

PETRI 2020



SATODEV

SAFETY TOOLS DEVELOPMENT

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- Utils for distribution function estimator



UTILS FOR DISTRIBUTION FUNCTION ESTIMATOR

In transition

ns' - Tr1

1

Tr1

Delay

Fire

Guards

Assignments

Description

Others

Law

Advanced distribution function (Hazard rate)

Tabular of the distribution function: time, h(t), with a factor and the orde of a polynomial.

Parameter(s)

Times (in h)

h(t) (in h⁻¹)

P50% at:

Coefficient:

Order: 3

Add times up to : 0 h

Advanced...

☐ Transition with memory

Condition to keep memory true

Cancel

Help

The aim is to estimate a distribution function starting from failure rate at several time

In Utils menu

Utils

Distribution function estimator

Moca seed testing

	A	B
1	days	h(t)
2	0	8.1069E-05
3	1	8.1018E-05
4	2	8.0967E-05
5	3	8.0916E-05
6	4	8.0866E-05
7	5	8.0815E-05
8	6	8.0765E-05
9	7	8.0714E-05
10	8	8.0664E-05
11	9	8.0613E-05
12	10	8.0563E-05
13	11	8.0512E-05
14	12	8.0462E-05
15	13	8.0411E-05
16	14	8.0361E-05
17	15	8.0311E-05
18	16	8.0261E-05
19	17	8.021E-05
20	18	8.016E-05

UTILS FOR DISTRIBUTION FUNCTION ESTIMATOR

1 Fill in the table with time in hour and associated failure rate

A copy paste from excel can be used

2 $H(t)$ is calculated by integrating $h(t)$ function

3 $F(x)$ is evaluated using $1 - \exp(-H(t))$

4 A coefficient can be added or it is possible to indicate when $F(X)$ reaches 50%

5 Modification by adding time

6 Value of $h(t)$ with the different coefficient

Time when $F(x)$ exceeds 50%

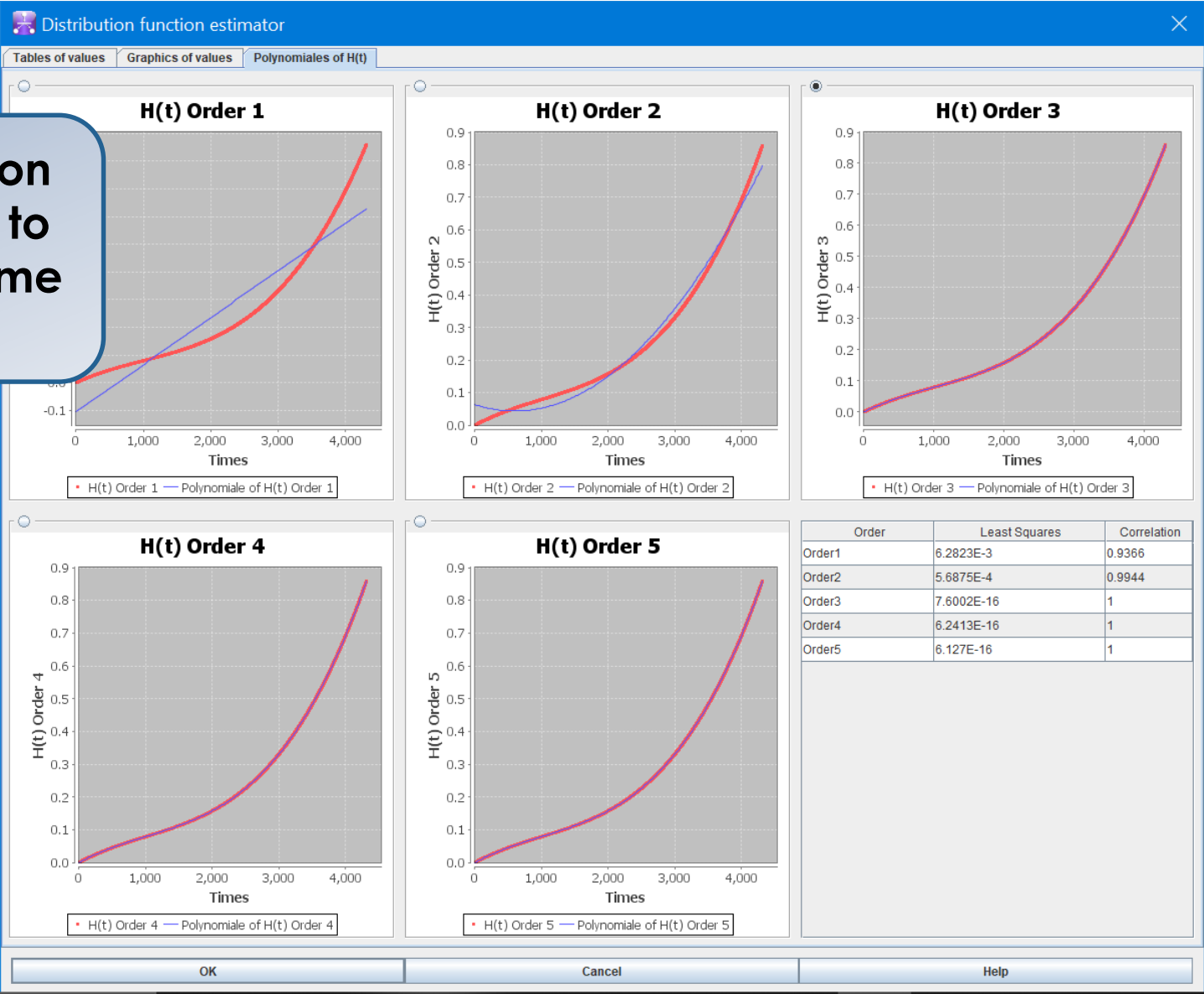
P50% at: 5.454E3 Hour(s)

