

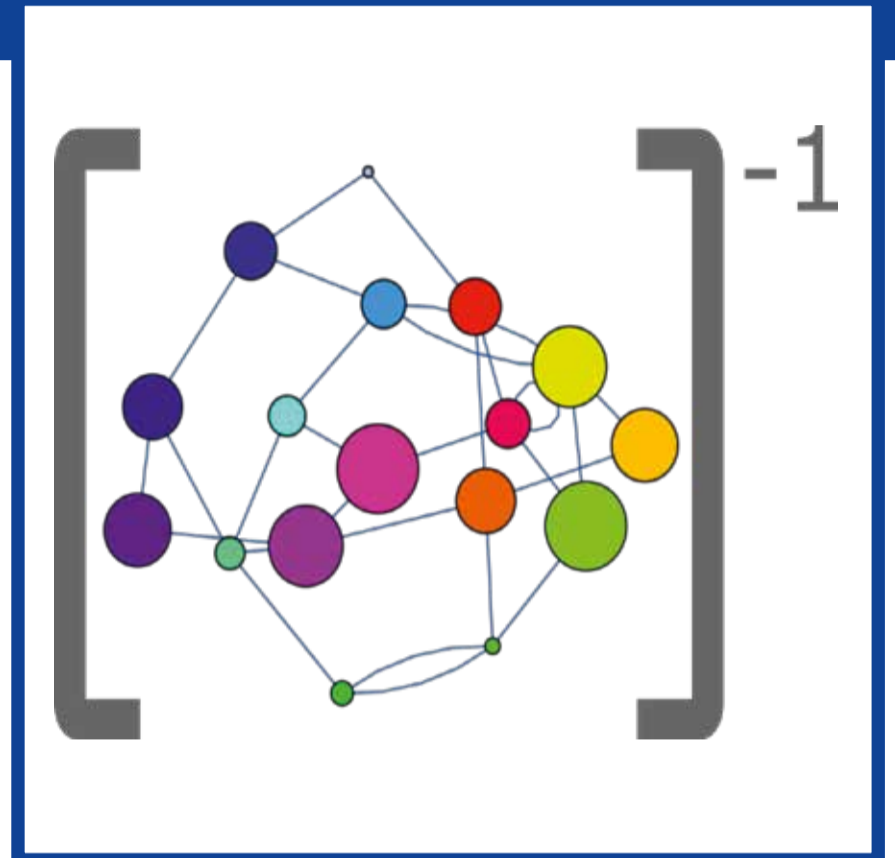
Inverse Network Dynamics - Network structure and function from nonlinear dynamics and time series

International Seminar & Workshop 12 - 21 September 2022

In contrast to the forward procedure of analyzing complex systems, we consider inverse problems: Topical questions include how to *infer* structure and models from multi-dimensional time series and how to *design* networks for a desired function. Progress relies on the rapidly increasing availability of time series data and novel tools for analyzing large data sets. The event shall bridge theory and method development with applications from biology and physics to computer science and engineering.

Topics:

- multi-dimensional time series and data analytics
- structural vs. statistical inference
- probabilistic models
- causal inference
- compressed sensing
- networks in biology, biomedical and engineering applications
- bio-engineering and synthetic biology
- unreliable, subsampled and heterogeneous data
- model reduction
- network design
- machine learning and dynamical systems
- computational and algorithmic challenges



Invited speakers:

B. Barzel (IL)
S. Bialonski (DE)
S. Boccaletti (IT)
J. Casadiego Bastidas (ES)
E. Ching (HK)
C. Grebogi (UK)
S. Grün (DE)
H. Kantz (DE)
B. Lünsmann (DE)
N. Molkenhain (DE)
E. Ott (US)
U. Parlitz (DE)
J. Peters (DK)
A. Pikovsky (DE)
V. Priesemann (DE)
M. Rosenblum (DE)
J. Runge (DE)

T. Sauer (US)
B. Schelter (UK)
E. Schneidman (IL)
I. Scholtes (DE)
L. Tupikina (FR)

Scientific coordinators:

Klaus Lehnertz
Bonn, Germany
Mor Nitzan
Cambridge, USA
Marc Timme
Dresden, Germany

Organisation:

Katrin Lantsch
MPIPKS Dresden

The application deadline for on-site participation is 15th July 2022.
Applications for virtual participation will be considered until 15th August 2022.

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 seminar and workshop is 140 Euro and should be paid by all on-site participants. Costs for accommodation and meals will be covered by the Max Planck Institute for all on-site participants. Limited funding is available to partially cover travel expenses.

For further information please contact:

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