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: 10000
  objectives:
  - Manufacturer
  - Export_Port
  - Transit_Port
  - Import_Port
  - Wholesales_Distributor
  - Retailer_Amsterdam
  - Retailer_Utrecht
  - Retailer_Venlo
  ranges_variables:
  - - 1
     - 10
  seed: 5
report_parameters: {}
running_time: 57515.88452410698
type: calibrationmodel
version: 1.0.0

Results

Summary CalibrationModel with solutions:

	Manufacturing_Time	Distance
0	2.997939	9.938220
1	1.898120	11.142209
2	1.898120	11.142209
3	1.898120	11.142209
4	1.898120	11.142209
...	...	...
3904	2.738375	8.270519
3905	2.738380	8.217112
3906	2.738350	7.823569
3907	2.738368	8.111579
3908	2.738386	7.294003

[3909 rows x 2 columns]

with the most optimal solution:

	Manufacturing_Time	Distance
0	2.738386	6.343133
1	2.738391	6.343133
2	2.738386	6.343133
3	2.738391	6.343133

with an acceptance percentage of [0.19424823410696265, 0.026942482341069628, 0.19344096871846622, 0.19424823410696265, 0.026942482341069628, 0.19344096871846622,

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0.19344096871846622]%
```

genetic_algorithm

Parameters

```
cm_name: ga_epsNSGAII_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: epsNSGAII
    decision_variables:
    - Manufacturing_Time
    epsilons:
    - 1
    multi_objective: false
    nfe: 10000
    objectives:
    - Manufacturer
    - Export_Port
    - Transit_Port
    - Import_Port
    - Wholesales_Distributor
    - Retailer_Amsterdam
    - Retailer_Utrecht
    - Retailer_Venlo
    population_size: 100
    ranges_variables:
    -   - 1
        - 10
    seed: 5
report_parameters: {}
running_time: 55242.138890028
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	2.356717	2.657994	2.657994	2.657994	2.657994	2.657994	2.657994	2.657994	2.657994

and eprogress is [7, 7, 8, 9, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 11, 11, 11, 11, 11, 11, 11, 11, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12]

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: 1000
  objectives:
  - Manufacturer
  - Export_Port
  - Transit_Port
  - Import_Port
  - Wholesales_Distributor
  - Retailer_Amsterdam
  - Retailer_Utrecht
  - Retailer_Venlo
  ranges_variables:
  - - 1
     - 10
  seed: 5
report_parameters: {}
running_time: 356.98189878463745
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	356.982 sec	{'Manufacturing_Time': 3.126223077692396}
ga_epsNSGAII_0	genetic_algorithm	0.98	manhattan_metrics	data_0	55242.139 sec	{'Manufacturing_Time': 2.3567170633106125}
abc_0	approximate_bayesian_computation	0.97	manhattan_metrics	data_0	57515.885 sec	{'Manufacturing_Time': 2.7383861145073896}