Nonequilibrium Physics – Current Trends and Future Perspectives

793. WE-Heraeus-Seminar

28 August - 01 September 2023

at the Physikzentrum Bad Honnef, Germany

WILHELM UND ELSE
HERAEUS-STIFTUNG

Program

Sunday, 27 August 2023

17:00 – 20:00	Registration
18:00	*BUFFET SUPPER and informal get-together*

Monday, 28 August 2023

08:00	*BREAKFAST*	
08:45 – 09:00	Scientific organizers	**Welcome words**
09:00 – 09:50	Masahito Ueda	**Eigenstate thermalization hypothesis: locality and range of interactions**
09:50 – 10:40	Michael Kastner	**Equilibration timescales of isolated quantum systems: the role of locality**
10:40 – 11:10	*COFFEE BREAK*	
11:10 – 11:40	Karen Hovhannisyan	**Long-time equilibration can determine transient thermality**
11:40 – 12:10	Jiaozi Wang	**Impact of decoherence on the route to equilibrium**
12:10 – 12:40	Cornelia Vogel	**Canonical typicality for other ensembles than micro-canonical**
12:40	*LUNCH*	

Program

Monday, 28 August 2023

14:10 – 15:00	Tony Short	**Equilibration in discrete time**
15:00 – 15:50	Lev Vidmar	**Scale invariant quantum dynamics at eigenstate transitions**
15:50 – 16:20	Christopher Wächtler	**Topological synchronization of classical and quantum systems**
16:20 – 16:50	*COFFEE BREAK*	
16:50 – 17:05	Stefan Jorda	**About the WE-Heraeus-Foundation**
17:05 – 17:55	Roland Ketzmerick	**Structure of resonance states in open chaotic systems**
17:55 – 18:45	Sebastian Eggert	**Resonances in many-body Floquet systems**
18:45	*DINNER*	

Program

Tuesday, 29 August 2023

08:00	*BREAKFAST*	
09:00 – 09:50	Roderich Moessner	**Dynamical fractal and anomalous noise in a clean magnetic crystal**
09:50 – 10:40	Fabian Essler	**Statistics of matrix elements in integrable models**
10:40 – 11:10	*COFFEE BREAK*	
11:10 – 11:40	Christian Eidecker-Dunkel	**Allosteric impurity effects in long spin chains**
11:40 – 12:10	Roopayan Ghosh	**Relaxation of imbalance in a disordered XX model with on-site dephasing**
12:10 – 12:40	Dominik Weis	**Understanding intrinsic ratchets microscopically and phenomenologically**
12:40	*LUNCH*	
14:10 – 16:00	**Poster flash**	
16:00 – 16:30	*COFFEE BREAK*	
16:30 – 18:30	**Poster session**	
18:30	*DINNER*	

Program

Wednesday, 30 August 2023

08:00	*BREAKFAST*	
09:00 – 09:50	Lennart Dabelow	**Stalled response near thermal equilibrium in periodically driven systems**
09:50 – 10:40	Jesko Sirker	**Many-body localization?**
10:40 – 11:10	*COFFEE BREAK*	
11:10 – 12:00	Keiji Saito	**Information propagation and thermalization in bosonic systems**
12:00 – 12:30	Maximilian Prüfer	**Squeezing oscillations and information extraction in one-dimensional BECs**
12:30 – 12:40	**Conference Photo** (in the front of the lecture hall)	
12:40	*LUNCH*	
14:00	**Excursion** *(planned is an optional walking tour of either about 2 or 3.5 hours duration plus a coffee break of about 1 hour)*	
18:30	*HERAEUS DINNER* *(social event with cold & warm buffet with complimentary drinks)*	

Program

Thursday, 31 August 2023

08:00	*BREAKFAST*	
09:00 – 09:50	Konrad Viebahn	**Many-body Floquet engineering with optical lattices**
09:50 – 10:40	André Eckardt	**Floquet engineering of open quantum systems**
10:40 – 11:10	*COFFEE BREAK*	
11:10 – 11:40	Karel Proesmans	**Precision-dissipation trade-off for driven stochastic systems**
11:40 – 12:10	Hans Keßler	**From a continuous to a discrete time crystal in a driven atom-cavity system**
12:10 – 12:40	Krzysztof Ptaszyński	**System-bath entanglement in nonequilibrium fermionic systems**
12:40	*LUNCH*	

Program

Thursday, 31 August 2023

14:10 – 15:00	Jorge Kurchan	**Eigenstate thermalization, quantum designs and free probability**
15:00 – 15:50	Takashi Mori	**Liouvillian gap analysis in the weak dissipation limit**
15:50 – 16:20	Dirk Schuricht	**Long-lived circulating currents in strongly correlated nanorings**
16:20 – 16:50	*COFFEE BREAK*	
16:50 – 17:40	Markus Schmitt	**Simulating non-equlibrium dynamics of Rydberg atom arrays**
17:40 -18:30	Alvaro Alhambra	**The law of large numbers in quantum non-equilibrium dynamics**
18:30	*DINNER*	

Program

Friday, 01 September 2023

08:00	*BREAKFAST*	
09:00 – 09:50	Artur Widera	**Quantum-engine cycles in ultracold gases**
09:50 – 10:40	Luca Asteria	**Real space studies of ultracold atomic systems out of equilibrium with quantum gas magnification**
10:40 – 11:10	*COFFEE BREAK*	
11:10 – 11:40	Jonas Glatthard	**Lamb shift, potential renormalisation and mean-force Gibbs state: to shift or not to shift?**
11:40– 12:10	Zahra Shomali	**Thermal investigation of newly proposed field effect transistors using non-equilibrium Monte Carlo simulation of phonon Boltzmann equation**
12:10 – 12:40	Ryotaro Suzuki	**Quantum complexity phase transitions in monitored random circuits**
12:40 – 12:50	Scientific organizers	**Closing words**
12:50	*LUNCH*	

End of the seminar and departure

NO DINNER for participants leaving on Saturday; however, a self-service breakfast will be provided on Saturday morning