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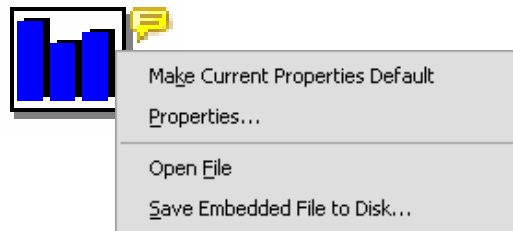
News

Spike2 and Signal Training Days

This years U.K. Spike2 and Signal training courses are fast approaching and will take place on Thursday 30th April and Friday 1st of May in Cambridge. The Spike2 thread for both days is now fully booked, but there are still limited places available on the Signal and Workshop threads. If you or any of your colleagues would like to attend, please follow the links to view the [training day program](#) and complete the [registration form](#). Please give a short description of the type of research that you do and analysis that you are interested in. This will allow us to tailor sessions for specific requirements.

Opening and saving embedded files

The scripts, sequence files and sampling configurations included in the email newsletter are embedded files, which can be opened or saved to disk by right-clicking on the following style of icons which are positioned next to the section title:



Embedded script icon showing right-click context menu

Please let us know if you have any problems opening or saving these embedded files.

Meetings and events

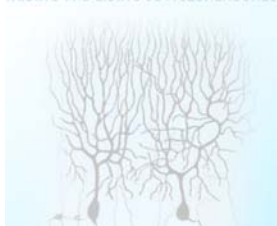
Experimental Biology 2009

Ernest N. Morial Convention Center
New Orleans, LA, USA
April 18th – 22nd 2009

British Neuroscience Association 20th National Meeting

Adelphi Hotel
Liverpool, UK
April 19th – 22nd 2009

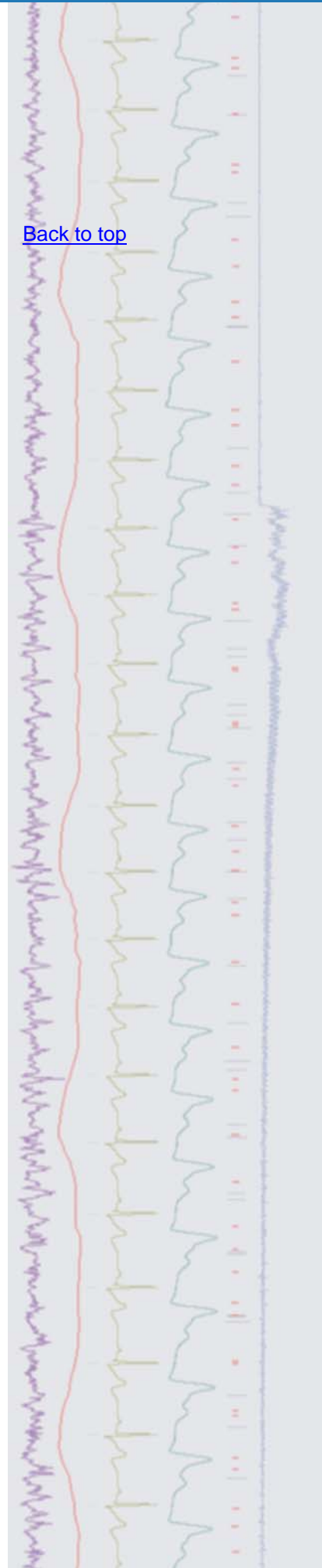
INTERNATIONAL WORKSHOP AND CONFERENCE
ON HUMAN REFLEXES
WIRING AND FIRING OF MOTONEURONES
WIRING AND FIRING OF MOTONEURONES



International Workshop and Conference on Human Reflexes: Wiring and Firing of Motorneurons

Ege University
Izmir, Turkey
May 11th – 15th 2009

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[3rd Annual Canadian Neuroscience Meeting](#)

Westin Bayshore
Vancouver, Canada
May 24th – 27th 2009



[The 6th Congress of the International Society for Autonomic Neuroscience](#)

ISAN09 is a joint meeting to be held with the European Federation of Autonomic Societies (EFAS) in Sydney, from September 1st-4th, 2009. Approx. 400 international and national delegates are expected, having clinical and/or basic scientific research interests in autonomic neuroscience.

Plenary speakers: Darwin Berg (UCSD), Hugo Critchley (University of Sussex), Max Hiltz (University of Erlangen-Nuremberg) and Elspeth McLachlan (POWRI)

Further details of the meeting can be found at <http://www.iceaustralia.com/isan2009/>

Proudly supported by Cambridge Electronic Design and the Foundation for High Blood Pressure Research, Australia.

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.

