

Program

Sunday, 31 July

18:00 - 20:00 Registration at the registration desk
(guest house 4, library)

Monday, 01 August

08:45 - 09:00 **Jan-Michael Rost (director of the MPIPES) & scientific coordinators**

Opening

chair: Takashi Oka

09:00 - 09:35 **Yuta Murakami (RIKEN Tokyo)**
Anomalous temperature dependence of high-harmonic generation in Mott insulators

09:35 - 10:10 **Guy Cohen (Tel Aviv University)**
Inchworm Monte Carlo in the Steady State

10:10 - 10:40 Coffee break

chair: Philipp Werner

10:40 - 11:15 **Gianluca Stefanucci**
(University of Rome Tor Vergata)
NEGF methods for real-time simulations of interacting electrons and bosons

Program

- 11:15 - 11:35 **Yaling Ke** (University of Freiburg)
Hierarchical equations of motion approach to open quantum system dynamics: Matrix product state formulation in twin space
- 11:35 - 11:55 **Alessio Lerose** (University of Geneva)
Non-equilibrium quantum impurity problems via matrix-product states in the temporal domain
- 11:55 - 12:55 Lunch break
- 12:55 - 14:00 Informal discussions

chair: Fabian Heidrich-Meisner
- 14:00 - 14:20 **Hugo Strand** (Örebro University)
Numerical Methods for imaginary and real-time Green's functions
- 14:20 - 14:40 **Johannes Lang** (University of Cologne)
Non-equilibrium Green's functions methods for polaron dynamics
- 14:40 - 15:00 **Shovan Dutta** (Max Planck Institute for the Physics of Complex Systems)
Generating symmetry-protected long-range entanglement in many-body systems
- 15:00 - 16:30 Coffee break & informal discussions

colloquium chair: Shovan Dutta (MPIPKS)
- 16:30 - 17:30 **neqmps22 colloquium: Monika Aidelsburger** (Ludwig-Maximilians-Universität München)
Quantum simulation with ultracold atoms - from Hubbard models to gauge theories

| | |
|---------------|----------------------|
| 17:30 - 18:00 | Informal discussions |
| 18:00 - 19:30 | Welcome dinner |
| 19:30 - 21:00 | Informal discussions |

Tuesday, 02 August

chair: Hugo Strand

09:00 - 09:45

Uwe Bovensiepen (Universität Duisburg-Essen)
Non-equilibrium energy transfer dynamics across interfaces

09:45 - 10:20

Denis Golež (Jozef Stefan Institute Ljubljana)
Characterizing microscopic interactions via photo-induced lifetime changes

10:20 - 10:50

Coffee break

chair: Denis Golež

10:50 - 11:25

Adrian Feiguin (Northeastern University)
A time-dependent approach to inelastic scattering spectroscopies in and away from equilibrium: beyond perturbation theory

11:25 - 12:00

Discussions

12:00 - 13:00

Lunch break

13:00 - 14:00

Informal discussions

chair: Adrian Feiguin

- 14:00 - 14:35 **Anatoli Polkovnikov** (Boston University)
Asymptotic Birkhoff construction of a local
integral of motion for an impurity spin
- 14:35 - 14:55 **Arijit Dutta** (J. W. Goethe-Universität Frankfurt)
The voltage driven Mott insulator at finite
temperature
- 14:55 - 15:15 **Julian Rincon** (Universidad del Rosario, Bogota)
Photoinduced optical response in Mott insulators
via differential optical conductivity
- 15:15 - 15:35 **Shun Okumura** (The University of Tokyo)
Nonlinear optical responses in noncentro-
symmetric magnets
- 15:35 - 16:05 Coffee break
- chair: Julian Rincon
- 16:05 - 16:40 **Stefan Kehrein**
(Georg-August-Universität Göttingen)
Scrambling and Tripartite Information in Many-
Body Systems
- 16:40 - 17:00 **Hongzheng Zhao** (Max Planck Institute for the
Physics of Complex Systems)
Random multipolar driving: tunably slow heating
through spectral engineering

Program

- 17:00 - 17:20 **Pranay Patil** (Max Planck Institute for the Physics of Complex Systems)
Slow melting of density waves in classical analogue of ring-exchange bosonic system
- 17:20 - 17:40 **Alexander Schnell**
(Technical University of Berlin)
Floquet-heating-induced non-equilibrium Bose condensation in an open optical lattice
- 17:40 - 18:00 Informal discussions
- 18:00 - 19:00 Dinner
- 19:00 - 20:30 Poster session (main building, 2nd floor)

Wednesday, 03 August

chair: Stefan Kehrein

09:00 - 09:45

Davide Bossini (University of Konstanz)
Ultrafast Amplification and Nonlinear Coupling
of Coherent Magnon Modes

09:45 - 10:20

Martin Eckstein (Friedrich-Alexander-Universität
Erlangen-Nürnberg)
Ultrafast dynamics of symmetry-broken states: From
mean-field theory to a microscopic description of
inhomogeneous disorder

