

W19: Model-Driven Closed-Loop Technologies for Neuroscience Research

CNS 2019 Workshop Schedule, University of Barcelona, July 16th-17th

Organizers: Pablo Varona & Thomas Nowotny

Morning Session: Tuesday, July 16th (Room S4)

09:30-09:40 Welcoming words

09:40-10:20 Mel Slater (Universitat de Barcelona, Spain): Virtual reality in closed-loop learning.

10:20-11:00 Daniele Linaro (Leuven Center for Brain & Disease Research, Belgium): Real-time closed-loop electrophysiology to investigate correlation transfer in cortical neurons.

11:00-11:30 Coffee break

11:30-12:10 Attila Szücs (Eotvos Lorand University, Budapest, Hungary & University of California San Diego, USA): Differential and frequency-dependent regulation of intrinsic excitability by voltage-dependent membrane currents.

12:10-12:50 Pablo Varona (Universidad Autónoma de Madrid, Spain): On the need for multiscale closed-loops in neuroscience research.

12:50-13:10 Software demos

Afternoon session: Wednesday, July 17th (Room B1)

14:50-15:25 José L. Pons (Shirley Ryan AbilityLab & Northwestern University, USA): Closed-loop neurorehabilitation.

15:25-16:00 Paul Pfeiffer (Humboldt-Universität zu Berlin, Germany): Capacitance clamp.

16:00-16:25 Coffee break

16:25-17:00 Adam Ponzi (IBM TJ Watson Research Center, USA and Institute of Biology, Otto-von-Guericke University, Germany): Fitting a striatal network model to single unit spiking data for early intervention in Huntington's disease.

17:00-17:35 Maxym Myroshnychenko (Gordon Lab, NIH/NINDS, USA): Closed-loop sinusoidal stimulation of ventral hippocampal terminals in prefrontal cortex preferentially entrains circuit activity at distinct frequencies and delays.

17:35-18:10 Thomas Nowotny (University of Sussex, UK): Closed-loop electrophysiology for single cell investigations.

18:10-18:30 Concluding remarks and discussion