



Ergodicity Breaking and Anomalous Transport in Quantum Many-Body Systems

International Workshop 4 - 8 October 2021

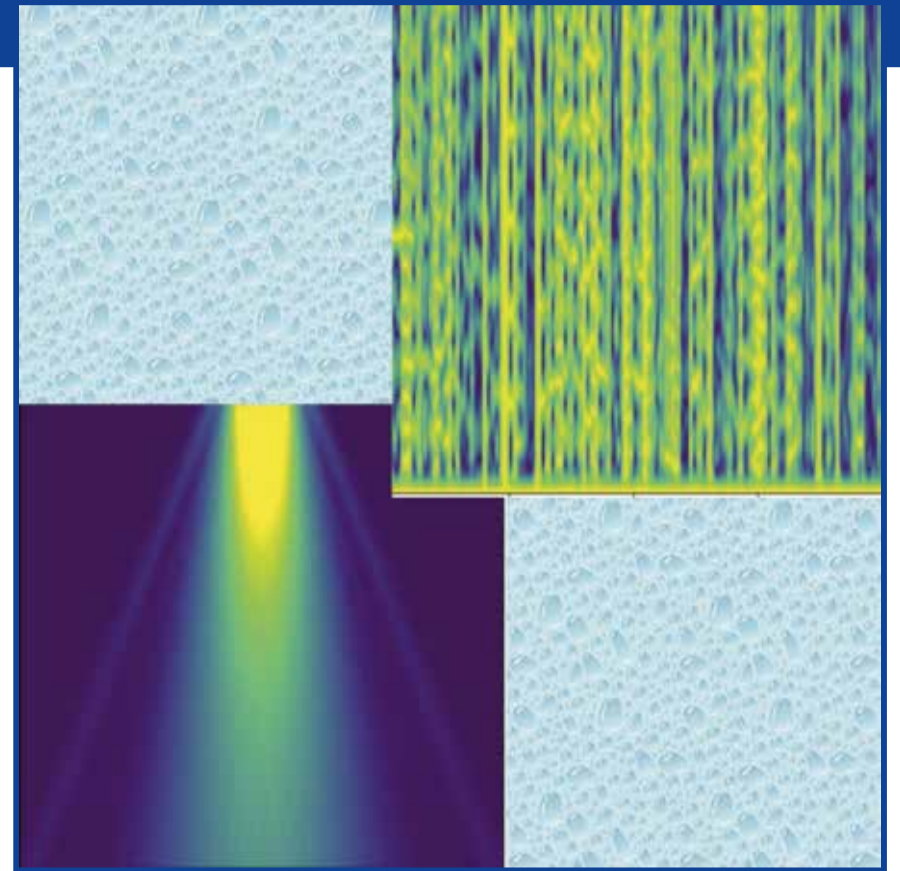
The workshop will bring together leading experts in the fields of many-body localization (MBL) and generalized hydrodynamics (GHD), experimentalists and theorists. These two rapidly developing fields have multiple connections: they address non-equilibrium physics of many-body systems that either completely break ergodicity or show very slow thermalization, and also exhibit anomalous transport. Further, experimental platforms and computational approaches to both classes of systems have much in common.

We plan for a **hybrid workshop** with a number of participants on-site and the others connected via video conference.

For accepted participants, online attendance will be possible in any case. The organizers will decide and inform about an option of on-site attendance at a later stage.

Topics

- MBL: properties of many-body wave functions, energy levels, and related observables
- MBL transition and critical behavior
- Effects of periodic driving and coupling to a bath
- Anomalously slow dynamics near the MBL transition
- MBL and quantum information
- GHD in integrable systems; effects of integrability breaking
- Anomalous diffusion in GHD regime
- Experimental realizations of MBL and GHD, including cold atoms, trapped ions, spin chains, qubit arrays.



Invited speakers

Dmitry Abanin (CH)
 Alexander Altland (DE)
 Ehud Altman (US)
 Jens Bardarson (SE)
 Soumya Bera (IN)
 Immanuel Bloch (DE)
 John Chalker (UK)
 Anushya Chandran (US)
 Jacopo De Nardis (FR)
 Elmer Doggen (DE)
 Benjamin Doyon (UK)
 Maurizio Fagotti (FR)
 Sarang Gopalakrishnan (US)
 Markus Heyl (DE)
 David Huse (US)
 Vedika Khemani (US)
 Nicolas Laflorencie (FR)
 Gabriel Lemarié (SG)
 Julian Leonard (US)
 Mikhail Lukin (US)
 William Morong (US)
 Roderich Moessner (DE)

Sid Parameswaran (UK)
 Frank Pollmann (DE)
 Tomaž Prosen (SI)
 Pedram Roushan (US)
 Maksym Serbyn (AT)
 Jörg Schmiedmayer (AT)
 D. Alan Tennant (US)
 Konstantin Tikhonov (RU)
 Romain Vasseur (US)
 David Weiss (US)
 Norman Yao (US)
 Jakub Zakrzewski (PL)
 Marko Žnidarič (SI)

Scientific coordinators

Ferdinand Evers
 Regensburg, Germany
 Alexander Mirlin
 Karlsruhe, Germany

Organisation

Maria Voigt & Mandy Lochar
 MPIPKS Dresden

Applications received before 31 August 2021 are considered preferentially.

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 on-site participants. (No fee for remote participation.)

Costs for accommodation and meals for on-site participants will be covered by the Max Planck Institute.

For further information please contact:

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