clock2.gce

Attributes

```
mainvars: y
iparms: i0=0
rparms: t1=1 t2=2 alpha=0 g_high=1 dt1=0.01 dt2=0.01
```

Description

`clock2.gce` is a square wave source with the general variable `y` as its output. The parameters have the following meaning:

`t1:` The first part of one period. `y` is equal to 0 in this interval if `i0`=0 and `g_high` if `i0`=1.

`t2:` The second part of one period.

`alpha:` `alpha` is used to compute the "offset" time interval. (One period corresponds to 360°.) Its meaning will become clear in the following example.

`dt1:` Width of the transition at the beginning of the `t1` phase.

`dt2:` Width of the transition at the beginning of the `t2` phase.

Note that the transition width is included in `t1` or `t2`. For example, if `t1`=10, `dt1`=1.5, and `i0`=1, then the `t1` phase consists of a rising edge for 1.5 s and an interval of 8.5 s with a constant level equal to `g_high`.

AC behaviour is not implemented.

The effect of the various paramters of `clock2.gce` on the waveforms is shown in Fig. 1. The corresponding circuit file (available as `clock2.in` in the examples directory) is reproduced below.

```
title: testing of clock2.gce

begin_circuit
   gelement type=clock2 y=y1 g_high=1
+     t1=10 t2=20 dt1=1 dt2=1 i0=0 alpha=0
   gelement type=clock2 y=y2 g_high=1
+     t1=10 t2=20 dt1=2 dt2=4 i0=1 alpha=120
   gelement type=clock2 y=y3 g_high=1
+     t1=10 t2=20 dt1=0.1 dt2=0.1 i0=0 alpha=90
   outvar:
+    y1=var_of_y1
+    y2=var_of_y2
+    y3=var_of_y3
end_circuit

begin_solve
   solve_type=dc
   initial_sol initialize
end_solve

begin_solve
   solve_type=trns
   initial_sol previous
   begin_output
      filename=clock2_gce.dat
      variables: y1 y2 y3
   end_output
   method: back_euler=yes
+    t_start=0 t_end=100 delt_const=1
end_solve

end_cf
```

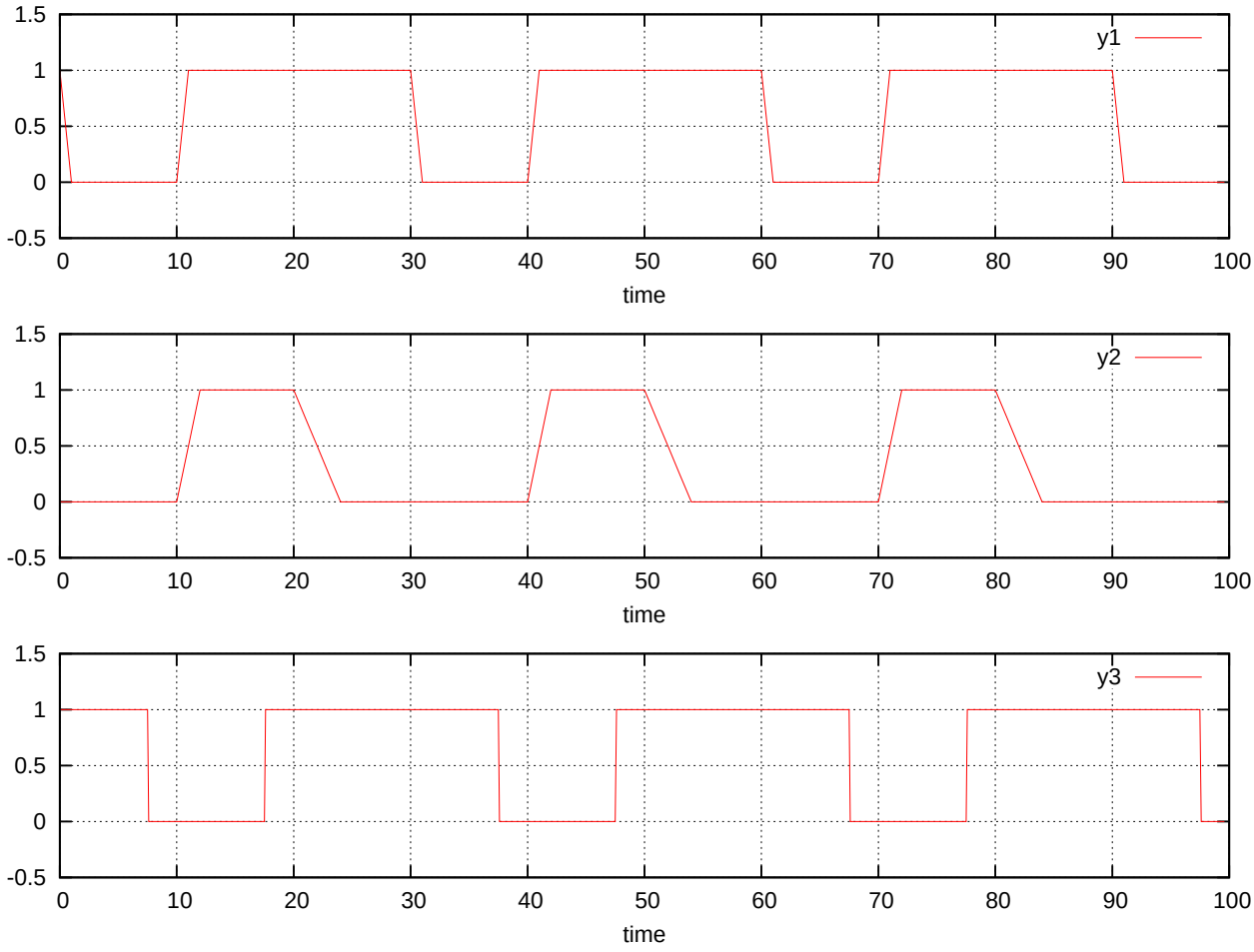

Figure 1: Waveforms obtained with `clock2.gce`: (a) `g_high`=1, `t1`=10, `t2`=20, `dt1`=1, `dt2`=1, `i0`=0, `alpha`=0, (b) `g_high`=1, `t1`=10, `t2`=20, `dt1`=2, `dt2`=4, `i0`=1, `alpha`=120, (c) `g_high`=1, `t1`=10, `t2`=20, `dt1`=0.1, `dt2`=0.1, `i0`=0, `alpha`=90.