

## pulse.gce

### Attributes

```
mainvars: y
rparms:
+   t1=1 t2=2 val1=0 val2=0 val3=0
+   delt1=0.1 delt2=0.1
```

### Description

`pulse.gce` generates a pulse with the general variable `y` as its output. The parameters have the following meaning:

`t1`: Time of the first transition (from `val1` to `val2`).

`t2`: Time of the second transition (from `val2` to `val3`).

`delt1`: Width of the transition at `t1`.

`delt2`: Width of the transition at `t2`.

AC behaviour is not implemented.

The effect of the various parameters of `pulse.gce` on the waveforms is shown in Fig. 1. The corresponding circuit file is given below.

```
title: testing of pulse.gce
```

```
begin_circuit
  gelement type=pulse y=y1
+   t1=0.1 t2=0.3
+   val1=5 val2=0 val3=5
+   delt1=0.01 delt2=0.03
  gelement type=pulse y=y2
+   t1=0.4 t2=0.8
+   val1=0 val2=5 val3=2.5
+   delt1=0.001 delt2=0.001
  gelement type=pulse y=y3
+   t1=0.1 t2=0.12
+   val1=0 val2=5 val3=0
+   delt1=0.001 delt2=0.001
  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=pulse.dat
    variables: y1 y2 y3
  end_output
  method: back_euler=yes
+   t_start=0 t_end=1 delt_const=0.02 delt_min=0.0001
end_solve
```

```
end_cf
```

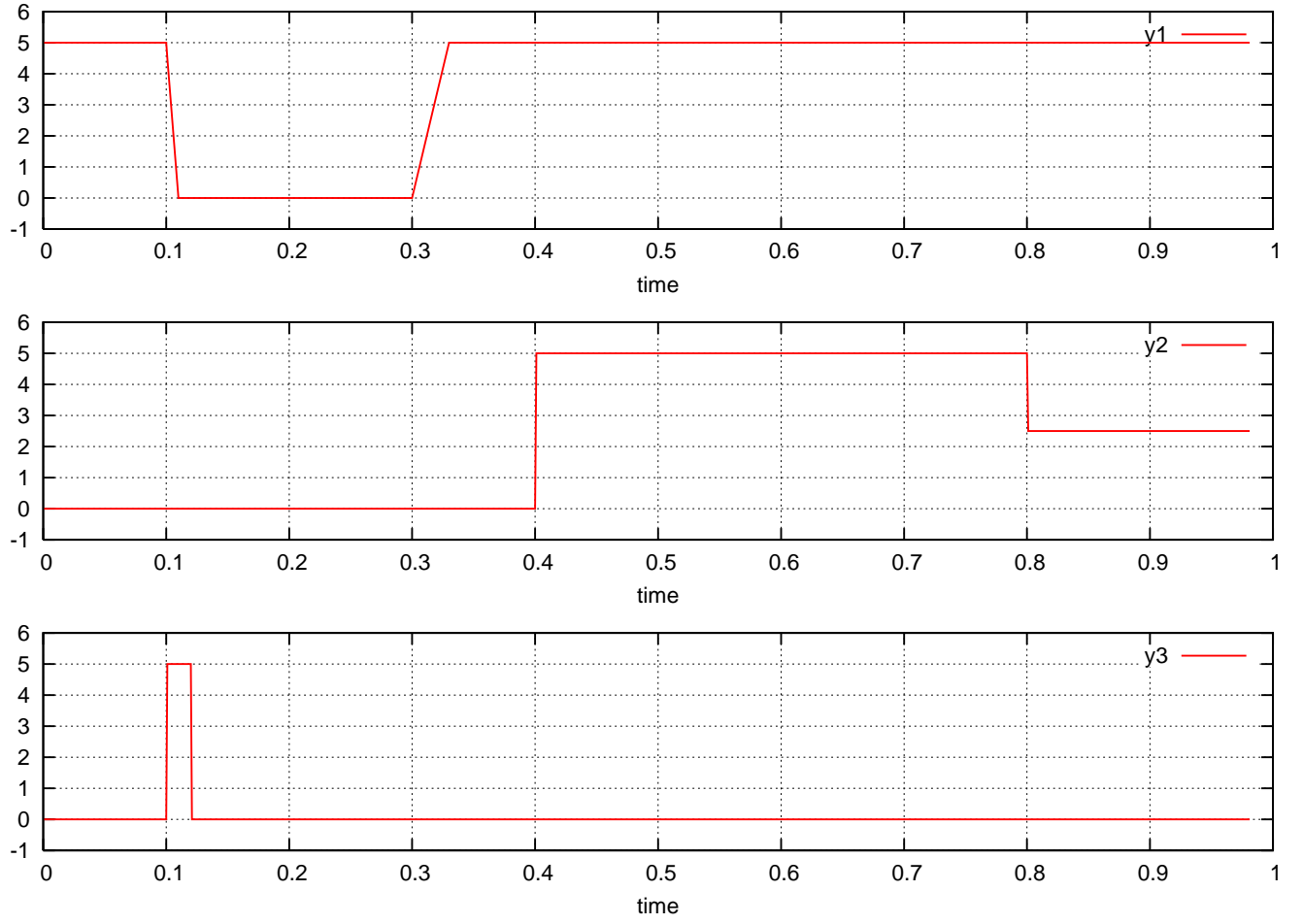


Figure 1: Waveforms obtained with `pulse.gce`: (a)  $t_1=0.1$ ,  $t_2=0.3$ ,  $val_1=5$ ,  $val_2=0$ ,  $val_3=5$ ,  $delt_1=0.01$ ,  $delt_2=0.03$ , (b)  $t_1=0.4$ ,  $t_2=0.8$ ,  $val_1=0$ ,  $val_2=5$ ,  $val_3=2.5$ ,  $delt_1=0.001$ ,  $delt_2=0.001$ , (c)  $t_1=0.1$ ,  $t_2=0.12$ ,  $val_1=0$ ,  $val_2=5$ ,  $val_3=0$ ,  $delt_1=0.001$ ,  $delt_2=0.001$ .