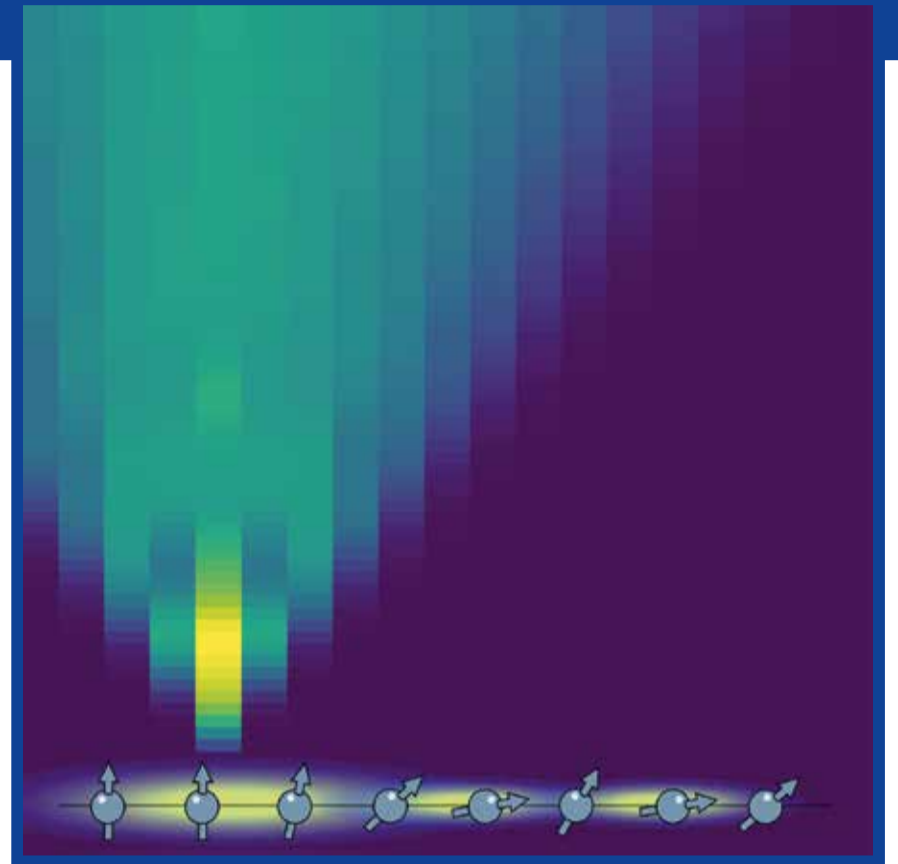




Chaos and Dynamics in Correlated Quantum Matter

International Workshop 19 - 22 March 2018

The dynamics of complex systems is apparently irreversible, seemingly in contradiction with the intrinsic reversibility of the microscopic laws of nature. The effective formation of an arrow of time by complex dynamics is an ongoing debate lasting over more than a century. Chaos plays a crucial role in resolving this paradox, and the past decade has seen a great revival of interest in this question concerning the foundations of quantum statistical mechanics and how chaos arises in quantum many-body systems due to enormous computational, theoretical and experimental progress in the field.



Topics:

- Dynamics of quantum information
- Out-of-time-order correlation
- Dynamic entanglement formation
- Quantum thermalization
- Novel quantum phases out of equilibrium
- Spatio-temporal orders
- Efficient numerical simulation of quantum many-body dynamics
- Many-body localization

Invited speakers:

Dmitry Abanin (CH)
 Vincenzo Alba (IT)
 Ehud Altman (US)
 Yevgeny Bar Lev (IL)
 Subhro Bhattacharjee (IN)
 Balázs Dóra (HU)
 Lara Faoro (FR)
 Lea Ferreira dos Santos (US)
 Alexey V. Gorshkov (US)
 Andrew G. Green (UK)
 Vedika Khemani (US)
 Michael Knap (DE)
 Dmitry Kovrizhin (UK)
 Jorge Kurchan (FR)
 Achilleas Lazarides (DE)
 Hong Liu (US)
 Mark Mezei (US)
 Adam Nahum (UK)
 Tomaž Prosen (SI)

Tibor Rakovszky (DE)
 Mukund Rangamani (US)
 Peter Reimann (DE)
 Marcos Rigol (US)
 Shivaji Sondhi (US)
 Brian Swingle (US)
 Curt von Keyserlingk (UK)

Scientific coordinators:

David Luitz
 Garching, Germany
 Roderich Moessner
 Dresden, Germany
 Frank Pollmann
 Garching, Germany

Organisation:

Katrin Lantsch
 MPIPKS Dresden

Applications received before 31 January 2018 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 120 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:

Visitors Program – Katrin Lantsch
 MPI for the Physics of Complex Systems
 Nöthnitzer Str. 38, D-01187 Dresden
 phone: +49-351-871-1931
 fax: +49-351-871-2199
 quamat18@pks.mpg.de
 www.pks.mpg.de/quamat18/