

Validation process for VALLEDUPAR

The epidemiology research group, EAFIT

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Chapter 1. Extension number1

1.1. Basic information

The extension to be validated consists of the time series from the data1 to the 71. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

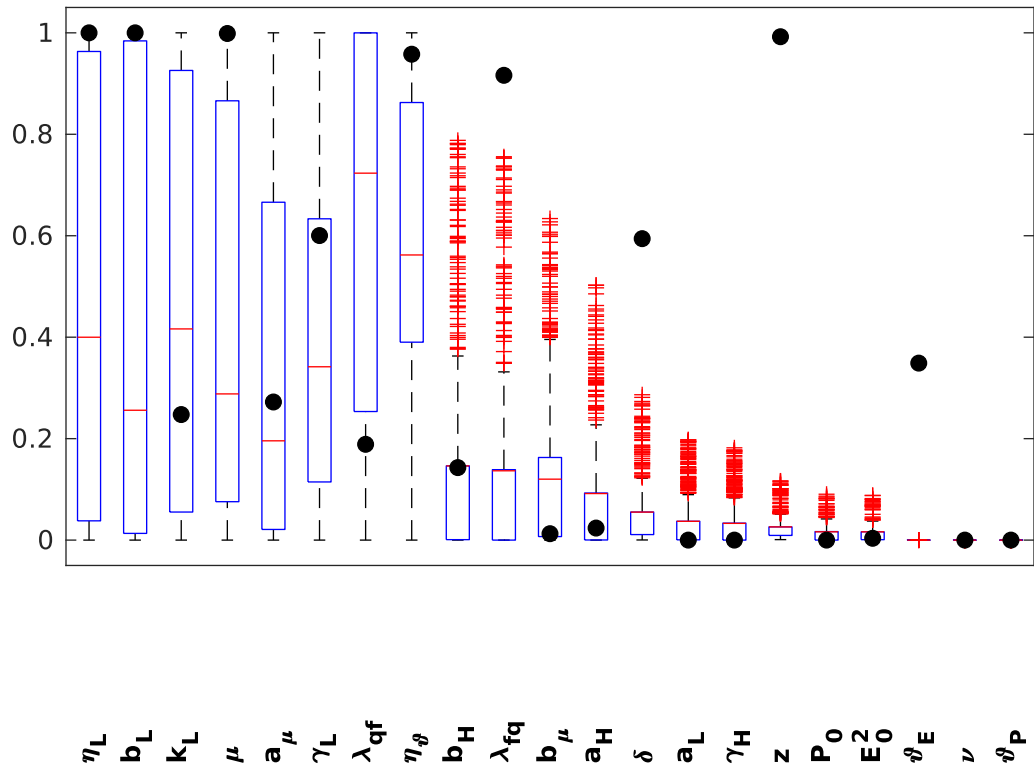
1.2. Estimated parameters with their intervals

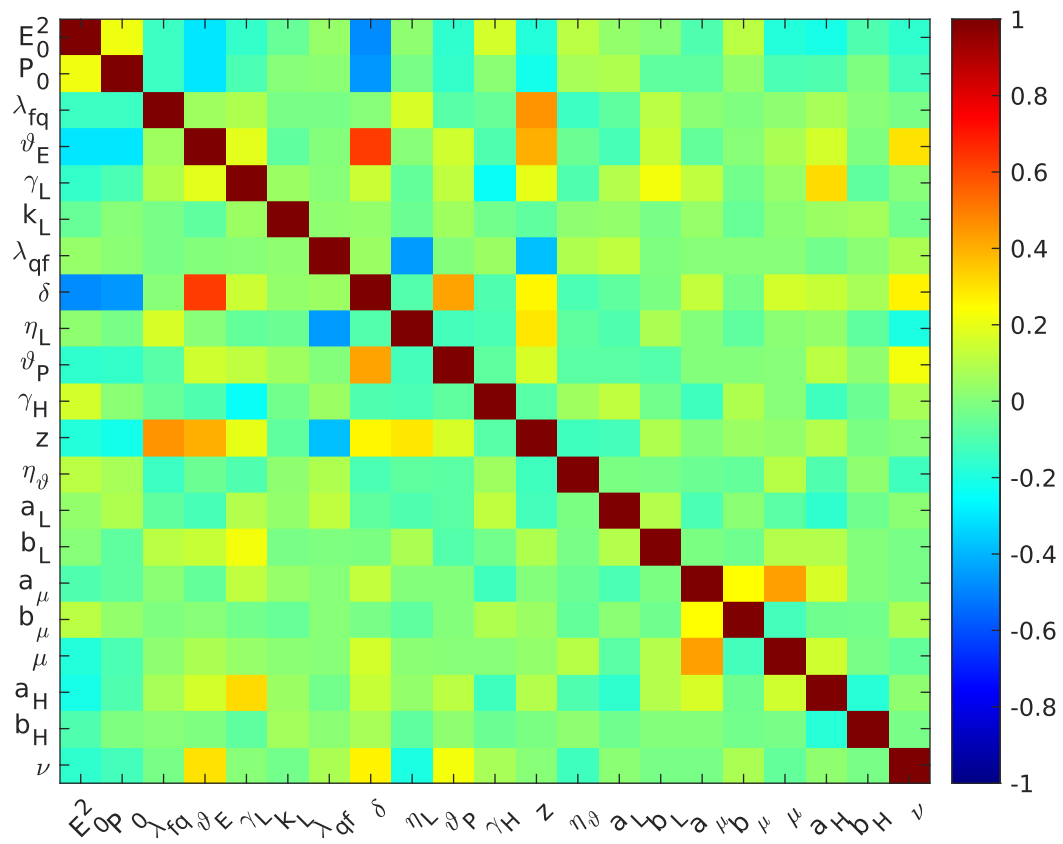
It was necessary to fix 0 parameters of 11 that could be fixed to complete validation.

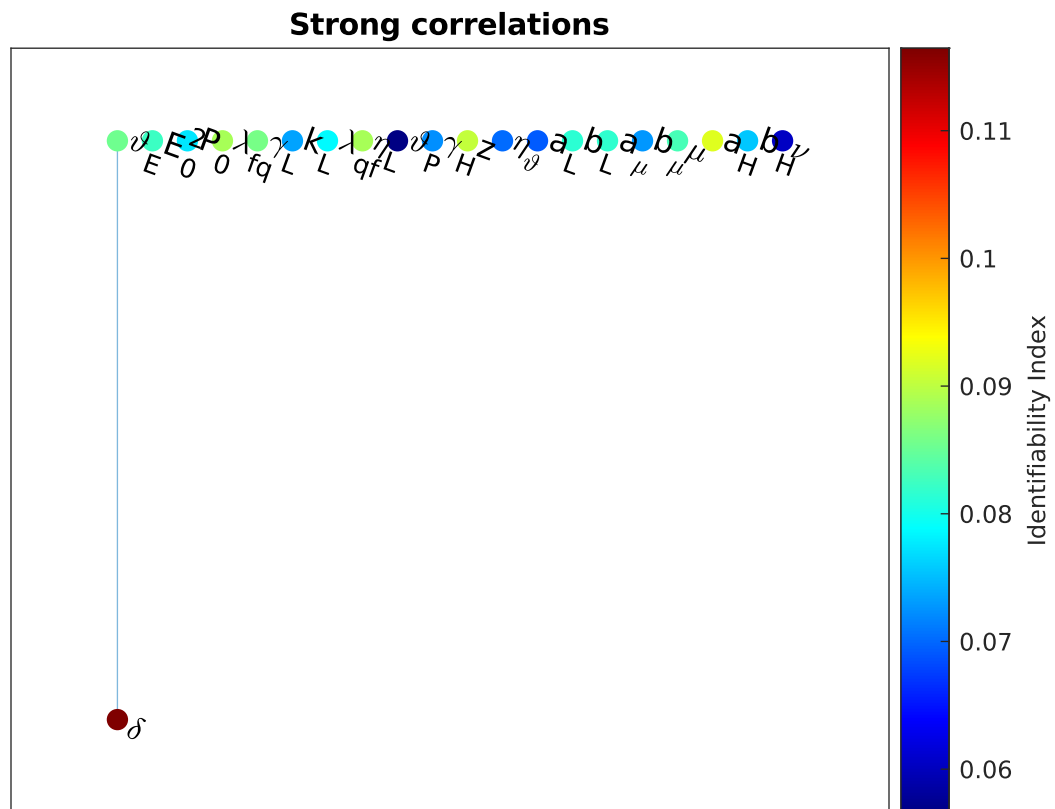
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
E^2_0	'7.0982'	'8.577'	'32.7025'	'7.1475'	'0.0824'
P_0	'0'	'0'	'6.7162'	'0'	'0.0775'
λ_{fq}	'0.8818'	'0.9204'	'0.1389'	'0.9163'	'0.0888'
ϑ_E	'0.2998'	'0.3545'	'0'	'0.3489'	'0.0856'
γ_L	'0.5662'	'0.6009'	'0.3417'	'0.6004'	'0.0859'
k_L	'1.225'	'10'	'4.7468'	'3.2274'	'0.0736'
λ_{qf}	'0.1865'	'0.1935'	'0.7234'	'0.1888'	'0.0787'
δ	'0.0751'	'0.1095'	'0.0083'	'0.0891'	'0.1165'
η_L	'0.9337'	'1'	'0.3999'	'1'	'0.0888'
ϑ_P	'0'	'0'	'0'	'0'	'0.0566'
γ_H	'0'	'0'	'0.0335'	'0'	'0.0725'
z	'28.1565'	'29.8743'	'0.7811'	'29.7695'	'0.0903'
η_{ϑ}	'0.3234'	'1'	'0.5621'	'0.9578'	'0.0703'
a_L	'1'	'1.1226'	'1.5199'	'1'	'0.0694'
b_L	'12.3379'	'15'	'4.5837'	'14.9998'	'0.0816'
a_{μ}	'4.7915'	'6.6495'	'3.74'	'4.8114'	'0.0817'
b_{μ}	'1.1278'	'1.6628'	'2.6829'	'1.1767'	'0.073'
μ	'0.4749'	'1'	'0.2882'	'0.9987'	'0.0832'
a_H	'1'	'13.6'	'2.2994'	'1.3322'	'0.092'
b_H	'1.56'	'14.328'	'3.0489'	'3.0006'	'0.0756'
ν	'0'	'0.0003'	'0.0014'	'0.0001'	'0.0605'

1.3. Identifiability analysis

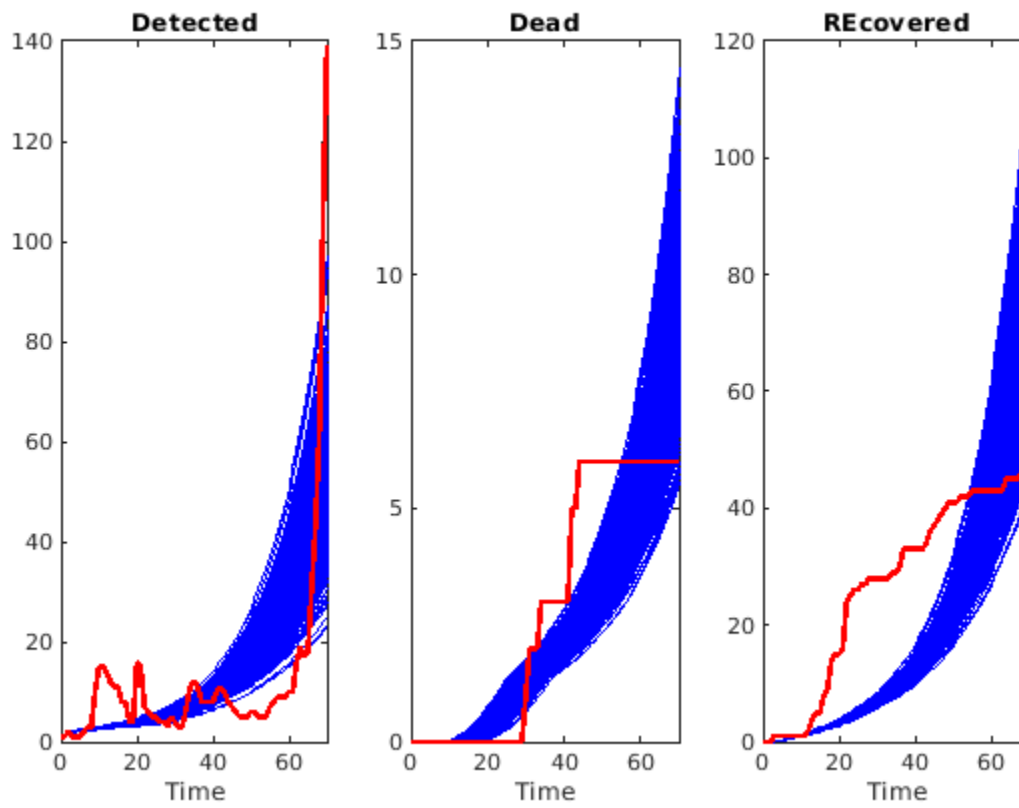






1.4. Uncertainty analysis

N=500



Chapter 2. Extension number2

2.1. Basic information

The extension to be validated consists of the time series from the data71 to the 118. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

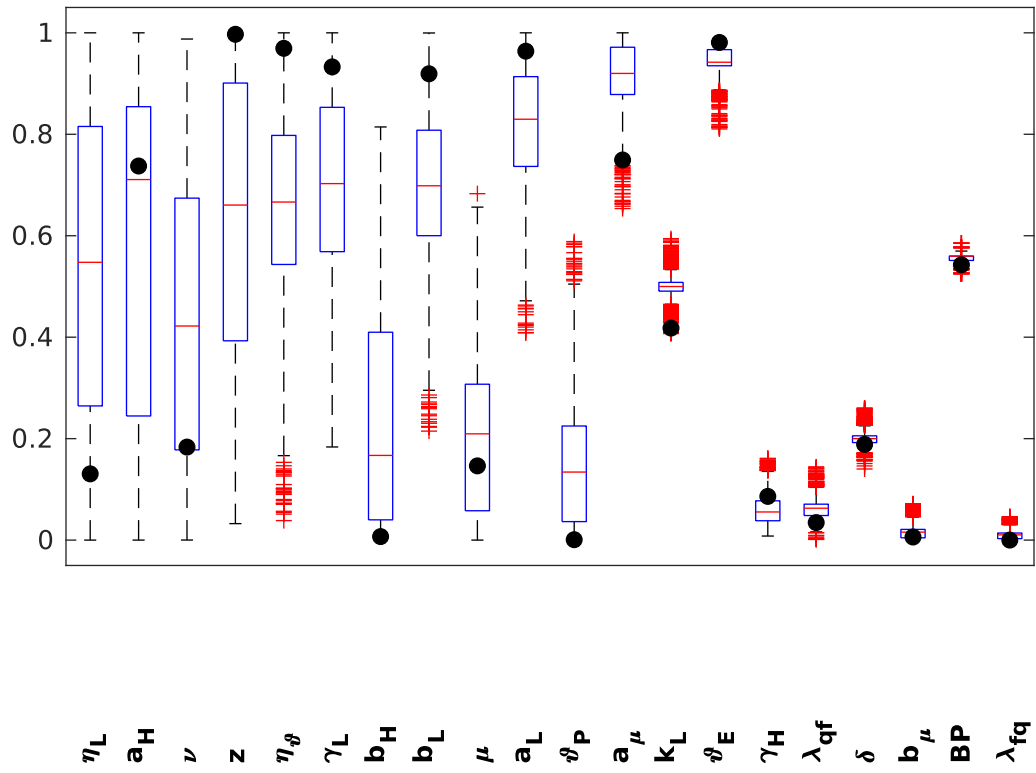
2.2. Estimated parameters with their intervals

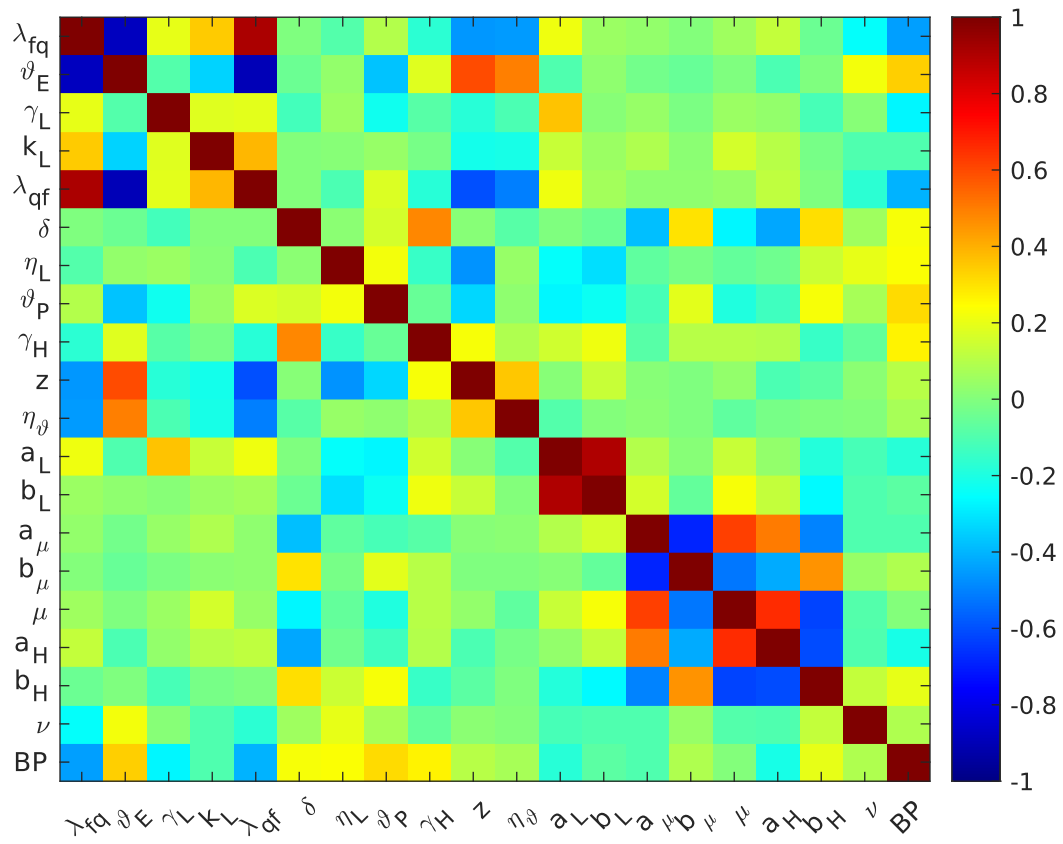
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

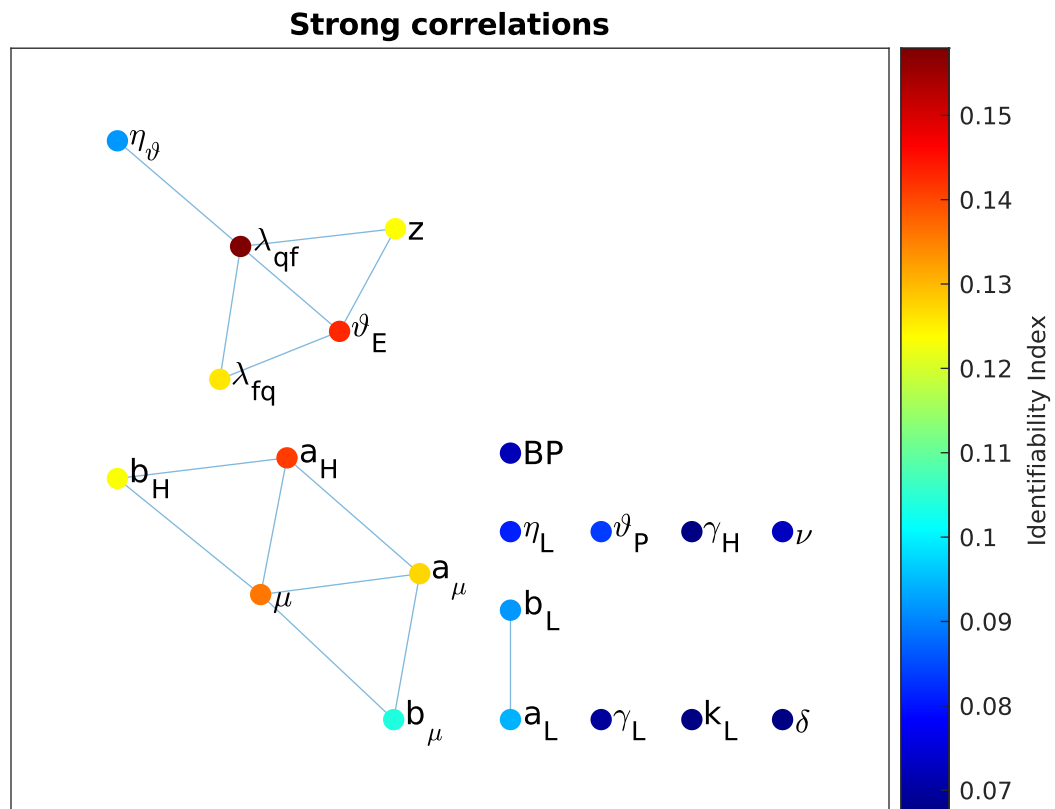
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0001'	'0.0103'	'0'	'0.1261'
ϑ_E	'0.9786'	'0.9813'	'0.9421'	'0.981'	'0.1428'
γ_L	'0.3547'	'1'	'0.7027'	'0.9328'	'0.0698'
k_L	'1'	'10'	'5.4993'	'4.7619'	'0.0674'
λ_{qf}	'0.0339'	'0.0408'	'0.0629'	'0.0345'	'0.158'
δ	'0.0145'	'0.0579'	'0.03'	'0.0283'	'0.0674'
η_L	'0.1261'	'0.1373'	'0.5476'	'0.1306'	'0.0814'
ϑ_P	'0'	'0.0018'	'0.1343'	'0.0008'	'0.0838'
γ_H	'0.0448'	'0.0908'	'0.0555'	'0.0862'	'0.0677'
z	'27.7433'	'30'	'19.8145'	'29.9136'	'0.1239'
η_{ϑ}	'0.4667'	'1'	'0.6664'	'0.9694'	'0.0921'
a_L	'9.9776'	'14.7991'	'12.6092'	'14.4932'	'0.0945'
b_L	'7.73'	'13.9207'	'10.7775'	'13.8697'	'0.092'
a_{μ}	'7.7712'	'15'	'13.8793'	'11.4908'	'0.1272'
b_{μ}	'1'	'2.6069'	'1.2201'	'1.0853'	'0.1041'
μ	'0.0071'	'0.2678'	'0.2095'	'0.1463'	'0.1357'
a_H	'4.9595'	'14.5332'	'10.9504'	'11.3241'	'0.1411'
b_H	'1'	'6.4239'	'3.3382'	'1.097'	'0.1233'
ν	'25.6036'	'197.2545'	'211.0214'	'91.6839'	'0.0728'
BP	'61.8831'	'68.2717'	'66.5'	'64.5'	'0.0723'

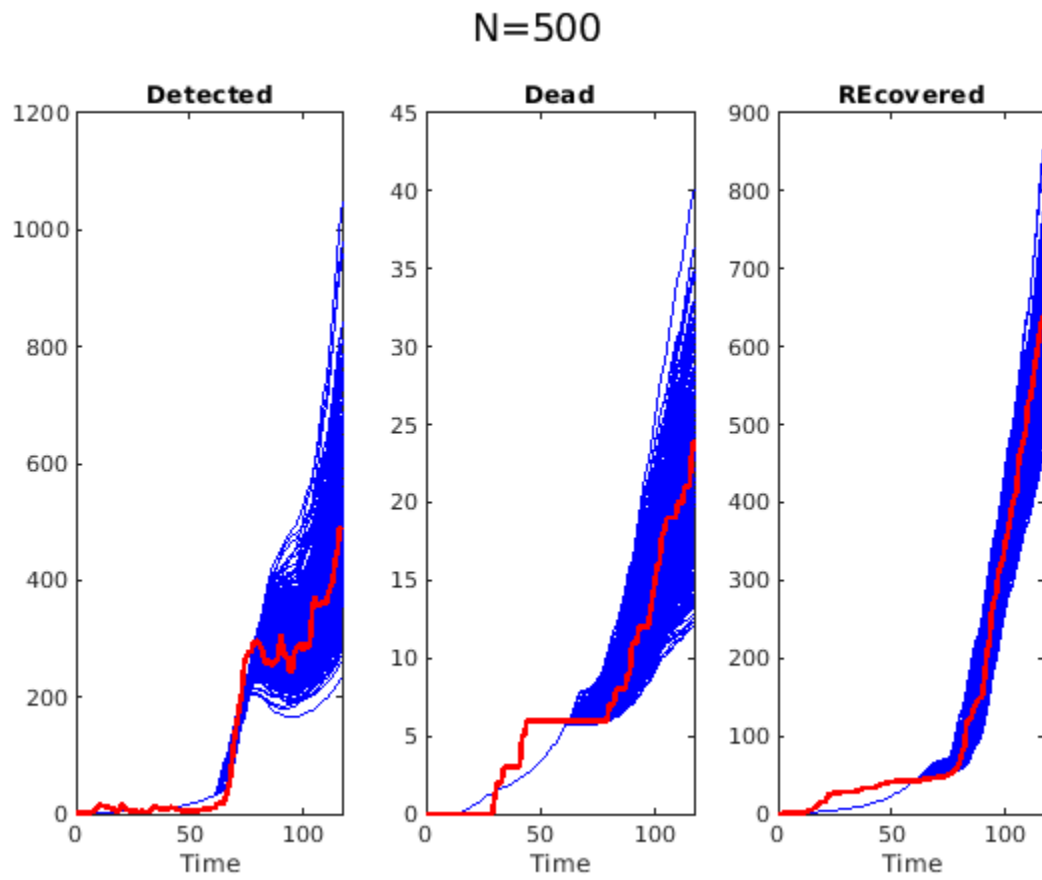
2.3. Identifiability analysis







2.4. Uncertainty analysis



Chapter 3. Extension number3

3.1. Basic information

The extension to be validated consists of the time series from the data118 to the 158. The status of the validation is: COMPLETED.

