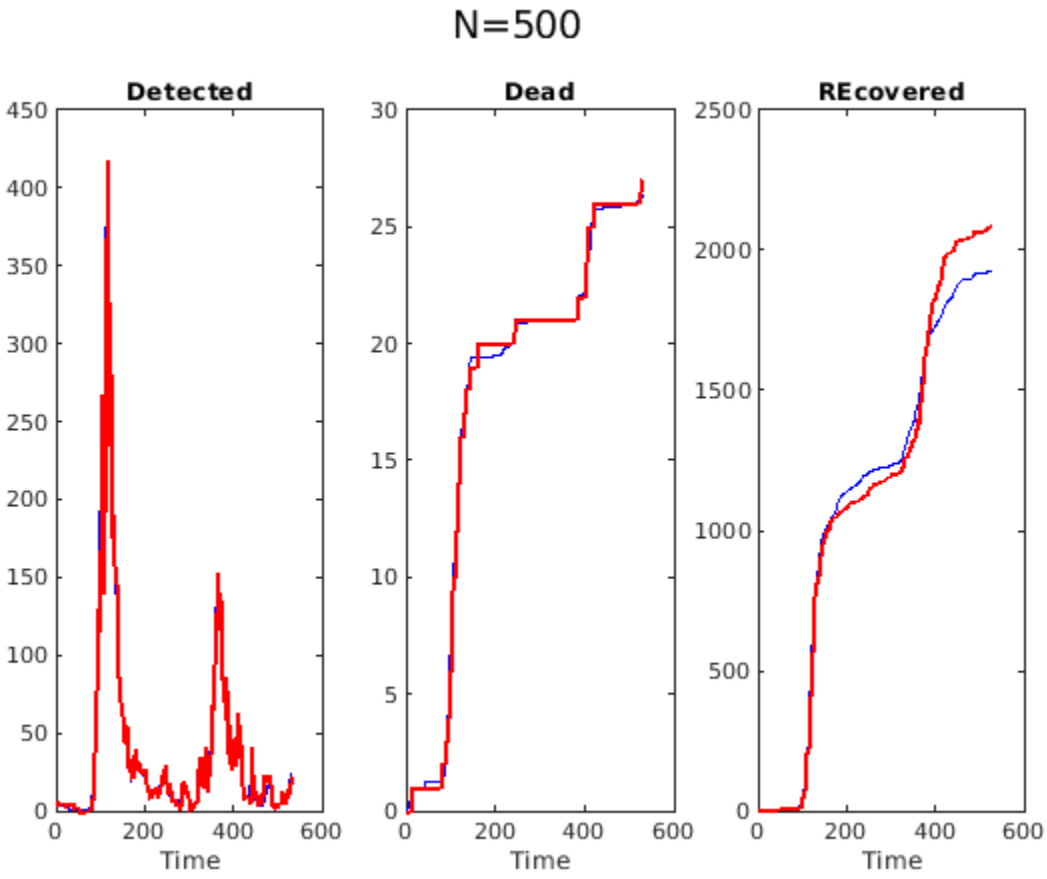
26.3. Identifiability analisys




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
b L
ν
γ L
ϑ E
z
ϑ P
η L
λ fq
μ
a H
b H
BP
η ϑ
a L
a μ
b μ
k L
λ qf
δ
γ H
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
Identifiability Index

26.4. Uncertainty analisys



Chapter 27. Extension number27

27.1. Basic information

The extension to be validated consists of the time series from the data531 to the 549. The status of the validation is: COMPLETED.

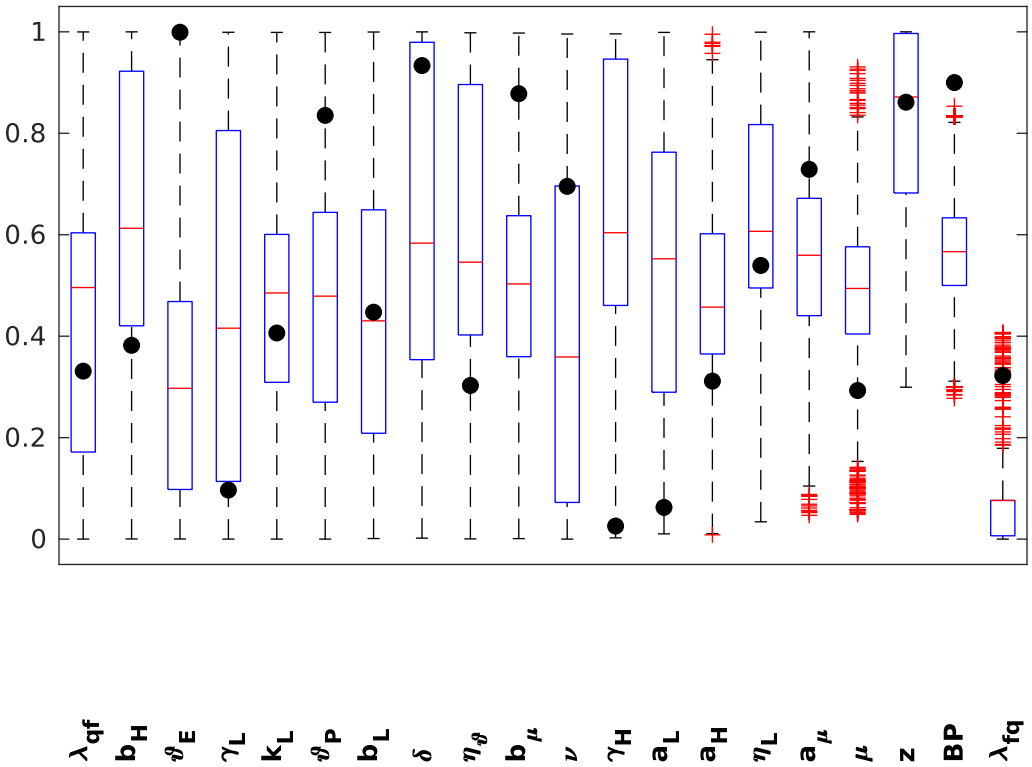
The number of estimations needed to perform the validation was1000.

