



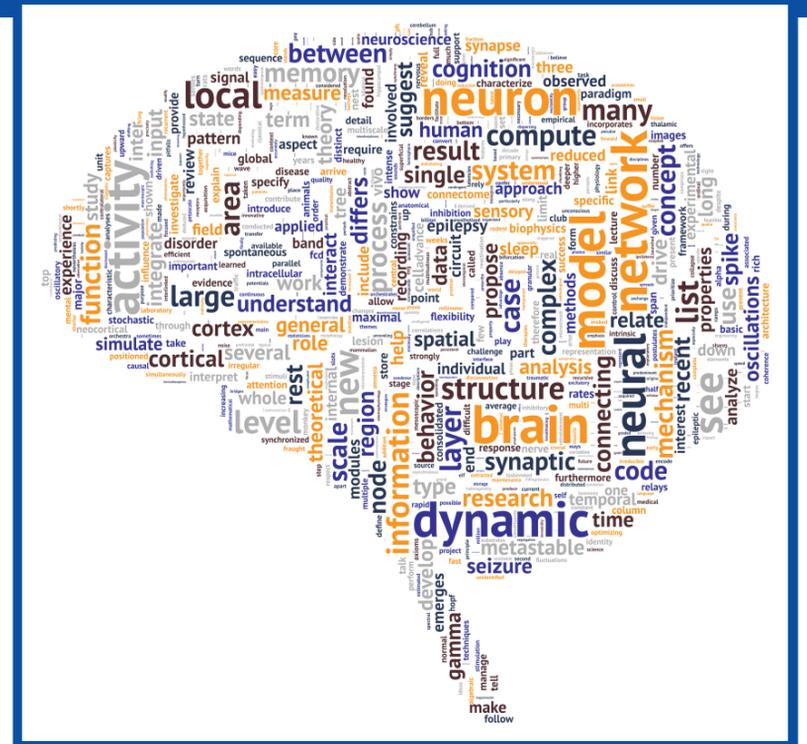
Brain Dynamics on Multiple Scales - Paradigms, their Relations, and Integrated Approaches

International Workshop 19 - 23 June 2017

Previous research paradigms in the brain sciences have often focused on one spatial or temporal scale only, for instance defined by the experimental technique of choice or a specific set of cognitive phenomena. This workshop aims at exploring paradigms and concepts such as complexity, information, or dynamical systems that provide bridges, links, relations, or connections between two, three or more "elements of brain science" and link them to recent developments in mathematics, physics, and neurobiological experimental techniques.

Topics

- The brain as a complex system: complex networks, dynamics and criticality, understanding the interplay between structure, dynamics, and function.
- Information processing and coding: what is the current state in using information-theoretic principles like infomax, complexity measures, evidence, or surprise as tools to understand the brain?
- Brain oscillations, waves and synchronisation: what are their functional roles?
- Multiple scales and levels: what are proper "building blocks" of the brain or a brain theory?
- Large scale cognitive brain systems: what are the best approaches to an understanding of high level cognitive and brain functions including consciousness?



Invited speakers: * to be confirmed

N. Brunel (US)
B. Cessac (FR)
G. Deco (SP)
S. Dehaene (FR)
A. Destexhe (FR)
M. Diesmann (DE)
O. Jensen (NL)
M. A. Kramer (US)
A. Lansner (SE)
C. Michel (CH)
J. Jost (DE)
G. Palm (DE)
S. Schulz (UK)
M. Shanahan (UK)
E. Schneidman (IL)
M. Timme (DE)
G. Tononi (US)*
V. Vyazovskiy (UK)

Scientific coordinators:

Peter Achermann
Zurich, Switzerland

Eckehard Olbrich
Leipzig, Germany

Thomas Wennekers
Plymouth,
United Kingdom

Organisation:

Mandy Lochar
MPIPKS Dresden

Applications received before 28 February 2017 are considered preferentially.

Applications are welcome and should be made by using the application form on the event's web page. The number of attendees is limited. The registration fee for the international workshop is 120 Euro and should be paid by all participants. Costs for accommodation and meals will be covered by the Max Planck Institute. Limited funding is available to partially cover travel expenses. Please note that childcare is available upon request.

For further information please contact:
Visitors Program
MPI for the Physics of Complex Systems
Nöthnitzer Str. 38, D-01187 Dresden
Tel: +49-351-871-1933
Fax: +49-351-871-2199
msbdy17@pks.mpg.de
www.pks.mpg.de/msbdy17/