Block FIT3PC

The FIT3PC block approximates the input data by a three-parameter model typically used for cooling demand calculations of buildings.



FIT3PC

Name	FIT3PC
Function	bs0031
Inputs	2
Outputs	4
Parameters	0
Strings	0
Group	I

Inputs

1 Temperature T_a / °C
2 Demand / kWh

Outputs

1 Cooling base load Q_{cb} / kWh
2 Cooling change-point temperature T_c / °C
3 Slope α_c / kWh K^{-1}
4 Regression coefficient r^2

Parameters

None

Strings

None

Description

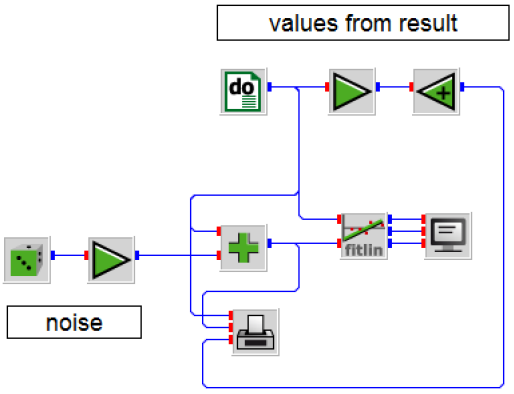
The blocks input data are approximated by the linear equation

$$Q_c = Q_{cb} + \alpha_c (T_a - T_c)^+$$

With the notation $(T_1 - T_2)^+$ where temperature differences are only accounted for if positive and zero otherwise The successors of this block are executed only at the end of the simulation run.

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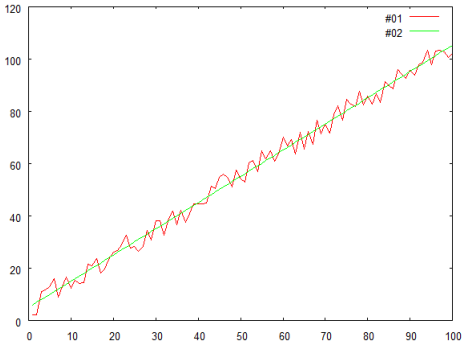
fitlin.vseit



A DO block delivers 100 clicks, i. e., counts from 1 to 100. A RAN1 block generates one uniformly distributed random number for each step multiplied by 10 by a GAIN block. A SUM block adds the DO block's output and the output of the GAIN block giving the variable to be fitted as a function of the DO block's output by the FITLIN block. The outputs a, b, and r^2 are then displayed numerically by a SCREEN block.

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4.8319  1.0039  0.9903
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Assuming that the result is already known ($a = 4.8319$ and $b = 1.0039$) the linear equation $y' = a + bx$ is calculated. A PLOT block displays the data and the fit on screen.



Remarks The FITLIN block is a typical example for an I-block: Its successors are executed (once) only when a certain condition is fullfilled—here the end of the main simulation loop. Compare this behavior with a typical example for a T-block like block FDIST, for example.