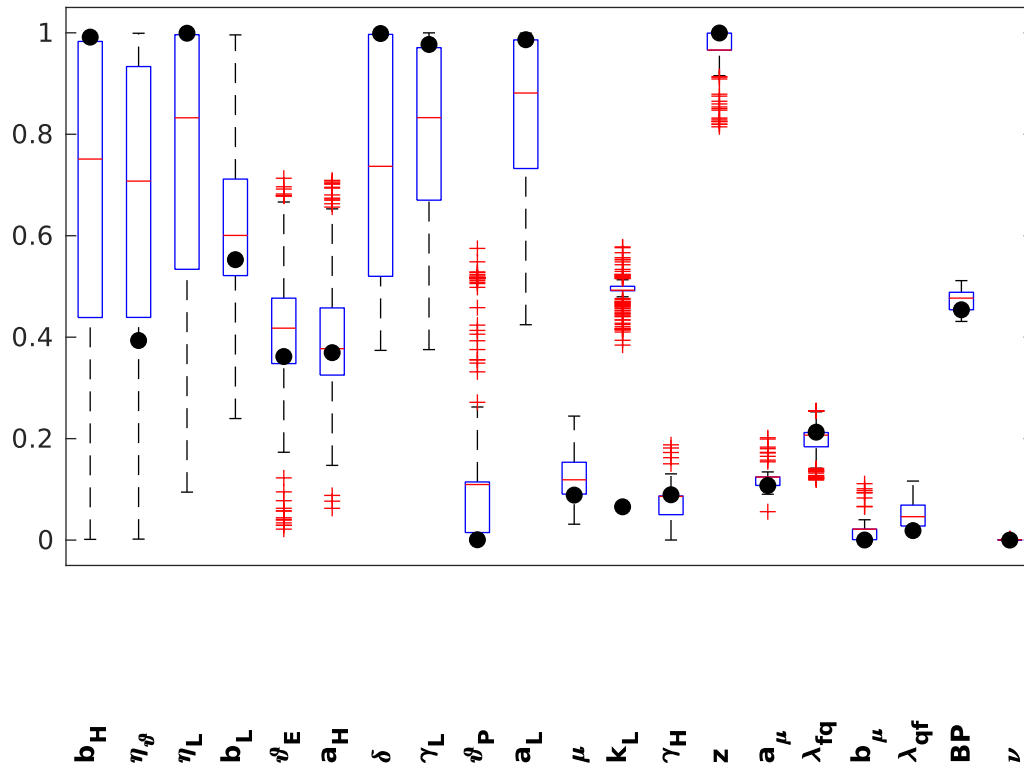
The number of estimations needed to perform the validation was1000.

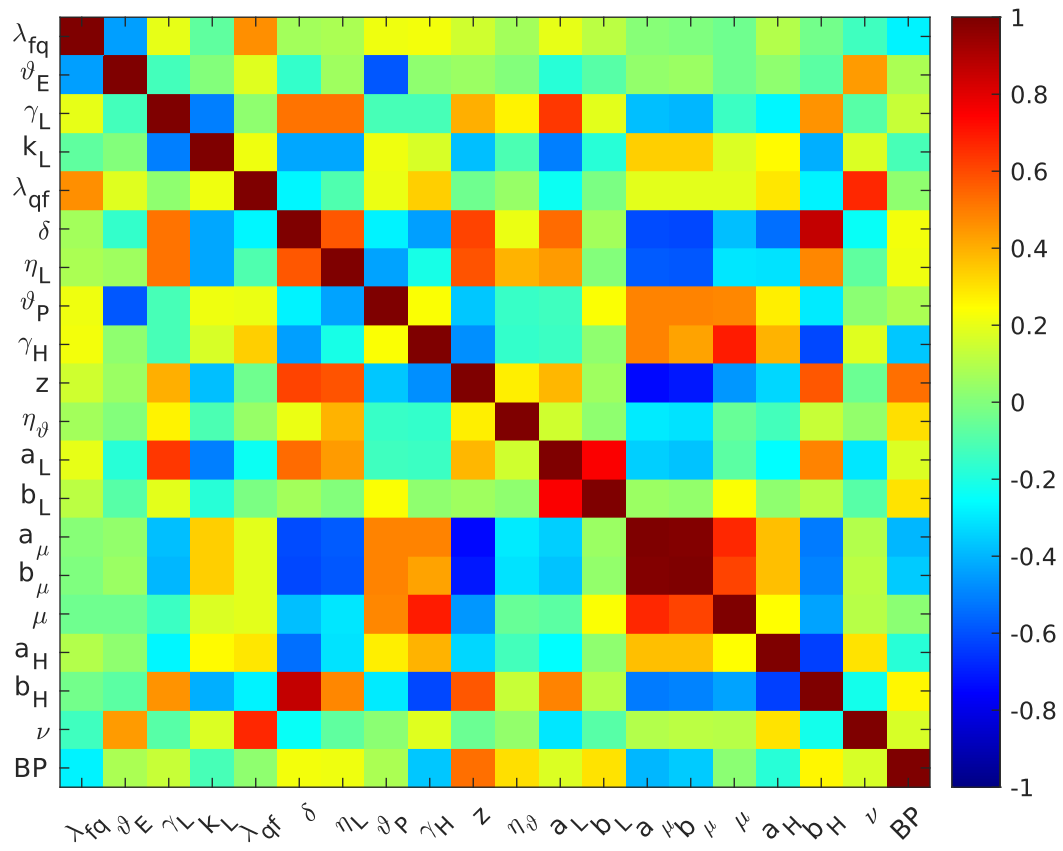
3.2. Estimated parameters with their intervals

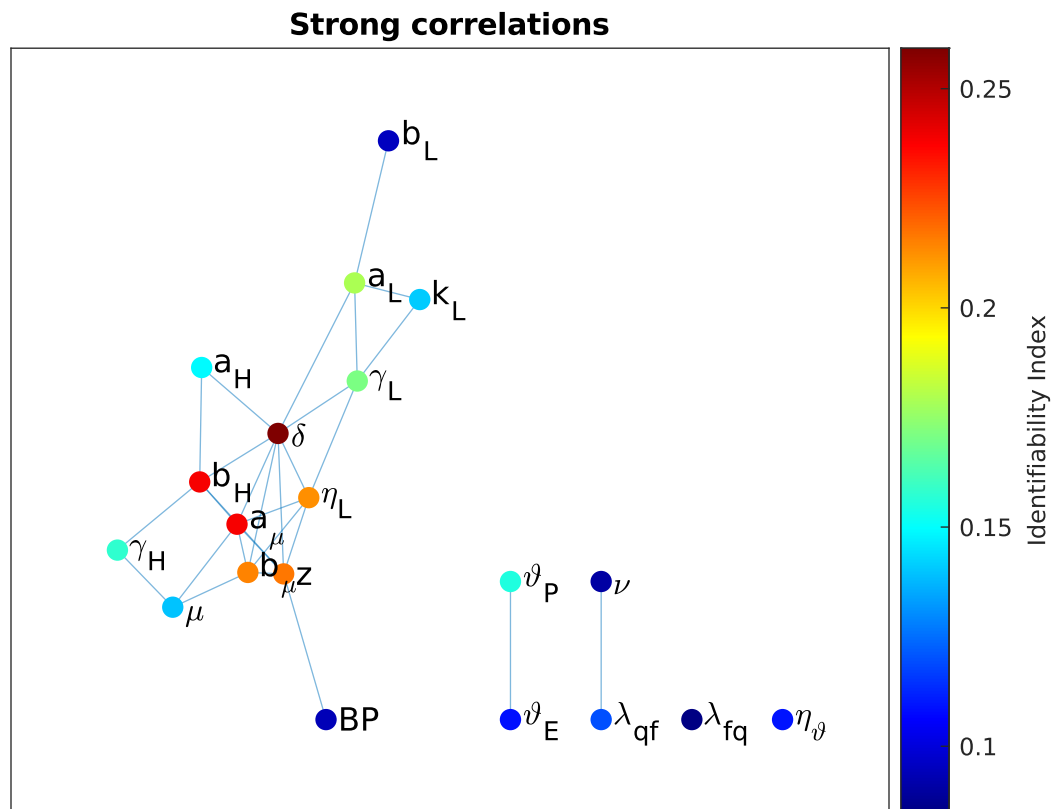
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.1829'	'0.2308'	'0.2069'	'0.2128'	'0.085'
ϑ_E	'0.3788'	'0.4568'	'0.4178'	'0.3619'	'0.1093'
γ_L	'0.8049'	'0.8606'	'0.8328'	'0.977'	'0.171'
k_L	'5.1778'	'5.6891'	'5.4334'	'1.5906'	'0.1408'
λ_{qf}	'0.0135'	'0.0791'	'0.0463'	'0.0187'	'0.1198'
δ	'0.1047'	'0.1164'	'0.1105'	'0.1498'	'0.2592'
η_L	'0.7851'	'0.8768'	'0.831'	'0.9992'	'0.2127'
ϑ_P	'0.0577'	'0.1614'	'0.1095'	'0.0007'	'0.1554'
γ_H	'0.0494'	'0.1229'	'0.0861'	'0.0894'	'0.1581'
z	'28.1447'	'29.8014'	'28.973'	'29.9882'	'0.217'
η_{ϑ}	'0.6616'	'0.7537'	'0.7077'	'0.3934'	'0.1099'
a_L	'12.9609'	'13.6887'	'13.3248'	'14.8088'	'0.1795'
b_L	'9.0343'	'9.7538'	'9.394'	'8.7391'	'0.0957'
a_{μ}	'2.1316'	'3.3553'	'2.7434'	'2.5065'	'0.2383'
b_{μ}	'1'	'1.9636'	'1.3042'	'1.0026'	'0.215'
μ	'0.1084'	'0.1297'	'0.1191'	'0.0887'	'0.1396'
a_H	'5.8141'	'6.7515'	'6.2828'	'6.1728'	'0.1495'
b_H	'10.6808'	'12.3507'	'11.5158'	'14.8808'	'0.2386'
ν	'0'	'9.5731'	'0.2605'	'0.0015'	'0.0905'
BP	'112.1369'	'112.8631'	'112.5'	'110.5'	'0.0942'

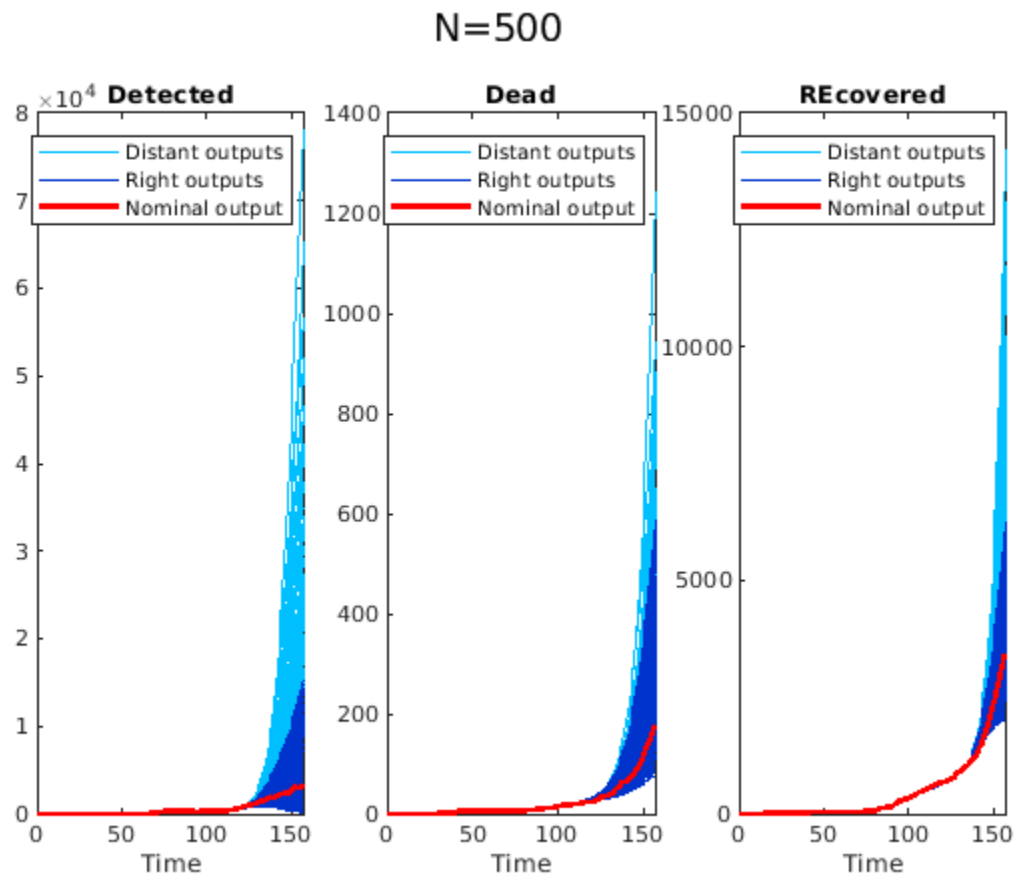
3.3. Identifiability analysis







3.4. Uncertainty analysys



Chapter 4. Extension number4

4.1. Basic information

The extension to be validated consists of the time series from the data158 to the 192. The status of the validation is: COMPLETED.

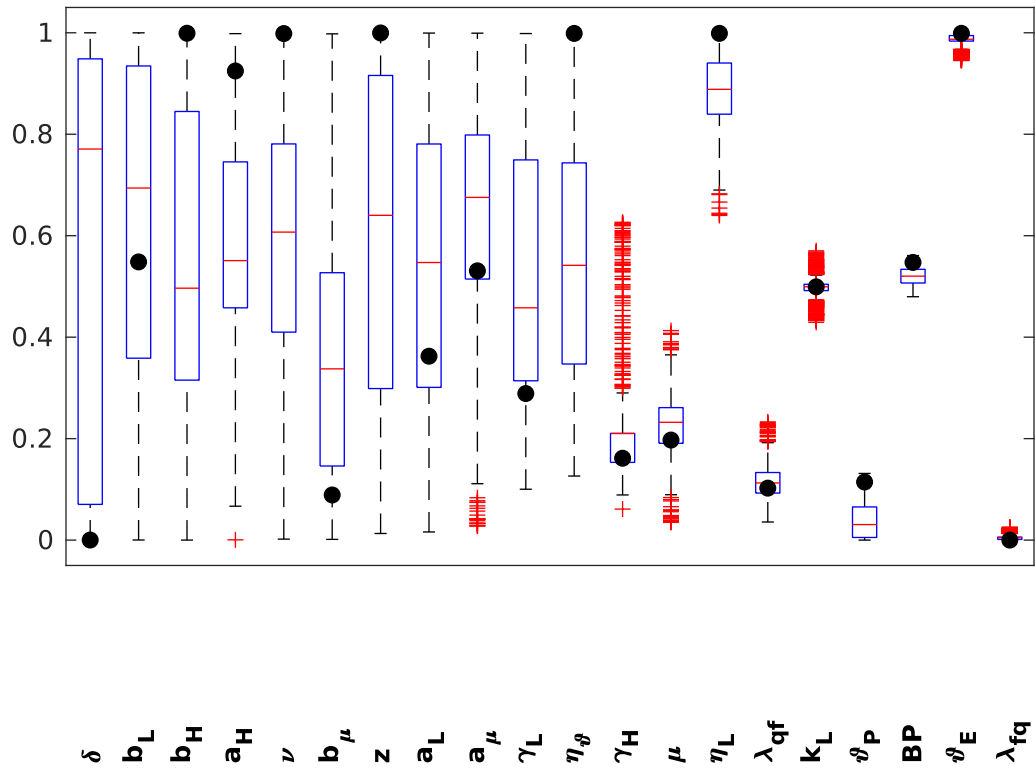
The number of estimations needed to perform the validation was1000.

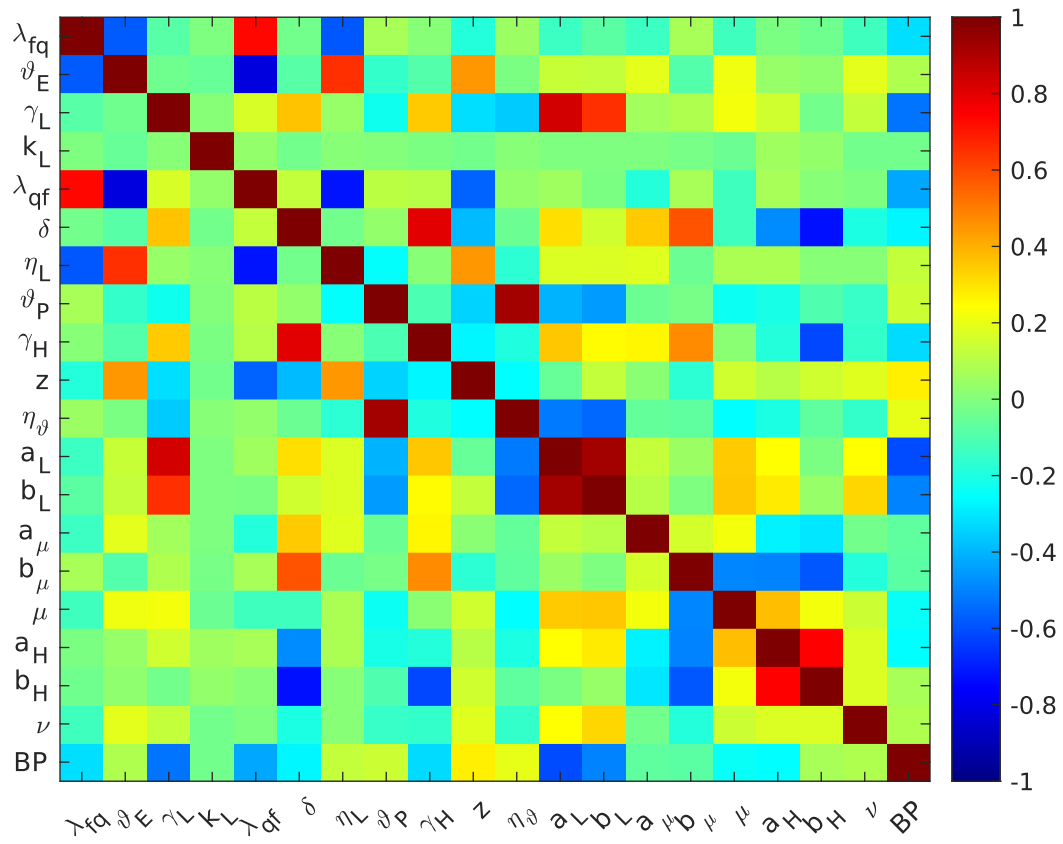
4.2. Estimated parameters with their intervals

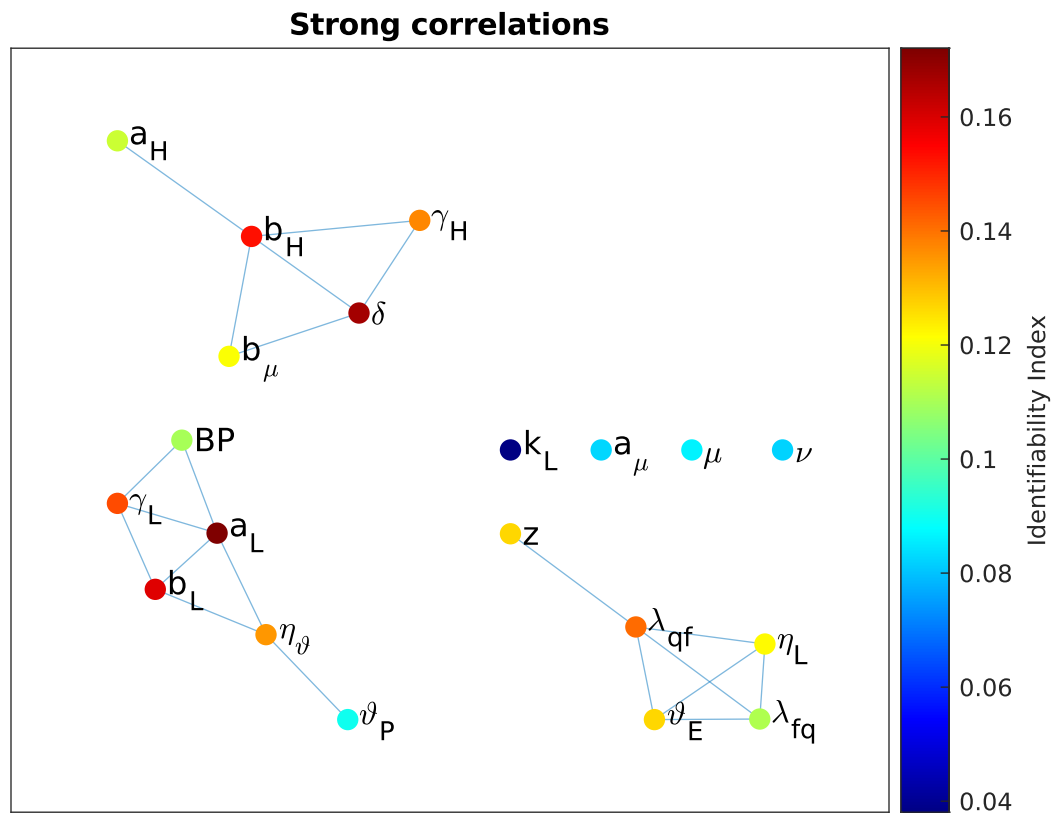
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0'	'0.0133'	'0.0049'	'0'	'0.1112'
ϑ_E	'0.9725'	'1'	'0.9873'	'0.9989'	'0.1265'
γ_L	'0.4331'	'0.4826'	'0.4579'	'0.2889'	'0.1453'
k_L	'5.4224'	'5.5653'	'5.4938'	'5.4925'	'0.0381'
λ_{qf}	'0.1015'	'0.1238'	'0.1127'	'0.1024'	'0.1409'
δ	'0.1095'	'0.1218'	'0.1156'	'0'	'0.1673'
η_L	'0.876'	'0.9009'	'0.8885'	'0.9989'	'0.1222'
ϑ_P	'0.0273'	'0.034'	'0.0306'	'0.1145'	'0.0902'
γ_H	'0.1803'	'0.2404'	'0.2103'	'0.1614'	'0.1374'
z	'18.2025'	'20.2063'	'19.2044'	'29.9887'	'0.1269'
η_{ϑ}	'0.52'	'0.5632'	'0.5416'	'0.9987'	'0.1353'
a_L	'8.2693'	'9.0508'	'8.6601'	'6.0749'	'0.1721'
b_L	'10.2594'	'11.1715'	'10.7155'	'8.677'	'0.1591'
a_{μ}	'10.1347'	'10.777'	'10.4558'	'8.4304'	'0.0827'
b_{μ}	'5.3867'	'6.0643'	'5.7255'	'2.2453'	'0.1209'
μ	'0.221'	'0.2435'	'0.2322'	'0.1972'	'0.0863'
a_H	'8.4103'	'9.0148'	'8.7126'	'13.9458'	'0.1146'
b_H	'7.5548'	'8.3485'	'7.9517'	'14.9869'	'0.1529'
ν	'291.7989'	'315.2886'	'303.5437'	'499.2127'	'0.0822'
BP	'156.3436'	'156.6564'	'156.5'	'158.4991'	'0.1099'

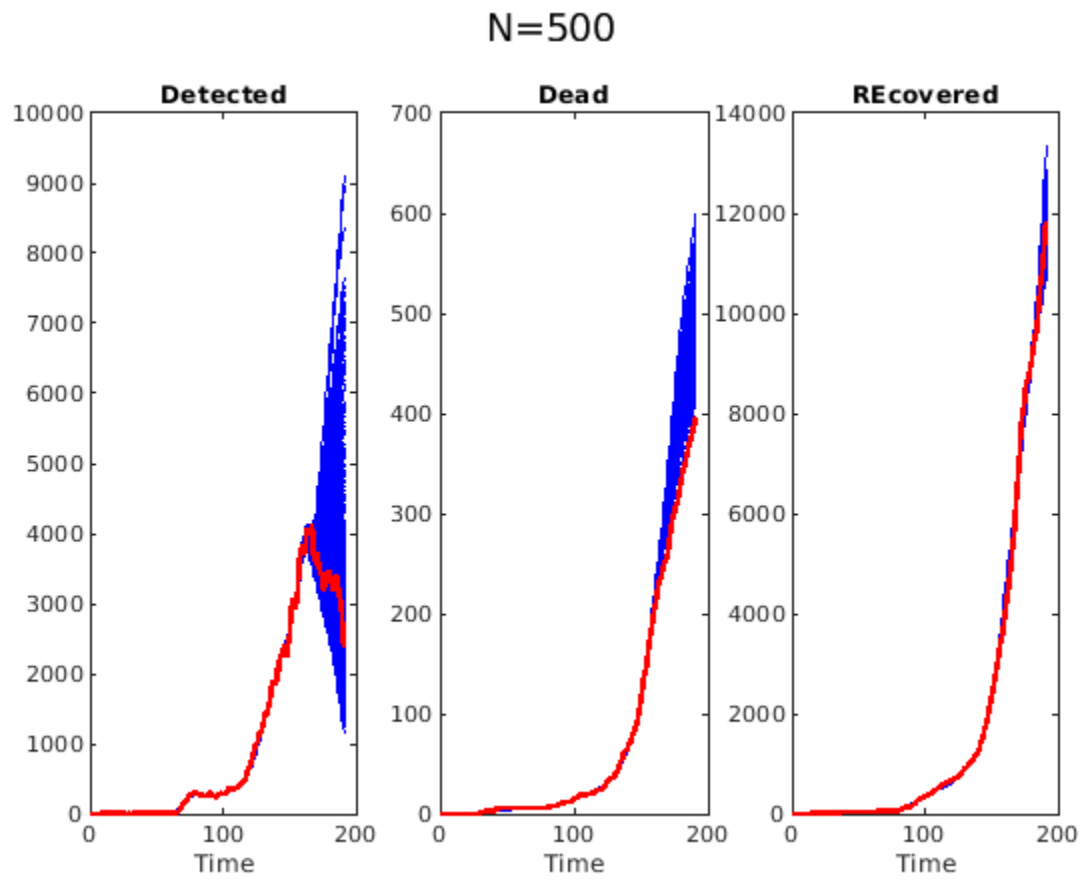
4.3. Identifiability analysis







4.4. Uncertainty analysys



Chapter 5. Extension number5

5.1. Basic information

The extension to be validated consists of the time series from the data192 to the 244. The status of the validation is: COMPLETED.