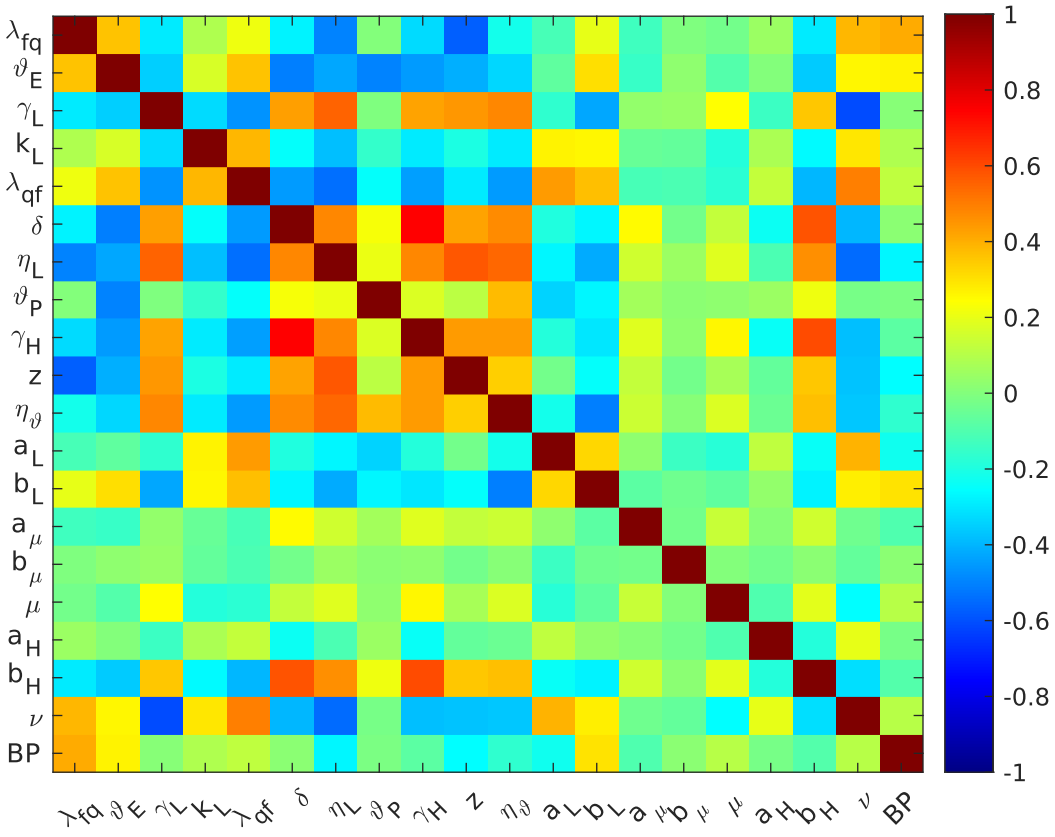
27.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0569'	'0.0955'	'0.0762'	'0.3224'	'0.1124'
\vartheta_E	'0.2774'	'0.3171'	'0.2972'	'0.9992'	'0.1247'
\gamma_L	'0.3886'	'0.4429'	'0.4158'	'0.0967'	'0.1492'
k_L	'5.1993'	'5.5347'	'5.367'	'4.6566'	'0.0947'
\lambda_{qf}	'0.475'	'0.5168'	'0.4959'	'0.3311'	'0.1355'
\delta	'0.0835'	'0.0915'	'0.0875'	'0.14'	'0.1688'
\eta_L	'0.5901'	'0.6234'	'0.6067'	'0.5394'	'0.1933'
\vartheta_P	'0.4611'	'0.4967'	'0.4789'	'0.8352'	'0.0808'
\gamma_H	'0.5821'	'0.6259'	'0.604'	'0.0257'	'0.1524'
z	'25.4308'	'26.7991'	'26.115'	'25.8372'	'0.1398'
\eta_\vartheta	'0.5215'	'0.5702'	'0.5459'	'0.3029'	'0.1485'
a_L	'8.451'	'9.0216'	'8.7363'	'1.8747'	'0.0943'
b_L	'6.7196'	'7.3274'	'7.0235'	'7.262'	'0.1212'
a_\mu	'8.6128'	'9.0531'	'8.833'	'11.2043'	'0.0655'
b_\mu	'7.8222'	'8.2631'	'8.0427'	'13.2922'	'0.05'
\mu	'0.4787'	'0.5095'	'0.4941'	'0.2929'	'0.0729'
a_H	'7.1898'	'7.6143'	'7.4021'	'5.3604'	'0.0632'
b_H	'9.2791'	'9.8764'	'9.5778'	'6.3482'	'0.1428'
\nu	'166.7131'	'192.2909'	'179.502'	'347.6797'	'0.1475'
BP	'532.3068'	'532.6932'	'532.5'	'537.5'	'0.0708'

