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News

Spike2 and Signal Training Courses

Our U.K. training days will take place on the 12th & 13th of April at St. John's Innovation Centre, Cambridge. Further details of the training day sessions are available from the [training](#) section of our website.

Meetings and events

[Biophysical Society Annual Meeting 2007](#)

Baltimore, Maryland, USA
March 3rd – 7th 2007

[British Neuroscience Association 2007](#)

Harrogate International Centre, Harrogate, UK
April 1st – 4th 2007

[Experimental Biology 2007](#)

Washington, DC, USA
April 28th – May 2nd 2007

Latest versions of Spike2 and Signal

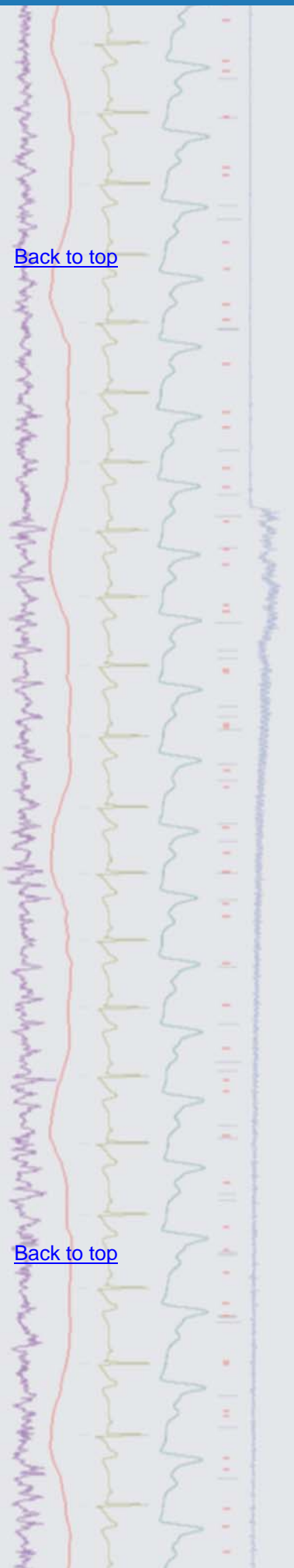
The latest updates for Spike2 and Signal are available from the [CED downloads](#) page, or by clicking on the links in the table below. Demonstration versions of the latest software are also available.

Spike2 downloads	Signal downloads
Spike2 version 6.02	Signal version 3.08
Spike2 version 5.16	Signal version 2.16
Spike2 v6 demo	Signal demo

A full list of the new features and changes in the latest software versions is available from the website.



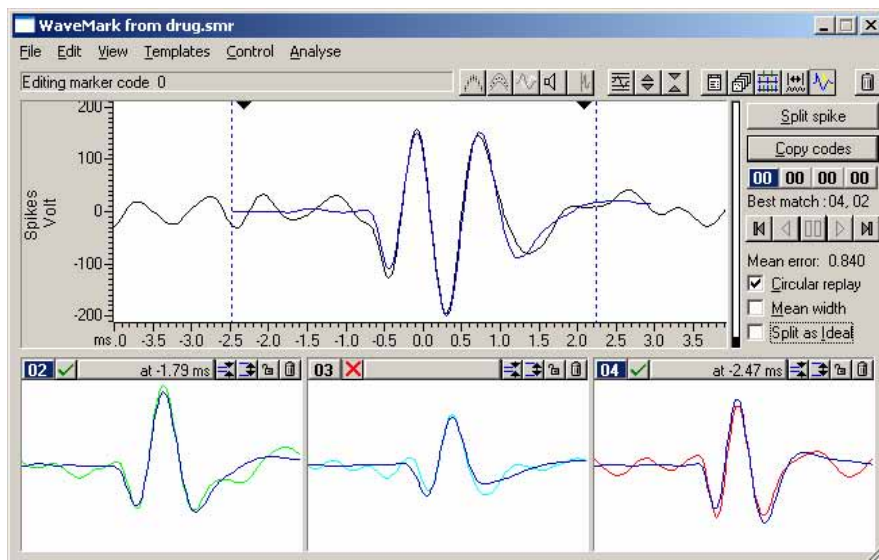
- Q. When I visited the CED stand at the Society for Neuroscience meeting in Atlanta, I was told that some new features were being added for clustering and spike analysis. Are these included in the latest version?
- A. The latest version of Spike2 includes new features for spike sorting, clustering and overdrawn display of spike data.