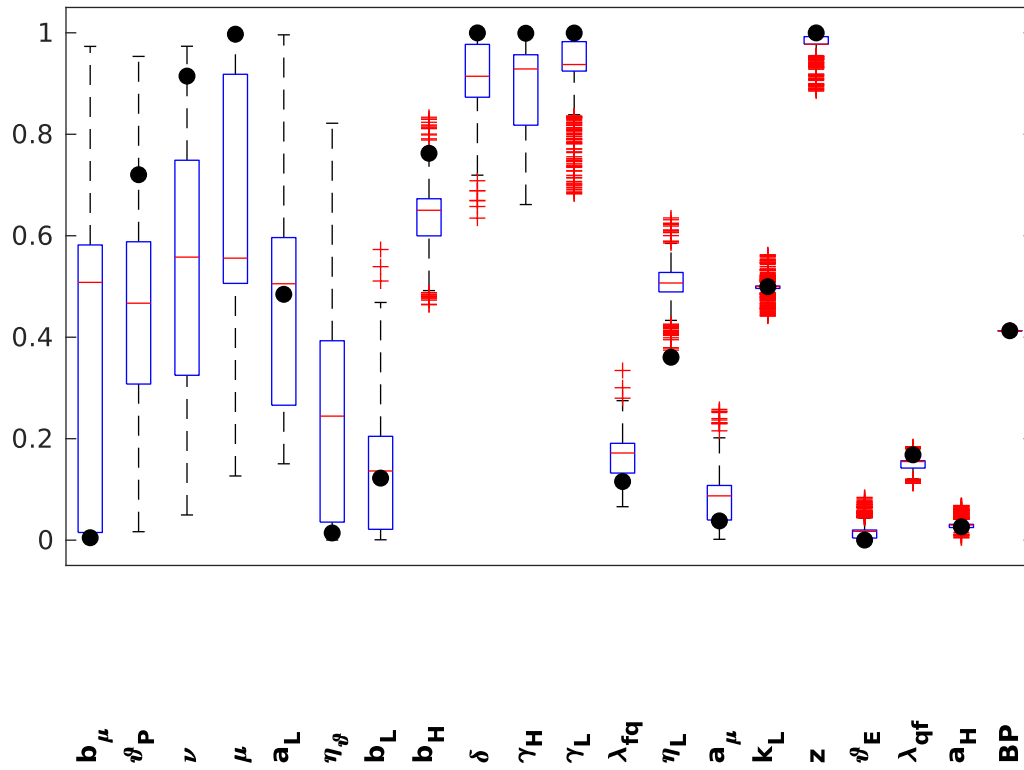
The number of estimations needed to perform the validation was1000.

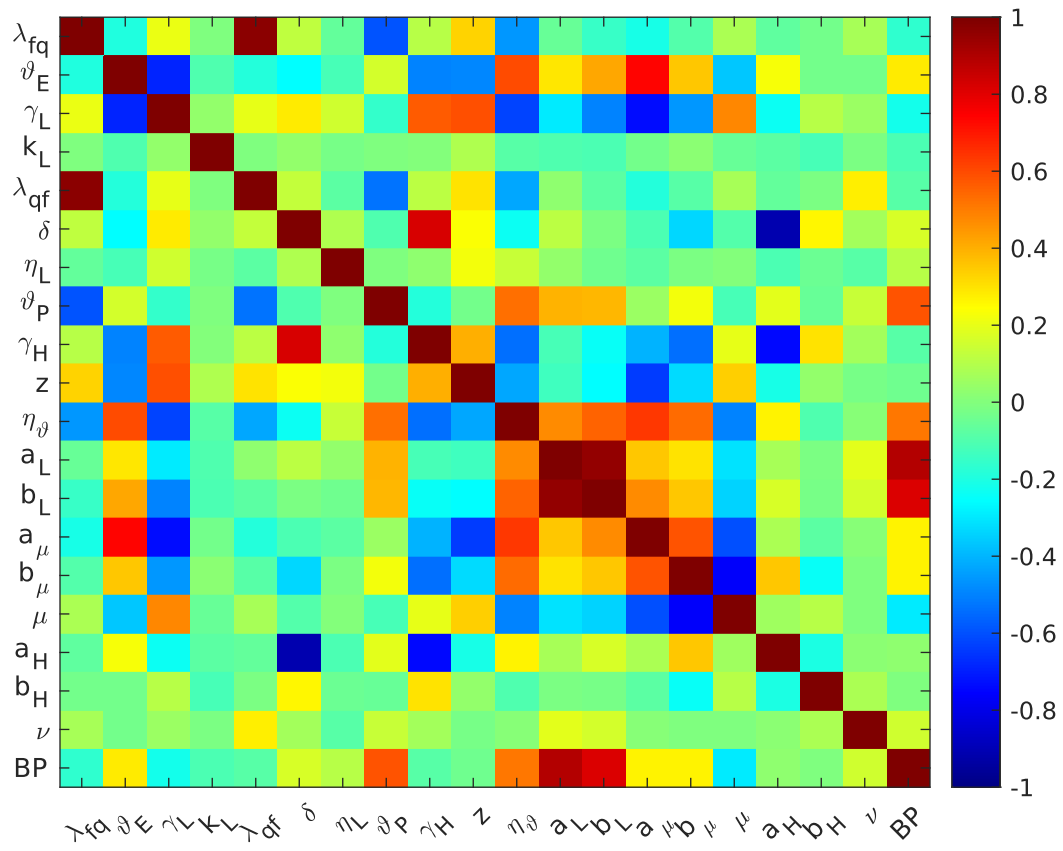
5.2. Estimated parameters with their intervals

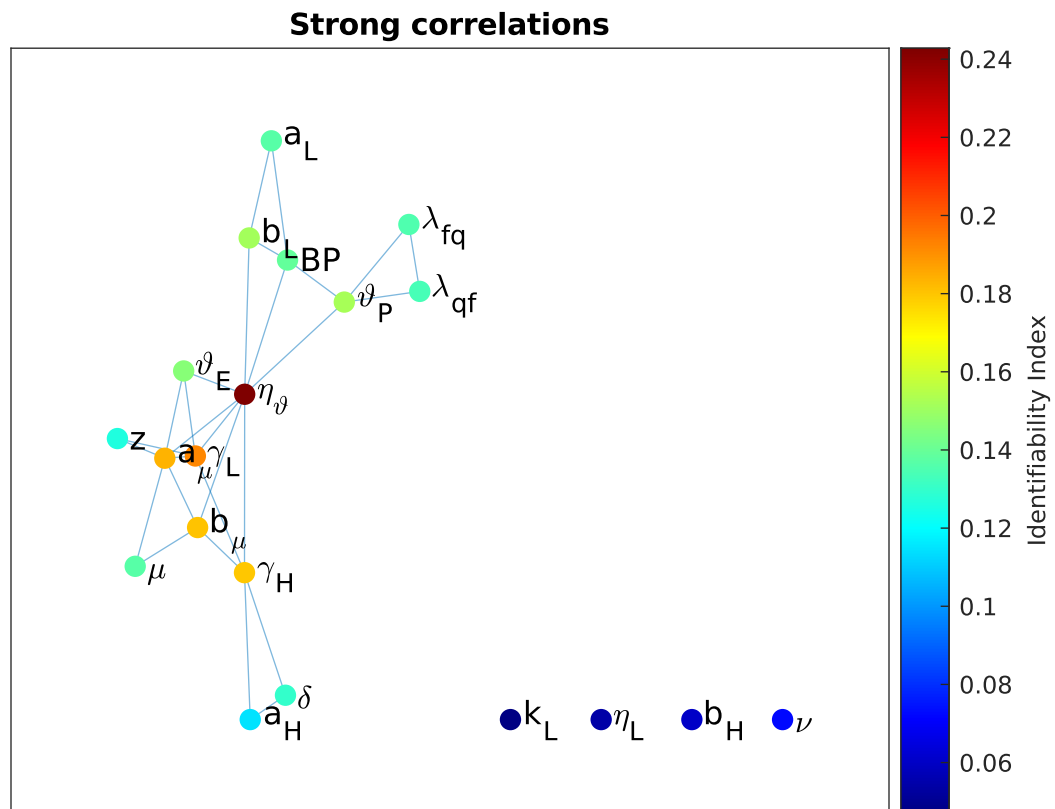
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.1354'	'0.2084'	'0.1719'	'0.1156'	'0.1358'
ϑ_E	'0.0091'	'0.0258'	'0.0175'	'0.0002'	'0.1461'
γ_L	'0.915'	'0.9596'	'0.9373'	'0.9995'	'0.1918'
k_L	'5.4096'	'5.5903'	'5.5'	'5.4963'	'0.0473'
λ_{qf}	'0.1187'	'0.1912'	'0.155'	'0.1682'	'0.1337'
δ	'0.1333'	'0.1409'	'0.1371'	'0.15'	'0.1299'
η_L	'0.4948'	'0.519'	'0.5069'	'0.3605'	'0.0546'
ϑ_P	'0.4446'	'0.4895'	'0.467'	'0.7203'	'0.1526'
γ_H	'0.9107'	'0.9467'	'0.9287'	'0.9991'	'0.1799'
z	'28.945'	'29.7057'	'29.3254'	'29.9929'	'0.1265'
η_{ϑ}	'0.222'	'0.267'	'0.2445'	'0.0142'	'0.2428'
a_L	'7.7468'	'8.4038'	'8.0753'	'7.7839'	'0.1374'
b_L	'2.71'	'3.1086'	'2.9093'	'2.7124'	'0.1519'
a_{μ}	'2.1372'	'2.3081'	'2.2227'	'1.5318'	'0.1839'
b_{μ}	'7.6587'	'8.5683'	'8.1135'	'1.0671'	'0.1806'
μ	'0.5281'	'0.5836'	'0.5559'	'0.9972'	'0.1372'
a_H	'1.2242'	'1.6153'	'1.4197'	'1.3689'	'0.115'
b_H	'9.922'	'10.2837'	'10.1029'	'11.6755'	'0.0605'
ν	'263.9791'	'293.8866'	'278.9329'	'457.332'	'0.073'
BP	'193.4332'	'193.5668'	'193.5'	'193.5'	'0.1391'

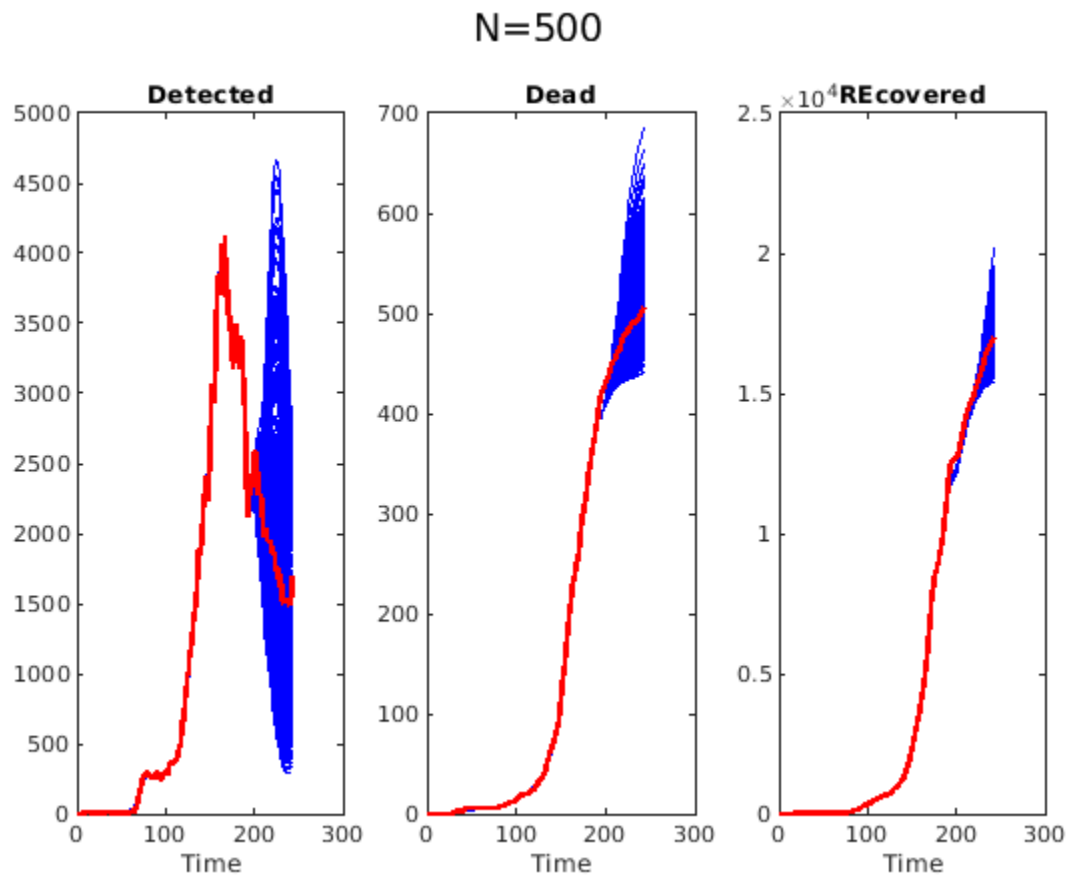
5.3. Identifiability analysys







5.4. Uncertainty analysis



Chapter 6. Extension number6

6.1. Basic information

The extension to be validated consists of the time series from the data244 to the 280. The status of the validation is: COMPLETED.

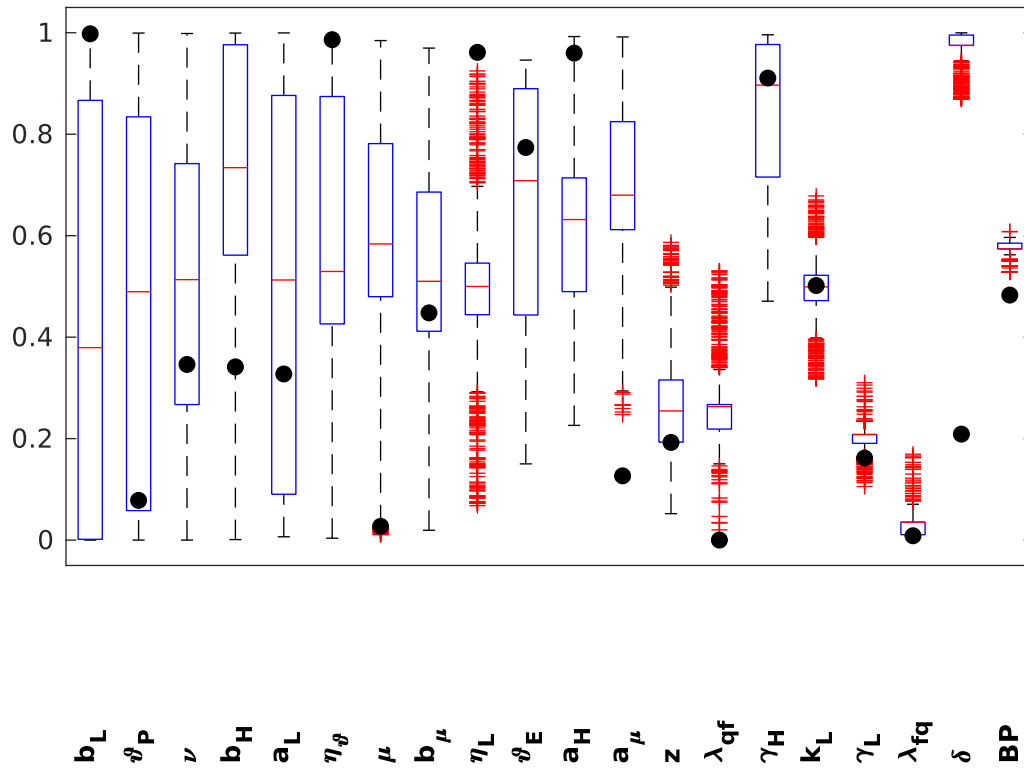
The number of estimations needed to perform the validation was1000.

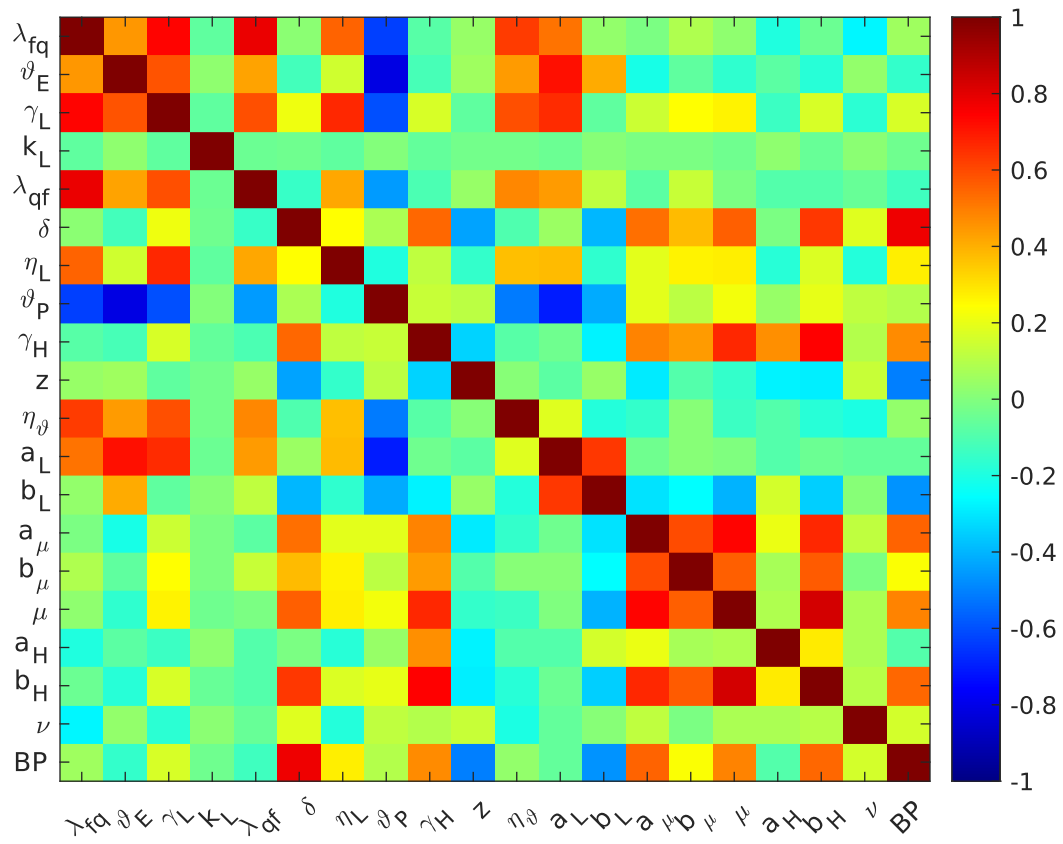
6.2. Estimated parameters with their intervals

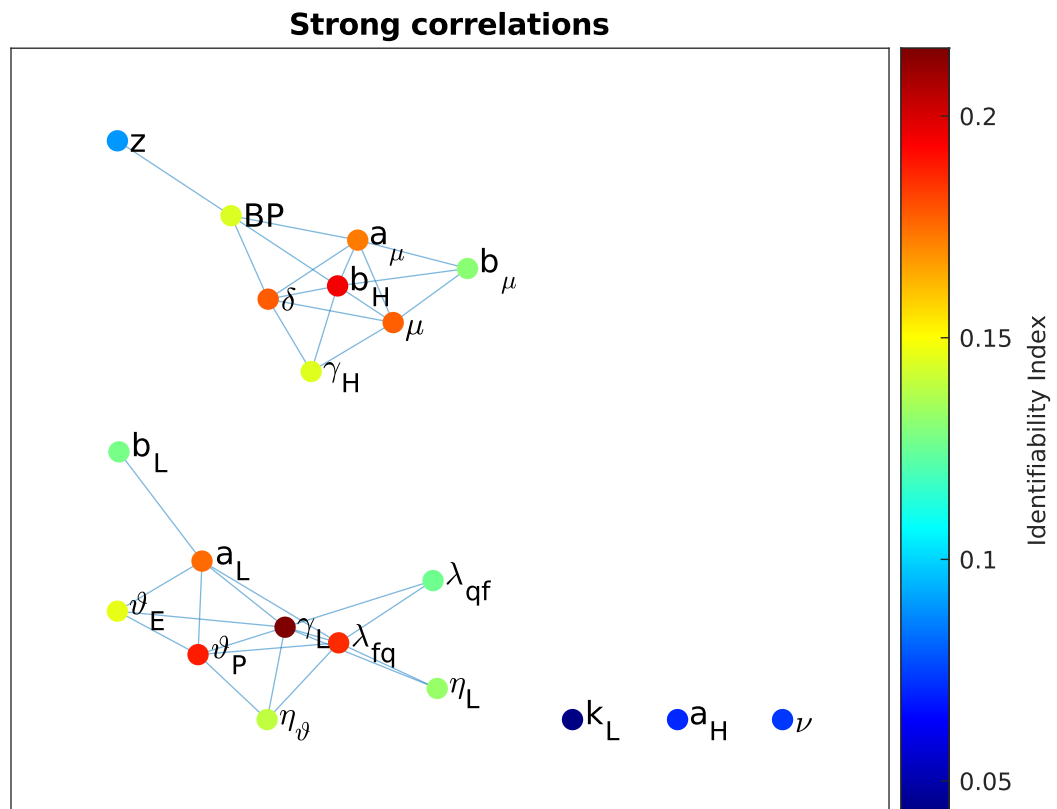
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0146'	'0.0561'	'0.0354'	'0.0085'	'0.1863'
ϑ_E	'0.6895'	'0.7273'	'0.7084'	'0.7739'	'0.1462'
γ_L	'0.1842'	'0.232'	'0.2081'	'0.1616'	'0.2153'
k_L	'5.4058'	'5.5781'	'5.492'	'5.5162'	'0.043'
λ_{qf}	'0.2451'	'0.281'	'0.2631'	'0'	'0.1259'
δ	'0.1429'	'0.1496'	'0.1463'	'0.0313'	'0.178'
η_L	'0.4801'	'0.5197'	'0.4999'	'0.9613'	'0.1328'
ϑ_P	'0.4589'	'0.5202'	'0.4895'	'0.0783'	'0.1887'
γ_H	'0.8821'	'0.9114'	'0.8968'	'0.9107'	'0.1451'
z	'7.2464'	'8.0292'	'7.6378'	'5.7756'	'0.0899'
η_{ϑ}	'0.5077'	'0.5512'	'0.5295'	'0.9863'	'0.1394'
a_L	'7.7722'	'8.5828'	'8.1775'	'5.5836'	'0.1756'
b_L	'5.8691'	'6.7537'	'6.3114'	'14.9711'	'0.1278'
a_{μ}	'10.2876'	'10.7393'	'10.5134'	'2.7734'	'0.1726'
b_{μ}	'7.9168'	'8.3658'	'8.1413'	'7.2705'	'0.1308'
μ	'0.5655'	'0.6021'	'0.5838'	'0.0271'	'0.1771'
a_H	'9.6651'	'10.0233'	'9.8442'	'14.4372'	'0.071'
b_H	'11.0157'	'11.5371'	'11.2764'	'5.7796'	'0.1954'
ν	'245.4093'	'267.9364'	'256.6728'	'173.1251'	'0.0735'
BP	'242.2287'	'242.7713'	'242.5'	'234.5'	'0.1445'

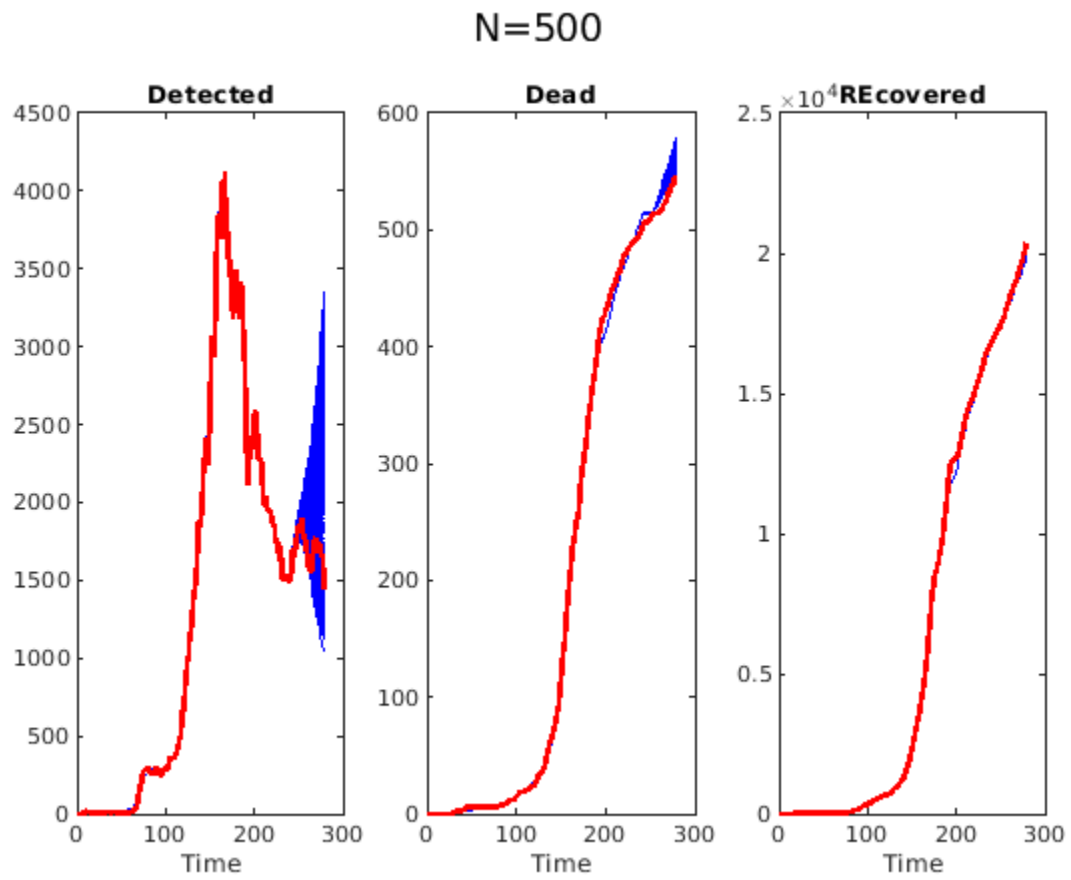
6.3. Identifiability analysis







6.4. Uncertainty analysys



Chapter 7. Extension number7

7.1. Basic information

The extension to be validated consists of the time series from the data280 to the 302. The status of the validation is: COMPLETED.