27.3. 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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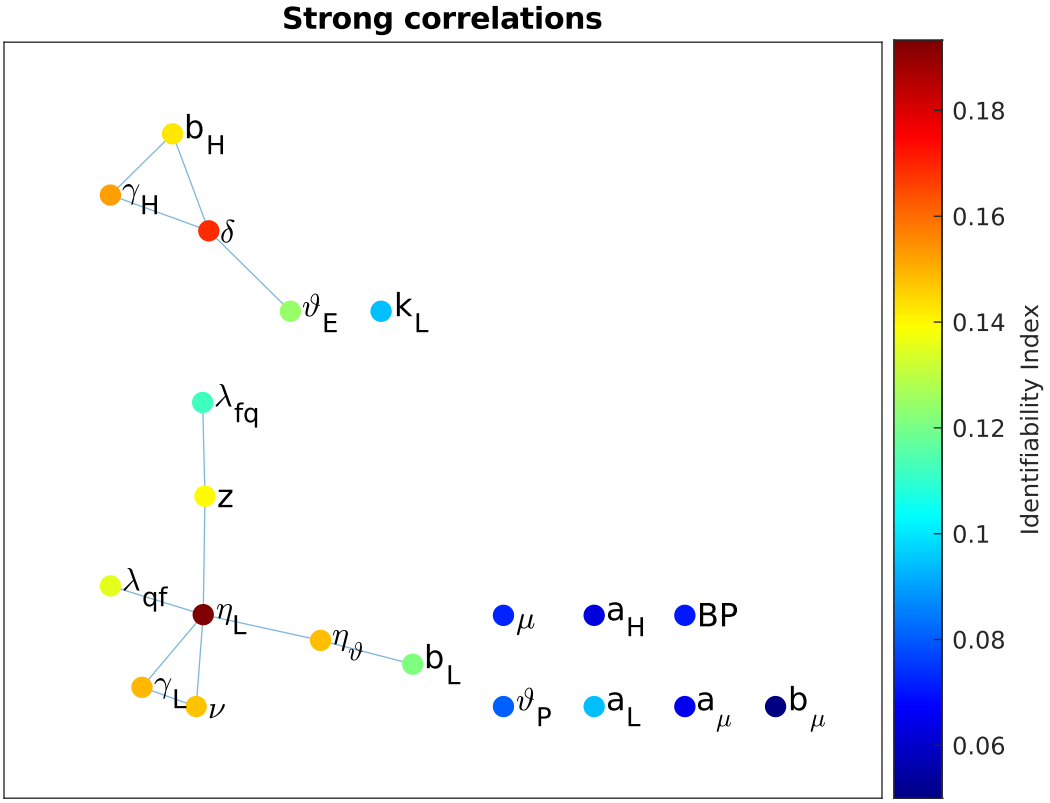
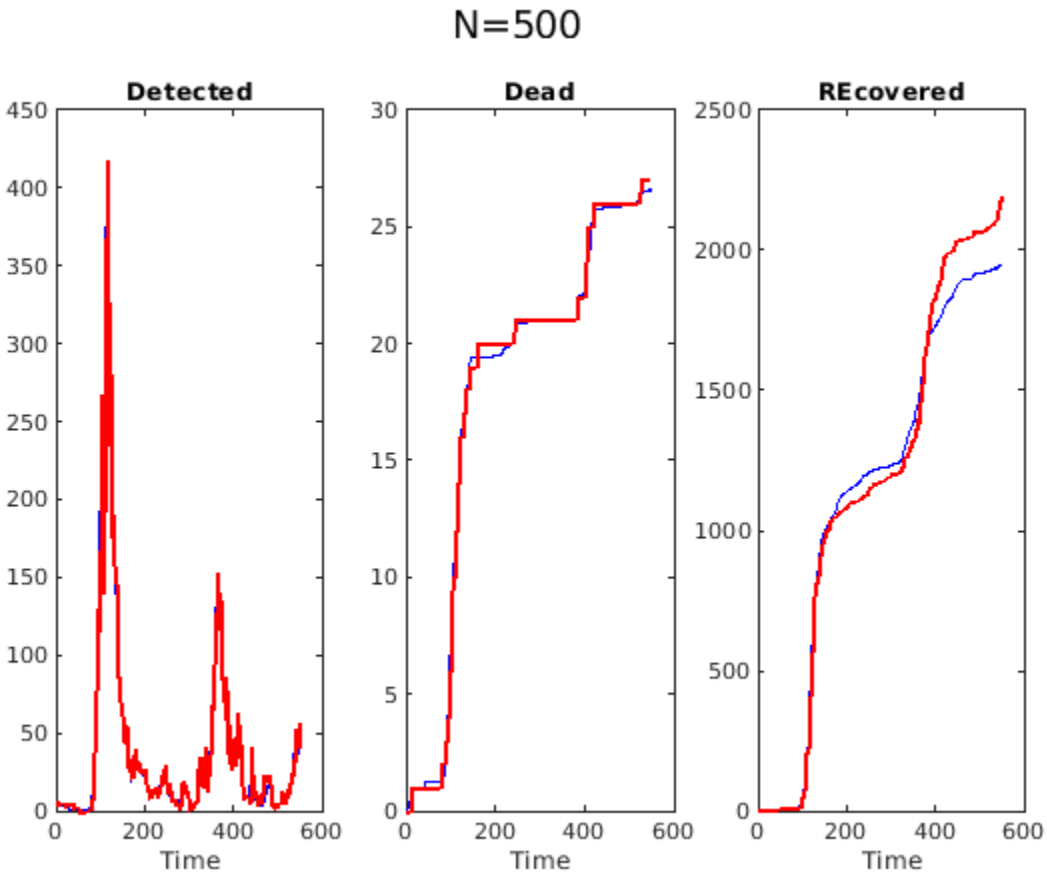
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
b H
γ H
δ
ϑ E
k L
λ fq
z
λ qf
η L
η ϑ
b L
γ L
ν
μ
a H
BP
ϑ P
a L
a μ
b μ
0.18
0.16
0.14
0.12
0.1
0.08
0.06
Identifiability Index

27.4. Uncertainty analisys



Chapter 28. Extension number28

28.1. Basic information

The extension to be validated consists of the time series from the data549 to the 558. The status of the validation is: COMPLETED.