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- Spike Collision Analysis is available in the Edit WaveMark dialog to separate colliding spikes by comparing the current shape with pairs of templates



Spike Collision Analysis comparing templates 02 and 04 with the current spike shape

- Two new methods of generating clusters based on existing templates are now available, cluster on correlations and cluster on errors
- Event time option for the Z axis value when displaying principal component data to visualise clustering changes as a function of time
- The clustering window now flashes the dot that represents the current spike in the Edit WaveMark dialog
- Multiple traces drawn in Overdraw WaveMark mode are now shown side-by-side, rather than all overdrawn
- In Overdraw WaveMark mode you can re-code events by holding down **Alt+Ctrl** and left clicking to draw a line. Any spike that crosses the line is included in the re-classification
- Overdraw WaveMark mode now draws the spikes as smooth curves (using cubic splines to interpolate) rather than joining points with straight lines

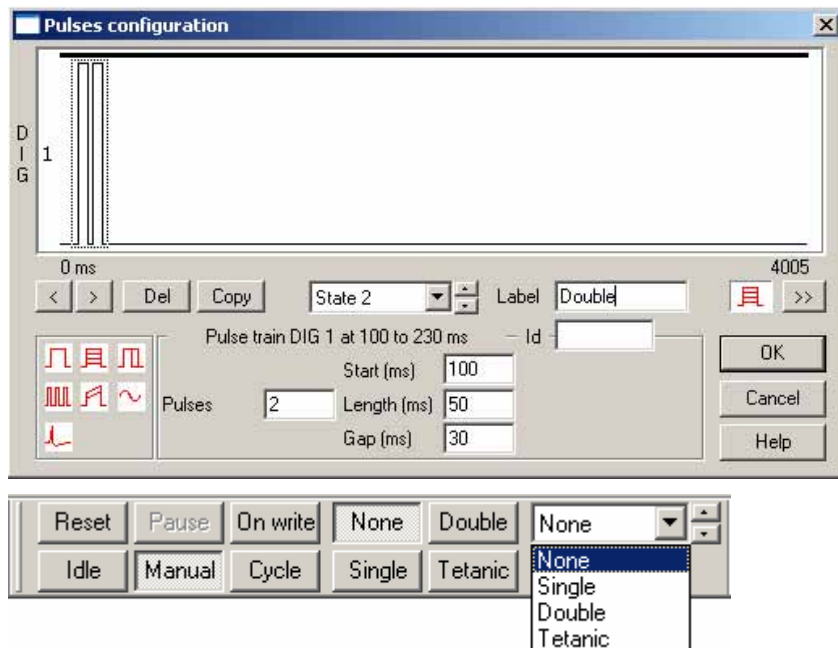
Full details of the Spike Collision Analysis and new clustering features can be found in the Spike2 on-line help.

Signal

- Q. Can I define the labels for the state buttons in the state toolbar when using dynamic outputs mode? I use a number of different pulse protocols for output during my recordings, and it would be nice to be able to refer to the state toolbar buttons by name rather than keeping track of which numbered state relates to which protocol.
- A. Signal now supports labeling for multiple states in dynamic outputs mode, which enable the user to define their own names and labels (up to 9 characters) for buttons in the states toolbar. The labels for each state are set in the pulses configuration dialog and displayed in the states toolbar when sampling.

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New label fields in the pulse configuration dialog and the states toolbar

Scripts: Spike2

- Q. Do you have (or plan to develop) the software equivalent of a device for mains signal removal? I'm looking for something that will take a running average of a signal at 60Hz and subtract this average from the signal.
- A. Any mains interference in a recording is usually composed of odd harmonics of the mains frequency (50Hz or 60Hz, depending on location), meaning that it is unlikely to be removed by the simple use of high-pass or notch filters. There is a script, `HumRemove.s2s`, available to [download](#) from the website which generates an estimate of the mains interference by averaging the signal with respect to each mains cycle. This estimate is then subtracted from the raw data. The script runs on Spike2 version 6 and can process multiple waveform or RealWave channels to attempt to remove mains related interference. Further information can be found in the user documentation included with the script download.