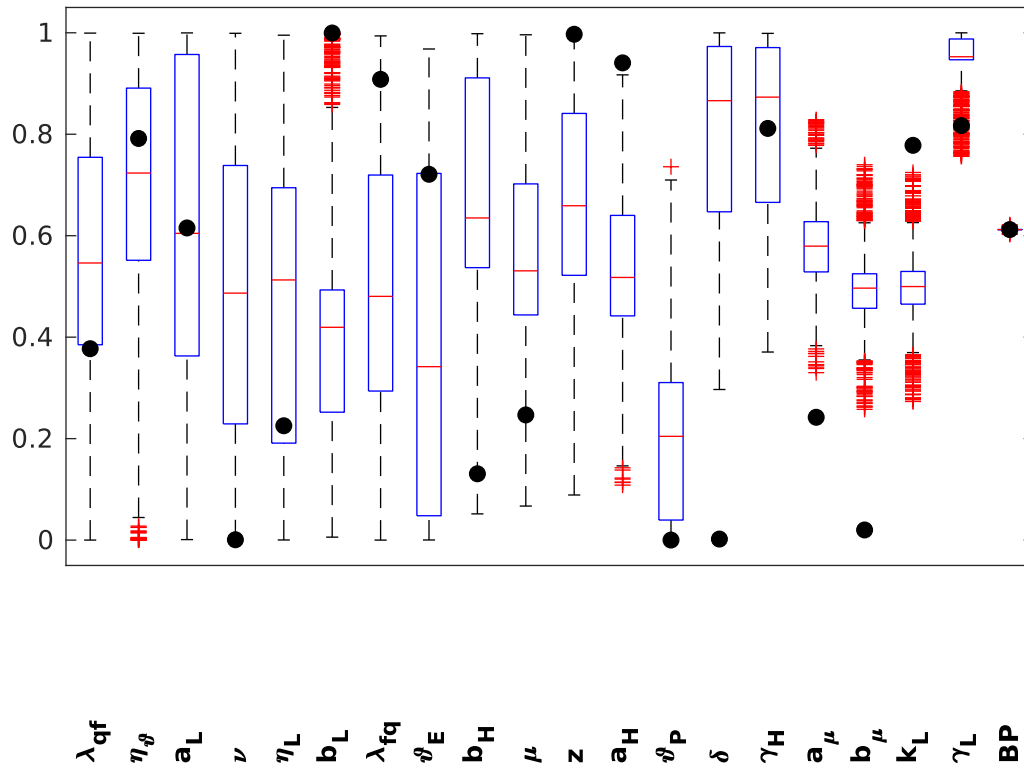
The number of estimations needed to perform the validation was1000.

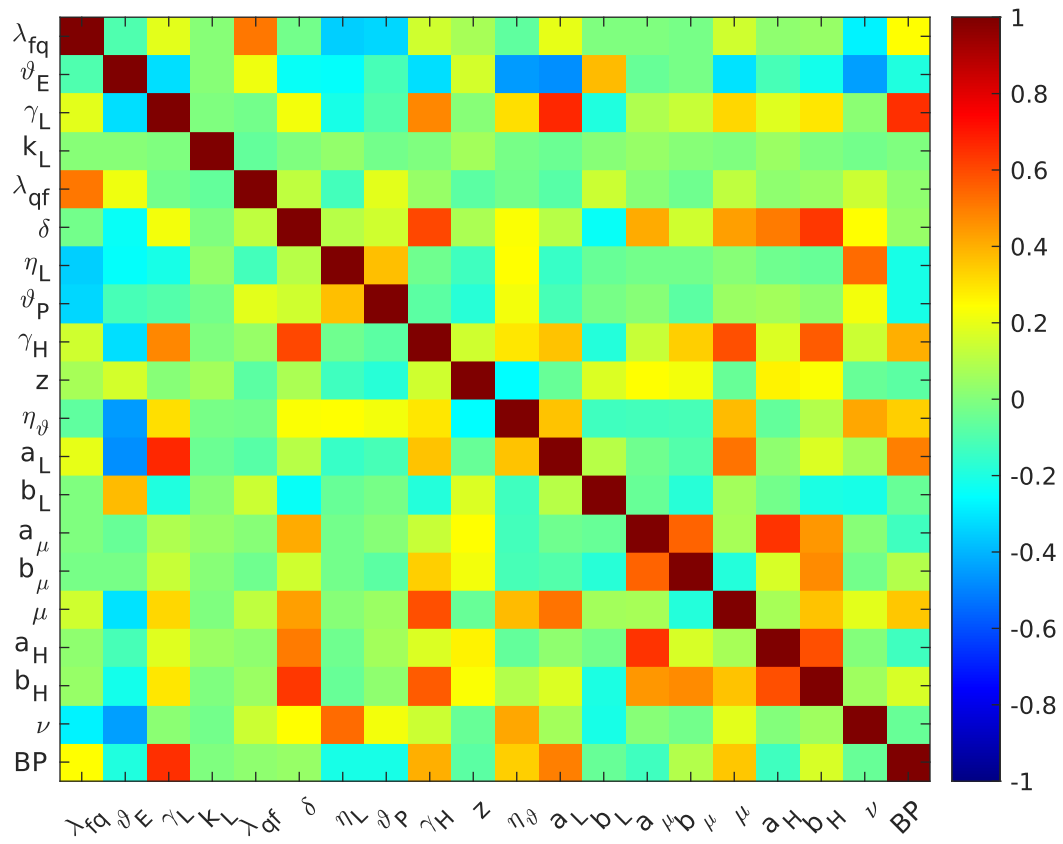
7.2. Estimated parameters with their intervals

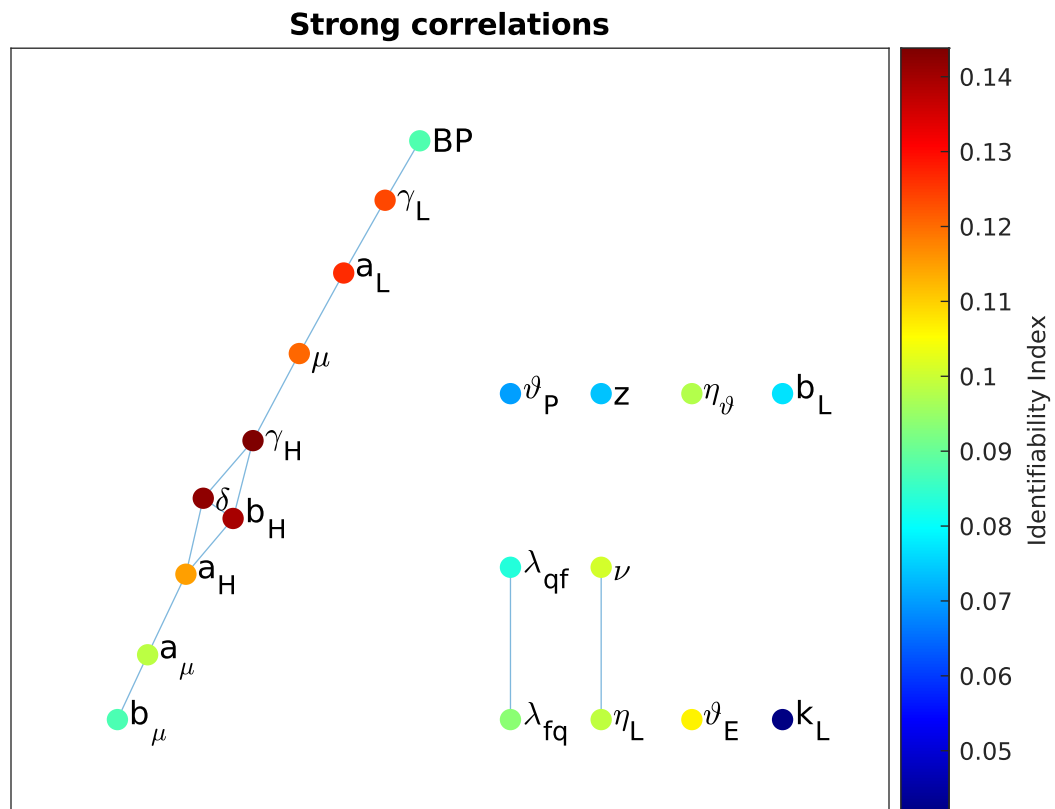
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.4588'	'0.5021'	'0.4804'	'0.9082'	'0.094'
ϑ_E	'0.3147'	'0.369'	'0.3419'	'0.7211'	'0.1066'
γ_L	'0.9343'	'0.9712'	'0.9527'	'0.8171'	'0.1238'
k_L	'5.3968'	'5.5988'	'5.4978'	'8.0032'	'0.0418'
λ_{qf}	'0.5257'	'0.5668'	'0.5462'	'0.3772'	'0.0836'
δ	'0.1266'	'0.1333'	'0.1299'	'0.0003'	'0.1419'
η_L	'0.488'	'0.5376'	'0.5128'	'0.2254'	'0.0991'
ϑ_P	'0.1909'	'0.2181'	'0.2045'	'0.0001'	'0.0704'
γ_H	'0.8552'	'0.8911'	'0.8732'	'0.8115'	'0.1438'
z	'19.2652'	'20.2786'	'19.7719'	'29.9125'	'0.0738'
η_{ϑ}	'0.7028'	'0.7443'	'0.7235'	'0.7917'	'0.0976'
a_L	'9.1163'	'9.8133'	'9.4648'	'9.6141'	'0.1266'
b_L	'6.5675'	'7.1772'	'6.8723'	'14.9933'	'0.077'
a_{μ}	'8.9755'	'9.2487'	'9.1121'	'4.3894'	'0.0985'
b_{μ}	'7.7622'	'8.1438'	'7.953'	'1.2798'	'0.0876'
μ	'0.5136'	'0.5479'	'0.5307'	'0.2467'	'0.1204'
a_H	'8.0708'	'8.4259'	'8.2484'	'14.1695'	'0.115'
b_H	'9.6342'	'10.1454'	'9.8898'	'2.83'	'0.1395'
ν	'231.273'	'255.525'	'243.399'	'0.3515'	'0.101'
BP	'279.4013'	'279.5987'	'279.5'	'279.5'	'0.0877'

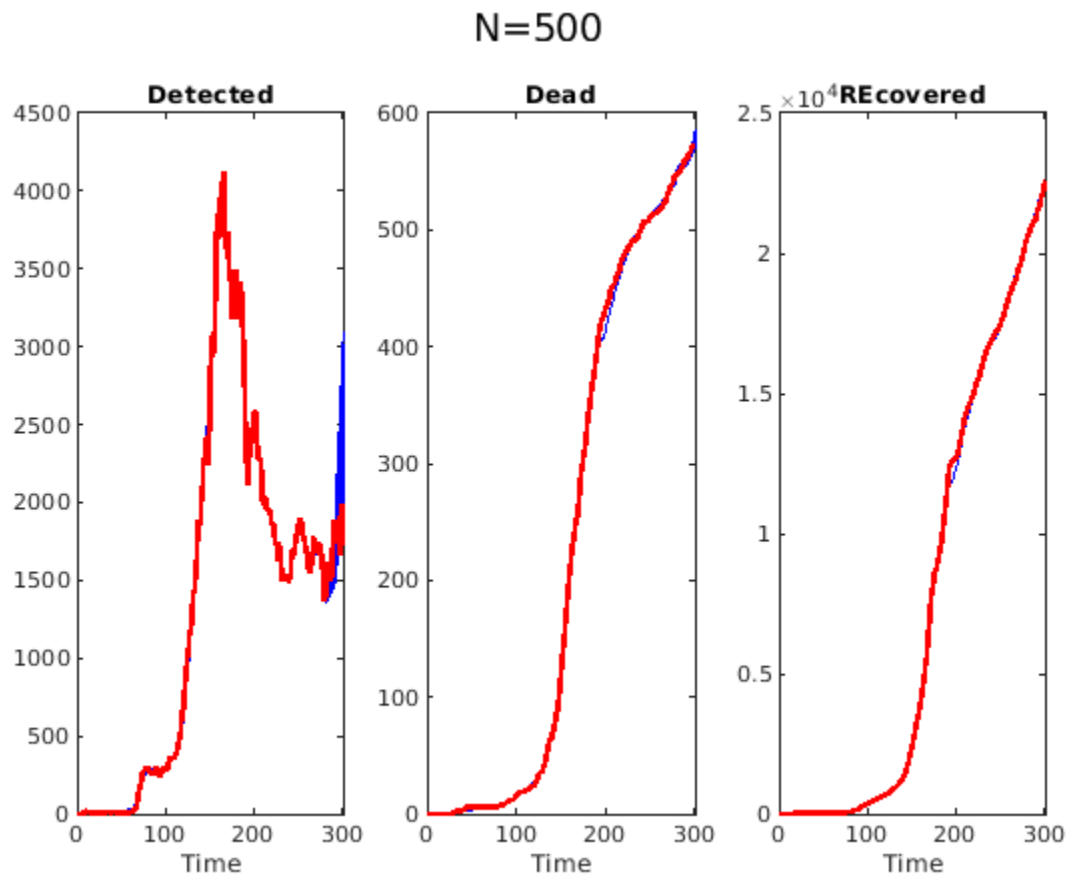
7.3. Identifiability analysys







7.4. Uncertainty analysis



Chapter 8. Extension number8

8.1. Basic information

The extension to be validated consists of the time series from the data302 to the 332. The status of the validation is: COMPLETED.

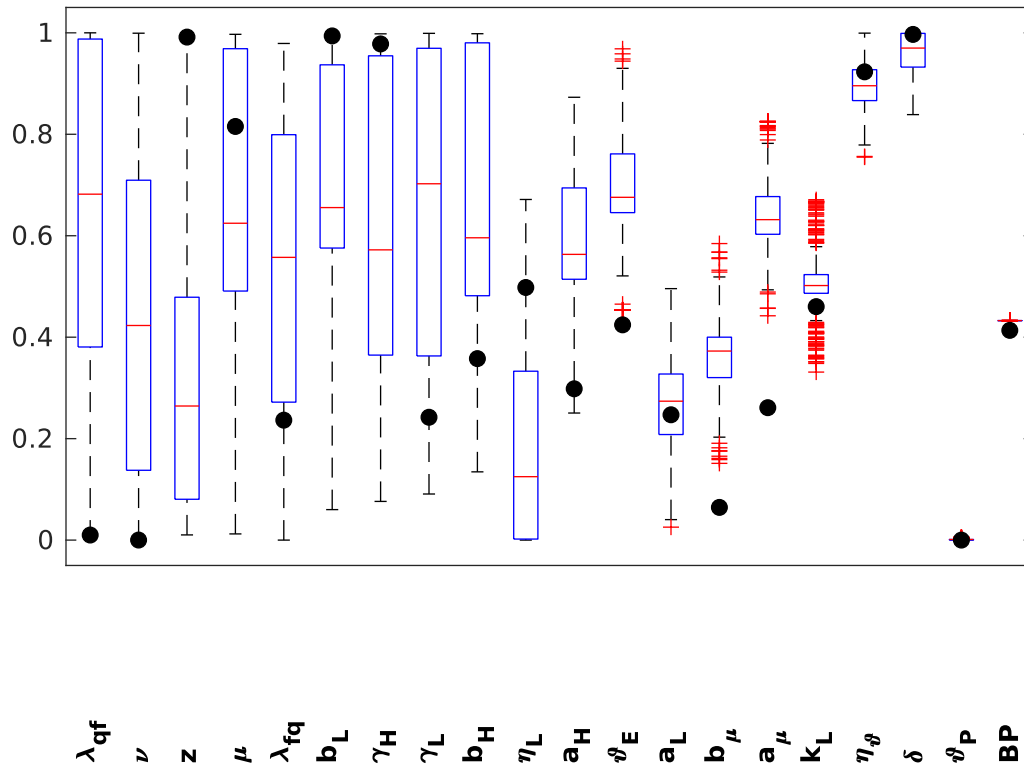
The number of estimations needed to perform the validation was1000.

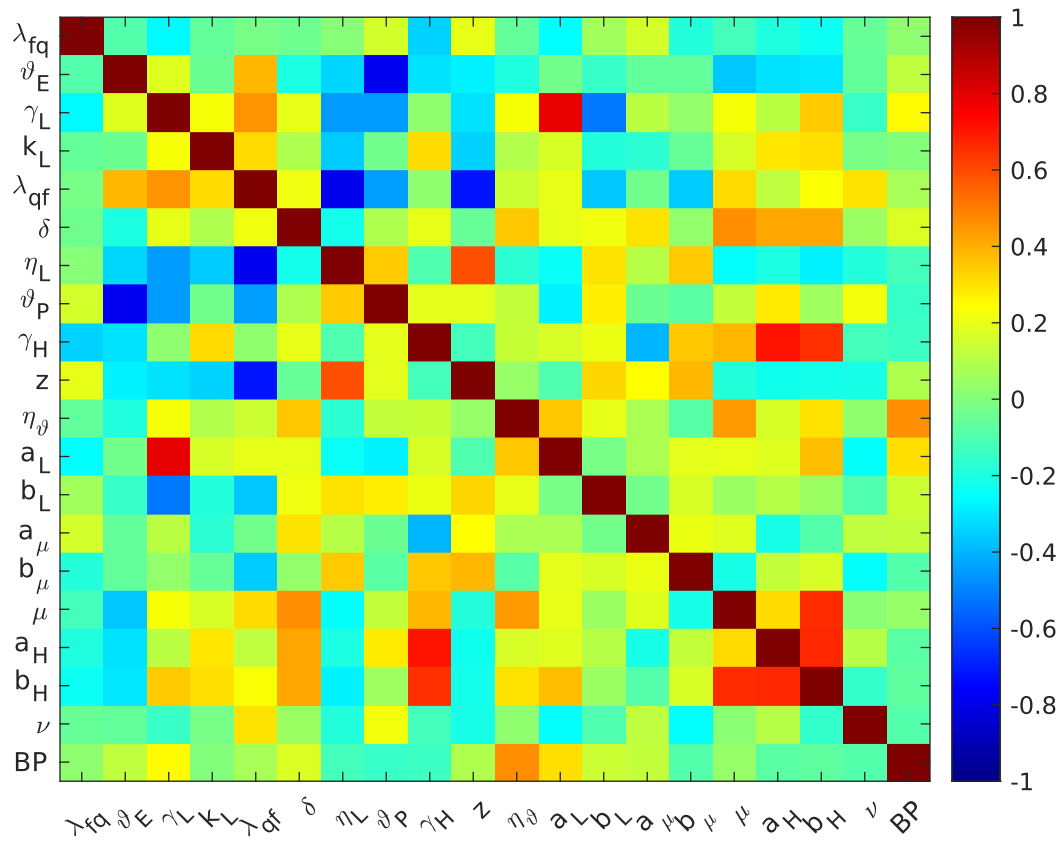
8.2. Estimated parameters with their intervals

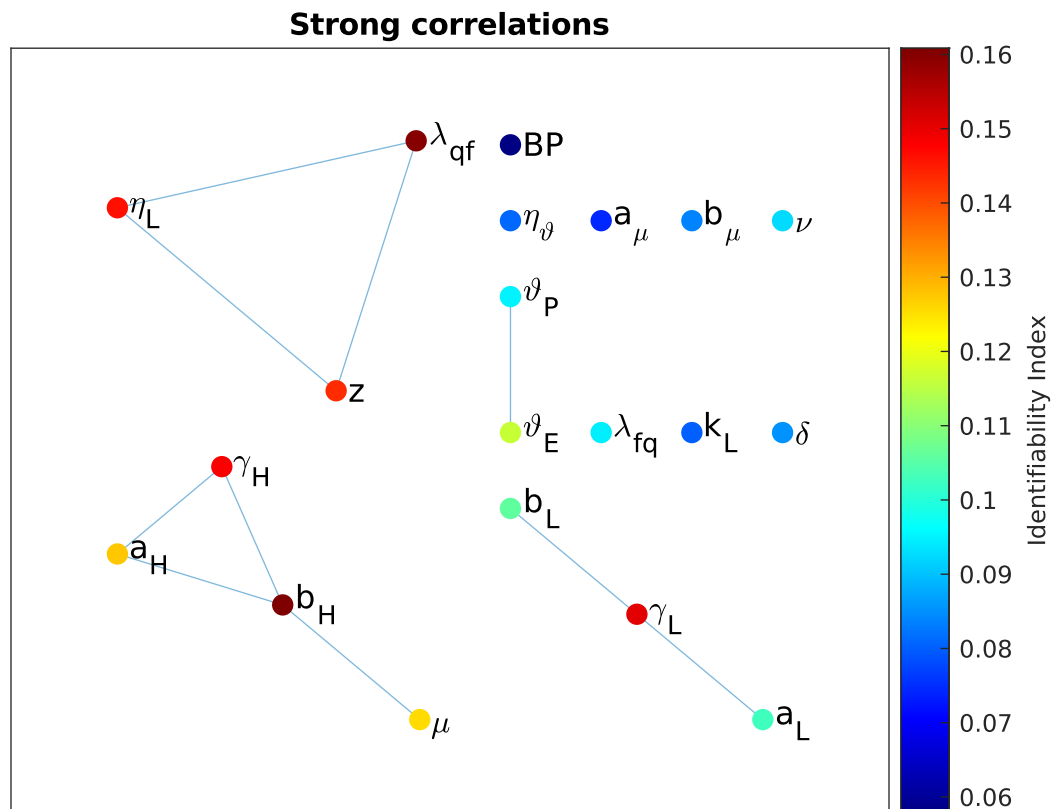
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.5192'	'0.5955'	'0.5574'	'0.2364'	'0.0947'
ϑ_E	'0.6496'	'0.7018'	'0.6757'	'0.4243'	'0.1164'
γ_L	'0.6687'	'0.7361'	'0.7024'	'0.2422'	'0.1508'
k_L	'5.3829'	'5.6495'	'5.5162'	'5.1421'	'0.0803'
λ_{qf}	'0.6406'	'0.7232'	'0.6819'	'0.01'	'0.1599'
δ	'0.1438'	'0.1472'	'0.1455'	'0.1495'	'0.0855'
η_L	'0.0957'	'0.1543'	'0.125'	'0.498'	'0.1463'
ϑ_P	'0'	'0.0073'	'0.0012'	'0'	'0.0952'
γ_H	'0.5353'	'0.609'	'0.5722'	'0.9781'	'0.1481'
z	'6.9384'	'8.9218'	'7.9301'	'29.7478'	'0.1432'
η_{ϑ}	'0.8857'	'0.9056'	'0.8957'	'0.9231'	'0.081'
a_L	'4.6853'	'4.9823'	'4.8338'	'4.4588'	'0.1029'
b_L	'9.8271'	'10.527'	'10.177'	'14.9147'	'0.106'
a_{μ}	'9.6281'	'10.0596'	'9.8439'	'4.6544'	'0.0747'
b_{μ}	'5.9868'	'6.4481'	'6.2174'	'1.9027'	'0.0839'
μ	'0.5957'	'0.6536'	'0.6246'	'0.8154'	'0.1255'
a_H	'8.6379'	'9.1333'	'8.8856'	'5.1758'	'0.1276'
b_H	'8.9411'	'9.7461'	'9.3436'	'6.0086'	'0.1608'
ν	'192.9856'	'230.0805'	'211.5331'	'0.0461'	'0.0927'
BP	'302.4478'	'302.5522'	'302.5'	'301.5'	'0.0579'

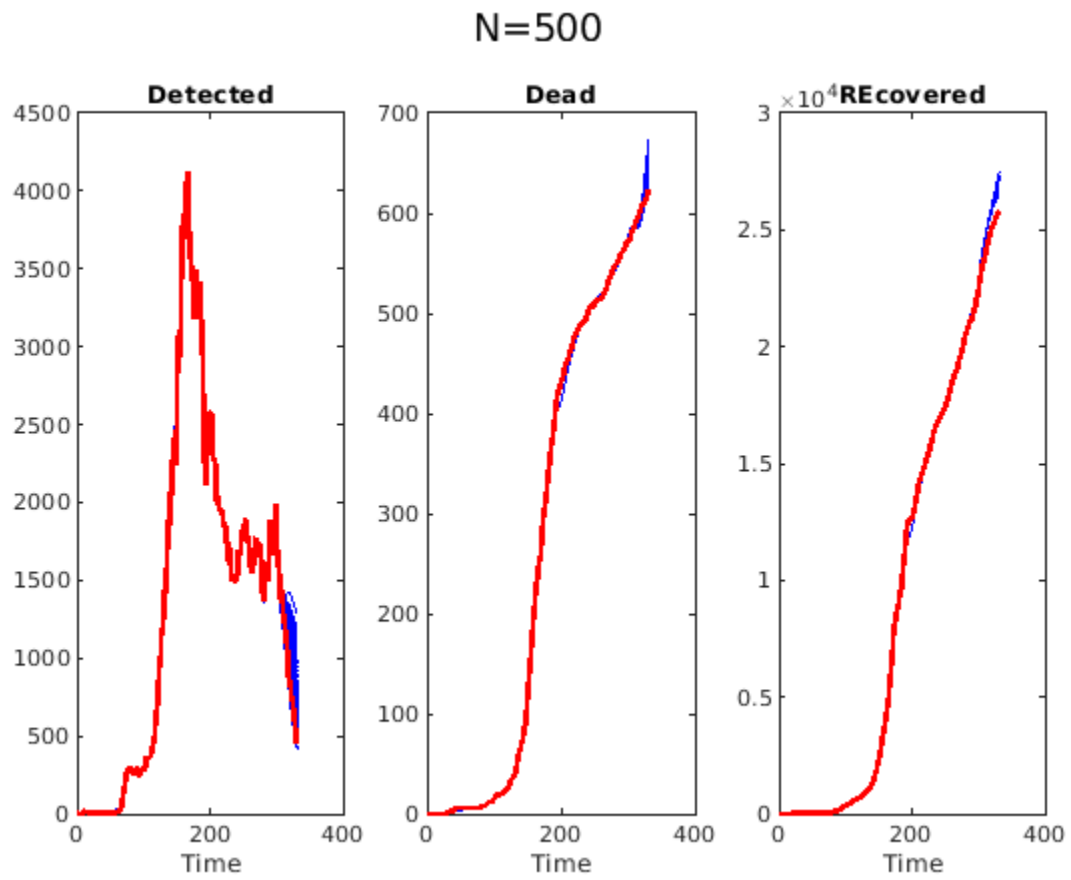
8.3. Identifiability analysis







8.4. Uncertainty analysis



Chapter 9. Extension number9

9.1. Basic information

The extension to be validated consists of the time series from the data332 to the 345. The status of the validation is: COMPLETED.

