














# Nonequilibrium Quantum Workshop

**December 15 – 19, 2024**  
**Hotel Krvavec, Cerklje, Slovenia**

## TIMETABLE

-  Invited talk
-  Contributed talk
-  Tutorial
-  Poster session

### Sunday, December 15, 2024

14:00 – 16:15	REGISTRATION	
16:15 – 16:30	Opening: NQW 2024	
	<i>Chair: Janez Bonča</i>	
16:30 – 17:00	<i>Uwe Bovensiepen</i>	Non-equilibrium Dynamics of Condensed Matter in the Time Domain 
17:00 – 17:30	<i>Simon Gerber</i>	Escaping Beam Heating and Electronic Damage Using Ultrashort X-ray Free-Electron Laser Pulses 
17:30 – 17:45	<i>Nelson Hua</i>	Interlayer Stacking Order of the 1T-TaS <sub>2</sub> Commensurate Charge Density Wave Phase 
17:45 – 18:00	<i>Jaka Strohsack</i>	Ultrafast Optical Switching of Magnetic Anisotropy in the Pt/Co/H <sub>2</sub> Pc Heterostructure 
18:00 – 19:30	DINNER AND DISCUSSIONS	
	<i>Chair: Tomaž Mertelj</i>	
19:30 – 20:00	<i>Enrico Arrigoni</i>	Multiple carrier generation in a model for Mott photovoltaics 
20:00 – 20:15	<i>Anna Galler</i>	Direct signatures of light-driven bands in ultrafast nonlinear optical excitation 
20:15 – 20:30	<i>Viktor Kabanov</i>	TBA 

## Monday, December 16, 2024

			<i>Chair: Uwe Bovensiepen</i>
9:00 – 9:30	<i>Denis Golež</i>	Tutorial + Ultrafast screening of U in photo-excited charge-transfer insulators	●
9:30 – 10:00	<i>Philipp Werner</i>	Multidimensional coherent spectroscopy of correlated lattice systems	●
10:00 – 10:15	<i>Corinna Burri</i>	Non-destructive imaging of bulk electrical 'hidden' state switching in a 1T-TaS <sub>2</sub> cryo-memory device	●
10:15 – 10:45	COFFEE BREAK		
			<i>Chair: Denis Golež</i>
10:45 – 11:15	<i>Leo Radzihovsky</i>	Immobile topological quantum matter: fractons	●
11:15 – 11:45	<i>Dragan Mihailović</i>	Topologically choreographed noise in metastable Wigner crystals	●
11:45 – 12:00	<i>Yevhenii Vaskivskyi</i>	Real-time Tunnelling Microscopy: A Novel Method of Imaging Non-equilibrium Dynamics	●
12:00 – 16:00	LUNCH, DISCUSSIONS AND FREE TIME		
16:00 – 16:30	<i>Poster session: Flash talks</i>		<i>Chair: Dragan Mihailović</i>
16:30 – 16:45	<i>Lev Vidmar</i>	Too cold for summer, too hot for winter: The story of fading ergodicity	●
16:45 – 17:15	<i>Patrycja Lydzba</i>	Distinct eigenstate transitions detected via fidelity susceptibilities	●
17:15 – 17:45	<i>Jaka Vodeb</i>	Stirring the false vacuum via interacting quantized bubbles on a 5564-qubit quantum annealer	●
17:45 – 18:00	<i>Rafal Swietek</i>	Scaling theory of fading ergodicity	●
18:00 – 19:30	Dinner and Discussions		
			<i>Chair: Lev Vidmar</i>
19:30 – 20:00	<i>Marcos Rigol</i>	Typical entanglement entropy of pure states with SU(2) symmetry	●
20:00 – 20:15	<i>Jiaozi Wang</i>	Hydrodynamics and the eigenstate thermalization hypothesis	●
20:15 – 20:30	<i>Gregor Humar</i>	Scaling of excitation densities following a 1 <sup>st</sup> order quantum phase transition on a quantum annealer	●

## Tuesday, December 17, 2024

			<i>Chair: Marcos Rigol</i>
9:00 – 10:00	<i>Hermann Dürr</i>	Tutorial + THz spin-lattice dynamics in CrI <sub>3</sub>	●
10:00 – 10:15	<i>Nicolai Taufertshöfer</i>	Spatially-resolved $\mu$ ARPES study of the current-driven Hidden state in 1T-TaS <sub>2</sub>	●

