

School for Master Students: Quantum Dynamics - Fundamentals and Realizations

18 - 22 September 2023

Fascinated by quantum physics and wondering if a career in research might be for you? This school will help you find your answer. Learn about the fast-moving field of quantum dynamics, from recent experimental developments in ultracold atoms, quantum materials and Rydberg atoms, to novel theoretical and numerical approaches to exotic many-body dynamics and out-of-equilibrium phases of matter. Connect to students and to physicists of all career stages — sharing their passion for quantum research with you.

This school invites you and all master students considering a Ph.D. in quantum physics to experience the broader community of theoretical and experimental quantum research.

You will:

- **Discover the field of quantum dynamics** through introductory lectures on out-of-equilibrium states of matter, thermalization, topology and entanglement in quantum systems, the experimental observation of quantum dynamics, and numerical techniques for quantum matter. Presentations will range from overview talks by world-leading researchers to short talks on recent research by PhD students.
- **Get to know how research is done** under the supervision of active scientists: Simulate quantum dynamics on quantum computers, bring your own laptop for a hands-on coding session on numerical methods for strongly-correlated many-body physics, or learn about cutting-edge experimental techniques during a lab tour.
- **Build your network** beyond the classroom by participating in scientific discussions with your peers or with a panel of world-renowned scientists. Get career advice about pursuing a Ph.D. in quantum research. Talk physics, share ideas, and connect informally with researchers from starting Ph.D. students to the senior scientists from Max Planck Institutes (PKS and CPfS) on a trip to Saxon Switzerland or over a barbecue.

No previous research experience is required, just a basic knowledge of quantum mechanics and a strong drive to learn more.

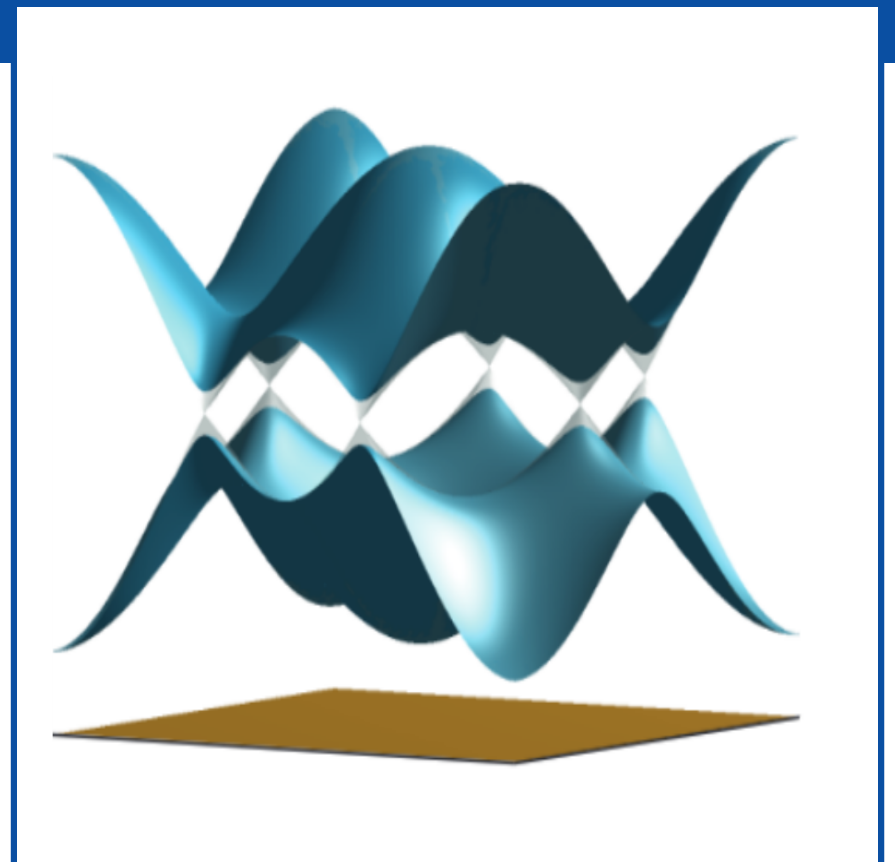
Topics:

- Nonequilibrium Physics
- Quantum Simulation
- Quantum Matter
- Topology in Physics
- Numerical Methods in Quantum Physics

Applications received before 3 July 2023 are considered preferentially.

We plan for an **on-site school**. The registration fee is 80 Euro; costs for accommodation and meals will be covered by the Max Planck Institute.

The event takes place in cooperation with the junge DPG.
The junge DPG is a working group of the
German Physical Society (DPG).



Invited speakers:

- A. Bohrdt
(University of Regensburg)
- J. Budich
(TU Dresden)
- M. Eckstein
(University of Hamburg)
- C. Felser
(MPI-CPfS)
- R. Fletcher
(MIT and MIT-Harvard Center for
Ultracold Atoms)
- B. Lake
(Helmholtz-Zentrum Berlin and
TU Berlin)
- S. Pappalardi
(University of Cologne and ENS
Paris)
- F. Pollmann
(TU Munich)

Scientific coordinators:

- M. Bukov
(MPI-PKS)
- P. Claeys
(MPI-PKS)
- S. Rockenstein
(junge DPG)
- R. Moessner
(MPI-PKS)

Organisation:

- Anna Burger
(MPI-PKS)

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