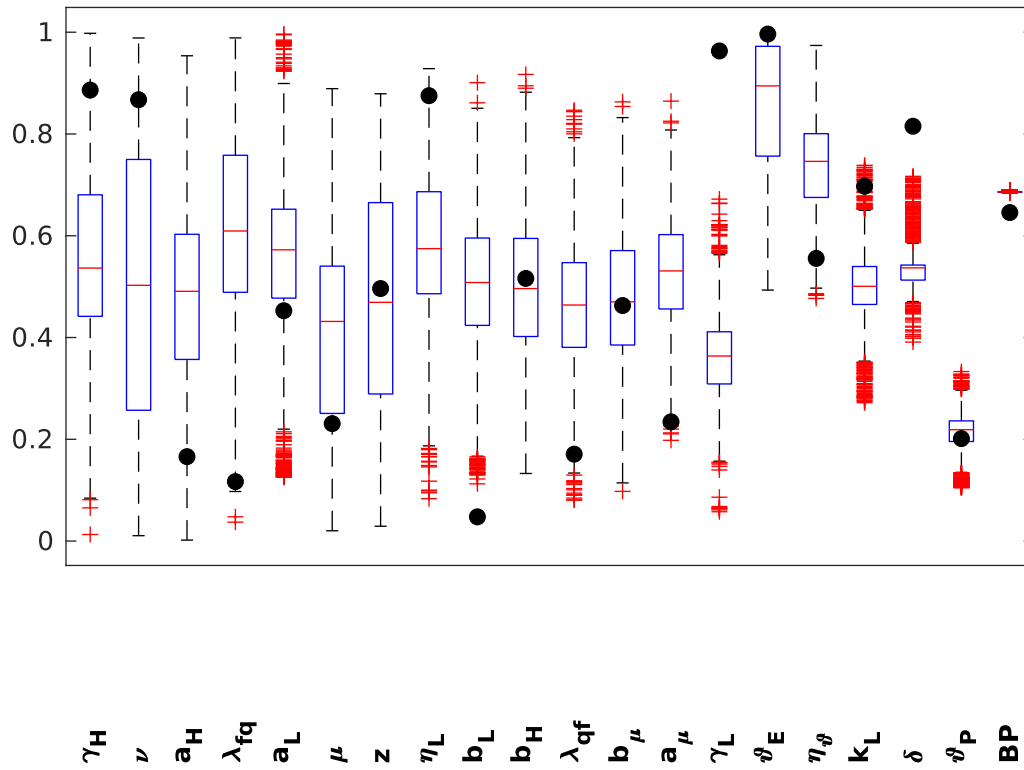
The number of estimations needed to perform the validation was1000.

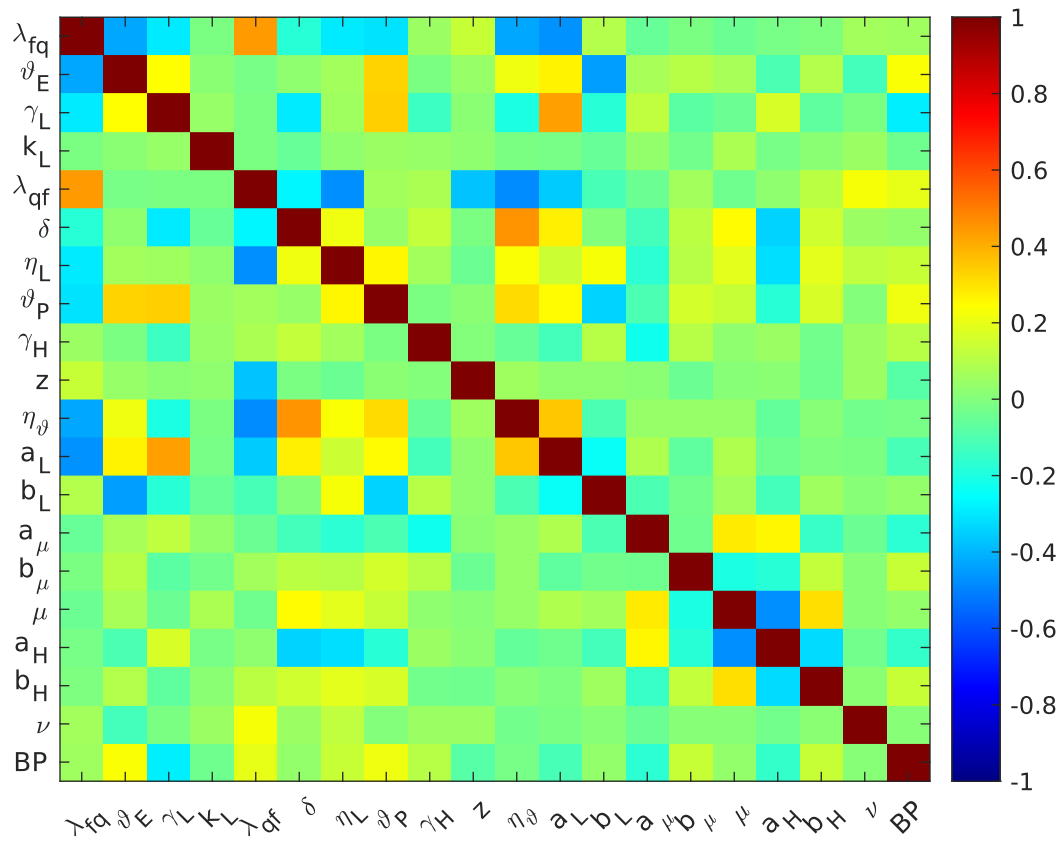
9.2. Estimated parameters with their intervals

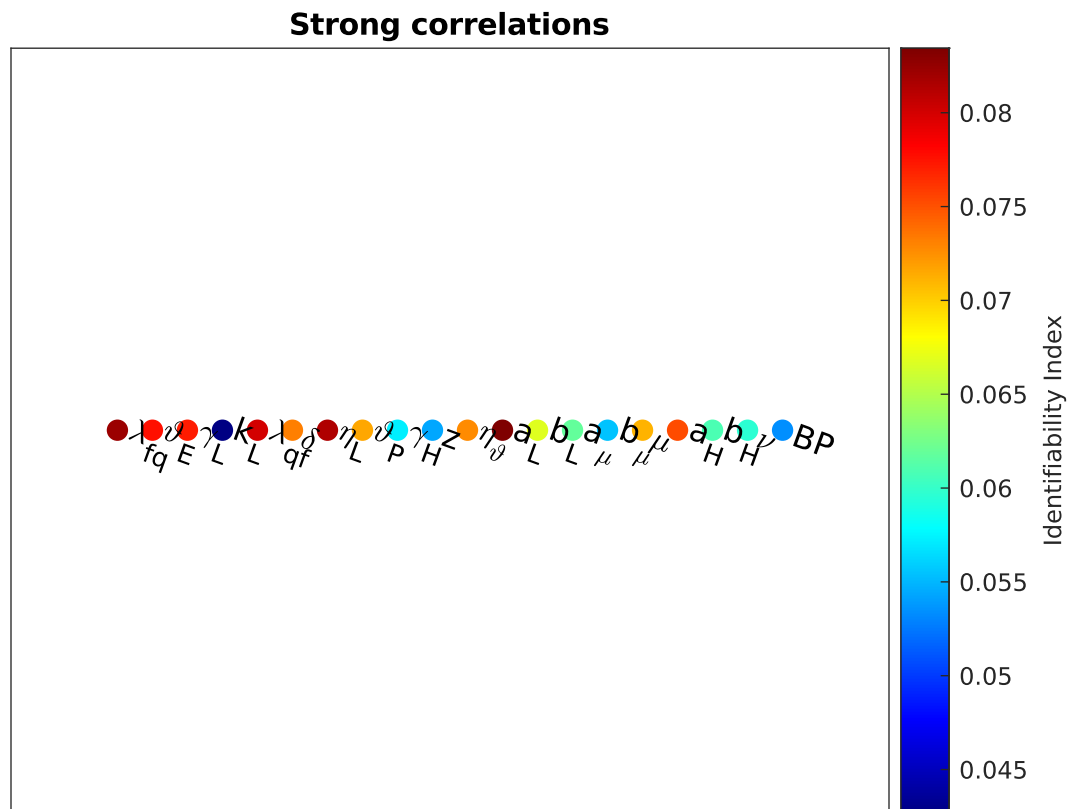
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.5942'	'0.6244'	'0.6093'	'0.1169'	'0.0822'
ϑ_E	'0.8784'	'0.9105'	'0.8945'	'0.9963'	'0.0777'
γ_L	'0.3494'	'0.378'	'0.3637'	'0.9632'	'0.0772'
k_L	'5.4165'	'5.5959'	'5.5062'	'7.276'	'0.0427'
λ_{qf}	'0.4516'	'0.4762'	'0.4639'	'0.1707'	'0.0801'
δ	'0.0789'	'0.0821'	'0.0805'	'0.1223'	'0.0731'
η_L	'0.56'	'0.5894'	'0.5747'	'0.8753'	'0.0815'
ϑ_P	'0.2135'	'0.2243'	'0.2189'	'0.2014'	'0.0715'
γ_H	'0.5217'	'0.5513'	'0.5365'	'0.8863'	'0.0572'
z	'13.5844'	'14.5665'	'14.0755'	'14.8861'	'0.0544'
η_{ϑ}	'0.738'	'0.7544'	'0.7462'	'0.5555'	'0.0728'
a_L	'8.7854'	'9.2416'	'9.0135'	'7.3376'	'0.0834'
b_L	'7.9385'	'8.2874'	'8.113'	'1.6665'	'0.0668'
a_{μ}	'8.2899'	'8.5742'	'8.4321'	'4.2807'	'0.0619'
b_{μ}	'7.4373'	'7.7258'	'7.5816'	'7.4801'	'0.0556'
μ	'0.4154'	'0.4478'	'0.4316'	'0.2308'	'0.0712'
a_H	'7.6732'	'8.0693'	'7.8712'	'3.3224'	'0.0752'
b_H	'7.7943'	'8.099'	'7.9467'	'8.2252'	'0.061'
ν	'239.841'	'262.7667'	'251.3038'	'433.6724'	'0.0597'
BP	'331.4634'	'331.5366'	'331.5'	'329.7613'	'0.0534'

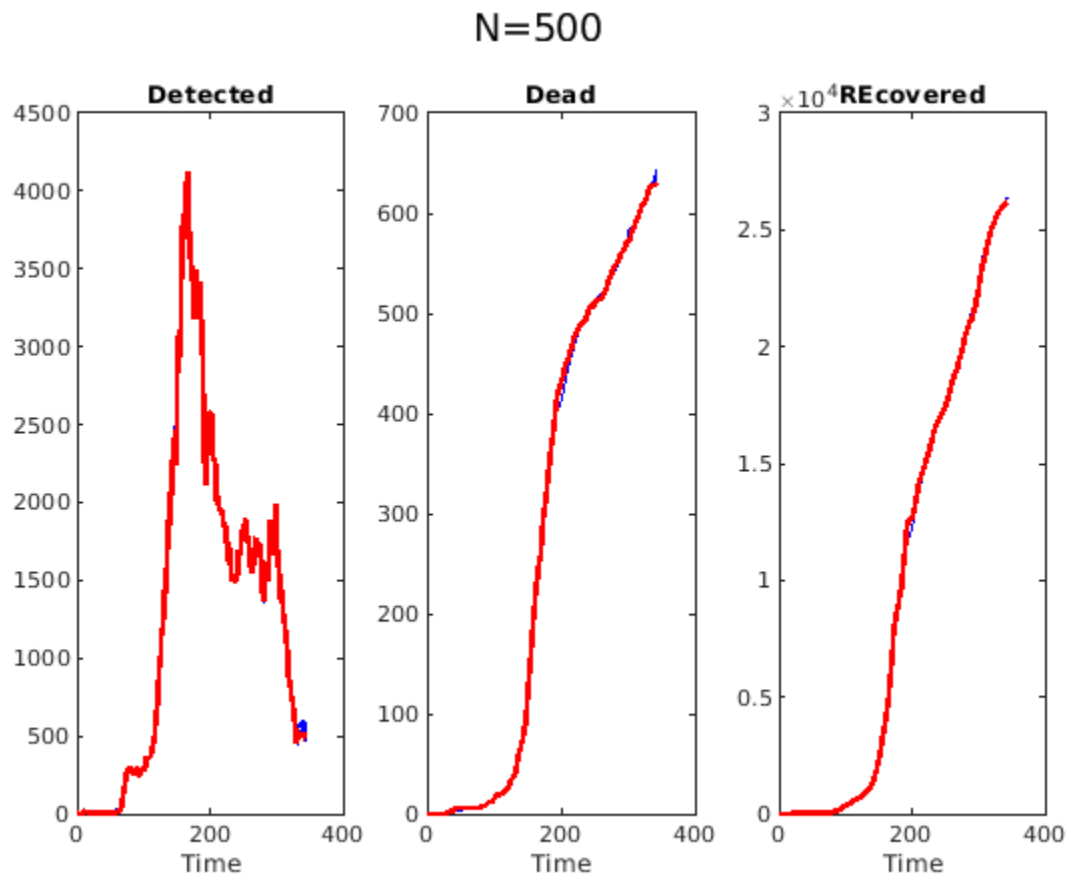
9.3. Identifiability analysys







9.4. Uncertainty analysis



Chapter 10. Extension number10

10.1. Basic information

The extension to be validated consists of the time series from the data345 to the 398. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

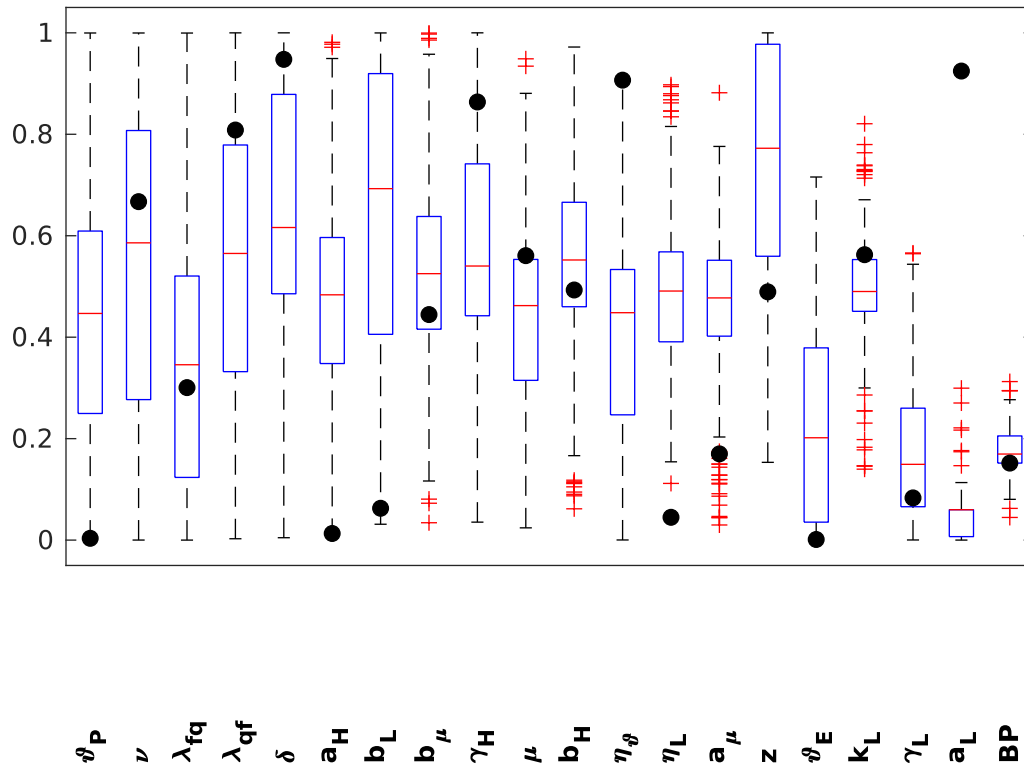
10.2. Estimated parameters with their intervals

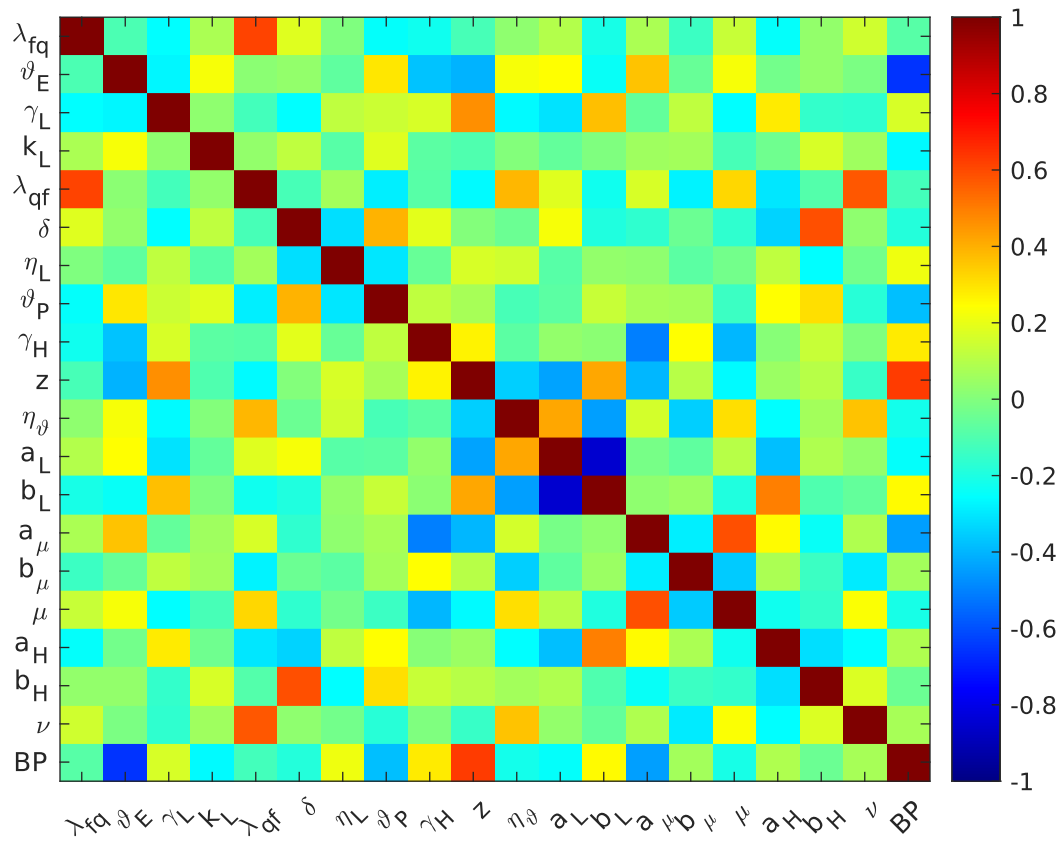
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

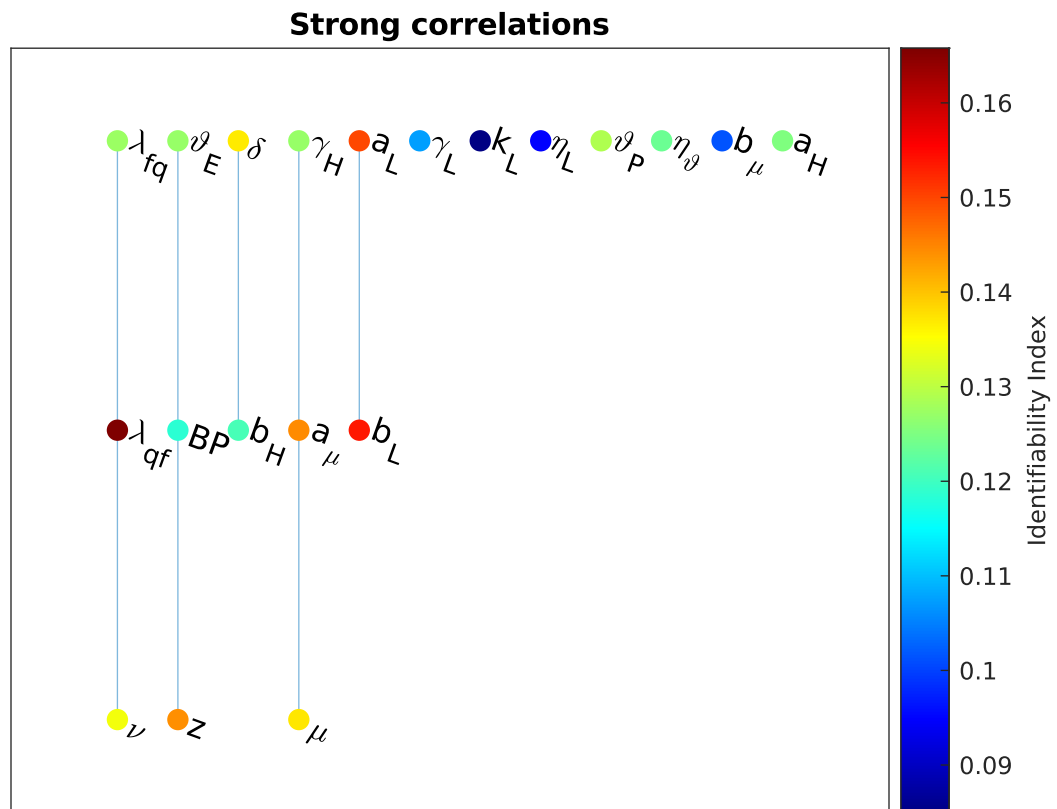
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.2479'	'0.3073'	'0.3457'	'0.3006'	'0.1274'
ϑ_E	'0'	'0.0021'	'0.2017'	'0.0012'	'0.1271'
γ_L	'0.0454'	'0.0836'	'0.1503'	'0.0832'	'0.1076'
k_L	'1.171'	'9.55'	'5.4106'	'6.0636'	'0.085'
λ_{qf}	'0.6805'	'0.8088'	'0.5651'	'0.8084'	'0.1658'
δ	'0.0392'	'0.15'	'0.0924'	'0.1422'	'0.137'
η_L	'0.0025'	'0.0845'	'0.491'	'0.0449'	'0.0949'
ϑ_P	'0.0032'	'0.0048'	'0.4468'	'0.0035'	'0.129'
γ_H	'0.4401'	'0.9499'	'0.5403'	'0.8637'	'0.127'
z	'14.3521'	'20.2278'	'23.1735'	'14.6808'	'0.144'
η_{ϑ}	'0.8565'	'0.9294'	'0.4483'	'0.9067'	'0.1236'
a_L	'7.3098'	'14.4233'	'1.8383'	'13.9449'	'0.15'
b_L	'1.51'	'11.1991'	'10.6994'	'1.8783'	'0.1537'
a_{μ}	'2.9037'	'8.5817'	'7.684'	'3.3797'	'0.1446'
b_{μ}	'1.285'	'12.4018'	'8.3533'	'7.2242'	'0.1016'
μ	'0.0469'	'0.9025'	'0.4628'	'0.5607'	'0.1373'
a_H	'1.0626'	'2.2605'	'7.7695'	'1.1824'	'0.1251'
b_H	'2.715'	'14.5086'	'8.7164'	'7.9026'	'0.1209'
ν	'299.6609'	'433.092'	'292.9941'	'333.5978'	'0.1344'
BP	'340.2524'	'346.484'	'341.5'	'340.5'	'0.1185'

