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News

US Training Days: Thursday 10th and Friday 11th November

These training days will take place at the [Holiday Inn at Rosslyn, 1900 N Fort Myer Drive, ARLINGTON, VA](#) just prior to the Society for Neuroscience meeting in Washington, DC. The days are suitable for both existing and prospective users so join us and learn how to make the most of Spike2 and Signal for your individual data acquisition and analysis requirements.

- **Covers all the major features of Spike2 and Signal**
- **In-depth tutorials take you from recording data through to advanced analysis techniques**
- **Optional workshop sessions allow you to discuss specific questions with CED staff in a small group environment**

Attendance is limited so please [register](#) early to reserve your place on the appropriate course.

Digitimer D360 amplifier control in Spike2

The support for third-party amplifier control in the next release of Spike2 (7.08) has been extended to include the Digitimer D360 medically isolated amplifier. The interface to the D360 is provided by software supplied by Digitimer, which will then allow the user to control the D360 from Spike2. Additional Help is available within Spike2 from the D360 control panel.

Future meetings and events

Scottish Neuroscience Group Meeting 2011

University of Aberdeen,
Aberdeen, UK
August 26th 2011

Polish Neuroscience Society

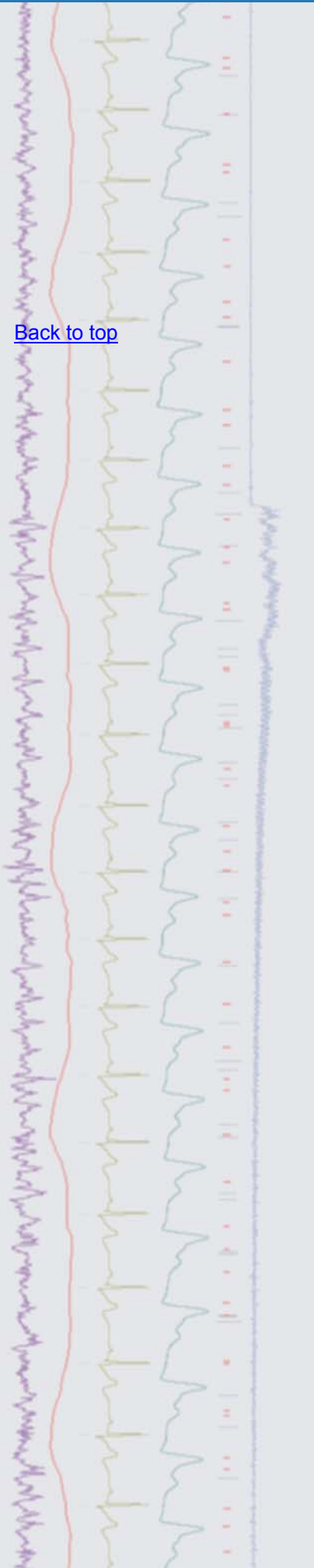
University of Lodz,
Lodz, Poland
September 21st – 24th 2011

Spanish Neuroscience Society

University of Salamanca,
Salamanca, Spain
September 28th – 30th 2011

Society for Neuroscience 2011

Walter E. Washington Convention Center,
Washington, DC, USA
November 12th – 16th 2011



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Latest versions of Spike2 and Signal

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	Released	Signal downloads	Released
Spike2 version 7.07	06/11	Signal version 5.02	05/11
Spike2 version 6.16	03/11	Signal version 4.09	08/11
Spike2 demo		Signal demo	

Scripts Spotlight

Merge Files

Many Spike2 users have a need to copy and paste data between time views. Typical requirements are to:

- Concatenate batches of data files end-to-end in order of creation date so that the results can be analysed together
- Overlay data from separate files one above the other on a common timebase for easy comparison of the timing of responses in different experiments
- Create files of "edited highlights" with sections of irrelevant data discarded

`MergeFiles.s2s` is a utility script that can perform all these tasks and many variations on the theme. Spike2 v6 and v7 users will find a copy in the `scripts` folder in the Spike2 root directory. A stripped down version that works with Spike2 v5 is available from the CED website ([MergeFiles5.s2s](#)).

There is a detailed user guide built into the comments section at the top of the script file. The script is robust and we are confident that it will do what you ask of it (within limits) However, you could easily ask it to do something that you later regret. So it is *imperative* that you back up your data before using this script. A cursory glance at that user guide wouldn't do any harm either!

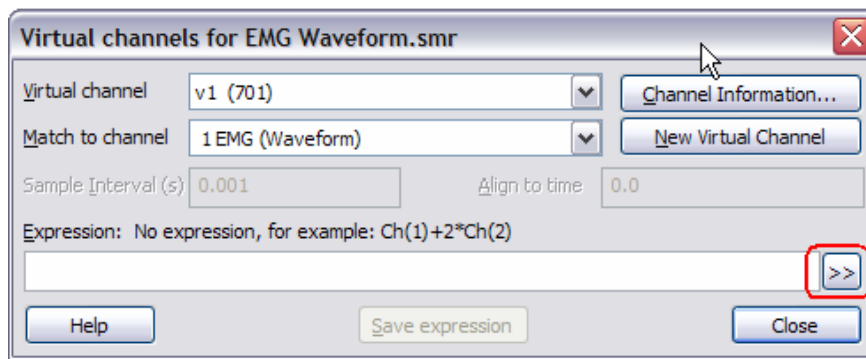
If you have any questions please contact geoff@ced.co.uk

The logo for Spike2, featuring the word "Spike2" in a stylized, cursive font. The letters are primarily red with a yellow-to-orange gradient, and the number "2" is a solid yellow. The logo has a slight 3D effect with a shadow.

