

clock.xbe

Attributes

```
xbe name=clock evaluate=yes limit_tstep=yes
# clock source
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
+ eps1=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.

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

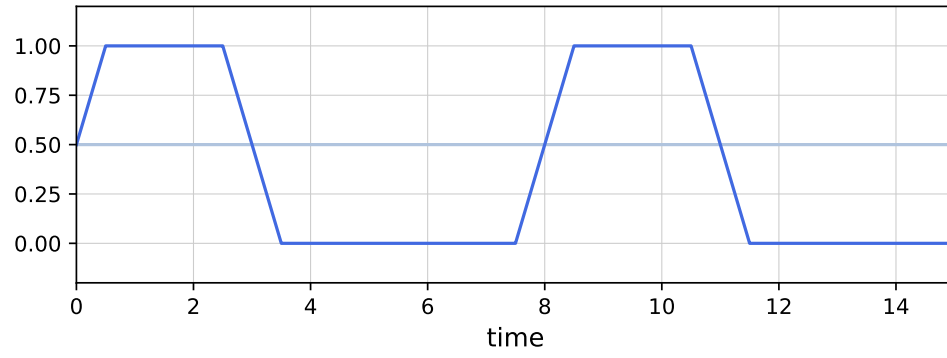


Figure 1: $y(t)$ obtained with $T1 = 3$, $T2 = 5$, $L1 = 1$, $L2 = 0$, $\delta t_1 = 1$, $\delta t_2 = 1$, $t_0 = 0$.

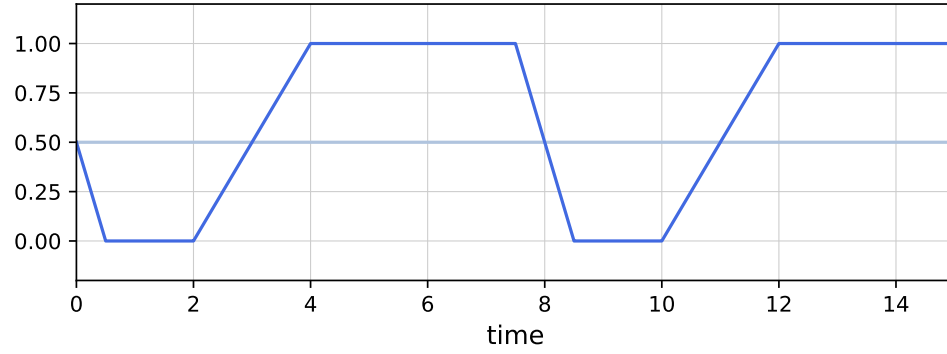


Figure 2: $y(t)$ obtained with $T1 = 3$, $T2 = 5$, $L1 = 0$, $L2 = 1$, $\delta t_1 = 1$, $\delta t_2 = 2$, $t_0 = 0$.

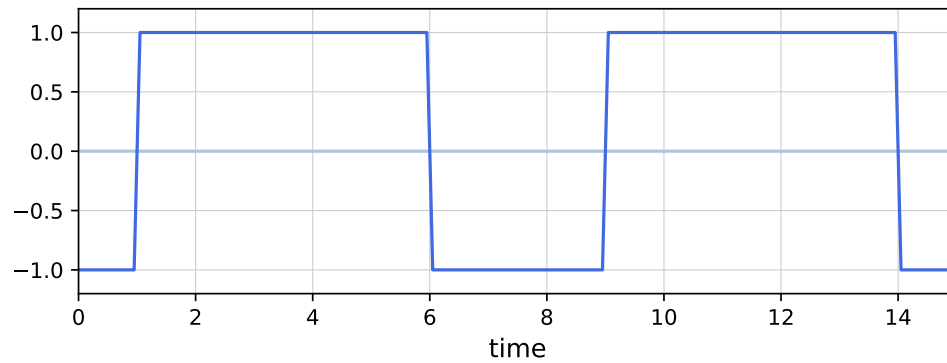


Figure 3: $y(t)$ obtained with $T1 = 3$, $T2 = 5$, $L1 = -1$, $L2 = 1$, $\delta t_1 = 0.1$, $\delta t_2 = 0.1$, $t_0 = 6$.