10.3. Identifiability analysis

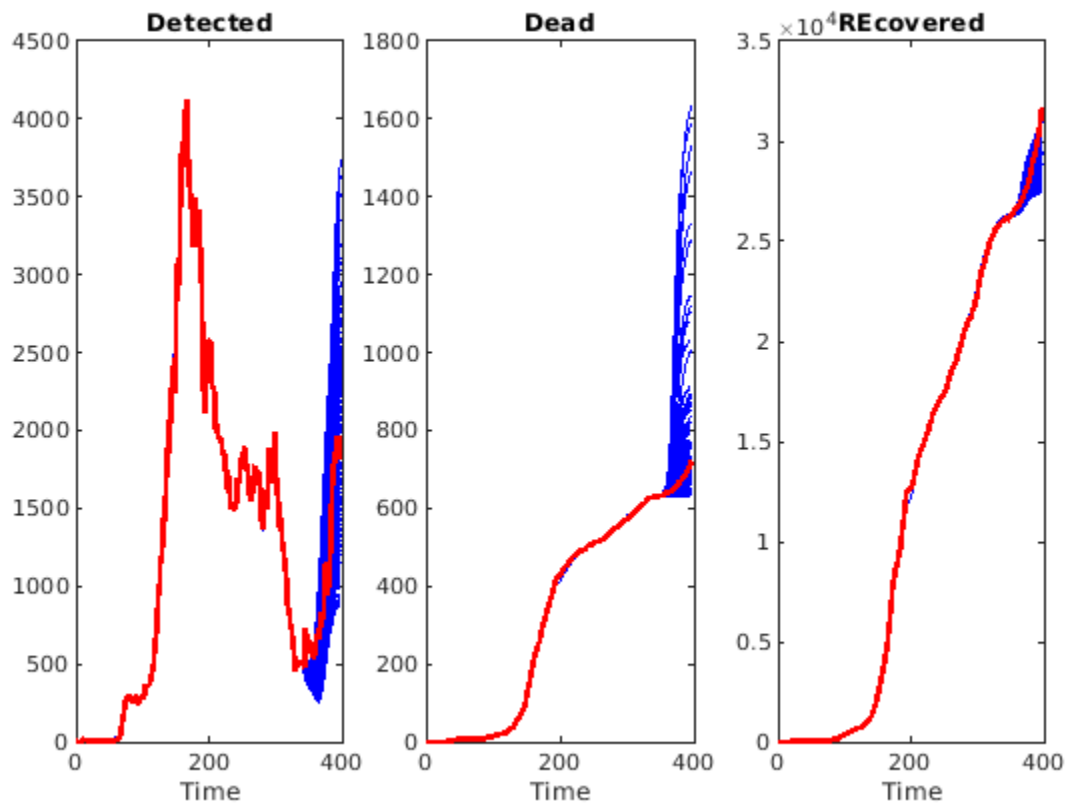






10.4. Uncertainty analysis

N=500



Chapter 11. Extension number11

11.1. Basic information

The extension to be validated consists of the time series from the data398 to the 398. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

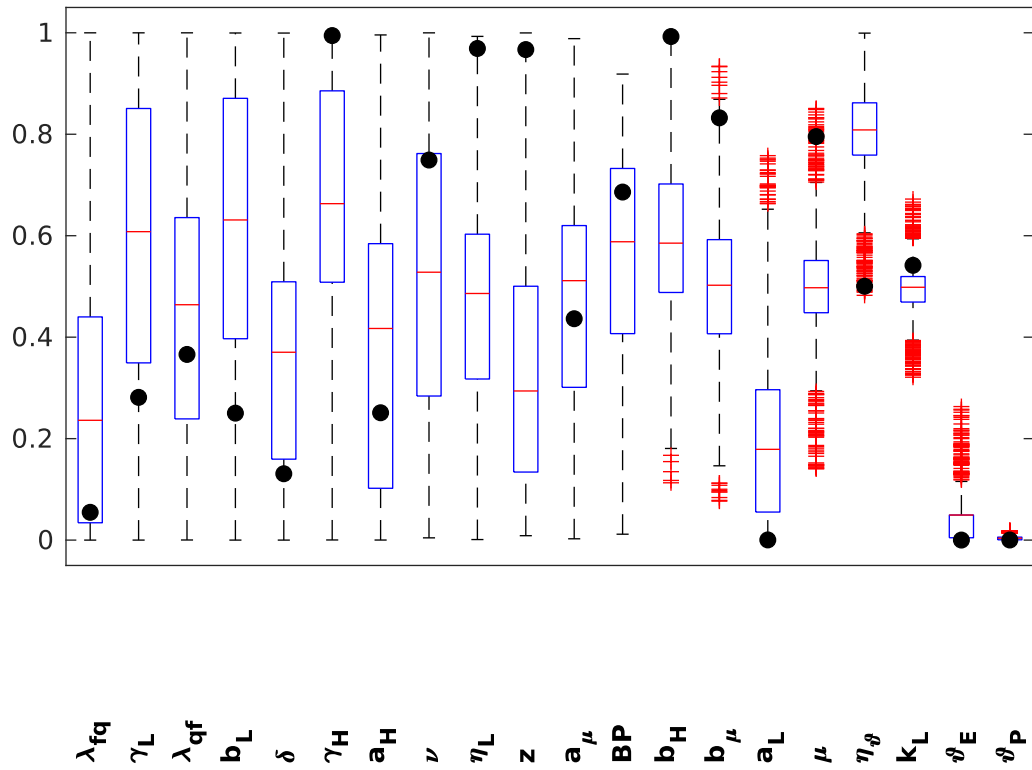
11.2. Estimated parameters with their intervals

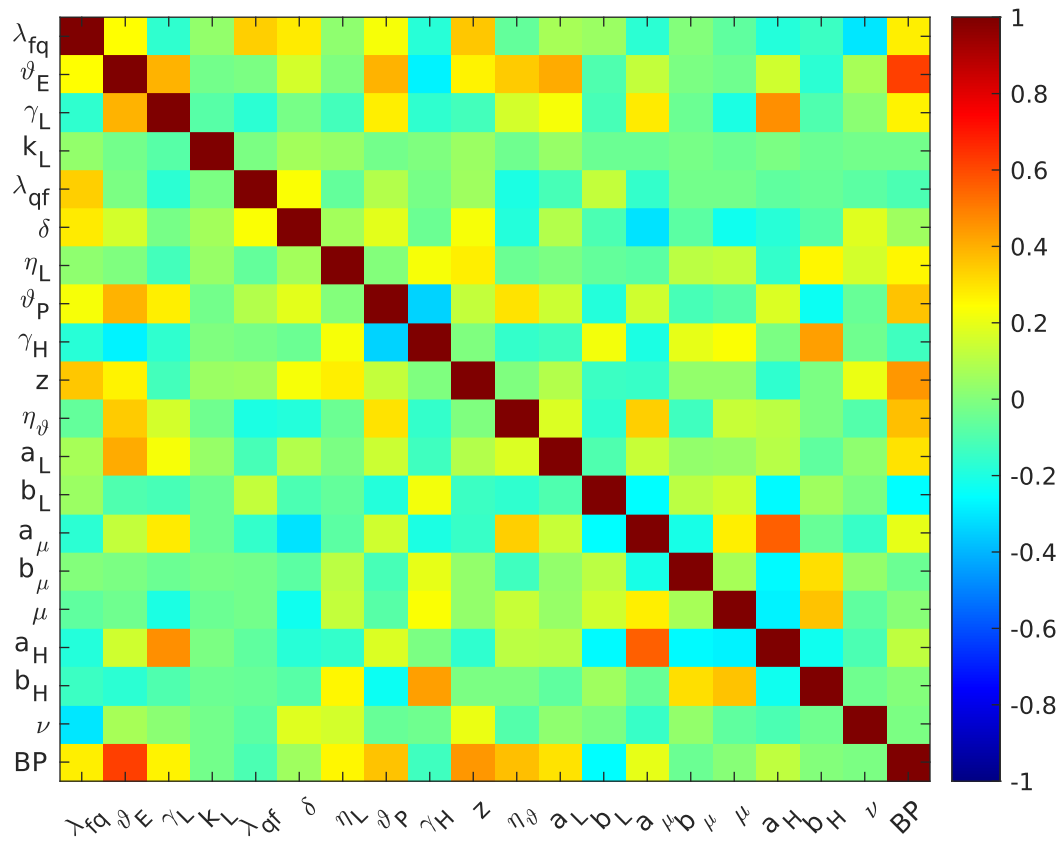
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

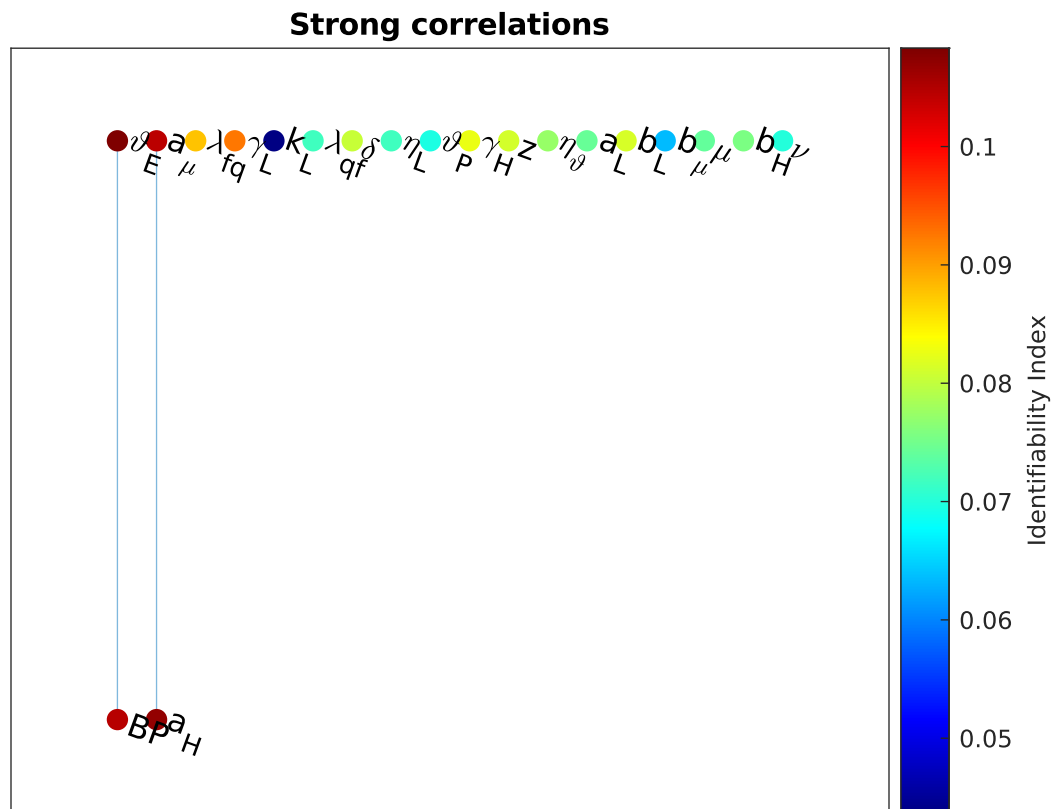
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0548'	'0.0548'	'0.2361'	'0.0548'	'0.0878'
ϑ_E	'0.0001'	'0.0001'	'0.0494'	'0.0001'	'0.1083'
γ_L	'0.197'	'0.4221'	'0.608'	'0.2814'	'0.0926'
k_L	'4.1124'	'8.8122'	'5.4854'	'5.8748'	'0.0437'
λ_{qf}	'0.2562'	'0.549'	'0.464'	'0.366'	'0.072'
δ	'0.0137'	'0.0294'	'0.0555'	'0.0196'	'0.0804'
η_L	'0.6783'	'1'	'0.4861'	'0.9691'	'0.0719'
ϑ_P	'0.0001'	'0.0003'	'0.0037'	'0.0002'	'0.0696'
γ_H	'0.6961'	'1'	'0.6632'	'0.9945'	'0.0826'
z	'20.305'	'30'	'8.8187'	'29.0071'	'0.0812'
η_{ϑ}	'0.3502'	'0.7505'	'0.8085'	'0.5003'	'0.0773'
a_L	'1'	'1.5071'	'3.5046'	'1.0048'	'0.0744'
b_L	'3.1523'	'6.7548'	'9.8347'	'4.5032'	'0.0814'
a_{μ}	'4.9763'	'10.6635'	'8.1593'	'7.109'	'0.1045'
b_{μ}	'8.8572'	'15'	'8.0332'	'12.6532'	'0.0636'
μ	'0.5568'	'1'	'0.4974'	'0.7954'	'0.0742'
a_H	'3.1598'	'6.7711'	'6.8402'	'4.5141'	'0.107'
b_H	'10.4277'	'15'	'9.1947'	'14.8967'	'0.0757'
ν	'262.1986'	'500'	'264.0266'	'374.5694'	'0.07'
BP	'345'	'388'	'370.2875'	'374.4999'	'0.1047'

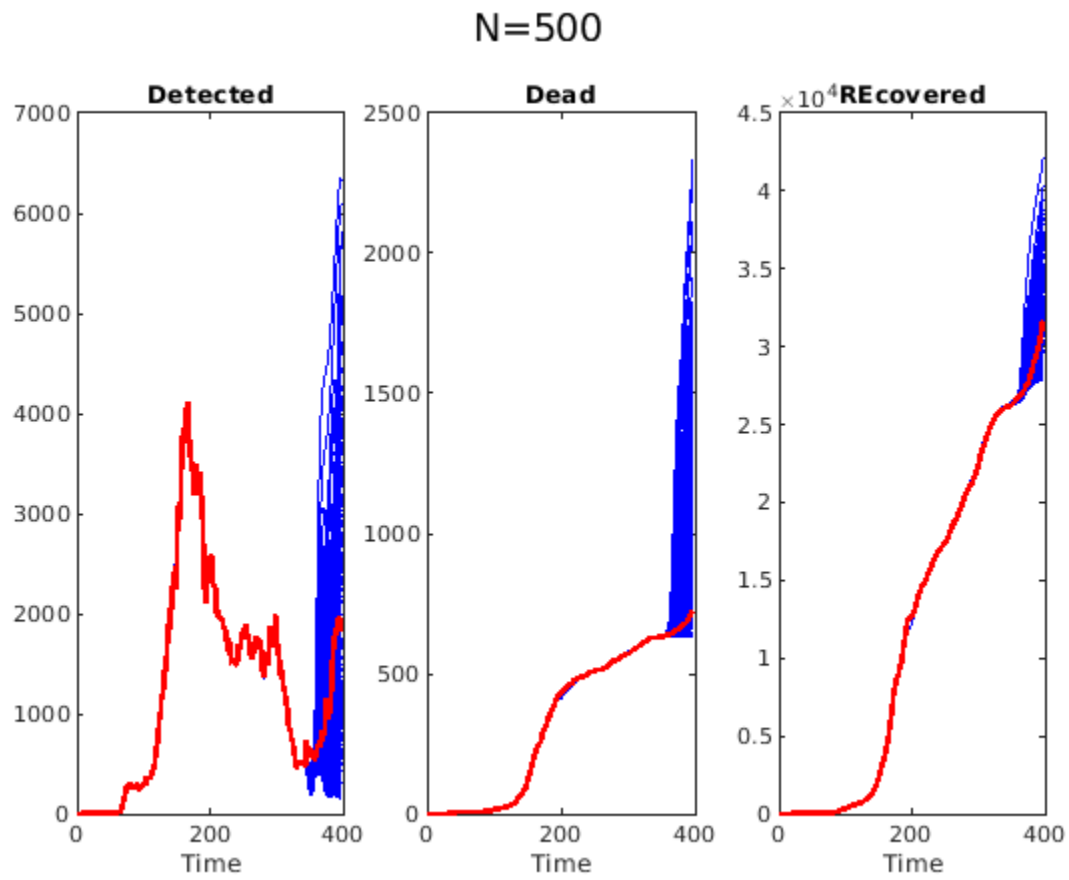
11.3. Identifiability analysis







11.4. Uncertainty analysis



Chapter 12. Extension number12

12.1. Basic information

The extension to be validated consists of the time series from the data398 to the 428. The status of the validation is: COMPLETED.

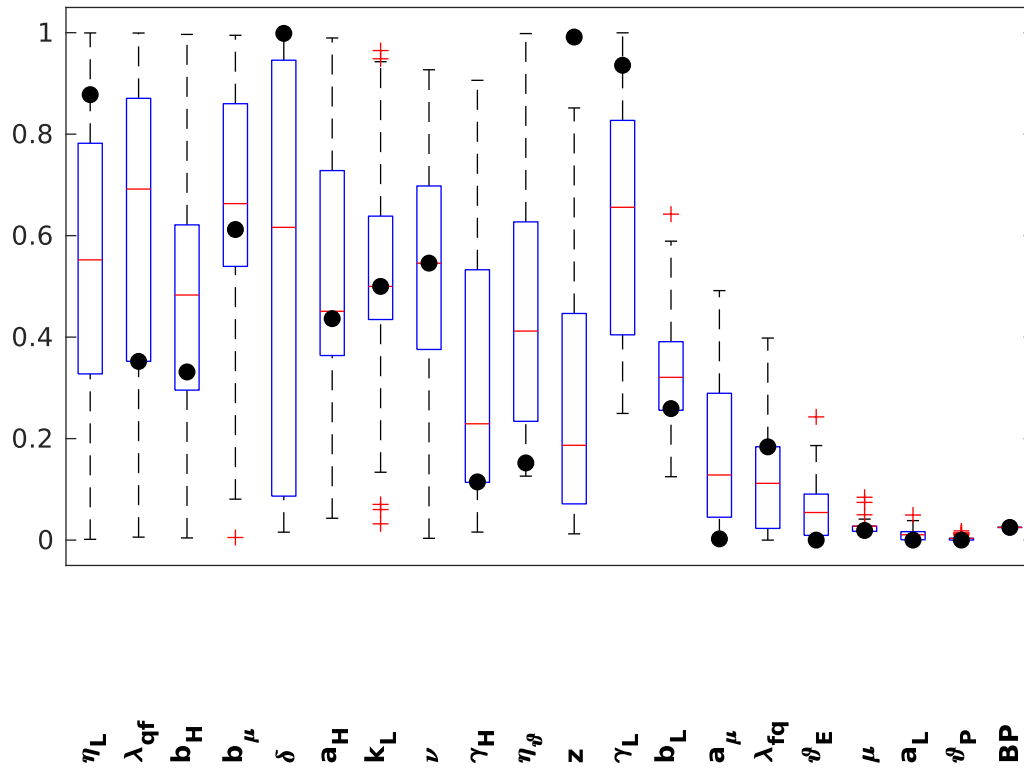
The number of estimations needed to perform the validation was3000.

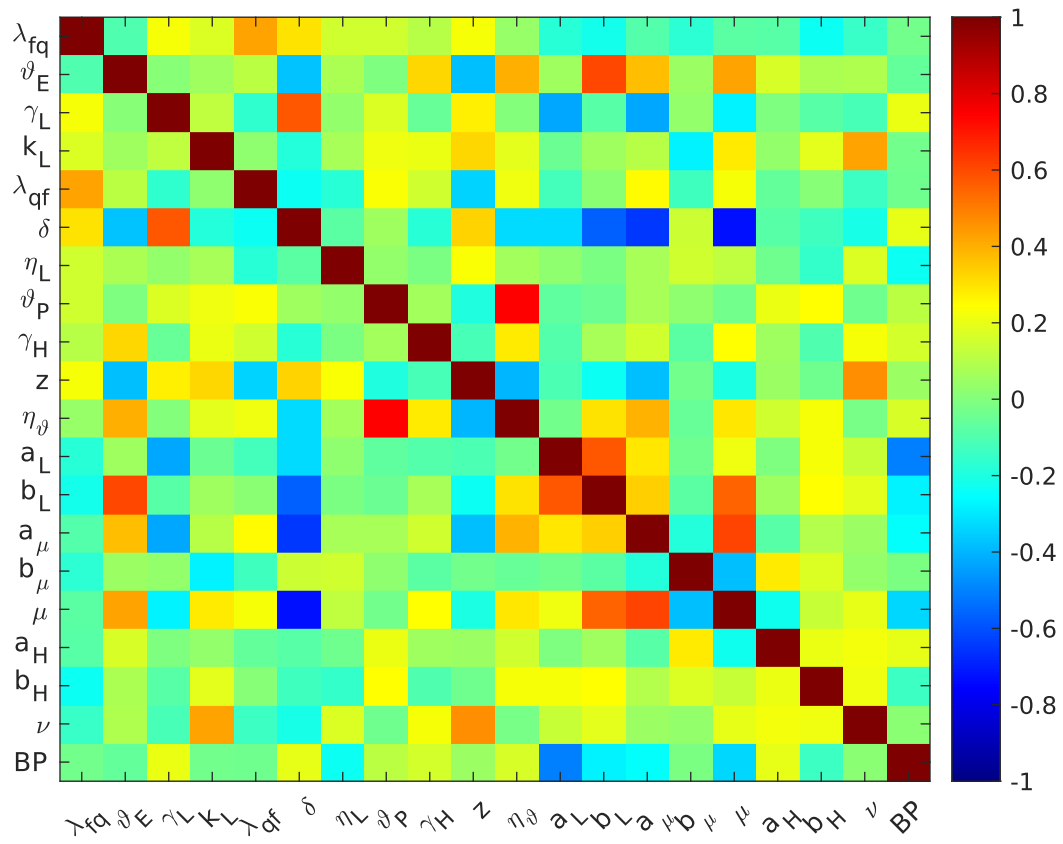
12.2. Estimated parameters with their intervals

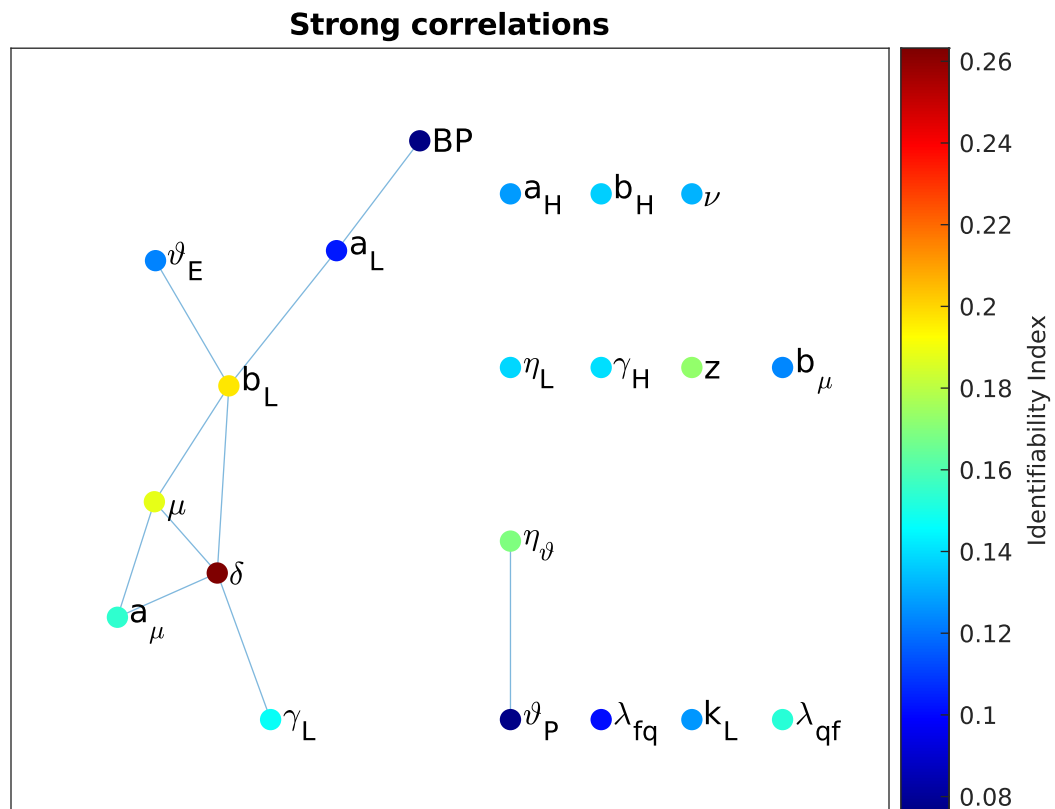
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
\lambda_{fq}	'0.0741'	'0.1496'	'0.1119'	'0.1838'	'0.1017'
\vartheta_E	'0.0151'	'0.0936'	'0.0544'	'0'	'0.1235'
\gamma_L	'0.5872'	'0.7246'	'0.6559'	'0.9357'	'0.1474'
k_L	'4.9249'	'6.0752'	'5.5001'	'5.4998'	'0.1267'
\lambda_{qf}	'0.6015'	'0.7821'	'0.6918'	'0.3522'	'0.1536'
\delta	'0.0748'	'0.1101'	'0.0925'	'0.1498'	'0.2632'
\eta_L	'0.4622'	'0.6424'	'0.5523'	'0.8779'	'0.139'
\vartheta_P	'0'	'0.0112'	'0.0035'	'0'	'0.077'
\gamma_H	'0.1471'	'0.3113'	'0.2292'	'0.1147'	'0.1405'
z	'2.81'	'8.4004'	'5.6052'	'29.7411'	'0.1727'
\eta_{\vartheta}	'0.3336'	'0.4903'	'0.412'	'0.1521'	'0.1696'
a_L	'1'	'1.3007'	'1.1466'	'1.0005'	'0.1039'
b_L	'4.5674'	'6.4132'	'5.4903'	'4.628'	'0.1973'
a_{\mu}	'2.1841'	'3.4091'	'2.7966'	'1.0335'	'0.1547'
b_{\mu}	'9.3063'	'11.2603'	'10.2833'	'9.5689'	'0.1237'
\mu	'0'	'0.1134'	'0.0275'	'0.019'	'0.1885'
a_H	'6.2622'	'8.3641'	'7.3132'	'7.1098'	'0.1275'
b_H	'6.6997'	'8.8244'	'7.7621'	'5.6393'	'0.1375'
\nu	'238.5265'	'307.0796'	'272.8031'	'272.9249'	'0.1323'
BP	'398.4828'	'398.5172'	'398.5'	'398.5'	'0.0762'

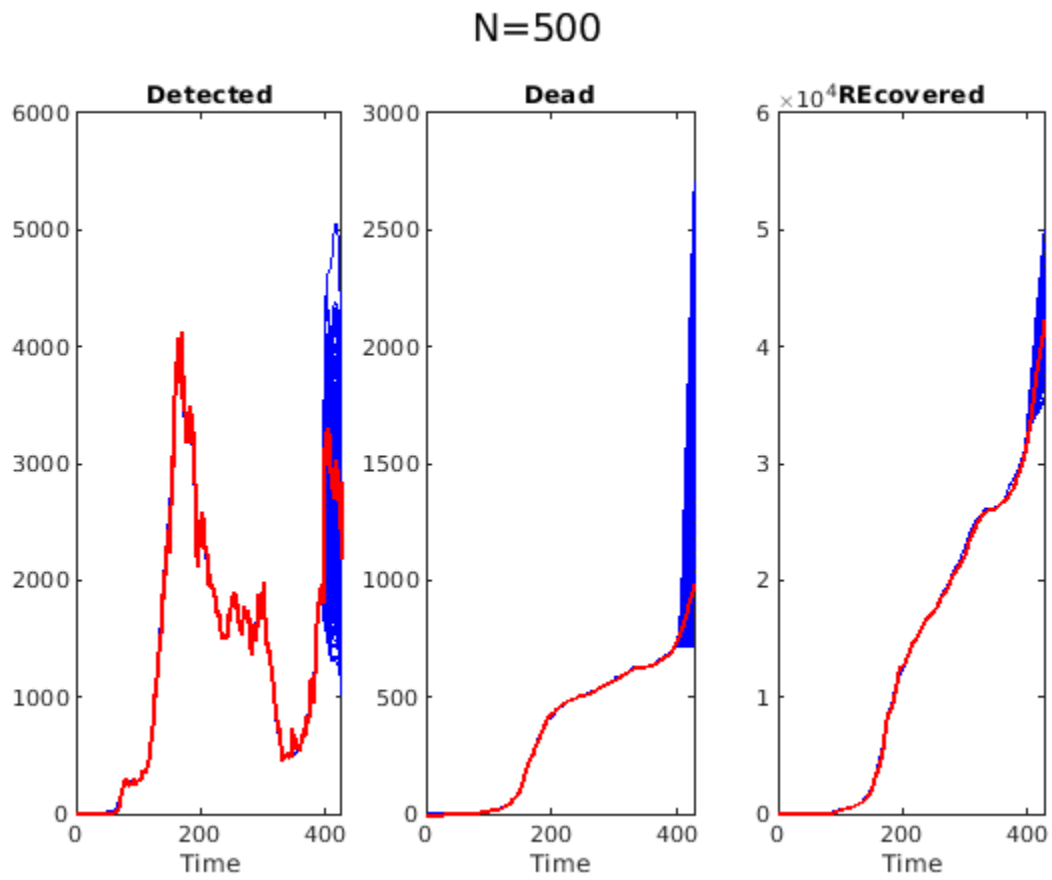
12.3. Identifiability analysis







12.4. Uncertainty analysis



Chapter 13. Extension number13

13.1. Basic information

The extension to be validated consists of the time series from the data428 to the 449. The status of the validation is: COMPLETED.