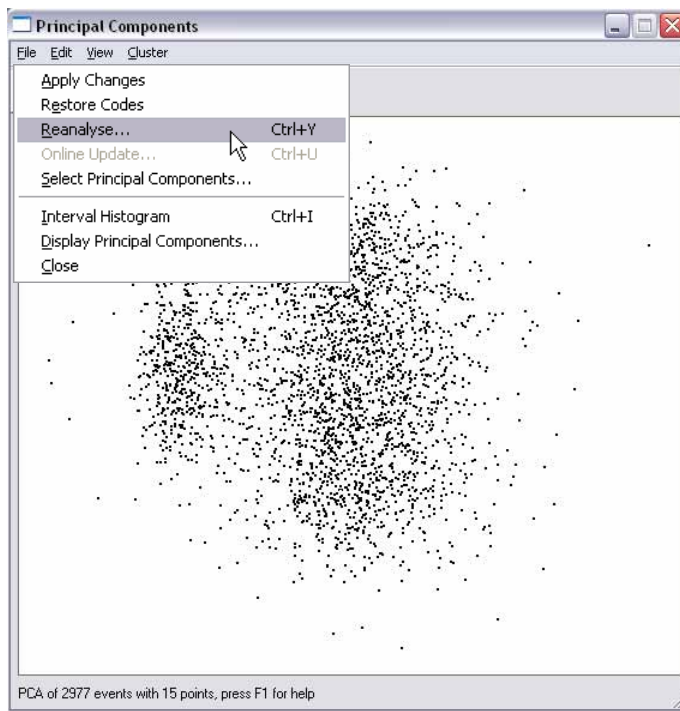
Spike2 downloads	Signal downloads
Spike2 version 6.11	Signal version 4.05
Spike2 version 5.21	Signal version 3.11
Spike2 demo	Signal demo



- Q. I am currently using PCA clustering to sort spikes off-line. One very common result of this is that I quickly find clusters of spikes that are well separated and assign them a code. I then use the Apply changes function from the cluster window to classify these spikes in the data file. I am then left with another cluster in which I can see different units that are not as easily separated. What I would like to do is re-run the PCA only on this second cluster, without the spikes that I have already sorted contributing to the analysis. Is there an easy way to do this?
- A. The marker filter function in the Spike2 analysis menu can be used to show or hide classified and non-classified spike shapes in the data file. Any analysis functions performed on a WaveMark channel will then only use the visible spikes. In this example, after applying the changes back to the data file, simply use the marker filter to hide the easily separated spikes in the data file. You can then use the Reanalyse function from the File menu in the cluster window to re-run the PCA analysis using only the visible spikes from your original WaveMark channel.

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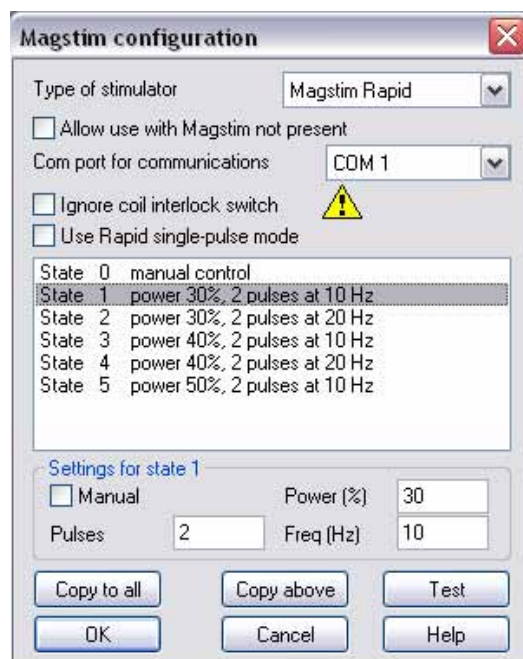


Reanalyse function in the cluster dialog

Signal

- Q. How do I use multiple states to control Magstim settings?
- A. Multiple states control of supported Magstim devices is achieved using the auxiliary states mode in Signal. The option of including auxiliary states device support is given during the Signal installation.

When the Multiple states checkbox is enabled in the General tab of the sampling configuration and Dynamic outputs mode is selected, the Magstim button in the States tab allows the user to configure settings for Magstim 200, BiStim or Rapid devices. Depending on the type of Magstim selected, each enabled state includes settings for Power %, no. of pulses and frequency of stimulation (Hz). During sampling, these settings are applied to the Magstim device for the current state. Signal can switch between states in numeric or random order during an experiment, or run multiple user-defined protocols for state sequencing.



Configuration settings for a Magstim Rapid device

Further information on Magstim control using multiple states can be found in the on-line help.