10:15 – 10:45	COFFEE BREAK		
			<i>Chair: Hermann Dürr</i>
10:45 – 11:15	<i>Zala Lenarčič</i>	Nearly integrable dynamics and usage of atomic ensembles coupled to light	<span style="color: blue;">●</span>
11:15 – 11:45	<i>Martin Eckstein</i>	Nonthermal order by nonthermal disorder	<span style="color: blue;">●</span>
11:45 – 12:00	<i>Michele Coppola</i>	Characterization of non-Markovian features of subsystem dynamics	<span style="color: red;">●</span>
12:00 – 16:00	LUNCH, DISCUSSIONS AND FREE TIME		
16:00 – 16:30	<i>Poster session</i>		<span style="color: yellow;">●</span> <i>Chair: Zala Lenarčič</i>
16:30 – 17:00	<i>Emil Bozin</i>	Length Scale Dependent Transient Disorder Through an Ultrafast Transition	<span style="color: blue;">●</span>
17:00 – 17:30	<i>Michael Först</i>	Inducing transient chirality by nonlinear phononics	<span style="color: blue;">●</span>
17:30 – 17:45	<i>Alexander Osterkorn</i>	Optical properties of dynamical excitonic condensates	<span style="color: red;">●</span>
17:45 – 18:00	<i>Iris Ulčakar</i>	Lindblad dynamics and GGEs in quantum computers	<span style="color: red;">●</span>
18:00 – 19:30	Dinner and Discussions		
			<i>Chair: Emil Bozin</i>
19:30 – 20:00	<i>Marcelo Dalmonte</i>	Complexity beyond entanglement – magic of strongly interacting quantum matter	<span style="color: blue;">●</span>
20:00 – 20:30	<i>Piotr Sierant</i>	Magic spreading under quantum many-body dynamics	<span style="color: blue;">●</span>

## Wednesday, December 18, 2024

			<i>Chair: Martin Eckstein</i>
9:00 – 9:30	<i>Tomaž Prosen</i>	Quantum Dynamics of East Circuits	<span style="color: blue;">●</span>
9:30 – 10:00	<i>Fabian Heidrich-Meisner</i>	Tuning slow dynamics in a family of quantum East models: Insights from Fock-space graphs	<span style="color: blue;">●</span>
10:00 – 10:15	<i>Miroslav Hopjan</i>	Critical dynamical exponent in short-range quadratic Hamiltonians	<span style="color: red;">●</span>
10:15 – 10:45	COFFEE BREAK		
			<i>Chair: Tomaž Prosen</i>
10:45 – 11:15	<i>Robin Stenigeweg</i>	Quantum versus classical dynamics in closed and open spin systems	<span style="color: blue;">●</span>
11:15 – 11:45	<i>Rok Venturini</i>	Room-temperature non-volatile switching in a charge density wave material	<span style="color: blue;">●</span>

11:45 – 12:00	<i>Jože Gašperlin</i>	Charge Density Wave Stacking and Metastable Energy Landscapes in $\text{EuTe}_4$	●
12:00 – 16:00	LUNCH, DISCUSSIONS AND FREE TIME		
16:00 – 16:30	<i>Poster session</i>		●
<i>Chair: Robin Steinigeweg</i>			
16:30 – 17:00	<i>Marcin Mierzejewski</i>	Long-living prethermalization in nearly integrable spin ladders	●
17:00 – 17:30	<i>Dries Sels</i>	Bethe-Peierls approximation in the era of quantum computers	●
17:30 – 17:45	<i>Francesco Sammartino</i>	Impact of Coherent Phonons on Time-Resolved Optical Properties of $\text{WTe}_2$	●
17:45 – 18:00	<i>Marco Cattaneo</i>	Thermalization is typical in large classical and quantum harmonic systems	●
18:00 – 19:30	Dinner and Discussions		
<i>Chair: Marcin Mierzejewski</i>			
19:30 – 20:00	<i>Mikhail Feigel'man</i>	Debye relaxation and ac response of pinned vortex state in superconductors	●
20:00 -20:30	<i>Federico Cilento</i>	On the light-induced rotated charge-density wave state in Rare-Earth Tritelurides	●

## Thursday, December 19, 2024

<i>Chair: Federico Cilento</i>			
9:00 – 9:30	<i>Marco Malvestuto</i>	Time resolved RIXS of graphite	●
9:30 – 10:00	<i>Jure Demšar</i>	Collective mode dynamics in pressure-tuned charge-density waves	●
10:00 – 10:15	<i>Maksymilian Środa</i>	Nonequilibrium GW calculations based on quantum tensor trains	●
10:15 – 10:45	COFFEE BREAK		
<i>Chair: Igor Vaskivskyi</i>			
10:45 – 11:15	<i>Peter Prelovšek</i>	Thouless approach to transport in disordered and nearly integrable spin chains	●
11:15 – 11:30	<i>Leonard Logarič</i>	Quantum Many-Body Scars in Dual-Unitary Circuits	●
11:30 – 11:45	<i>Wibke Bronsch</i>	Ultrafast Band Structure Dynamics in Bulk $1\text{T-VSe}_2$	●
11:45 – 12:00	<i>Alexander Nico-Katz</i>	Can Quantum Computers Do Nothing?	●
12:00 – 14:00	LUNCH AND DEPARTURE		