Scripts: Signal

- Q. Is there any way to pause and restart sampling from a hotkey in Signal, rather than using the sampling toolbar?
- A. The attached script, `keyboard_pause.sgs`, creates a script toolbar with a shortcut button (spacebar) to pause and restart sampling. You could modify the script to use any keyboard button for the pause and restart.

Did you know...?

You can now create waveforms based on algebraic combinations of sinusoids, square waves, triangle waves and waveform envelopes using the virtual channel functions in Spike2.

Recent questions

- Q. I would like to be able to sort rasters in PSTH result views with regard to measurements from an auxiliary channel, but I am having some problems with the settings when trying to only include sweeps that fall within a range. What units are used for the range fields?
- A. The range fields are specified in y-range units for waveform or RealWave channels or time in seconds for all other channel types. When creating a new result view for a PSTH, phase histogram or event correlation, you have the option of taking one measurement per sweep from any waveform, RealWave or event channel in the file. The selected channel is referred to as an auxiliary measurement channel. If you select a waveform or RealWave channel, the

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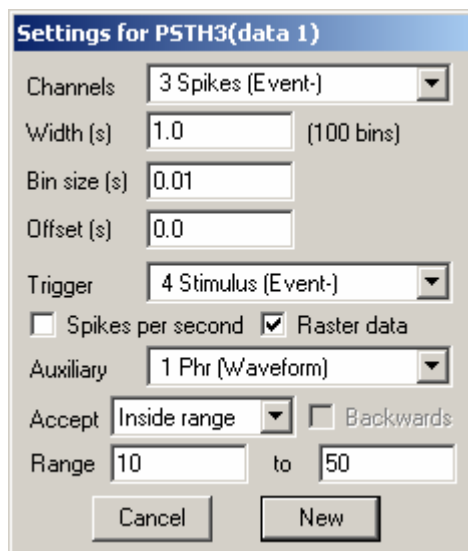
Right-click the script icon and save to disk.

If you have any problems opening the embedded scripts in this newsletter please let us know.

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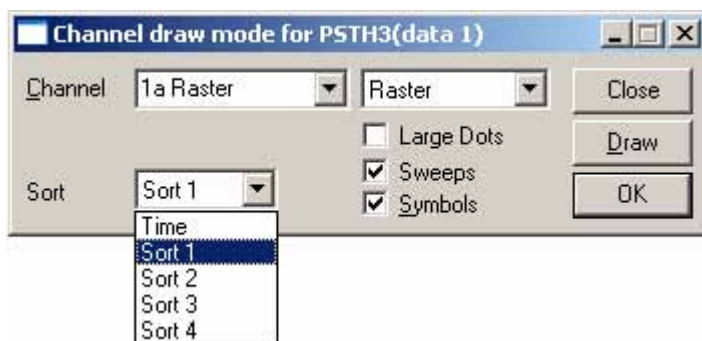


measurement taken is the channel value at the sweep trigger point, or 0 if there is no data present. For all other channel types the measurement is the latency between the sweep trigger point and the first event on the auxiliary channel after the trigger. You can also measure the latency for the closest pre-trigger event by checking the Backwards box in the dialog. When building the result view you can choose whether to accept all sweeps for the result, or only those with a measured value that lies inside or outside a specified range. The settings below will only include sweeps if the returned waveform values are in the range of 10 to 50 y-axis units.



PSTH settings dialog with auxiliary measurements

If you have enabled raster data, you can then sort raster sweeps based on the returned measurements from the auxiliary channel. Each raster sweep can store up to 4 sort values, the first of which holds the measurement value. You can sort the raster display by selecting Sort 1 from the drop down list in the channel draw mode dialog. The other three sort values are accessible via the script language.



Channel draw mode dialog for rasters

User group

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