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Scripts: Spike2 

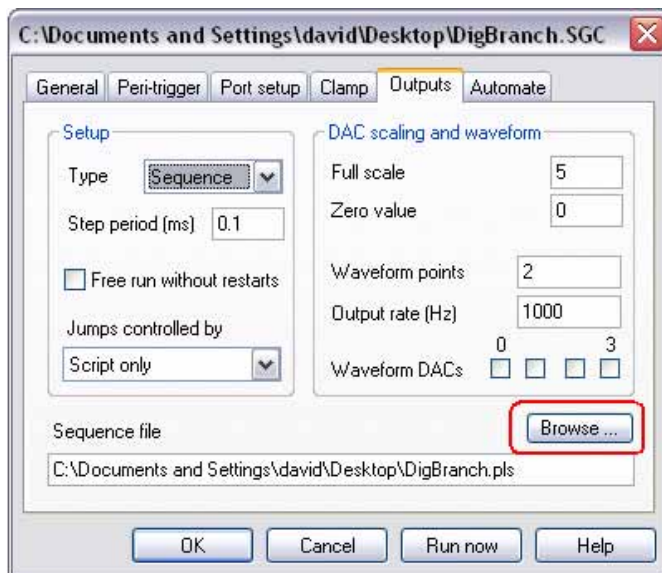
- Q. I am using Spike2 to record ECG and would like to know if there is any way to output a tone when an ECG complex occurs, much like a standard ECG monitor?
- A. The attached script, `ECGTone.s2s`, plays a tone pip from DAC 0 of the 1401 when the R-wave of an ECG complex is detected during sampling. Sampling is controlled via the script toolbar and the user is asked to set the waveform channel to monitor and a hysteresis value for peak detection. A horizontal cursor is then used to set a threshold for the detection of the R-wave. Each time the threshold is crossed Spike2 monitors the level of the incoming data and, when a peak is found, waits for the data to fall by at least the level set as the hysteresis value before playing the tone which flags the R wave detection.

This script requires Spike2 version 6 and writes a sequence file into a default folder of `C:\Spike6\Sequence`.

Scripts: Signal 

- Q. I have two states set-up in my sampling configuration to output single or double stimulation pulses during experiments. As I use peri-trigger sampling mode, it would be very useful if I could control which state to trigger from the digital inputs at the *start* of a sampling sweep. Is this possible with a script?
- A. State branching in response to digital inputs can be achieved by using the output sequencer in Signal. The attached sequence file and sampling configuration is an example of controlling state branching and pulse outputs in response to digital inputs at the beginning of a sampling sweep. The sequence file monitors the digital inputs during sampling and outputs a single pulse in response to bit 0 being set high, or a double stimulation pulse in response to bit 1 being set high. The sequence also sets the relevant frame state (1 for single stimulation and 2 for double).

To run the sequence, save the attached sequence file (`DigBranch.pls`) and sampling configuration (`DigBranch.SGC`). Load the sampling configuration from the File menu in Signal and browse to the saved sequence file from the Outputs tab. The sequence could easily be expanded to control additional states and outputs if required.



Sampling configuration with linked sequence file

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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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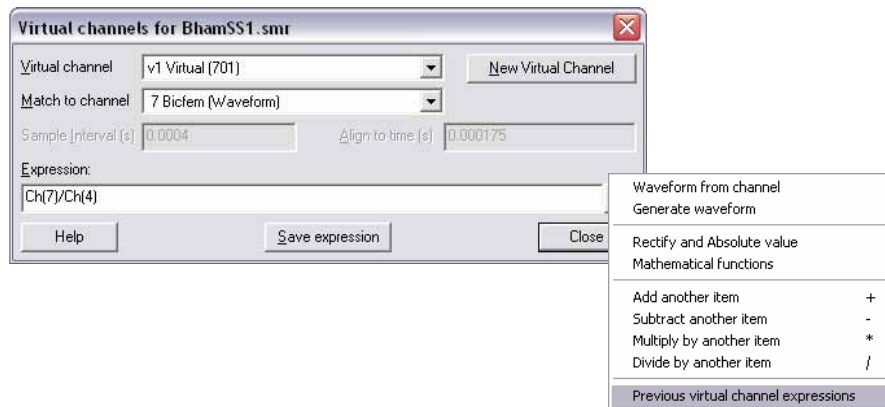
Right-click the script icon and save to disk.

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



Did you know...?

The virtual channels dialog in Spike2 holds a list of previously used expressions.



Virtual channel dialog menu

Recent questions

- Q. Is there any way to convert a Spike2 data file to an audio format for presentation purposes?
- A. The attached script, `SMRtoWav.s2s`, will take data from a Spike2 data file and save it to WAV audio file format.

User group

Try the new [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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