

rms.xce

Attributes

mainvars: x_in x_out x_cntrl

Description

rms.xce can be used to produce the rms value of a signal **x_in**, with **x_out** as the output. It is triggered by a clock signal at **x_cntrl**. The rms value of **x_in** computed for a given period (marked by positive clock edges at **x_cntrl**) is made available at the output (**x_out**) in the following period.

AC behaviour is not implemented.

The following circuit file shows how rms.xce can be used. The output obtained is shown in Fig. 1.

```
begin_circuit

# triggering pulses:
xelement type=clock y=y x_high=1
+      t1=2m t2=8m dt1=0.001m dt2=0.001m i0=1 t0=0

# signal to be averaged:
xelement type=srcac y=x a=1 f_hz=50 t0=0

xelement type=average x_in=x x_out=x_avg x_cntrl=y
xelement type=rms      x_in=x x_out=x_rms x_cntrl=y

outvar:
+      x=xvar_of_x
+      y1=xvar_of_y1
+      x_avg=xvar_of_x_avg
+      x_rms=xvar_of_x_rms
end_circuit

begin_solve
  solve_type=trns
  begin_output
    filename=xtest.dat
    variables: x y x_avg x_rms
  end_output
```

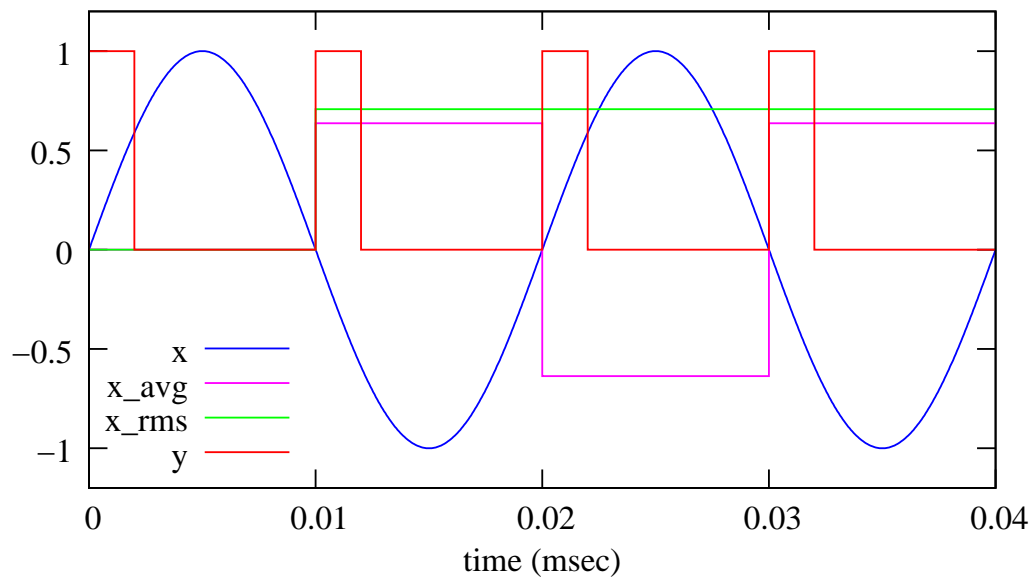


Figure 1: Waveforms obtained with `rms.xce`.

```

method: itmax_trns=100000
+   forward_euler=yes
+   t_start=0 t_end=60m delt_const_x=0.06m delt_min_x=0.1u
+   n_wrtiterno=1000
end_solve

```