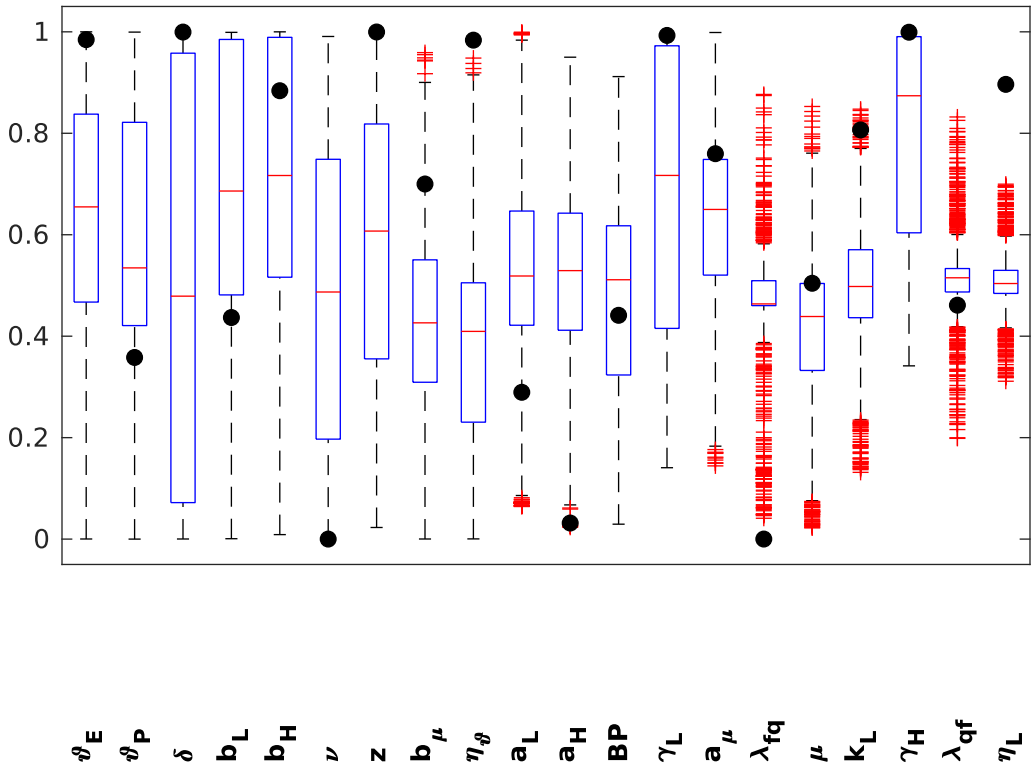
The number of estimations needed to perform the validation was1000.

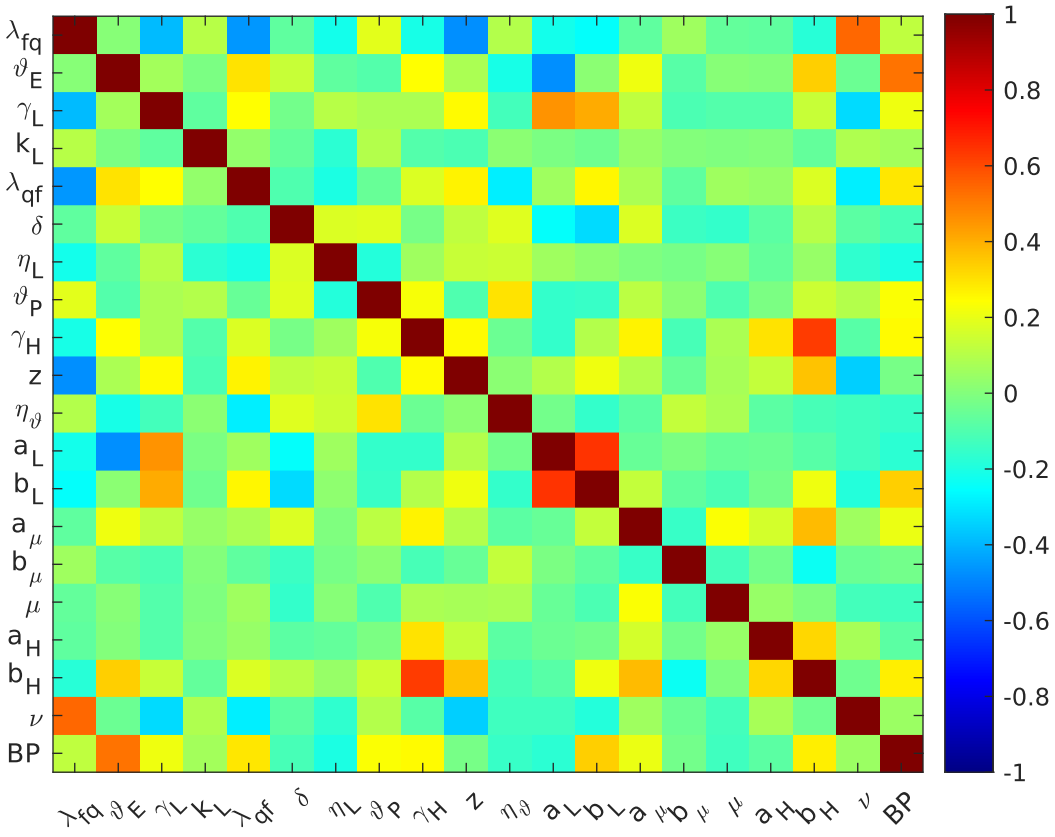
28.2. Estimated parameters with their intervals