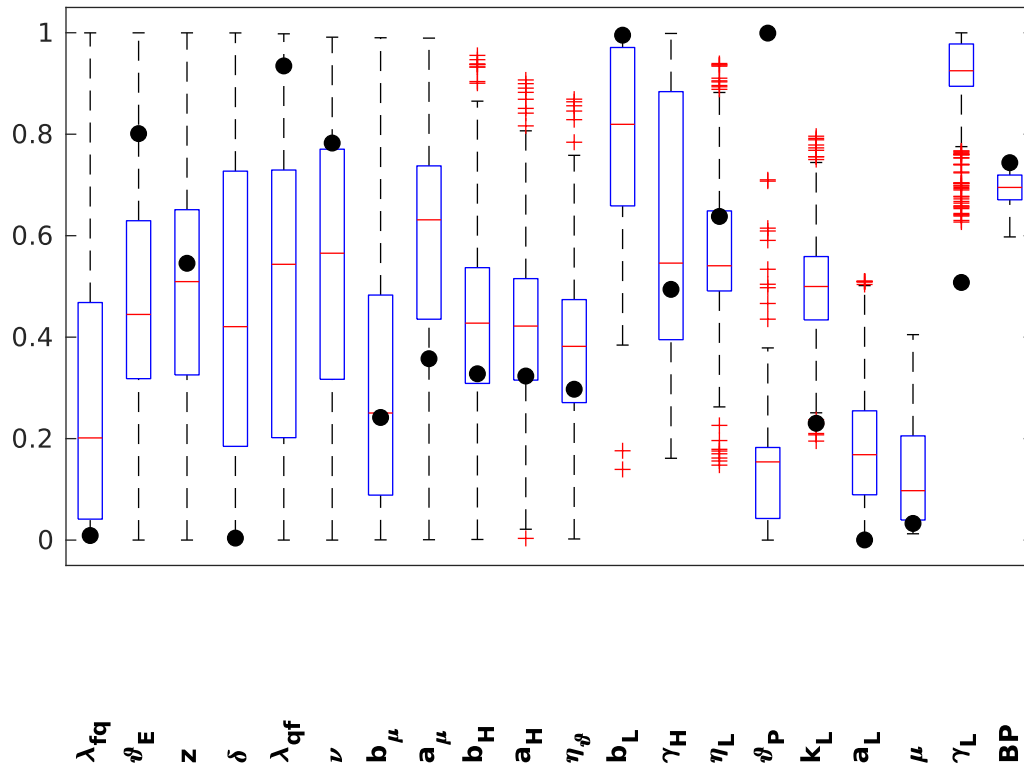
The number of estimations needed to perform the validation was1000.

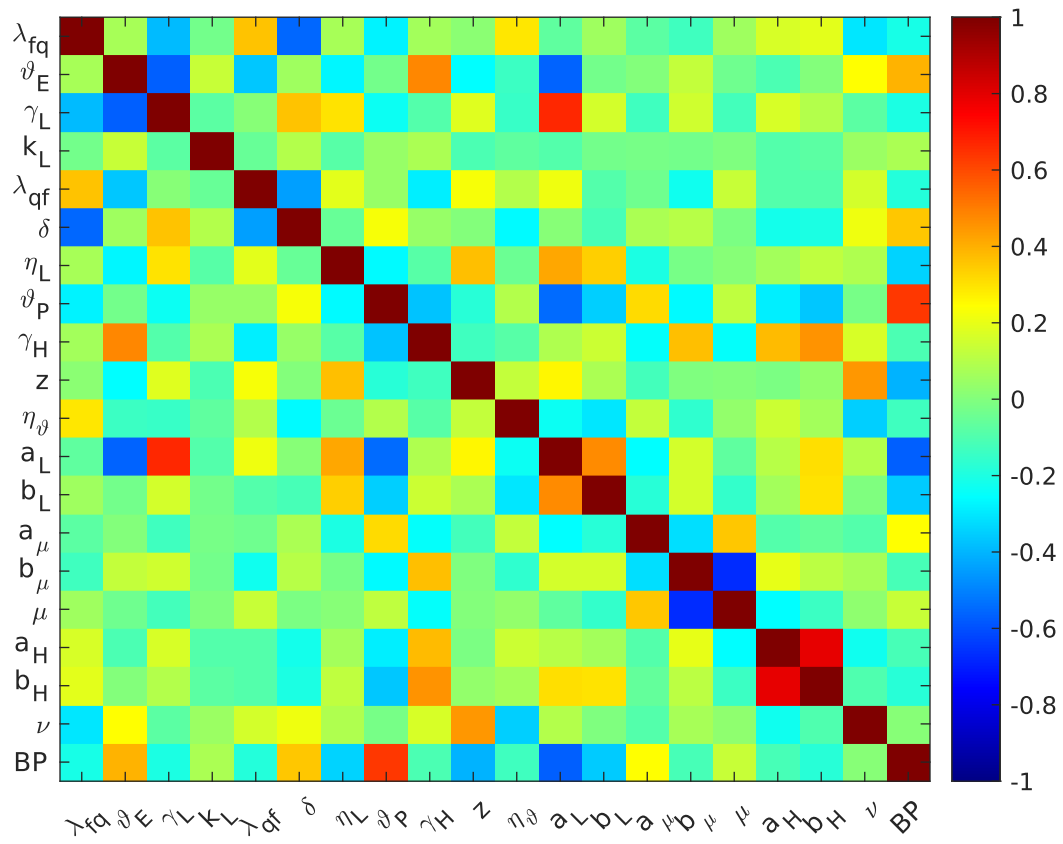
13.2. Estimated parameters with their intervals

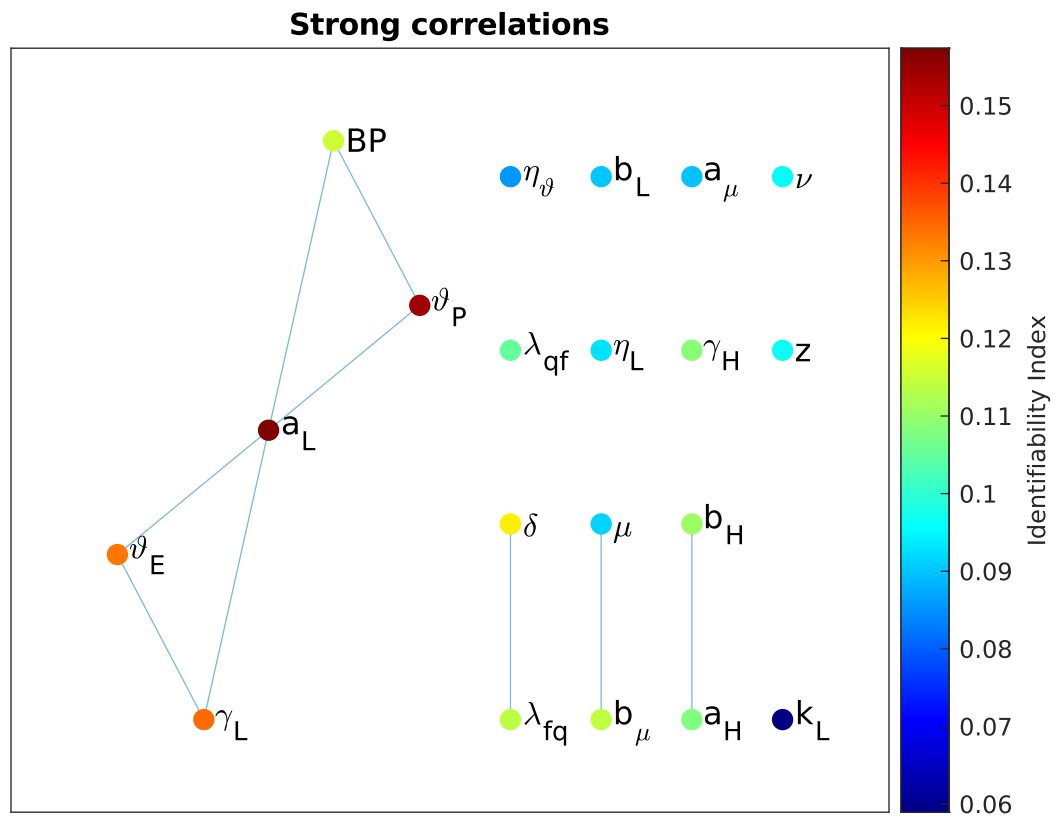
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.1674'	'0.2354'	'0.2014'	'0.009'	'0.1137'
ϑ_E	'0.4097'	'0.4798'	'0.4448'	'0.8012'	'0.1333'
γ_L	'0.8922'	'0.958'	'0.9251'	'0.5078'	'0.1344'
k_L	'5.3287'	'5.6684'	'5.4985'	'3.0721'	'0.0589'
λ_{qf}	'0.5046'	'0.5825'	'0.5436'	'0.9346'	'0.1053'
δ	'0.0568'	'0.0694'	'0.0631'	'0.0006'	'0.1219'
η_L	'0.5146'	'0.5668'	'0.5407'	'0.6379'	'0.093'
ϑ_P	'0.1082'	'0.2001'	'0.1541'	'0.9993'	'0.1543'
γ_H	'0.511'	'0.5808'	'0.5459'	'0.4942'	'0.1089'
z	'14.2446'	'16.3238'	'15.2842'	'16.3676'	'0.0968'
η_{ϑ}	'0.3573'	'0.4064'	'0.3819'	'0.2973'	'0.0857'
a_L	'3.1093'	'3.6042'	'3.3568'	'1.0043'	'0.1574'
b_L	'12.1495'	'12.7962'	'12.4728'	'14.9327'	'0.0904'
a_{μ}	'9.4448'	'10.2304'	'9.8376'	'6.0057'	'0.0899'
b_{μ}	'4.0257'	'4.9878'	'4.5067'	'4.3839'	'0.1142'
μ	'0.0759'	'0.1189'	'0.0974'	'0.0329'	'0.0913'
a_H	'6.5424'	'7.2691'	'6.9057'	'5.5272'	'0.108'
b_H	'6.6039'	'7.3693'	'6.9866'	'5.5897'	'0.1108'
ν	'264.2668'	'301.1789'	'282.7229'	'391.2841'	'0.0961'
BP	'426.2592'	'426.7407'	'426.5'	'428.5'	'0.1152'

13.3. Identifiability analysis

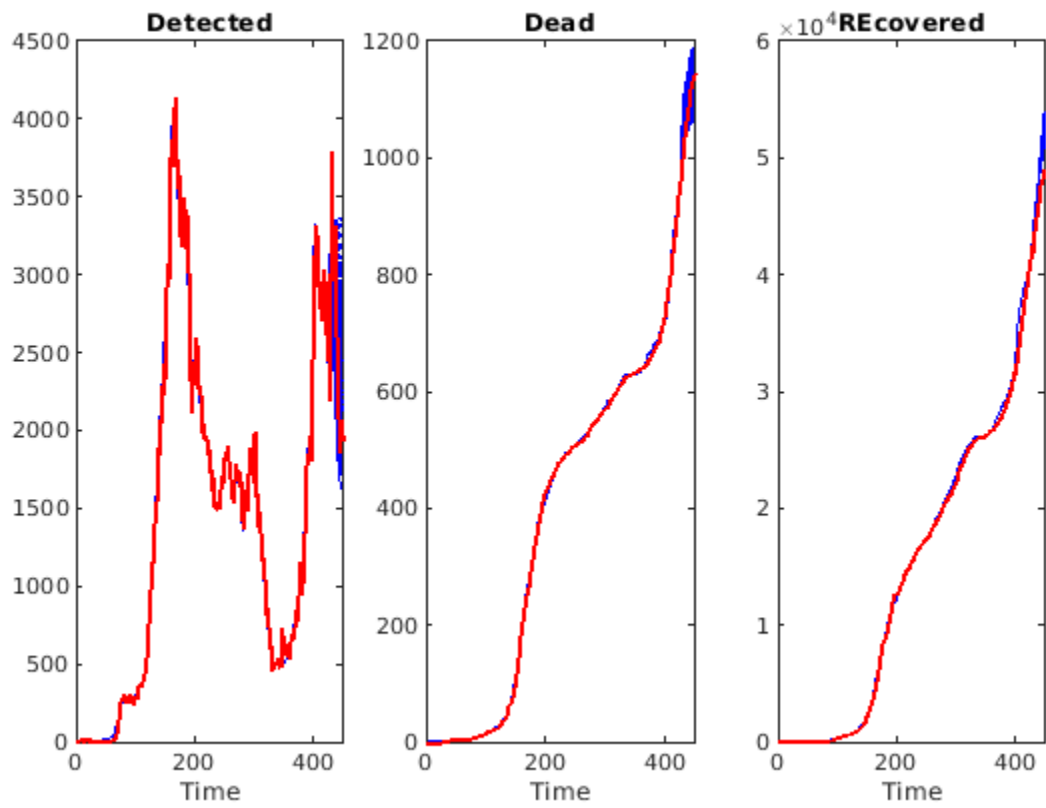






13.4. Uncertainty analysis

N=500



Chapter 14. Extension number14

14.1. Basic information

The extension to be validated consists of the time series from the data449 to the 492. The status of the validation is: COMPLETED.

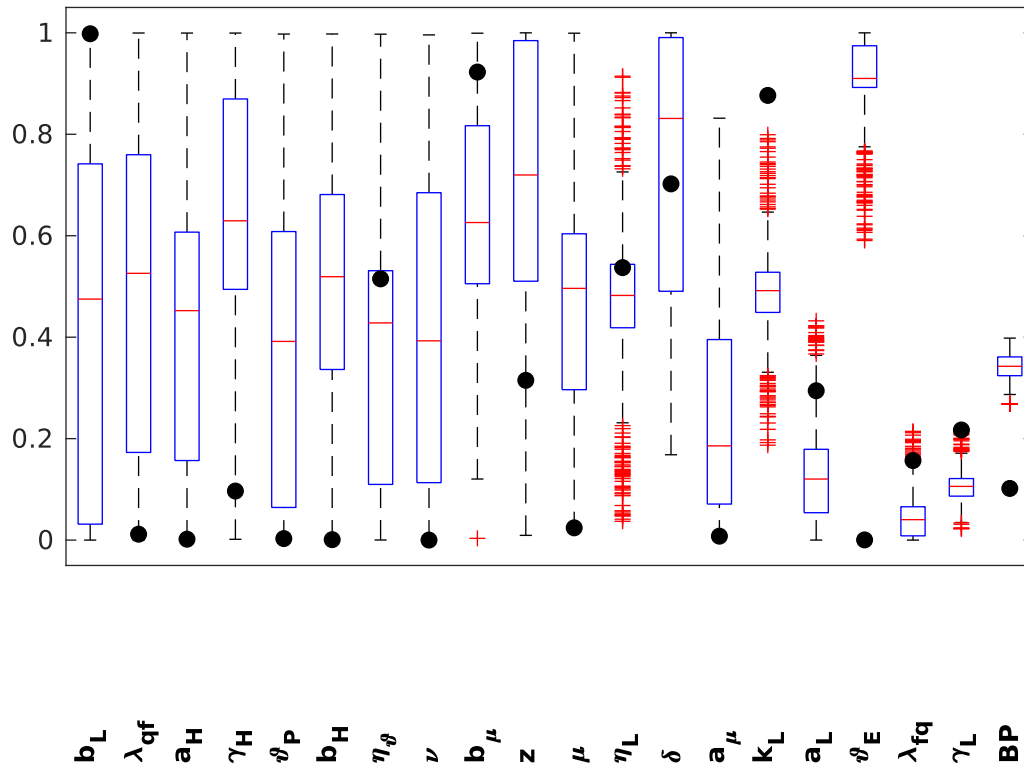
The number of estimations needed to perform the validation was1000.

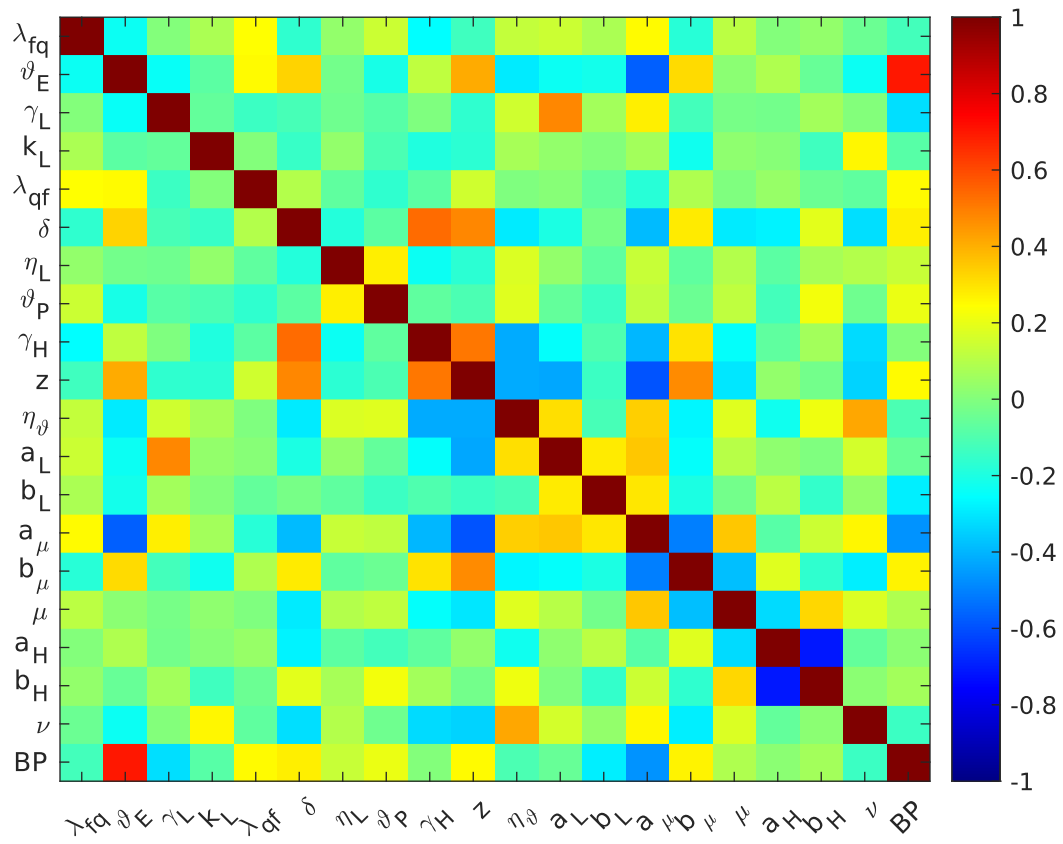
14.2. Estimated parameters with their intervals

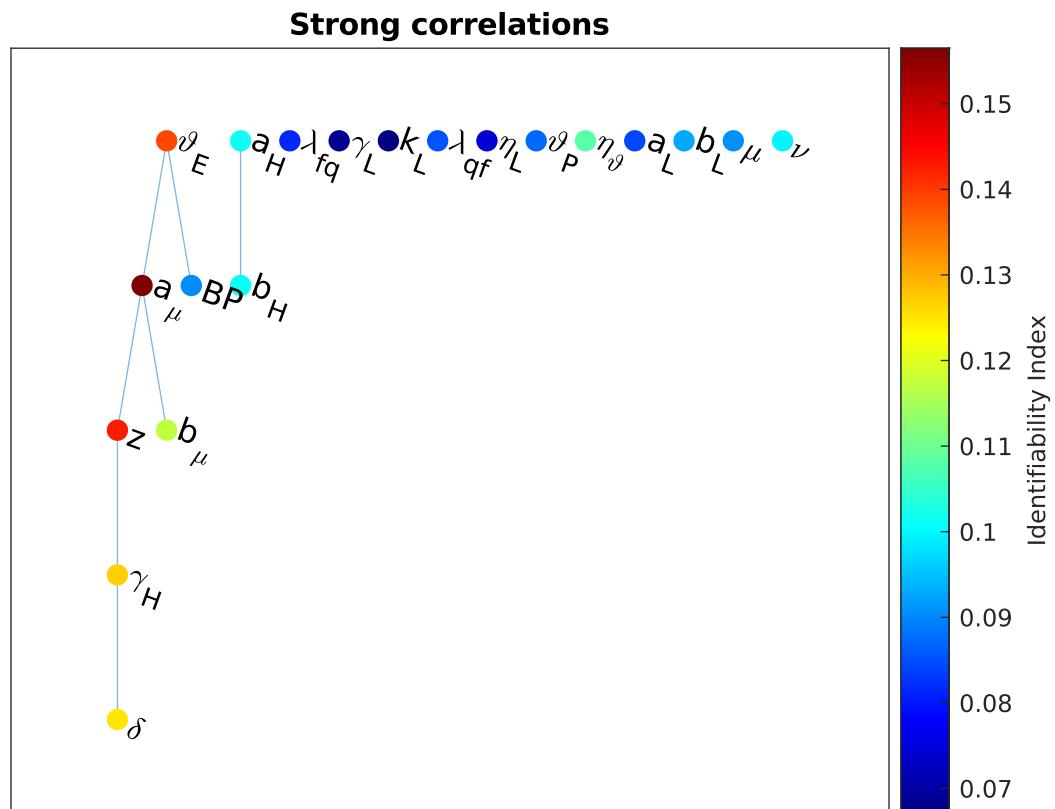
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0136'	'0.0672'	'0.0404'	'0.1568'	'0.0817'
ϑ_E	'0.8784'	'0.9411'	'0.9097'	'0.0004'	'0.1389'
γ_L	'0.0917'	'0.1201'	'0.1059'	'0.2171'	'0.0689'
k_L	'5.2437'	'5.6079'	'5.4258'	'8.8897'	'0.0672'
λ_{qf}	'0.4895'	'0.5623'	'0.5259'	'0.0116'	'0.0856'
δ	'0.1203'	'0.1291'	'0.1247'	'0.1053'	'0.125'
η_L	'0.458'	'0.5065'	'0.4823'	'0.5371'	'0.0745'
ϑ_P	'0.3603'	'0.423'	'0.3917'	'0.003'	'0.0872'
γ_H	'0.6043'	'0.6545'	'0.6294'	'0.0967'	'0.127'
z	'20.7976'	'22.3902'	'21.5939'	'9.4491'	'0.1427'
η_{ϑ}	'0.3988'	'0.4575'	'0.4281'	'0.515'	'0.1082'
a_L	'2.4535'	'2.9184'	'2.686'	'5.1218'	'0.0844'
b_L	'7.1143'	'8.1879'	'7.6511'	'14.974'	'0.093'
a_{μ}	'3.2964'	'3.9126'	'3.6045'	'1.1087'	'0.1565'
b_{μ}	'9.4516'	'10.0764'	'9.764'	'13.9178'	'0.1171'
μ	'0.4704'	'0.522'	'0.4962'	'0.0242'	'0.0908'
a_H	'6.8726'	'7.7927'	'7.3326'	'1.0248'	'0.1015'
b_H	'7.85'	'8.6894'	'8.2697'	'1.0124'	'0.1012'
ν	'179.494'	'213.3179'	'196.406'	'0.0195'	'0.0998'
BP	'446.246'	'446.754'	'446.5'	'433.5'	'0.0903'

