# approximate_bayesian_computation

## Parameters

cm_name: abc_90_s1
dataframe_in: data_missing_90
description: Approximate Bayesian Computation for Time Series
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: approximate_bayesian_computation
name: approximate_bayesian_computation
parameters:
  algorithm: pydream
  decision_variables:
    keys:
    - max_keys
  decision_variables_names:
  - graph_structure
  epsilons:
  - 1
  ground_truth_topology:
    keys:
    - max_keys
  initial_points: 100
  n_chains: 3
  n_draws: 15000
  n_iterations: 100
  nfe: 15000
  num_pool: 1
  population_size: 100
  seed: 1
report_parameters: {}
running_time: 213671.08933329582
type: calibrationmodel
version: 1.0.0

## Results

Summary CalibrationModel with solutions:

| | graph_structure | Distance |
|---|---|---|
| 0 | 1.676736e+04 | 103.315849 |
| 1 | 0.000000e+00 | 95.014947 |
| 2 | 0.000000e+00 | 95.084133 |
| 3 | 1.598822e+04 | 94.620677 |
| 4 | 1.598822e+04 | 92.475085 |
| 5 | 1.598822e+04 | 93.295638 |
| 6 | 1.598822e+04 | 89.398215 |
| 7 | 0.000000e+00 | 89.786136 |
| 8 | 0.000000e+00 | 86.411816 |
| 9 | 1.624345e-12 | 84.310052 |
| 10 | 3.248691e-12 | 80.975131 |
| 11 | 2.276053e-12 | 84.077358 |
| 12 | 1.303415e-12 | 81.713832 |

13 3.307767e-13 78.359089
14 0.000000e+00 121.897633
15 0.000000e+00 103.851658
16 0.000000e+00 102.345733
17 0.000000e+00 97.610358
18 0.000000e+00 94.415526
19 1.598822e+04 94.253377
20 1.598822e+04 91.061028
21 1.598822e+04 95.251500
22 1.598822e+04 95.392456
23 0.000000e+00 89.213308
24 0.000000e+00 88.458942
25 0.000000e+00 85.789292
26 1.624345e-12 83.483950
27 1.624345e-12 80.909892
28 6.517074e-13 84.077358
29 0.000000e+00 81.713832
30 0.000000e+00 78.359089
31 1.598822e+04 83.465405
32 1.598822e+04 82.464286
33 1.598822e+04 84.445138
34 1.598822e+04 82.025142
35 1.598822e+04 81.004644
36 1.598822e+04 80.459940
37 1.598822e+04 81.237774
38 1.598822e+04 80.616170
39 1.598822e+04 79.676603
40 1.598822e+04 78.099662
41 1.598822e+04 78.779854
42 1.598822e+04 77.283529
43 1.598822e+04 76.076133
44 1.598822e+04 76.580975
45 1.598822e+04 78.676989
46 1.598822e+04 78.535990
47 1.598822e+04 74.985614
48 1.598822e+04 77.275865
49 1.598822e+04 73.697108
with the most optimal solution:
graph_structure Distance round
0 15988.217867 73.697108 15988.0
with an acceptance percentage of 0.05336535254486025%

# approximate_bayesian_computation

## Parameters

cm_name: abc_90_s6
dataframe_in: data_missing_90
description: Approximate Bayesian Computation for Time Series
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: approximate_bayesian_computation
name: approximate_bayesian_computation
parameters:
  algorithm: pydream
  decision_variables:
    keys:
    - max_keys
  decision_variables_names:
  - graph_structure
  epsilons:
  - 1
  ground_truth_topology:
    keys:
    - max_keys
  initial_points: 100
  n_chains: 3
  n_draws: 15000
  n_iterations: 100
  nfe: 15000
  num_pool: 1
  population_size: 100
  seed: 6
report_parameters: {}
running_time: 183633.69066500664
type: calibrationmodel
version: 1.0.0

## Results

Summary CalibrationModel with solutions:

| | graph_structure | Distance |
|---|---|---|
| 0 | 17525.218903 | 124.255701 |
| 1 | 17525.218903 | 118.954248 |
| 2 | 17525.218903 | 116.337680 |
| 3 | 17525.218903 | 103.642408 |
| 4 | 0.000000 | 102.035876 |
| 5 | 0.000000 | 102.835721 |
| 6 | 0.000000 | 101.686632 |
| 7 | 0.000000 | 98.862189 |
| 8 | 0.000000 | 98.375279 |
| 9 | 0.000000 | 99.829194 |
| 10 | 0.000000 | 96.295440 |
| 11 | 0.000000 | 87.590127 |
| 12 | 0.000000 | 87.718225 |

13 0.000000 87.076798
14 0.000000 83.931961
15 0.000000 83.636251
16 0.000000 83.299310
17 0.000000 82.690675
18 0.000000 81.204476
19 0.000000 81.483450
20 0.000000 80.589960
21 0.000000 79.844538
22 0.000000 85.181530
23 0.000000 87.834999
24 0.000000 84.197813
25 39999.000000 186.525297
26 39999.000000 167.538242
27 39999.000000 165.840554
28 39999.000000 168.236400
29 39999.000000 168.153175
30 0.000000 109.660238
31 0.000000 103.181235
32 0.000000 102.793640
33 0.000000 94.974005
34 0.000000 93.171495
35 0.000000 81.048888
36 0.000000 79.922664
37 0.000000 104.835069
38 0.000000 93.501940
39 0.000000 92.085990
40 0.000000 91.929342
41 0.000000 92.312432
42 0.000000 93.316728
43 0.000000 91.144472
44 0.000000 90.681563
45 0.000000 91.404025
46 0.000000 89.725523
47 0.000000 86.889316
48 0.000000 88.109959
49 0.000000 88.227907
50 0.000000 89.655243
51 0.000000 90.094397
52 0.000000 91.051888
53 0.000000 94.860590
54 0.000000 92.621625
55 0.000000 89.625786
56 0.000000 83.955038
57 0.000000 83.356512
58 0.000000 79.274796
with the most optimal solution:
graph_structure Distance round
0 0.0 79.274796 0.0
with an acceptance percentage of 0.006670669068107531 5%

# Summary

| Model Name | Model Method | Score | Difference Function | Dataframe | Duration |
|---|---|---|---|---|---|
| abc_90_s6 | approximate_bayesian_computation | 0.96 | manhattan_metrics | data_missing_90 | 183633.691 sec |
| abc_90_s1 | approximate_bayesian_computation | 0.97 | manhattan_metrics | data_missing_90 | 213671.089 sec |