

# Program

## Wednesday, 26 May 2010

17:00 – 21:00 Registration

from 18:30 Buffet Supper / Informal get together

## Thursday, 27 May 2010

07:45 BREAKFAST

08:30 – 08:45 J. Kurths **Welcome and Introduction**

08:45 – 09:00 E. Dreisigacker **About the Wilhelm and Else Heraeus Foundation**

09:00 – 09:45 S. Havlin **Robustness of interdependent networks**

09:45 – 10:30 E. Ott **Emergent behavior in large systems of coupled phase oscillators**

10:30 – 11:00 COFFEE BREAK

11:00 – 11:45 C. J. Stam **Disruption of synchronization processes in neuropsychiatric diseases: A complex brain networks perspective**

11:45 – 12:15 S. Achard **Functional connectivity of the brain with wavelets**

12:15 Conference photo (in the front of the Physikzentrum)

12:30 LUNCH

# Program

**Thursday, 27 May 2010**

- 14:00 – 14:45 M. Ghil **Boolean delay equations: A simple way of looking at complex systems**
- 14:45 – 15:00 J. F. Donges **On the backbone of climate networks**
- 15:00 – 15:30 K. Schindler **Synchronization phenomena in human epileptic brain networks**
- 15:30 – 16:00 R. G. Andrzejak **Detecting directional couplings from time-continuous and event-related recordings**
- 16:00 – 17:00 **Poster session I + COFFEE BREAK**
- 17:00 – 17:30 A. Levermann **Abrupt monsoon failure**
- 17:30 – 17:45 C. Masoller **Inferring the climate complex network via ordinal patterns and symbolic dynamics**
- 17:45 – 18:00 P. Read **Synchronization phenomena in the Earth's climate on quasi-biennial and intraseasonal timescales from measurements of zonal wind and atmospheric angular momentum**
- 18:00 – 18:15 B. Gluckman **Active Probing for network topology - an experimentalists approach for neural systems**
- 18:15 – 19:00 V. Belykh **Synchronization in asymmetrical networks: Rigorous results**
- 19:00 DINNER

Followed by a social evening at the invitation of the Wilhelm und Else Heraeus-Stiftung in the "Bürgerstube" at the Physikzentrum

# Program

**Friday, 28 May 2010**

08:00 BREAKFAST

09:00 – 09:45 M. Timme **Challenges in network dynamics: From neural synchrony to chaos control for robots**

09:45 – 10:30 J. Suykens **Kernel spectral clustering for complex networks data**

10:30 – 11:00 COFFEE BREAK

11:00 – 11:30 N. Marwan **Complex network approach for recurrence analysis of time series**

11:30 – 12:00 A. Hense **Network analysis in climate physics: Application and interpretation**

12:00 – 12:45 K. Fraedrich **Time and space climate bridges: Long-term memory and teleconnections**

12:45 – 13:00 D. Newman **Characterization of climate using Hurst exponent and Renyi entropy techniques**

13:00 LUNCH

# Program

**Friday, 28 May 2010**

- 14:30 – 15:15 H. Nijmeier **The electronic brain: Does it synchronize?**
- 15:15 – 15:30 S. Bialonski **Indications of small-world-ness of interaction networks from natural dynamical systems: reliable or not?**
- 15:30 – 16:15 G. Hu **Self-sustained oscillations in complex excitable networks**
- 16:15 – 16:30 P. Ashwin **Design of cluster dynamics for coupled oscillator systems**
- 16:30 – 17:30 **Poster session II + COFFEE BREAK**
- 17:30 – 17:45 R.Wackerbauer **Transient and asymptotic behavior in a network model for the ice-albedo feedback**
- 17:45 – 18:30 V. Nekorkin **Sequential activity modes in an ensemble of synaptically coupled Hodgkin-Huxley-type neurons**
- 18:30 – 18:45 G. Zamora-López **Functional integration and segregation in corticocortical networks**
- 18:45 – 19:00 M. Palus **Complex networks from multivariate time series**
- 19:00 – 19:30 B. Schelter **Direct or indirect: Interactions in oscillatory networks with multiple time scales**
- 19:30 DINNER

# Program

**Saturday, 29 May 2010**

08:00 BREAKFAST

09:00 – 09:45 E. Schöll **Controlling synchrony by delay coupling in complex networks**

09:45 – 10:15 U. Feudel **Uncertain destination dynamics: Multistability and synchronization**

10:15 – 10:45 A. Rothkegel **Recurrent episodes of synchrony in complex networks of puls-coupled neurons**

10:45 – 11:15 COFFEE BREAK

11:15 – 11:30 G. Nolte **Nonlinear measures of brain connectivity robust to artefacts of volume conduction**

11:30 – 11:45 D. Kugiumtzis **Coupling detection from multivariate embedding**

11:45 – 12:30 A. Diaz-Guilera **Synchronization in networks of mobile oscillators**

12:30 K. Lehnertz **Best poster prizes ceremony + Closing remarks**

12:45 LUNCH

**End of the seminar and departure**