Seminar

Nonlinear Dynamics of Complex Neural Systems

Prof. Dr. Dr.h.c. Eckehard Schöll, PhD,
Dr. Anna Zakharova, Dr. Simona Olmi, Dr. Iryna Omelchenko

Winter Semester 2017/2018

EW 731 - Tuesdays 16:15

The seminar offers perspectives on our current research in the area of Nonlinear Dynamics and Control. The seminar is particularly suitable for BSc and MSc students looking for a final project. Students, who want to obtain a Seminarschein, are welcome as well.

The study of complex neural networks is currently one of the central issues of applied nonlinear science. Of particular interest is the collective dynamics of neuronal populations. Synchronization of individual neurons is believed to play the crucial role in the emergence of pathological rhythmic brain activity in Parkinson's disease, essential tremor and in epilepsies. The development of techniques for detection, prediction and suppression of undesired neural synchrony is an important clinical problem. In the focus of the seminar will be recent studies of complex neural systems, collective dynamics of neurons and their synchronization.
We will discuss aspects of the analytical and numerical studies of neural networks, and analyse the mechanisms of complex dynamical processes with their applications to studies of neural diseases.

Literature: http://www.itp.tu-berlin.de/schoell/nlds/seminare/

Schedule and Organization

If you are interested in a particular topic, please contact one of the advisors.
Final assignment of the topics will be done on 17.10.2017.

Contact

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