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.4453'	'0.482'	'0.4636'	'0.0001'	'0.1028'
\vartheta_E	'0.6344'	'0.6754'	'0.6549'	'0.9846'	'0.0946'
\gamma_L	'0.6955'	'0.7383'	'0.7169'	'0.9929'	'0.0889'
k_L	'5.3626'	'5.601'	'5.4818'	'8.2596'	'0.0517'
\lambda_{qf}	'0.4976'	'0.5327'	'0.5151'	'0.4611'	'0.0856'
\delta	'0.0675'	'0.0762'	'0.0718'	'0.1499'	'0.0852'
\eta_L	'0.492'	'0.5156'	'0.5038'	'0.8964'	'0.0622'
\vartheta_P	'0.5115'	'0.5578'	'0.5346'	'0.3581'	'0.0797'
\gamma_H	'0.8524'	'0.8951'	'0.8737'	'0.9992'	'0.1012'
z	'17.5718'	'18.862'	'18.2169'	'29.9904'	'0.0867'
\eta_\vartheta	'0.3914'	'0.4277'	'0.4095'	'0.9836'	'0.0726'
a_L	'8.0464'	'8.476'	'8.2612'	'5.0517'	'0.0921'
b_L	'10.2707'	'10.9418'	'10.6063'	'7.1153'	'0.107'
a_\mu	'9.8956'	'10.294'	'10.0948'	'11.6366'	'0.072'
b_\mu	'6.7682'	'7.1733'	'6.9708'	'10.7998'	'0.0577'
\mu	'0.4237'	'0.4539'	'0.4388'	'0.5043'	'0.0592'
a_H	'8.222'	'8.5974'	'8.4097'	'1.4434'	'0.0589'
b_H	'10.7547'	'11.3147'	'11.0347'	'13.3745'	'0.1054'
\nu	'231.478'	'255.6332'	'243.5556'	'0.0239'	'0.0978'
BP	'539.4274'	'539.9555'	'539.6914'	'538.4999'	'0.0965'

