

# approximate\_bayesian\_computation

## Parameters

cm\_name: abc\_0  
dataframe\_in: data\_0  
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  
    convergence\_progress: true  
    decision\_variables:  
        - Manufacturing\_Time  
    n\_chains: 3  
    n\_draws: 15000  
    objectives:  
        - Manufacturer  
        - Export\_Port  
        - Transit\_Port  
        - Import\_Port  
        - Wholesales\_Distributor  
        - Retailer\_Amsterdam  
        - Retailer\_Utrecht  
        - Retailer\_Venlo  
    ranges\_variables:  
        - - 1  
        - 10  
    seed: 15  
report\_parameters: {}  
running\_time: 81521.33469676971  
type: calibrationmodel  
version: 1.0.0

## Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	1.587817	14.768416
1	1.000000	13.772067
2	2.940960	8.492161
3	2.940960	8.492161
4	2.940960	8.492161
...	...	...
1942	2.207126	5.533317
1943	2.207126	5.533317
1944	2.207126	5.533317
1945	2.207126	5.533317
1946	2.207126	5.533317

[1947 rows x 2 columns]

Manufacturing\_Time Distance

```
[1679 rows x 2 columns]
```

[illegible]

[illegible]

## Parameters

```
cm_name: ga_epsNSGAll_0
dataframe_in: data_0
description: Genetic Algorithm for optimization of timeseries
diff_func_name: manhattan_metrics
diff_func_parameters: {}
model_method: genetic_algorithm
name: genetic_algorithm
parameters:
  algorithm: epsNSGAll
  decision_variables:
    - Manufacturing_Time
  epsilons:
    - 1
  multi_objective: false
  nfe: 15000
  objectives:
    - Manufacturer
    - Export_Port
    - Transit_Port
    - Import_Port
    - Wholesales_Distributor
    - Retailer_Amsterdam
    - Retailer_Utrecht
    - Retailer_Venlo
  population_size: 100
  ranges_variables:
    - - 1
    - 10
  seed: 15
report_parameters: {}
running_time: 83260.761241436
type: calibrationmodel
version: 1.0.0
```

# Results

## Summary CalibrationModel with solutions

Manufacturing_Time	Manufacturer	Export_Port	Transit_Port	Import_Port	Wholesales_Distributor
Retailer_Amsterdam	Retailer_Utrecht	Retailer_Venlo			
0	2.172515	2.628782	2.628782	2.628782	2.628782
2.628782	2.628782				

[illegible]

# powell\_method

## Parameters

cm\_name: powell\_0  
dataframe\_in: data\_0  
description: Powell Method for optimization of timeseries with simulation  
diff\_func\_name: manhattan\_metrics  
diff\_func\_parameters: {}  
model\_method: powell\_method  
name: powell\_method  
parameters:  
    decision\_variables:  
    - Manufacturing\_Time  
    n\_iterations: 100  
    nfe: 1500  
    objectives:  
    - Manufacturer  
    - Export\_Port  
    - Transit\_Port  
    - Import\_Port  
    - Wholesales\_Distributor  
    - Retailer\_Amsterdam  
    - Retailer\_Utrecht  
    - Retailer\_Venlo  
    ranges\_variables:  
    - - 1  
    - - 10  
    seed: 15  
report\_parameters: {}  
running\_time: 333.39557218551636  
type: calibrationmodel  
version: 1.0.0

## Results

Summary CalibrationModel with most optimal solution:

	Manufacturing_Time	Distance
0	3.126223	6.094983

# Summary

Model Name	Model Method	Score	Difference Function	Dataframe	Duration	Solution Params
powell_0	powell_method	0.93	manhattan_metrics	data_0	333.396 sec	{'Manufacturing_Time': 3.126223077692396}
ga_epsNSGAII_0	genetic_algorithm	0.96	manhattan_metrics	data_0	83260.761 sec	{'Manufacturing_Time': 2.1725146589062727}
abc_0	approximate_bayesian_computation	0.97	manhattan_metrics	data_0	81521.335 sec	{'Manufacturing_Time': 2.207126463672464}