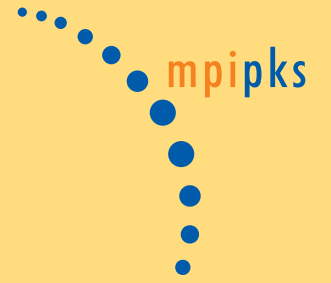




MAX-PLANCK-INSTITUT FÜR PHYSIK KOMPLEXER SYSTEME
DRESDEN, GERMANY



International Focus Workshop on
Spike-Frequency Adaptation in Neural Systems

October 26 - 27, 2010

Scientific coordination:

Jan Benda

Ludwig-Maximilians-Universität München
München, Germany

Benjamin Lindner

MPI für Physik komplexer Systeme
Dresden, Germany

Organisation:

Mandy Lochar

Neurons are complex systems with dynamics which involve many time scales. One important and ubiquitous manifestation of this complexity is spike-frequency adaptation (SFA), i.e. the observation that many nerve cells respond vigorously to rapid stimulation but adapt their firing rate in response to slow or quasi-static input. There are a number of biophysical mechanisms giving rise to adaptation which can be distinguished by recent experimental techniques. From the theoretical side, a number of computational roles for adaptation have been suggested over the last decade: high-pass filtering of time-dependent sensory stimuli, linearization of input-output relations, and an increase of the information transfer by means of SFA-induced noise shaping, to name but a few. Besides these functional aspects, it has been shown that the interplay of neural excitability, adaptation mechanisms and intrinsic fluctuations yields novel dynamic and stochastic effects. The workshop brings together experts of diverse backgrounds (experimental biology, statistical physics, nonlinear dynamics, and/or stochastic processes) who will discuss these aspects of neural adaptation.

List of invited speakers:

G. La Camera (Bern, CH)
M. Chacron (Montreal, CA)
K. Fisch (Munich, DE)
F. Gabbiani (Houston, US)
W. Gerstner (Lausanne, CH)
K. Hildebrandt (Berlin, DE)
R. Jolivet (Zürich, CH)

R. Kurtz (Bielefeld, DE)
S. Laughlin (Cambridge, UK)
J. Lewis (Ottawa, CA)
B. Lundstrom (Washington, US)
D. McAlpine (London, UK)
E. Muller (Lausanne, CH)
M. Nawrot (Berlin, DE)

A. Neimann (Ohio, US)
W. Nesse (Ottawa, CA)
K. Obermayer (Berlin, DE)
M. Richardson (Warwick, UK)
L. Schwabe (Rostok, DE)
T. Schwalger (Dresden, DE)

Applications for participation and poster contributions are welcome and should be made by using the application form on the event's web page (please see URL below). The number of attendees is limited. The **registration fee** for the focus workshop is **80 €** and should be paid by all participants. Costs for accommodation and meals will be covered by the Max Planck Institute for the Physics of Complex Systems. Limited funding is available to partially cover travel expenses. Please note that childcare is available upon request.

Deadline for registration is July 31, 2010.

For further information please contact:

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