

International Seminar and Workshop Dynamics on Complex Networks and Applications

February 6 - March 3, 2006

Scientific coordinators:

Prof. Dr. Jürgen Kurths	Dr. Manuel A. Matias	Dr. Adilson E. Motter
Institut für Physik, Universität Potsdam Potsdam, Germany	Instituto Mediterraneo de Estudios Avanzados Palma de Mallorca, Spain	Los Alamos National Laboratory Los Alamos, USA

Organisation:

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Complex networks serve as natural models for a variety of systems, with examples ranging from cell biology and epidemiology over earthquakes and climate to the Internet. There is now a rapidly developing science of complex networks that has as an essential underpinning a strong interaction among different disciplines and between theory and applications. Many of these applications, such as to metabolic, social and technological networks, are in the foreground of scientific research. This research has been fueled by the discovery of universal structural properties in real-world networks and the theoretical understanding of evolutionary laws governing the emergence of these properties.

Along with the study of purely structural and evolutionary properties, there has been an increasing interest in the interplay between the dynamics and the structure of complex networks. Network problems in traditional areas such as epidemic spreading, traffic congestion, cascading failures, and synchronization of coupled oscillators, are just in the forefront of the current research on network dynamics. Now, the study of dynamical phenomena on complex networks is a fast growing and promising area of interdisciplinary research in both theory and applications. The aim of this meeting is to bring together researchers from the areas of nonlinear dynamics, statistical physics, and biological sciences to foster this very interesting area of research.

The four-week meeting is centered around a one-week Workshop (February 13 - 17), featuring the latest progresses in network dynamics, preceded by a one-week School with lectures aiming at students and researchers entering the field. The remaining two weeks will focus on specific topics of network dynamics and applications, respectively. Main topics will include the collective dynamics of coupled oscillators, diffusion processes, network synchronization, cascading failures, flows, transport, epidemic spreading, and various other dynamical processes taking places on networked biological, social and technological systems as well as the networks emerging from the dynamics of these systems.

Invited speakers: (* to be confirmed):

Joel S. Bader, (USA)	Albert-Laszlo Barabasi*, (USA)	Ginestra Bianconi, (I)	Bernd Blasius, (D)
Erik M. Bollt, (USA)	Stefan Bornholdt*, (D)	Guido Caldarelli*, (I)	Luciano da F. Costa, (BR)
Joern Davidsen, (D)	Victor M. Eguiluz, (E)	Michael Ghil, (F)	Peter Hänggi, (D)
Martin Hasler, (CH)	Shlomo Havlin, (IL)	Ying-Cheng Lai, (USA)	Jose F.F. Mendes, (P)
Alessandro P.S. de Moura, (BR)	Takashi Nishikawa, (USA)	Edward Ott, (USA)	Maya Paczuski, (GB)
Louis M. Pecora*, (USA)	Antonio Politi*, (USA)	Sidney Redner, (USA)	Maxi San Miguel, (E)
Sara A. Solla, (USA)	Marc Timme*, (USA)	Zoltan Toroczkai, (USA)	Alessandro Vespignani, (USA)
Damián H. Zanette, (RA)	Martin Zapotocky, (D)	Changsong Zhou, (D)	

Application forms can be filled online on the school's webpage. The deadline for applications is October 31, 2005. The registration fee is 100 €. Costs for accommodation and meals will be covered by the Max Planck Institute for the Physics of Complex Systems. €). In exceptional cases, limited funding is available to partly cover travel expenses.



For further information please contact:

Visitors Program

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