Dynamical Methods in Data-based Exploration of Complex Systems

International Workshop
07 - 11 October 2019

Understanding underlying complex nonlinear dynamical processes from observations is a challenging problem even in the era of Big Data. Recently, novel approaches have been developed at the overlap of dynamically based techniques and methods from machine learning and data assimilation. At the workshop, general advanced tools of data-based understanding of complex systems and their particular applications will be discussed.

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 140 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.

Applications received before 15 June 2019 are considered preferentially.

Invited speakers:
- H. Abarbanel (US)
- R. Andrzejak (ES)
- J. Bröcker (UK)
- S. Daun (DE)
- C. Grebogi (UK)
- P. Ivanov (US)
- J. Kurths (DE)
- Y.-C. Lai (US)
- K. Lehnertz (DE)
- C. Letellier (FR)
- Z. Levnajic (SI)
- C. Masoller (ES)
- A. Mauroy (BE)
- E. Ott (US)
- J. Peinke (DE)
- M. Rosenblum (DE)
- T. Sauer (US)
- B. Schelter (UK)
- I. Sendiña-Nadal (ES)
- A. Stefanovska (UK)
- M. Timme (DE)
- J. Timmer (DE)
- P. van Leeuwen (UK)
- A. Witt (DE)

Scientific coordinators:
- Holger Kantz
  Dresden, Germany
- Ulrich Parlitz
  Göttingen, Germany
- Arkady Pikovsky
  Potsdam, Germany

Organisation:
- Mandy Lochar
  MPIPKS Dresden

Topics:
- machine learning of dynamical systems
- reservoir computing
- Koopman operator approach
- compressive sensing
- data assimilation
- nonlinear time series analysis of spatio-temporal data
- network reconstruction
- coupling function inference
- nonstationarity and hidden variables
- applications in physiology, neuroscience, social networks, power grids, climate, etc.

For further information please contact:
Visitors Program – Mandy Lochar
MPI for the Physics of Complex Systems
Nöthnitzer Str. 38, D-01187 Dresden
Tel: +49-351-871-1933
Fax: +49-351-871-2199
dymecs19@pks.mpg.de
www.pks.mpg.de/dymecs19