

triangle_4.xbe

Attributes

```
xbe name=triangle_4 evaluate=yes limit_tstep=yes
# triangle source with (frequency or T) and D specified
Jacobian: constant
input_vars:
output_vars: y
aux_vars:
iparms:
+ flag_frequency=0
+ flag_period=1
sparms:
rparms:
+ T=1
+ frequency=1
+ L1=-1
+ L2=1
+ D=0.5
+ t0=0
+ slope1=0
+ slope2=0
+ eps1=0
+ T1=0
+ T2=0
stparms:
igparms:
outparms: y
```

Description

triangle_4.xbe is a triangle wave source with y as its output. The parameters have the following meaning:

T: time period. This parameter applies if `flag_period` is 1.

frequency: frequency. This parameter applies if `flag_frequency` is 1.

D: the ratio $\frac{T_1}{T}$ where T_1 is the first part of the waveform (in which y goes from L_1 to L_2).

L1, L2: y goes from L_1 to L_2 in the T_1 interval and from L_2 to L_1 in the T_2 interval.

t0: An “offset” time interval by which the waveform is shifted (to the right).

The effect of the various parameters of `triangle_4.xbe` on $y(t)$ is shown in the following figures.

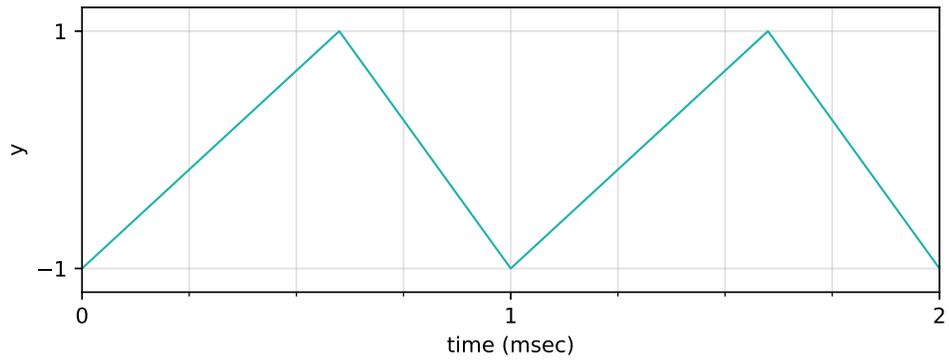


Figure 1: $y(t)$ obtained with $\text{flag_period} = 0$, $\text{flag_frequency} = 1$, $\text{frequency} = 1\text{k}$, $D = 0.6$, $L1 = -1$, $L2 = 1$, $t0 = 0$.

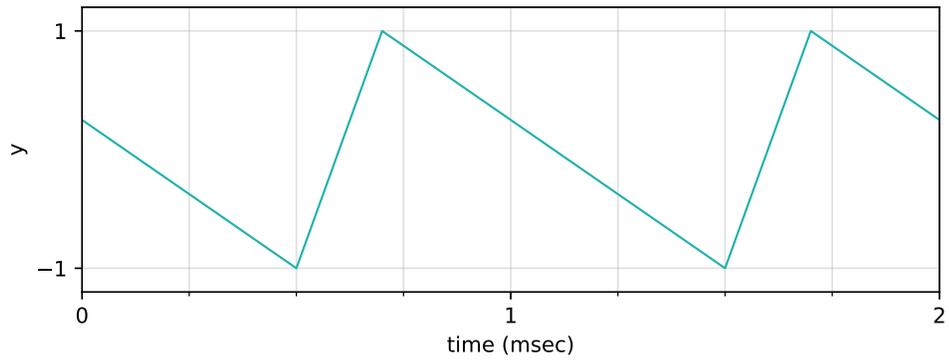


Figure 2: $y(t)$ obtained with $\text{flag_period} = 0$, $\text{flag_frequency} = 1$, $\text{frequency} = 1\text{k}$, $D = 0.2$, $L1 = -1$, $L2 = 1$, $t0 = 0.5\text{ms}$.