10:20 - 10:30

Group photo (to be published on the event's web
page)

10:30 - 10:0

Coffee break

chair: Anatoli Polkovnikov

10:50 - 11:25

Michael Sentef (Max Planck Institute for the
Structure and Dynamics of Matter)
Light-matter control of quantum materials:
From light-induced superconductivity to cavity
materials

11:25 - 12:00

Simone Latini (Max Planck Institute for the Struc-
ture and Dynamics of Matter)
The Ferroelectric Photo-Groundstate of SrTiO₃

12:00 - 13:00

Lunch break

13:00 - 13:50

Informal discussions

Program

- | | |
|---------------|---|
| 13:50 | Meeting for the social program (meeting point: reception on the ground floor in the main building) |
| 14:00 | departure by chartered bus from the MPIPKS to downtown of Dresden |
| 14:30 - 16:00 | short guided walking tour of the oldtown in Dresden |
| 16:00 - 17:00 | steamboat ride on the river Elbe (departure from Terrassenufer) to Dresden Blasewitz |
| 17:00 | crossing of the river Elbe on foot via the bridge 'Blaues Wunder' and ride up the hill with the Standseilbahn |
| 18:30 - 20:30 | buffet dinner at the restaurant 'Luisenhof', Bergbahnstraße 8, 01324 Dresden (Tel.: +49 351 2877783-0) |
| 20:45 | return transfer by chartered bus to the MPIPKS or hotel |

Thursday, 04 August

chair: Martin Eckstein

09:00 - 09:45

Ryo Shimano (The University of Tokyo)
Light-induced anomalous Hall effect in three dimensional Dirac electron systems

09:45 - 10:20

Takahiro Morimoto (The University of Tokyo)
Geometrical nonlinear optical effects in noncentrosymmetric crystals

10:20 - 10:50

Coffee break

chair: Michael Sentef

10:50 - 11:25

Jan-Philip Joost
(Christian-Albrechts-Universität Kiel)
Nonequilibrium Green Functions in Linear Time

11:25 - 12:00

Emanuel Gull
(University of Michigan, Ann Arbor)
From models to realistic systems Integrating the Baym Kadanoff equations for molecules

12:00 - 13:00

Lunch break

13:00 - 14:00

Informal discussions

chair: Emanuel Gull

14:00 - 14:20

Michael Schüler (Paul Scherrer Institut Villigen)
Probing Topological Floquet States by ultrafast Time- and Angle-Resolved Photoemission Spectroscopy: fingerprints in circular dichroism and birth of Floquet states

- 14:20 - 14:40 **Tanay Nag** (Uppsala University)
Dynamical construction of Quadrupolar and Octupolar topological superconductors
- 14:40 - 15:00 **Steven Tomsovic** (Washington State University)
Post-Ehrenfest Many-body Quantum Dynamics: a Semiclassical Approach
- 15:00 - 15:20 **Michael Kajan** (University of Bonn)
Auxilliary particle field theory for generalised and non-Markovian Jaynes-Cummings Models
- 15:20 - 15:50 Coffee break
- chair: Johann Kroha
- 15:50 - 16:10 **Manuel Weber** (Max Planck Institute for the Physics of Complex Systems)
Theoretical description of time-resolved photo-emission in charge-density-wave systems out to long times
- 16:10 - 16:30 **Miroslav Hopjan** (Jozef Stefan Institute Ljubljana)
Real-time non-adiabatic dynamics in the one-dimensional Holstein model: trajectory-based versus exact methods
- 16:30 - 16:50 **David Jansen**
(Georg-August-Universität Göttingen)
Dynamical properties in electron-phonon systems at finite temperatures from matrix-product state methods

- 16:50 - 17:10 **Md Mursalin Islam**
(Tata Institute of Fundamental Research Mumbai)
Non-equilibrium scalar field dynamics starting from
Fock states: Absence of thermalization in one
dimensional phonons coupled to fermions
- 17:10 - 18:00 Informal discussions
- 18:00 - 19:00 Dinner
- 19:00 - 20:00 Informal discussions

Friday, 05 August

chair: Fabian Heidrich-Meisner

09:00 - 09:45

Marcel Reutzel

(Georg-August-Universität Göttingen)

Formation of interlayer excitons in space and time

09:45 - 10:05

Jonas Richter (University College London)

Simulating hydrodynamics and entanglement growth with random quantum circuits

10:05 - 10:35

Coffee break

chair: Philipp Werner

10:35 - 10:55

Alexander Osterkorn (Georg-August-Universität Göttingen)

Photoinduced prethermal order parameter dynamics in the two-dimensional large-N Hubbard-Heisenberg model

10:55 - 11:15

Titus Neupert (University of Zurich)

Black hole dynamics and dissipation in the heating of a driven critical system

11:15 - 11:50

Frank Pollmann (Technische Universität München)

Constrained Dynamics and Hilbert space fragmentation

11:50 - 12:00

Closing

12:00 - 13:00

Lunch break

13:00 - 15:30

Informal discussions & departure