clock.xbe

Attributes

```
xbe name=clock evaluate=yes limit_tstep=yes
# clock source with T1, T2 specified
Jacobian: constant
input_vars:
output_vars: y
aux_vars:
iparms:
sparms:
# Note: L1 is the level in the first interval, L2 in the second.
rparms:
+   T1=1
+   T2=1
+   L1=1
+   L2=-1
+   t0=0
+   delta1=0.01
+   delta2=0.01
+   T=0
+   L0=0
+   tk1=0
+   tk2=0
+   tk3=0
+   tk4=0
+   tk5=0
+   slope1=0
+   slope2=0
+   epsl=0
stparms:
igparms:
outparms: y
```

Description

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

T1: The first part of one period. y is equal to L1 in this interval.

T2: The second part of one period. y is equal to L2 in this interval.

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

delta1: Width of the transition from the T2 phase to the T1 phase.

delta2: Width of the transition from the T1 phase to the T2 phase.

y is made available as an output variable. The effect of the various paramters of clock.xbe on $y(t)$ is shown in the following figures.
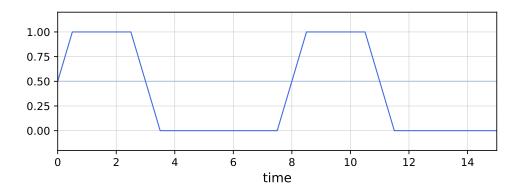
Figure 1: $y(t)$ obtained with T1 = 3, T2 = 5, L1 = 1, L2 = 0, delta1 = 1, delta2 = 1, t0 = 0.
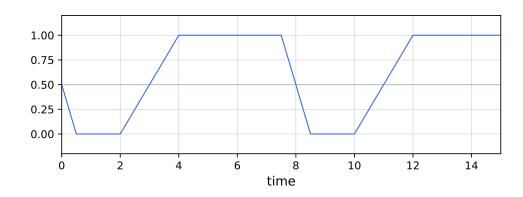

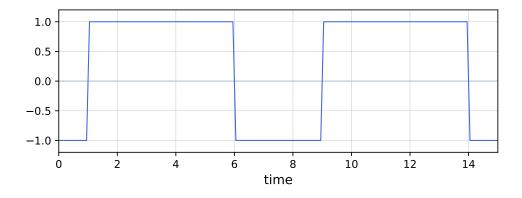Figure 2: $y(t)$ obtained with T1 = 3, T2 = 5, L1 = 0, L2 = 1, delta1 = 1, delta2 = 2, t0 = 0.

Figure 3: $y(t)$ obtained with T1 = 3, T2 = 5, L1 = −1, L2 = 1, delta1 = 0.1, delta2 = 0.1, t0 = 6.