

Fundamental Aspects of Statistical Mechanics and the Emergence of Thermodynamics in Non-Equilibrium Systems

Hanse-Wissenschaftskolleg (HWK) Delmenhorst, September 23 – 26, 2019

Organizers: A. Engel and M. Holthaus (Oldenburg)

Schedule

Monday, September 23

Arrival at the HWK prior to 12:30

12:30 – 13:30 : Lunch

13:30 – 14:00 : Welcome

14:00 – 14:45

L. Santos (New York):

Time Scales and Self-Averaging in Many-Body Quantum Dynamics

14:45 – 15:30

M. Esposito (Luxembourg):

Conservation Laws in Nonequilibrium Thermodynamics

15:30 – 16:00 : Coffee break

16:00 – 16:45

D. Weld (Santa Barbara):

Probing Quantum Dynamics in Strongly-driven Optical Lattices

16:45 – 17:30

A. Eckardt (MPIPKS Dresden):

Ordering in non-equilibrium steady states of driven-dissipative quantum systems

18:00 – 20:00 : Get together (fingerfood)

Tuesday, September 24

9:00 – 9:45

M. Heyl (MPIPKS Dresden):

Many-body localization dynamics and time crystals protected by gauge invariance

9:45 – 10:30

T. Sagawa (Tokio):

Second law and eigenstate thermalization in isolated quantum many-body systems

10:30 – 11:00 : Coffee break

11:00 – 11:45

T. Mori (RIKEN Wako):

Nonequilibrium steady states in weakly dissipative macroscopic quantum systems

11:45 – 12:30

M. Silveri (Oulu):

Superconducting quantum devices under frequency modulation

12:30 – 14:00 : Lunch

14:00 – 15:30

Poster presentations

15:30 – 16:00 : Coffee break

16:00 – 16:45

M. Haque (Maynooth):

Eigenstates of many-body systems as random-matrix states

16:45 – 17:30

S. kleine Brüning (Bielefeld):

Thermalization properties of a system with topological flat bands and impurities

18:00 – 20:00 : Conference Dinner

Wednesday, September 25

9:00 – 9:45

K. Brandner (Yokohama):
Thermodynamic Geometry of Microscopic Heat Engines

9:45 – 10:30

J. Ehrich (Oldenburg):
Stochastic thermodynamics with hidden degrees of freedom

10:30 – 11:00 : Coffee break

11:00 – 11:45

Z. Lenarcic (Berkeley):
Time-dependent generalized Gibbs ensembles in open quantum systems

11:45 – 12:30

A. Widera (Kaiserslautern):
Boosting the precision of single-atom quantum probes by nonequilibrium spin dynamics

12:30 – 14:00 : Lunch

14:00 – 16:00

Poster session with coffee

16:00 – 16:45

S. Kehrein (Göttingen):
Tripartite information and scrambling in quantum spin systems

16:45 – 17:30

J. Richter (Osnabrück):
Tackling quantum many-body dynamics by typicality, numerical linked cluster expansion, and projection operator techniques

— *Free evening* —

Thursday, September 26

9:00 – 9:45

P. Tierno (Barcelona):

From integer and fractional plateaus to directional locking in colloidal ratchet currents

9:45 – 10:30

P. Maass (Osnabrück):

Non-equilibrium steady states and phase transitions in single-file Brownian motion through periodic potentials

10:30 – 11:00 : Coffee break

11:00 – 11:45

L. Dabelow (Bielefeld):

Relaxation theory for perturbed many-body quantum systems

11:45 – 12:30

O. Raz (Rehovot):

Similarities and differences between non-equilibrium steady states and time-periodic driving

12:30 – 14:00 : Lunch

Departure after lunch