28.3. 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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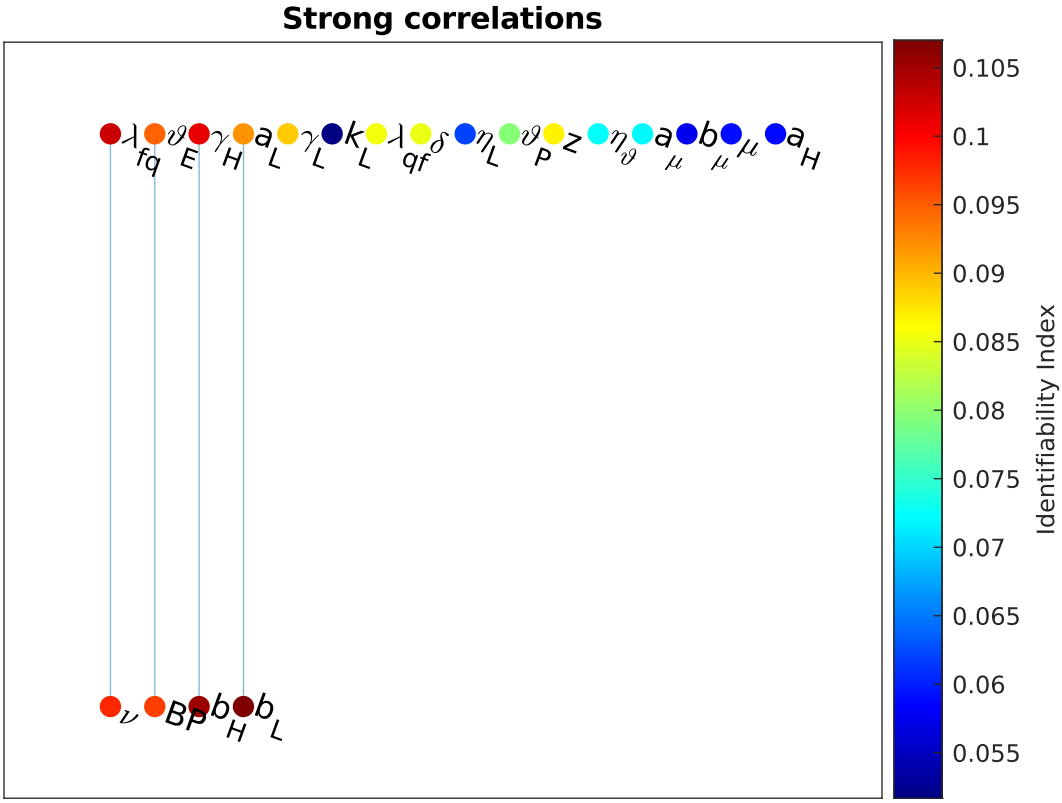
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
Identifiability Index
0.105
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0.095
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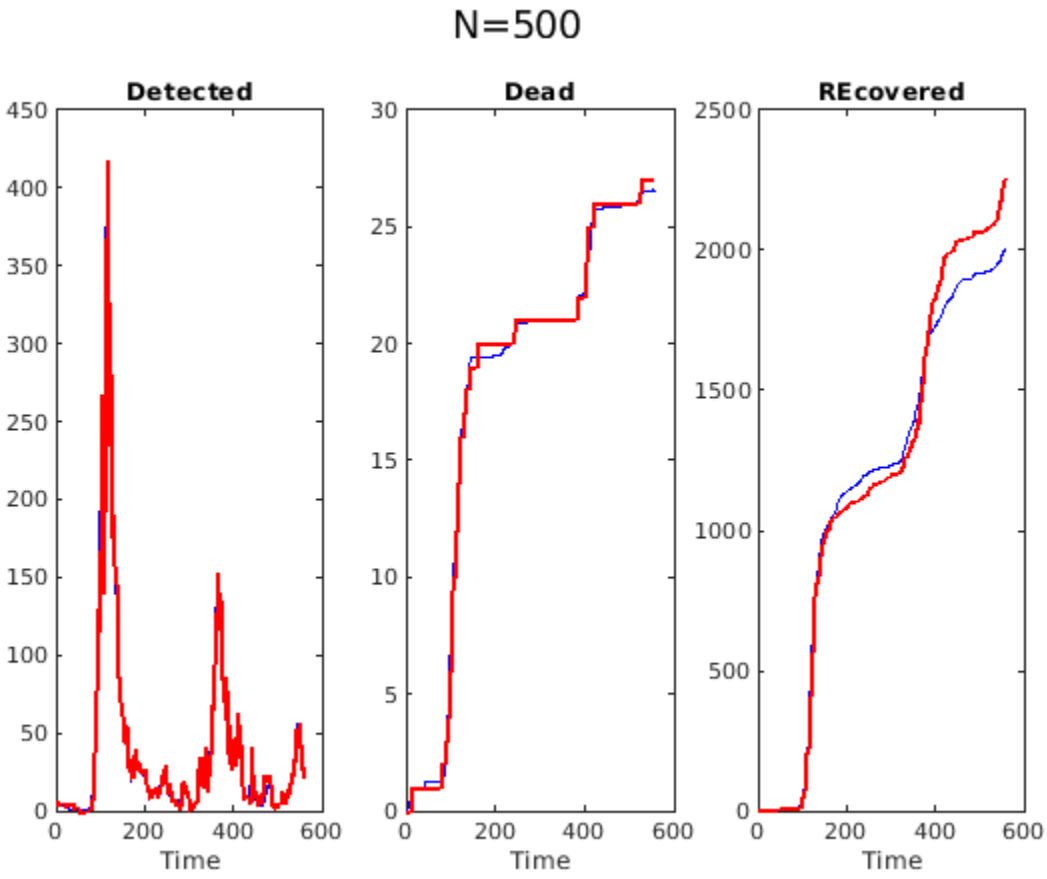
0.085
0.08
0.075
0.07
0.065
0.06
0.055

28.4. Uncertainty analisys



Chapter 29. Extension number29

29.1. Basic information

The extension to be validated consists of the time series from the data558 to the 661. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

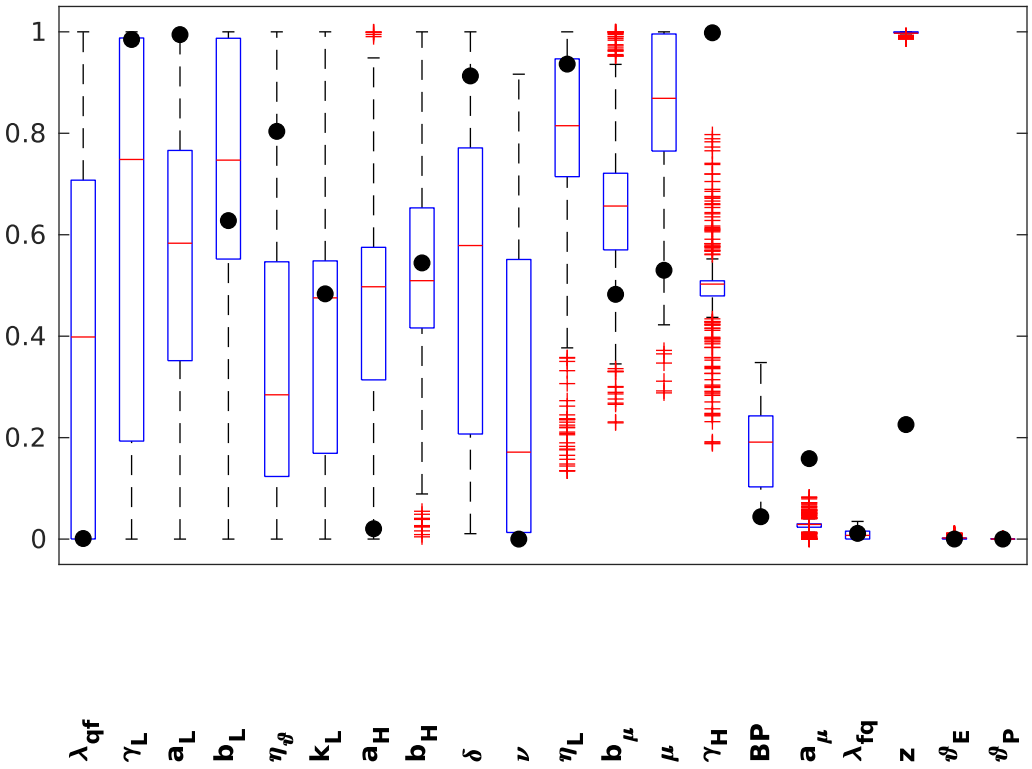
29.2. Estimated parameters with their intervals

