1 Program waver

1.1 Purpose

Creates an ideal waveform timeseries file. The output goes to stdout, and normally would be redirected to a file.

1.2 Usage

waver [options] > **output_filename**

1.3 Options

(# refers to a number; [xx] is the default value)

-WAV	=	Sets waveform to Cox special	[default]
-GAM	=	Sets waveform to form t^b * exp(-t/c)	

(waveforms will also be chosen if one of the options below is used)

These options set parameters for the -WAV waveform.

-delaytime #	=	Sets delay time to # seconds	[2]
-risetime #	=	Sets rise time to # seconds	[4]
-falltime #	=	Sets fall time to # seconds	[6]
-undershoot #	=	Sets undershoot to # times the peak (this should be a nonnegative factor)	[0.2]
-restoretime #	=	Sets time to restore from undershoot	[2]

These options set parameters for the -GAM waveform:

-gamb #	= Sets the parameter 'b' to #	[8.6]
-gamc #	= Sets the parameter 'c' to #	[0.547]

These options apply to any waveform type:

-peak #	= Sets peak value to #	[100]
-dt #	= Sets time step of output AND input	[0.1]

The default is just to output the waveform defined by the parameters above. If an input file is specified by one of the options below, then the timeseries defined by that file will be convolved with the ideal waveform defined above – that is, each nonzero point in the input timeseries will generate a copy of the waveform starting at that point in time, with the amplitude scaled by the input timeseries value.

-xyout	=	Output data in 2 columns: 1=time 2=waveform (useful for graphing) [default is 1 column=waveform]
-input infile	=	Read timeseries from 'infile'; convolve with waveform to produce output
-inline DATA	=	Read timeseries from command line DATA; convolve with waveform to produce output

DATA is in the form of numbers and count@value, as in
-inline 20@0.0 5@1.0 30@0.0 1.0 20@0.0 2.0
which means a timeseries with 20 zeros, then 5 ones, then 30 zeros, a single 1, 20 more zeros, and a final 2. [The '@' character may actually be any of: '@', '*', 'x', 'X'. Note that * must be typed as * to prevent the shell from trying to interpret it as a filename wildcard.]

At least one option is required, or the program will just print this message to stdout. Only one of the timeseries input options above can be used.

If you have the 'xmgr' graphing program, then a useful way to preview the results of this program is through a command pipe like
waver -dt 0.25 -xyout -inline 16@1 40@0 16@1 40@0 | xmgr -source stdin

If a square wave is desired, see the 'sqwave' program.