14.3. Identifiability analysis

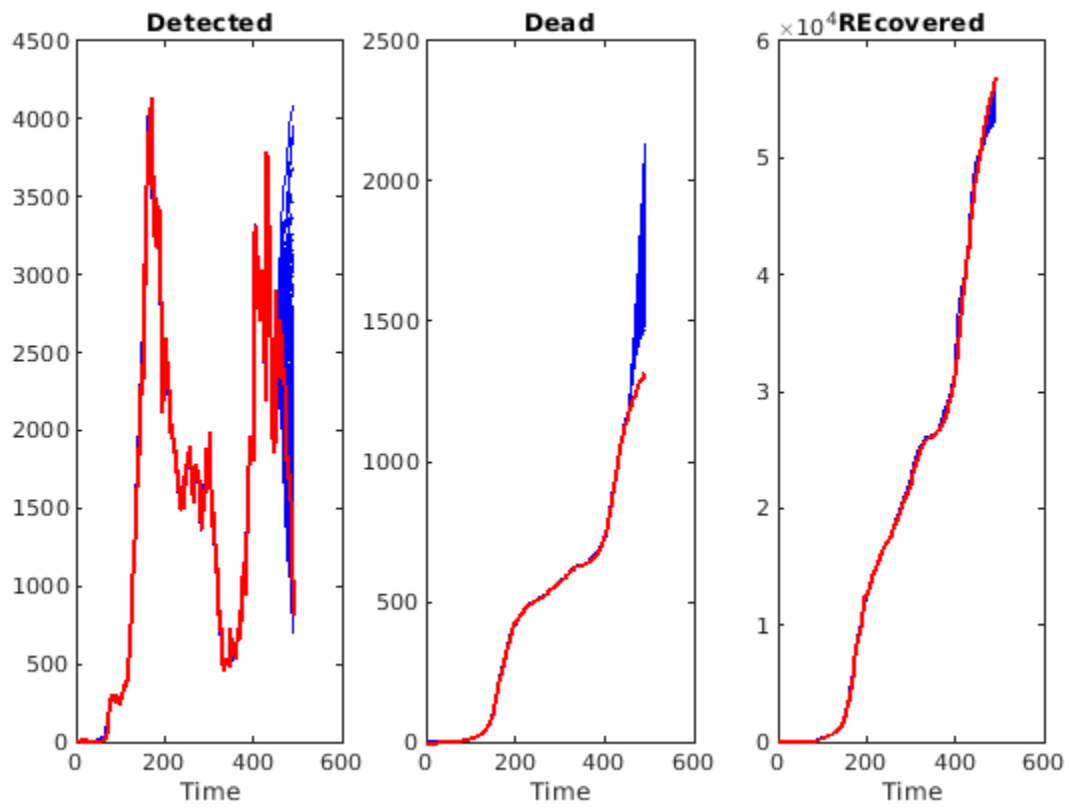






14.4. Uncertainty analysis

N=500



Chapter 15. Extension number15

15.1. Basic information

The extension to be validated consists of the time series from the data492 to the 591. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

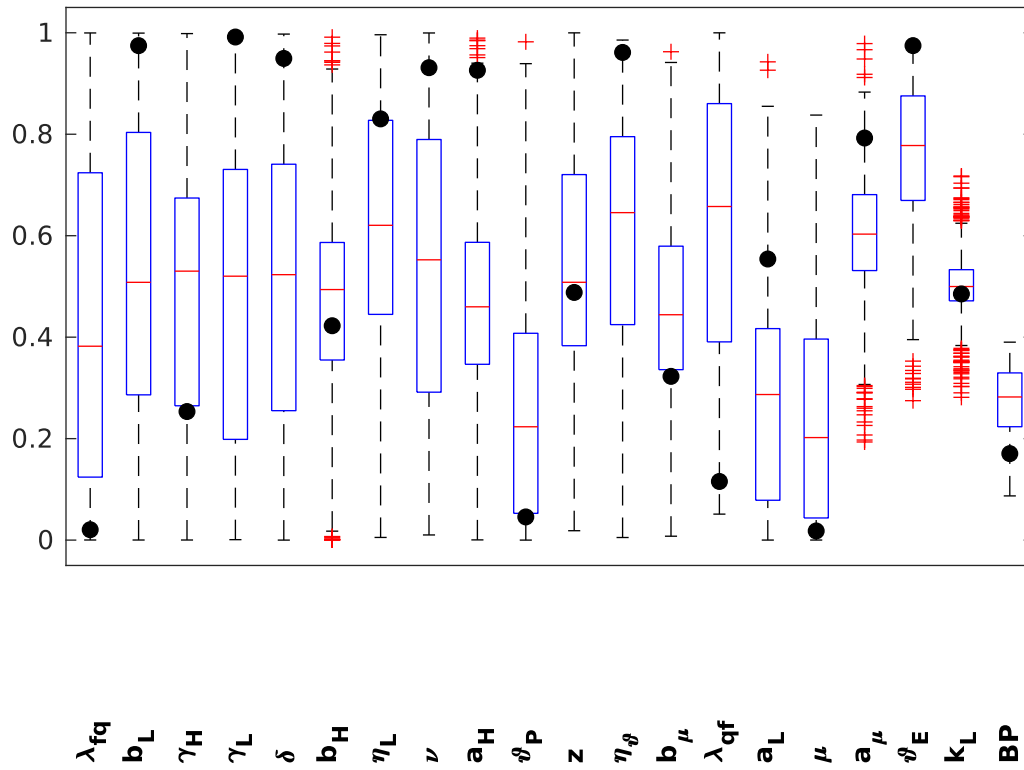
15.2. Estimated parameters with their intervals

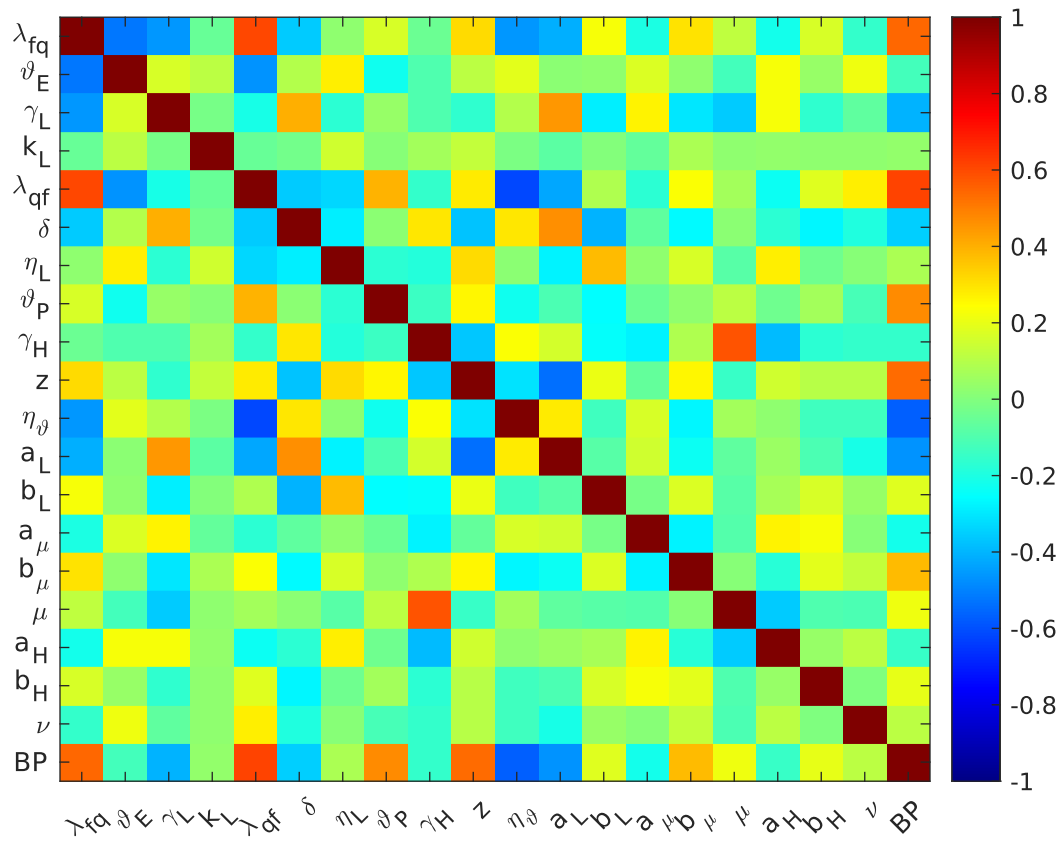
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

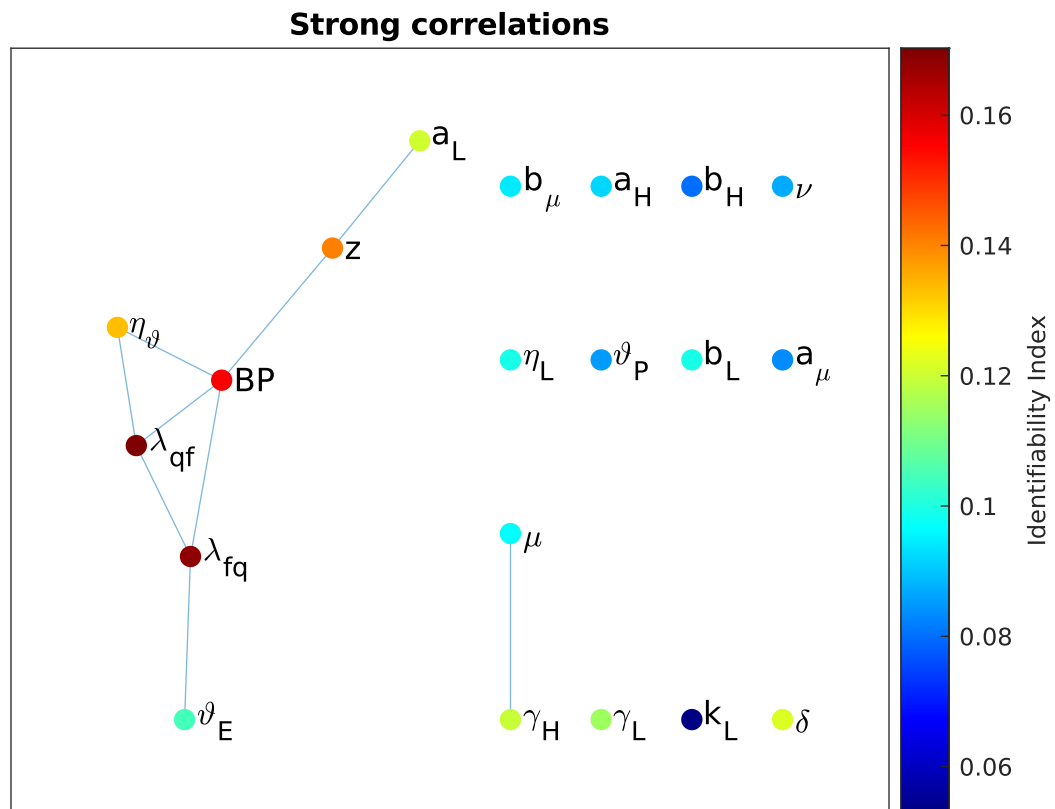
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0189'	'0.0268'	'0.3822'	'0.0205'	'0.1681'
ϑ_E	'0.9711'	'0.9774'	'0.7776'	'0.9747'	'0.1045'
γ_L	'0.6412'	'1'	'0.5202'	'0.9916'	'0.1149'
k_L	'2.2872'	'9.2968'	'5.4983'	'5.3671'	'0.053'
λ_{qf}	'0.1064'	'0.1212'	'0.6575'	'0.1156'	'0.1703'
δ	'0.0536'	'0.15'	'0.0785'	'0.1424'	'0.1221'
η_L	'0.7656'	'0.943'	'0.6205'	'0.8303'	'0.0994'
ϑ_P	'0.0322'	'0.0507'	'0.2234'	'0.0457'	'0.0855'
γ_H	'0.064'	'0.5035'	'0.5301'	'0.2534'	'0.1198'
z	'12.4064'	'14.9549'	'15.2452'	'14.6451'	'0.1408'
η_{ϑ}	'0.8304'	'0.9629'	'0.6455'	'0.9612'	'0.1332'
a_L	'6.8407'	'8.8989'	'5.0172'	'8.7568'	'0.1204'
b_L	'10.5828'	'14.7385'	'8.1135'	'14.6449'	'0.0996'
a_{μ}	'2.4202'	'14.371'	'9.4393'	'12.0957'	'0.0836'
b_{μ}	'2.0976'	'15'	'7.2204'	'5.5185'	'0.0942'
μ	'0.0014'	'0.0365'	'0.2035'	'0.018'	'0.0968'
a_H	'3.2644'	'15'	'7.4393'	'13.9646'	'0.0921'
b_H	'1.2993'	'12.97'	'7.9177'	'6.9156'	'0.0802'
ν	'383.6297'	'477.5838'	'276.2298'	'465.594'	'0.0873'
BP	'467.8376'	'478.948'	'486.1586'	'471.5'	'0.1562'

15.3. Identifiability analysis

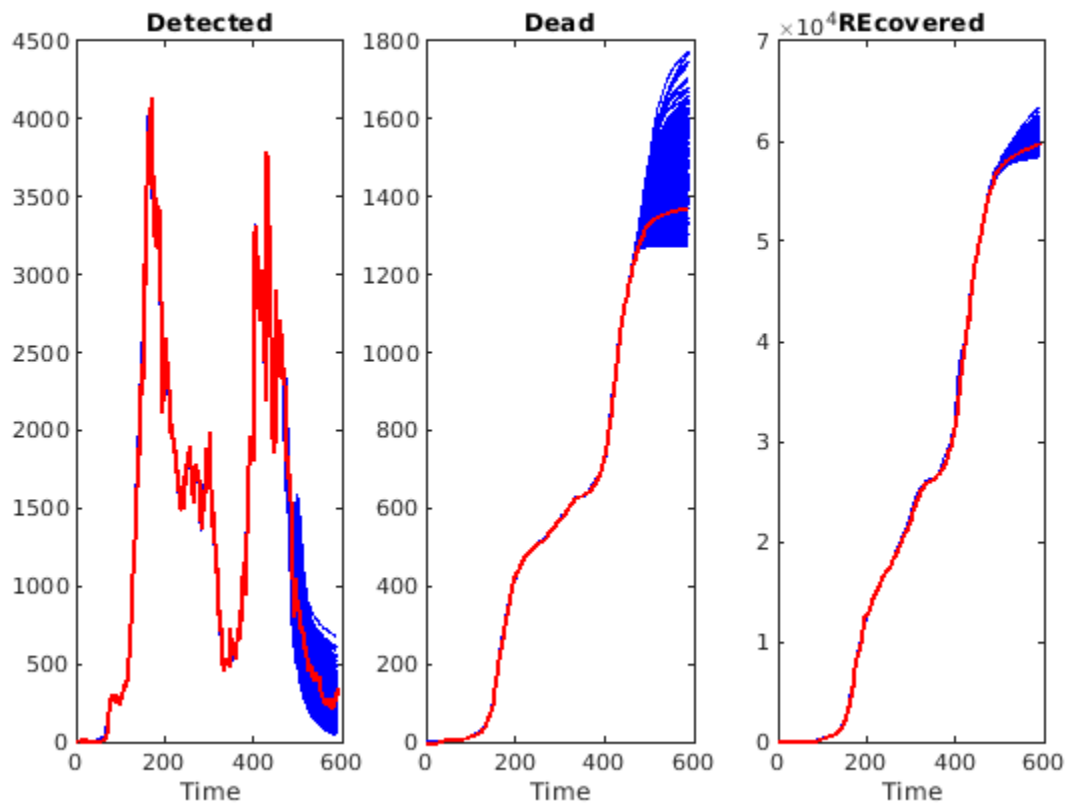






15.4. Uncertainty analysis

N=500



Chapter 16. Extension number16

16.1. Basic information

The extension to be validated consists of the time series from the data591 to the 712. The status of the validation is: COMPLETED.

The number of estimations needed to perform the validation was1000.

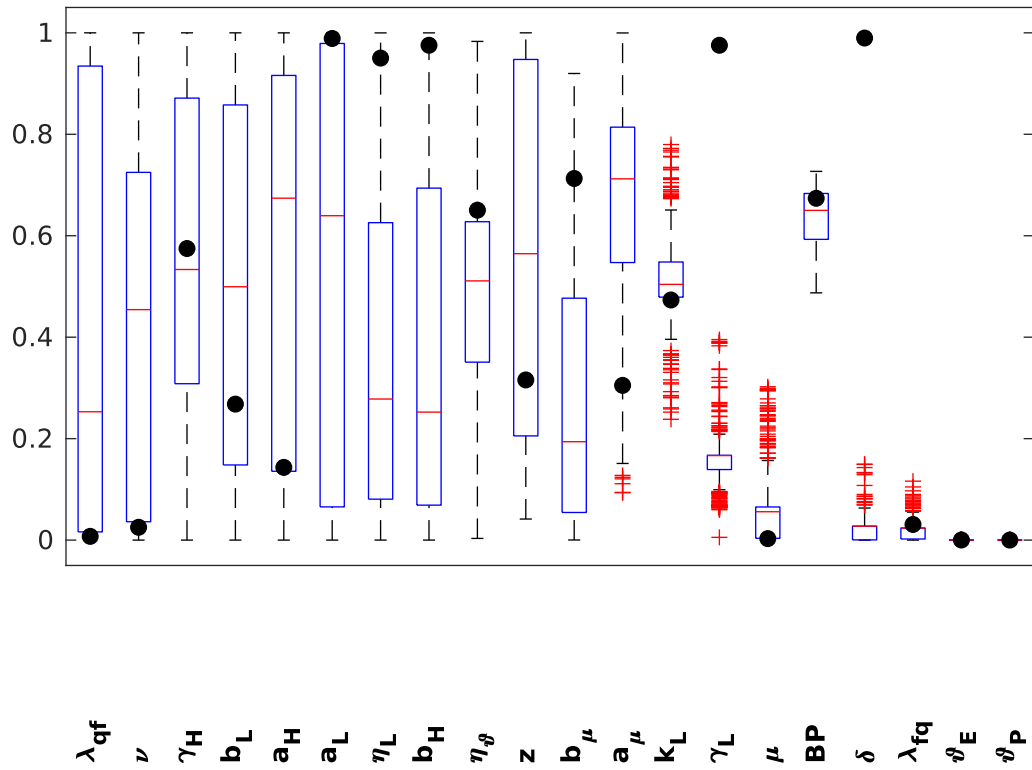
16.2. Estimated parameters with their intervals

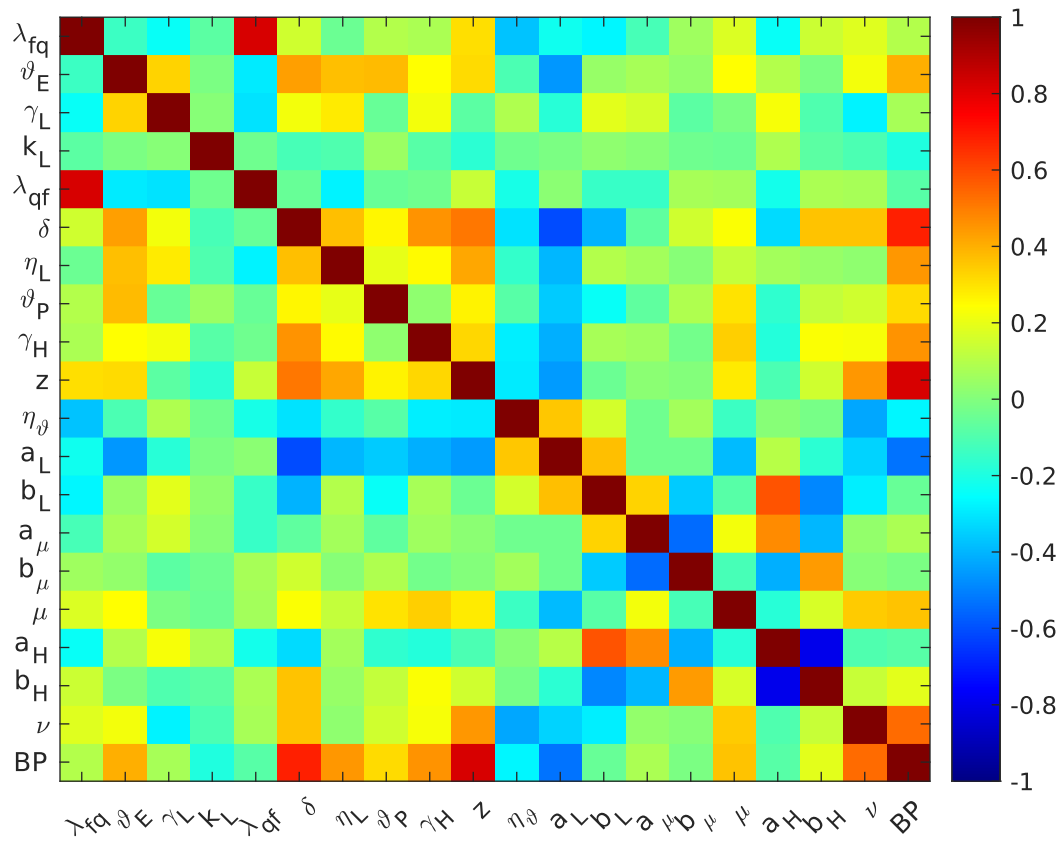
It was necessary to fix 0 parameters of 10 that could be fixed to complete validation.

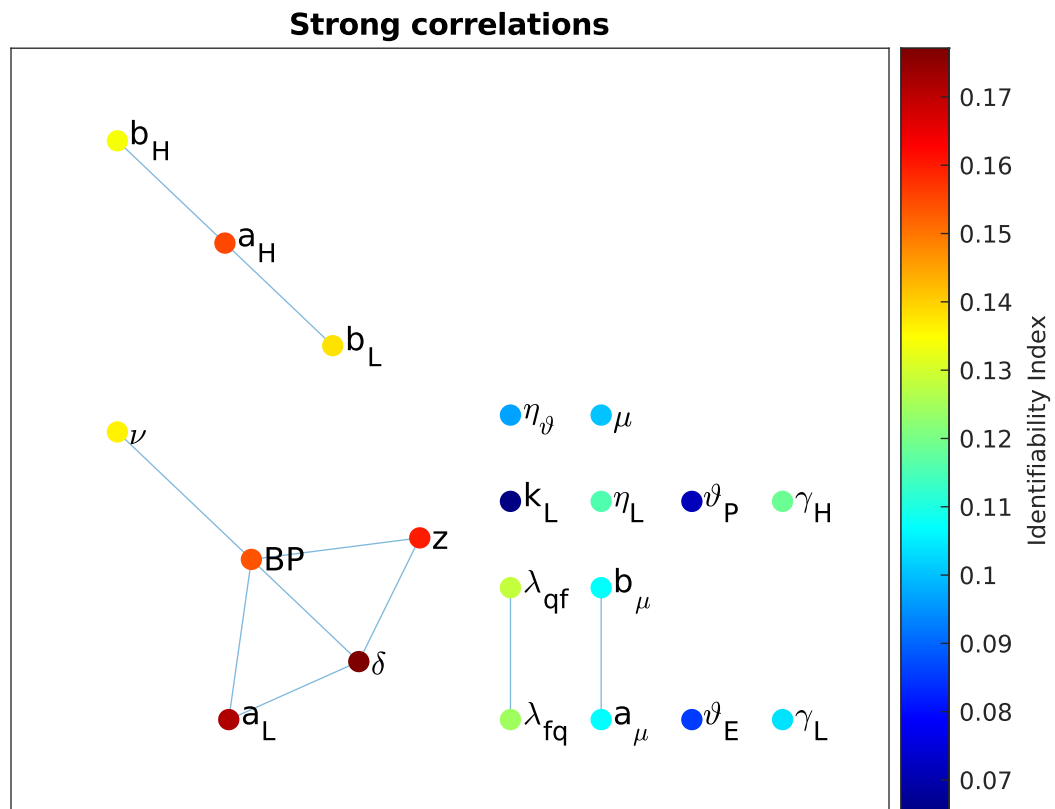
Due to a deviation from the median the CSB method was activated to obtain the parameter intervals.

	Rango		Nominal	Mejor	Index
λ_{fq}	'0.0292'	'0.0351'	'0.0238'	'0.0308'	'0.1244'
ϑ_E	'0'	'0.0004'	'0.0003'	'0.0002'	'0.0855'
γ_L	'0.5356'	'1'	'0.1666'	'0.9755'	'0.1039'
k_L	'1.621'	'10'	'5.5371'	'5.26'	'0.0653'
λ_{qf}	'0.0059'	'0.0124'	'0.253'	'0.0074'	'0.1283'
δ	'0.0989'	'0.15'	'0.0041'	'0.1485'	'0.1771'
η_L	'0.5013'	'0.9797'	'0.2781'	'0.9502'	'0.1157'
ϑ_P	'0.0001'	'0.0001'	'0.0001'	'0.0001'	'0.0715'
γ_H	'0.3925'	'0.9291'	'0.5334'	'0.5748'	'0.1187'
z	'9.0093'	'11.3455'	'16.9375'	'9.4715'	'0.1599'
η_{ϑ}	'0.6176'	'0.6927'	'0.511'	'0.6504'	'0.0968'
a_L	'8.4256'	'15'	'9.9526'	'14.8439'	'0.1717'
b_L	'3.2746'	'9.3914'	'7.9924'	'4.7529'	'0.1379'
a_{μ}	'1.35'	'13.1764'	'10.9703'	'5.2706'	'0.107'
b_{μ}	'1.8243'	'13.2772'	'3.7151'	'10.9804'	'0.1075'
μ	'0.0005'	'0.005'	'0.0559'	'0.0029'	'0.1006'
a_H	'2.8879'	'4.3797'	'10.4367'	'3.0074'	'0.1551'
b_H	'8.0932'	'15'	'4.5326'	'14.6571'	'0.1343'
ν	'9.8131'	'15.6714'	'227.1688'	'12.6289'	'0.1361'
BP	'633.2738'	'635.405'	'628.5'	'633.5'	'0.1538'

16.3. Identifiability analysis







16.4. Uncertainty analysis

N=500

