pwm20_1.xbe

Attributes

```
xbe name=pwm20_1 evaluate=yes limit_tstep=yes save_history=yes allow_ssw=no
#
# generate PWM signals using angle values (in degrees)
#
Jacobian: variable
input_vars:
output_vars: y
aux_vars:
iparms:
+  ndata=2
+  index_last=0
+  level_0minus=0
sparms:
rparms:
+  t_1=0   t_2=0   t_3=0   t_4=0   t_5=0
+  t_6=0   t_7=0   t_8=0   t_9=0   t_10=0
+  t_11=0  t_12=0  t_13=0  t_14=0  t_15=0
+  t_16=0  t_17=0  t_18=0  t_19=0  t_20=0
+  theta_1=0   theta_2=0   theta_3=0   theta_4=0   theta_5=0
+  theta_6=0   theta_7=0   theta_8=0   theta_9=0   theta_10=0
+  theta_11=0  theta_12=0  theta_13=0  theta_14=0  theta_15=0
+  theta_16=0  theta_17=0  theta_18=0  theta_19=0  theta_20=0
+  frequency=1
+  y_low=0
+  y_high=1
+  theta_delay=0.0
+  t_delay=0
+  t_period=0
+  epsl1=0
+  epsl2=0
+  epsl3=0
stparms:
igparms:
outparms: y
```

Description

`pwm20_1.xbe` is used to generate up to 10 pulses (i.e., 20 transitions from 0 to 1 or 1 to 0) which repeat at the specified frequency. The parameters have the following meaning:

`ndata`: Number of transitions.

`frequency`: The period T is computed as 1/`frequency`.

`theta_1`, `theta_2`, etc.: Time of transition 1, 2, etc. specified in terms of angles, with T corresponding to 360°.

`theta_delay`: specifies the offset interval as an angle. For example, if `theta_delay` is 30, then the $y(t)$ waveform would be shifted (to the right) by $\frac{30}{360}T$.

`y_low`: Low level.

`y_high`: High level.

The output `y` is made available as an output variable. An example is shown in the following figure.

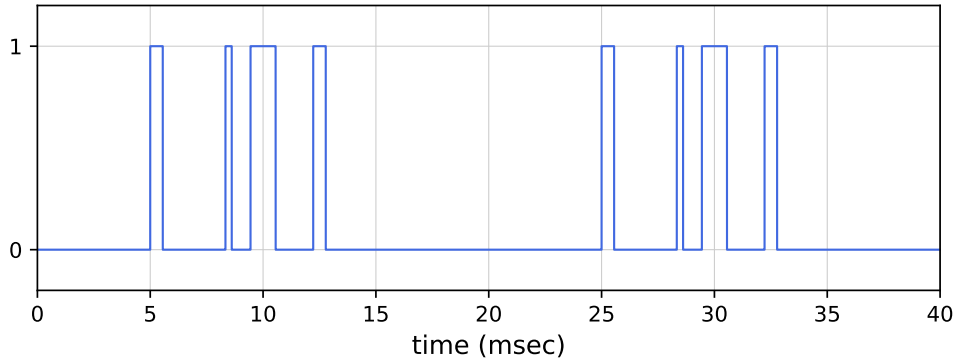

Figure 1: $y(t)$ obtained with $\texttt{ndata} = 8$, $\texttt{frequency} = 50$, $\texttt{theta\_1} = 90$, $\texttt{theta\_2} = 100$, $\texttt{theta\_3} = 150$, $\texttt{theta\_4} = 155$, $\texttt{theta\_5} = 170$, $\texttt{theta\_6} = 190$, $\texttt{theta\_7} = 220$, $\texttt{theta\_8} = 230$, $\texttt{theta\_delay} = 0$.