MAX PLANCK GESELLSCHAFT

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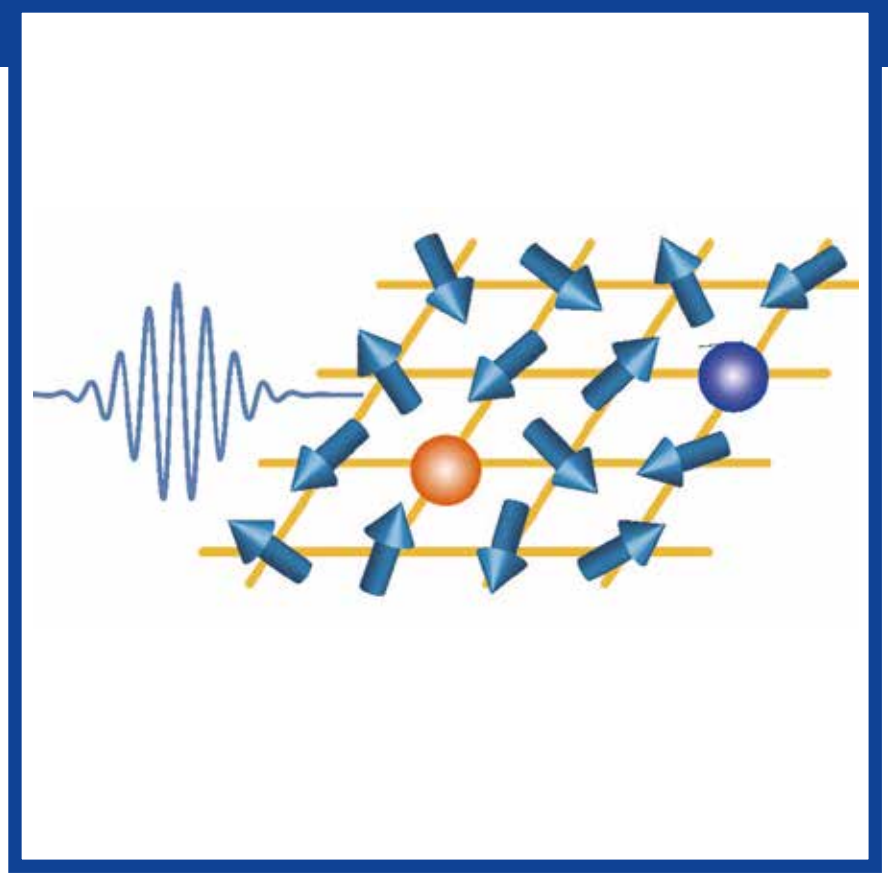
# New Trends in Nonequilibrium Many-Body Systems: Methods and Concepts

Max Planck Institute for the Physics of Complex Systems

## International Workshop
## 1 - 5 August 2022

This workshop provides a platform for researchers working in the field of nonequilibrium quantum dynamics, with a strong focus on theoretical and computational approaches. Since we lack a universally powerful method for the theoretical study of nonequilibrium states in interacting many-body systems, it is important to bring together experts from diverse backgrounds to discuss the potential and limitations of existing techniques, explore new applications for these methods, and learn about recently emerging ideas and experimental developments. We hope to stimulate a lively exchange also about technical aspects, which will result in a deeper understanding of the numerical challenges and the reliability of approximate schemes.



**Topics:**

- Theoretical techniques for nonequilibrium quantum systems
- DMFT, QMC, tensor network, DFT, semiclassical methods etc.
- Dynamical effects in many-body systems
- Floquet systems
- Higher-harmonic generation & chirality in current-carrying systems
- Electron-phonon coupled systems
- Ultra-fast Dynamics and Recent experimental progress

DFG Deutsche Forschungsgemeinschaft

This event is supported by the DFG (Deutsche Forschungsgemeinschaft) via CRC 1073.

**Invited speakers:**

M. Aidelsburger (DE)
U. Bovensiepen (DE)
T. Brabec (CA)
J. Burgdoerfer (AT)
G. Cohen (IL)
M. Eckstein (DE)
M. Fabrizio (IT)
A. Feiguin (US)
I. Gierz (DE)
D. Golez (SI)
E. Gull (US)
N. Helbig (ES)
M. Heyl (DE)
J. Joost (DE)
S. Kehrein (DE)
U. Keller (CH)
A. Landsman (US)
S. Latini (DE)
A. Leitenstorfer (DE)
Z. Lenarcic (SI)
N. Maitra (US)
T. Morimoto (JP)
Y. Murakami (JP)
A. Polkovnikov (US)
F. Pollmann (DE)
M. Reutzel (DE)
A. Rubio (DE)
U. Schollwöck (DE)
M. Sentef (DE)
R. Shimano (JP)
G. Stefanucci (IT)
T. Tohyama (JP)

**Scientific coordinators:**

Fabian Heidrich-Meisner
Göttingen, Germany

Takashi Oka
Tokyo, Japan

Philipp Werner
Fribourg, Switzerland

**Organisation:**

Maria Voigt,
MPIPKS Dresden

## Applications received before 31st May 2022 are considered preferentially.

We plan for an **in person workshop** with all participants on-site. The number of attendees is limited.

The registration fee 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.

**For further information please contact:**
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We also offer individual fellowships (phd, postdoc, sabbatical). Applications are accepted continuously. For details, please check www.pks.mpg.de/visitors