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- Q. I am a new user of Spike2 and, after reading how virtual channels can calculate spectral functions from waveform data in the previous eNewsletter, I would like to find out what other functions are supported.
- A. Virtual channels generate RealWave data based on mathematical functions and built in function generators. Virtual channels can use any waveform, event and RealWave channels, or combinations thereof, as a data source alongside many standard mathematical operators. Virtual channels are created from the Analysis menu > Virtual channels > Create new channel command. You can specify a sample interval and alignment or match the new virtual channel to the rate of an existing data channel in the file.





Virtual channels dialog

Expressions to generate the virtual channel result/data can be entered by hand or built by clicking the >> button (highlighted above) and selecting the following options from the context menu:

Waveform from channel ►

This option allows the user to create data by copying from an existing waveform channel or generating a waveform based on instantaneous frequency, kernels of events and RealMark data items.

Spectral Functions ►

These commands create waveforms based on the spectral content of a waveform. Examples of using these commands can be found in the Spike2 article in eNewsletter #61.

Generate waveform ►

Create a waveform independently of any channel data using functions such as sinusoid, envelope or triangle wave functions. Channels created using this method can then be used for waveform output.

Rectify, Abs, Min and Max ►

This option inserts commands that can rectify, half-wave rectify and limit values.

Mathematical functions ►

Insert mathematical functions including square root, sin, cos etc.

A list of standard mathematical operators (+, -, x, / etc.) and comparison operators are also available from the context menu. Previously used expressions can also be saved to the context menu using the *Save expression* button in the main virtual channel dialog.

Full details of all of the virtual channel commands can be found in the Spike2 online help.

Scripts: Spike2 

- Q. I have a number of PSTH result files that I would like to export as images for presentation purposes. Is there a script available that will export multiple files quickly and easily?
- A. The attached script, `ExportToImage.s2s` is an example script to batch export multiple result files in either bitmap or metafile format. The user can specify a directory containing result files and the script opens them one by one. You can set the window size of the first result file for the image and this is used to set the default size of the subsequent files. The created image files are saved in the same directory and with the same names as the result files.

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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.

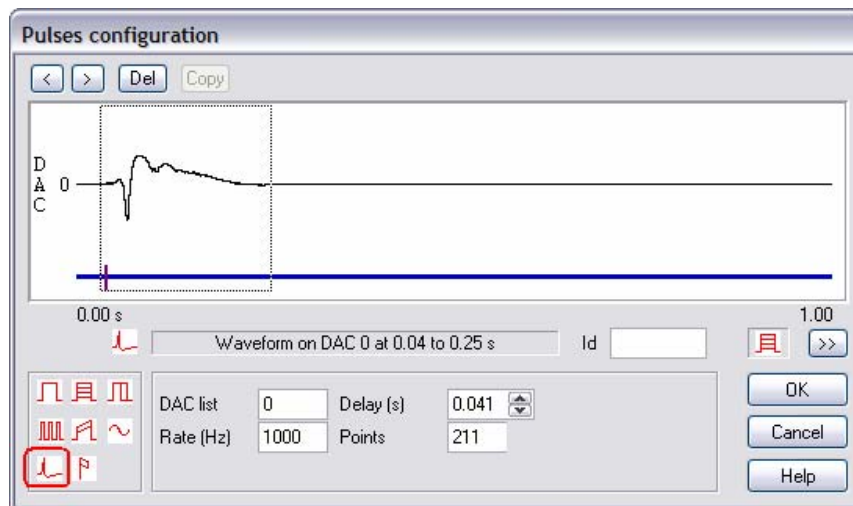
Signal

- Q. How can I use waveform data from a channel in my data file for arbitrary waveform output?
- A. In Signal, frame data can be copied and pasted to and from the clipboard using the *Edit* menu - *Copy* and *Paste* commands or the standard Windows

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keyboard shortcuts of **Ctrl+C** and **Ctrl+V**. This allows data to be copied and pasted between data files, result views and XY views as well as being pasted to the pulses output dialog to be used as an arbitrary waveform for output.



Pulses configuration dialog

Arbitrary waveform play areas can be set up by dragging the waveform icon from the palette and dropping it onto the control track, under an enabled DAC output, in the pulse configuration dialog, as above. When this area is selected you can then paste the data from the clipboard. Multiple arbitrary waveform output areas can be set per state when using multiple states in Dynamic Outputs mode.

Scripts: Signal

- Q. Is it possible to create a new file holding frames of a selected state from multiple Signal data files?
- A. The script, `Export&Merge.sgs`, will create a new data file by merging together frames of a selected state from one or more existing data files. When run the script creates a toolbar which allows the user to open files and select the state number to use for export. Frames of the selected state must all have the same number of data points to be included in the new export file.

Did you know...?

You can mark transitions in a level channel by creating a marker type memory channel and importing the times from the level channel. High-to-low transitions are marked with code 00 and low-to-high transitions with code 01. The Marker filter can then be used to show and hide codes indicating either level.

Recent questions

- Q. Is it possible to process data from Signal or Spike2 in MATLAB? I'd like to be able to pass data to MATLAB during an experiment using an on-line script.
- A. With a copy of MATLAB installed on your computer, the `MatLabXXX()` family of script commands let you start a MATLAB process for the purpose of using it as a computational engine. This process can have a visible window allowing some user interaction, but it is not a full workspace and will be separate from any normally opened workspaces that you use. You can transfer script variables and arrays (but not arrays of strings) to the workspace, command MATLAB to process your data, and then move results back into the script language. You must select to include the MATLAB script support option when installing Spike2 and Signal.

User group

You can now find our [eNewsletters](#) archived on the CED website.

Try the [CED Forums](#) bulletin board for software and hardware support

If you have any comments about the newsletter format and content, or wish to unsubscribe from the mailing list for this newsletter, please notify sales@ced.co.uk.

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