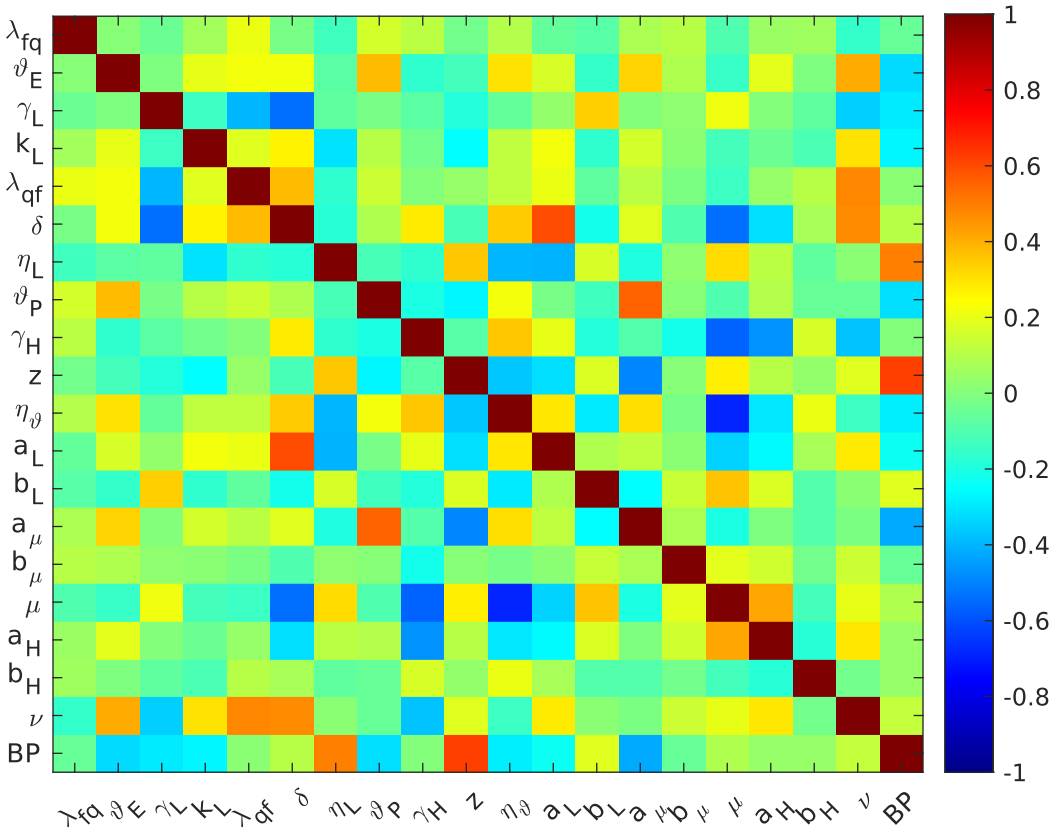
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

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

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.011'	'0.0138'	'0.0074'	'0.0113'	'0.0575'
\vartheta_E	'0.0001'	'0.0003'	'0.0021'	'0.0001'	'0.0781'
\gamma_L	'0.7808'	'1'	'0.7484'	'0.9849'	'0.1228'
k_L	'2.2689'	'6.0477'	'5.2802'	'5.3514'	'0.0994'
\lambda_{qf}	'0.0004'	'0.0015'	'0.3984'	'0.0012'	'0.1117'
\delta	'0.1148'	'0.1396'	'0.0868'	'0.137'	'0.1686'
\eta_L	'0.8364'	'0.9371'	'0.8146'	'0.9364'	'0.1121'
\vartheta_P	'0'	'0.0001'	'0.0001'	'0.0001'	'0.0786'
\gamma_H	'0.8767'	'1'	'0.5027'	'0.9981'	'0.1167'
z	'6.3776'	'6.8181'	'29.9182'	'6.7729'	'0.1024'
\eta_\vartheta	'0.791'	'0.8965'	'0.2845'	'0.8038'	'0.135'
a_L	'13.1226'	'15'	'9.166'	'14.9233'	'0.1277'
b_L	'7.9593'	'10.6841'	'11.4591'	'9.79'	'0.1052'
a_\mu	'3.0037'	'5.7631'	'1.4064'	'3.2211'	'0.1001'
b_\mu	'5.2559'	'9.9135'	'10.1895'	'7.7552'	'0.0726'
\mu	'0.2245'	'0.5381'	'0.8684'	'0.53'	'0.1652'
a_H	'1.1065'	'1.429'	'7.9641'	'1.2856'	'0.099'
b_H	'5.8742'	'9.536'	'8.1303'	'8.6224'	'0.073'
\nu	'0.001'	'0.0032'	'85.8661'	'0.0024'	'0.1142'
BP	'549'	'651'	'568.5'	'553.4998'	'0.0982'

