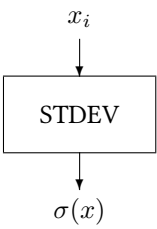


Block STDEV

The STDEV block calculates the standard deviation of its input signal over a complete simulation run.



Name	STDEV
Function	fb0021
Inputs	1 ... [50]
Outputs	1 ... [50]
Parameters	0
Strings	0
Group	I

Inputs

i Any signal x_i

Outputs

i Standard deviation σ over all x_i

Parameters

None

Strings

None

Description For the standard deviation σ of a set of numbers $x_i, i = 1 \dots N$ two slightly different definitions exist in literature.

$$\sigma = \left(\frac{1}{N-1} \sum_{i=1}^N (x_i - \bar{x})^2 \right)^{1/2}$$

and

$$\sigma = \left(\frac{1}{N} \sum_{i=1}^N (x_i - \bar{x})^2 \right)^{1/2}$$

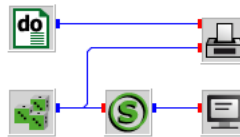
where $\bar{x}$ denotes the average

$$\bar{x} = \frac{1}{N} \sum_{i=1}^N x_i$$

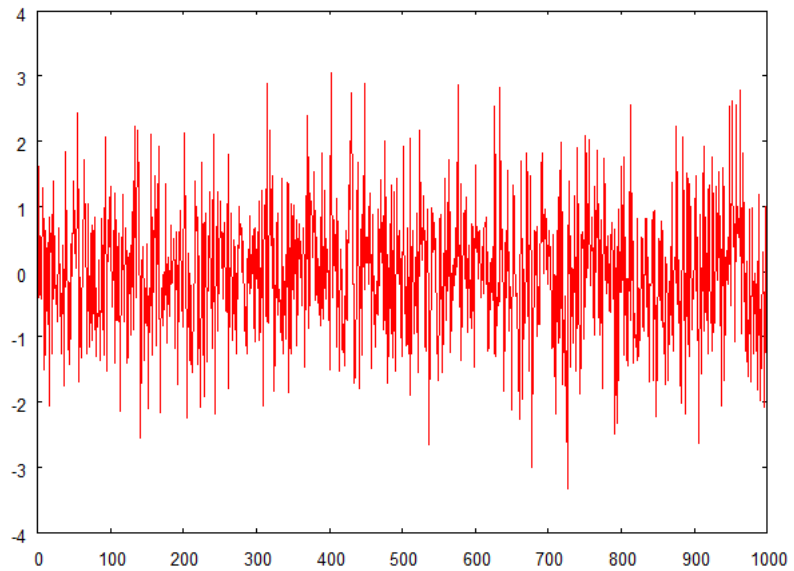
and N the number of elements in the sample.

The first equation is used by the [STDEV](#) block.

[stdev.vseit](#)



A [DO](#) block provides 1000 clicks, so that the [GASDEV](#) block generates 1000 normally distributed random numbers which are displayed by a [PLOT](#) block.



As expected, the standard deviation turns out to be close to one, as displayed by the [SCREEN](#) block.

0.10018E+01

See also Blocks [STDEVC](#) and [STDEVP](#).