OK Cancel Help



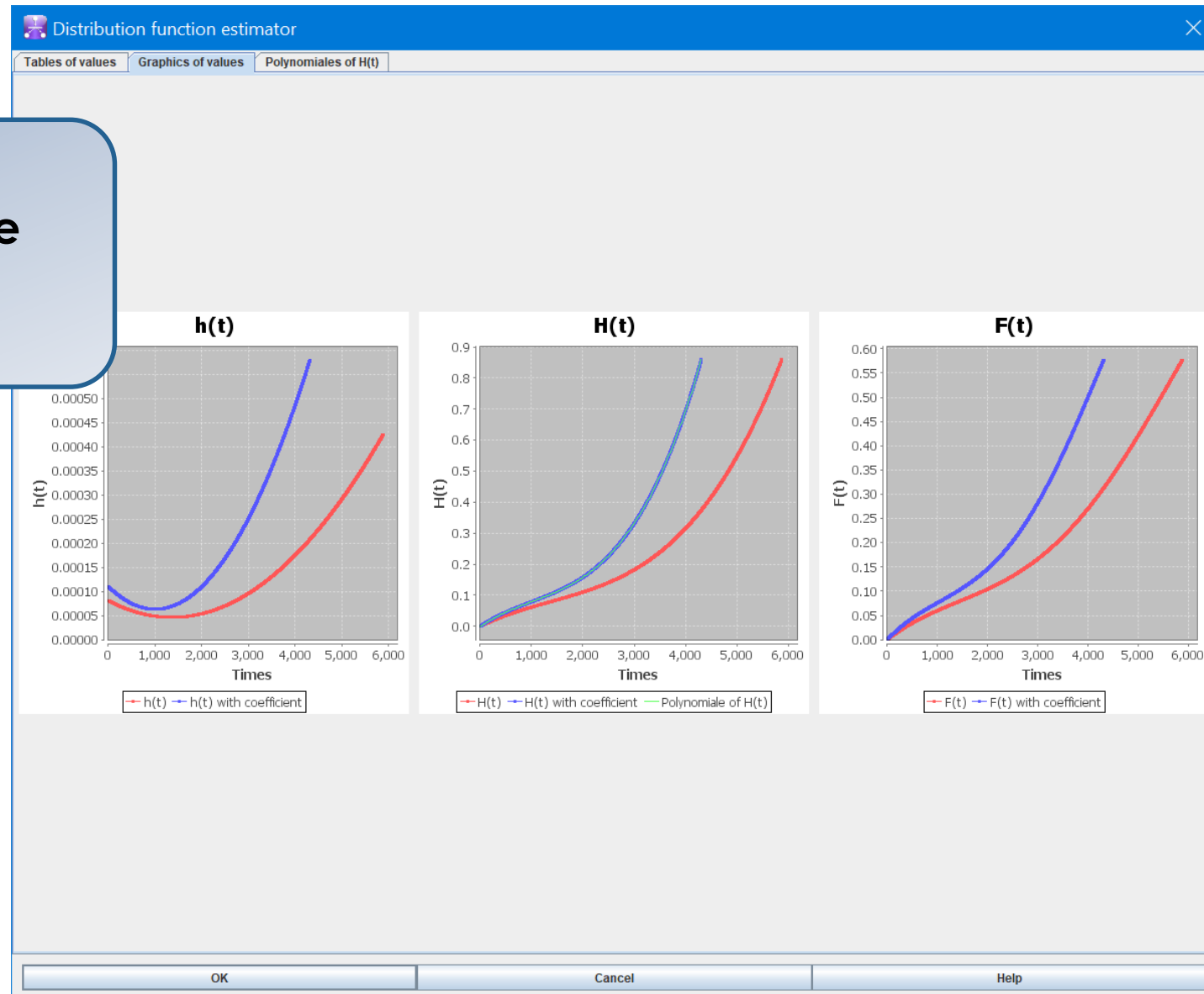
UTILS FOR DISTRIBUTION FUNCTION ESTIMATOR

Graphical representation of functions according to the order of the polynome truncature



UTILS FOR DISTRIBUTION FUNCTION ESTIMATOR

Representation of the different functions



THE END 😊



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