29.3. 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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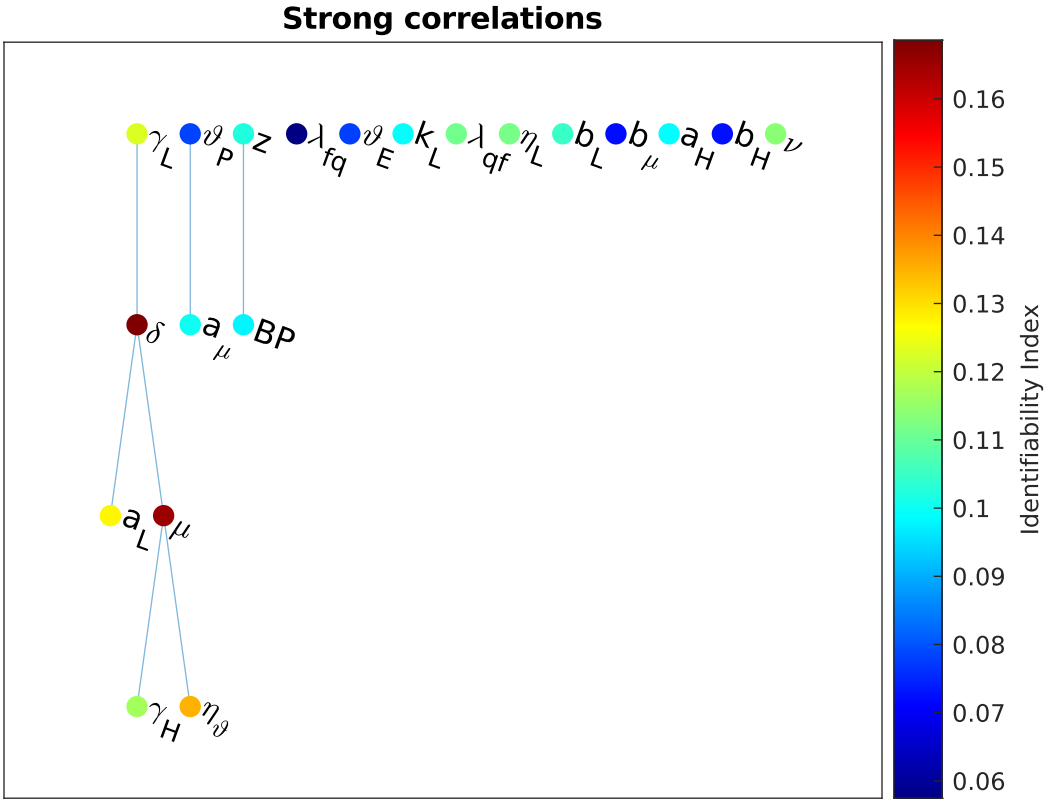
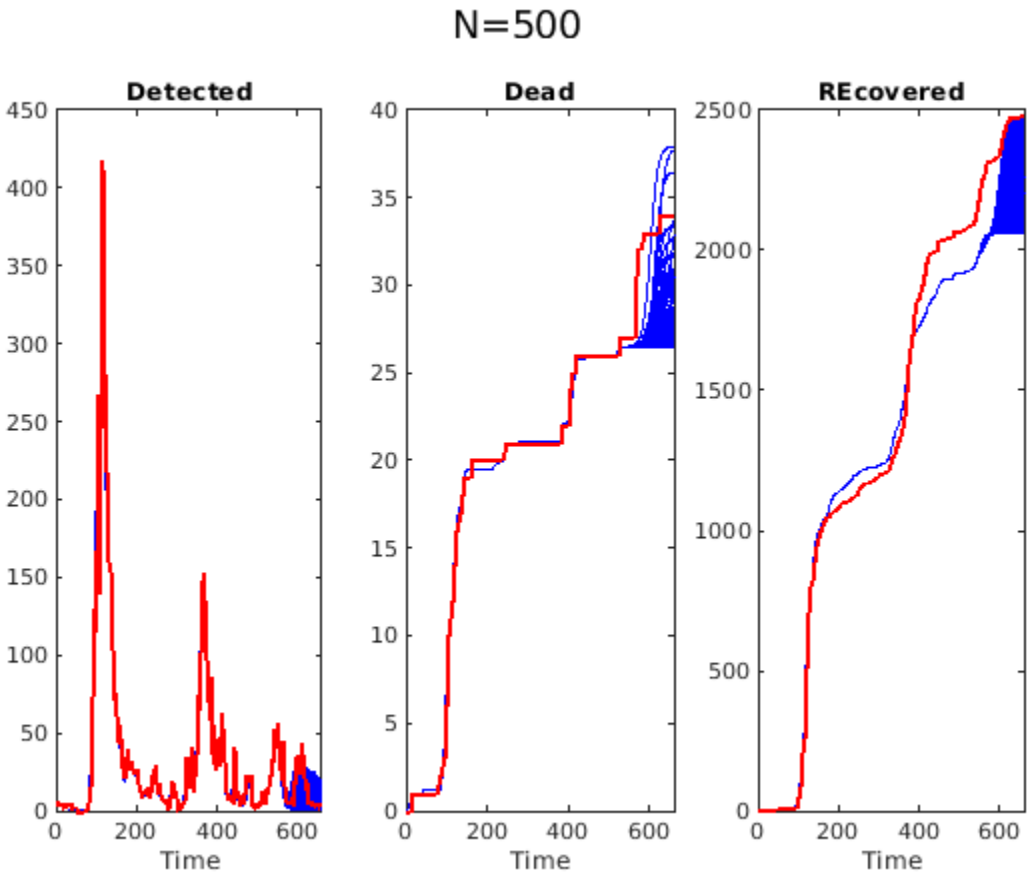
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Strong correlations
γ_L
ϑ_P
z
λ_{fq}
ϑ_E
k_L
λ_{qf}
η_L
b_L
b_μ
a_H
b_H
ν
δ
a_μ
BP
a_L
μ
γ_H
η_ϑ
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
Identifiability Index

29.4. Uncertainty analisys