

# PROGRAM

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**Sunday, 21 July 2024**

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17:00 – 21:00 Registration and welcome refreshment  
*Location: Pyramida hotel - lobby*

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# Monday, 22 July 2024

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07:50	–	08:20	<b>Opening address</b>	
<i>Location: Pyramida Hotel Lecture Hall A</i>				
08:20	–	09:50	<b>1 session: Stochastic and quantum thermodynamics</b>	
<i>Location: Pyramida Hotel Lecture Hall A</i>				
08:20	–	08:50	Udo Seifert:	<i>Stochastic thermodynamics: From concepts to model-free inference</i>
08:50	–	09:20	Eran Sela:	<i>Measuring stochastic thermodynamics in mesoscopic systems using a quantum work agent</i>
09:20	–	09:50	Gershon Kurizki:	<i>Quantum nonlinear thermodynamics from polaritons and spins to black holes</i>
09:50	–	10:10	Coffee break	
10:10	–	12:10	<b>2 session: Quantum measurement</b>	
<i>Location: Pyramida Hotel Lecture Hall A</i>				
10:10	–	10:40	Andrew N Jordan:	<i>Quantum Measurement: Theory and Practice</i>
10:40	–	11:10	Jasper van Wezel:	<i>Spontaneous unitarity violation as a model for quantum state reduction</i>
11:10	–	11:40	Dirk Bouwmeester:	<i>Quantum optomechanics for investigating the collapse of the quantum wave function</i>
11:40	–	12:10	Yuval Gefen:	<i>Measurement-assisted quantum cooling</i>
12:10	–	13:00	Lunch	
13:00	–	15:10	<b>3 session - A parallel: Quantum dynamics</b>	
<i>Location: Pyramida Hotel Lecture Hall A</i>				
13:00	–	13:30	Emanuel Gull:	<i>Denoising and Extension of Real- and Imaginary-time Green's Functions</i>
13:30	–	14:00	Michael Bonitz:	<i>Accelerating nonequilibrium Green functions simulations: the G1-G2 scheme</i>
14:00	–	14:30	Ilya Sinayskiy: <b>online</b>	<i>Quantum Simulation of Markovian Open Quantum Systems</i>

14:30	–	14:50	David Edward Bruschi:	<i>Towards exact factorization of quantum dynamics via Lie algebras</i>
14:50	–	15:10	Rafael Sánchez:	<i>Scattering theory of thermal and thermoelectric diodes</i>
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13:00	–	15:10	<b>3 session - B parallel : Quantum optics</b>	
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<i>Location: Pyramida Hotel Lecture Hall B</i>				
13:00	–	13:30	Anil K Patnaik:	<i>Reconstructing the Quantum State of Photon Propagating Through Atmospheric Turbulence Simulator</i>
13:30	–	14:00	Radim Filip:	<i>Quantum non-Gaussian coherence and correlation of light and atoms</i>
14:00	–	14:30	Maciej A. Nowak: <b>online</b>	<i>Eikonal formulation of large dynamical random matrix models</i>
14:30	–	14:50	Matthias Krüger:	<i>Theory of thermal transport via photons within media</i>
14:50	–	15:10	Evgeniy Narimanov: <b>online</b>	<i>The Effective Permittivity of a Composite Material</i>
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13:00	–	15:10	<b>3 session - C parallel: Many body physics</b>	
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<i>Location: Pyramida Hotel Lecture Hall C</i>				
13:00	–	13:30	Thomas Vojta:	<i>Critical Behavior and Collective Modes at the Superfluid Transition in Amorphous Systems</i>
13:30	–	14:00	Mauro Antezza:	<i>Spontaneous Breaking of Time Reversal Symmetry and Time-Crystal States in Chiral Atomic Systems</i>
14:00	–	14:30	Grégoire Ithier:	<i>Typicality and unconventional stationary states of a system of interacting spinless fermions</i>
14:30	–	14:50	Clément Sayrin:	<i>Interacting laser-trapped circular Rydberg atoms</i>
14:50	–	15:10	Jeremy R Armstrong:	<i>Static properties of an asymmetric impurity in a dipolar BEC</i>
15:10	–	15:30	Coffee break	
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15:30	–	16:00	<b>Opening address: 20th Anniversary of the first FQMT conference</b>	
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<i>Location: Pyramida Hotel Lecture Hall A</i>				

16:00	–	18:00	<b>4 session: 20th Anniversary of the first FQMT conference</b>	
<i>Location: Pyramida Hotel Lecture Hall A</i>				
16:00	–	16:30	Marlan O. Scully: <b>online</b>	<i>Entanglement in Unruh and Hawking radiation from a quantum optical perspective</i>
16:30	–	17:00	Heiner Linke:	<i>Symmetry-breaking as a tool for increasing power and efficiency in thermal-to-electric energy conversion</i>
17:00	–	17:30	Amir O. Caldeira:	<i>Exact Solution for the Heat Conductance in Harmonic Chains</i>
17:30	–	18:00	Peter Hänggi:	<i>Aspects of Quantum Thermodynamics: Facts, debatable issues and unsolved issues</i>
18:00	–	19:00	Free time and transfer to Wallenstein Palace	
19:00	–	22:00	<b>Welcome party</b>	
<i>Location: Wallenstein Palace and its Garden</i>				
19:00	–	19:30	Opening	
19:30	–	22:00	Welcome party in the Wallenstein Palace Garden	

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## Tuesday, 23 July 2024

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07:50 – 09:50 **1 session: Nonequilibrium, quantum dynamics**

*Location: Pyramida Hotel Lecture Hall A*

- 07:50 – 08:20 Ankerhold Joachim: *A Universal Framework for Quantum Dissipation: Minimally Extended State Space and Exact Time-Local Dynamics*
- 08:20 – 08:50 Tapio Ala-Nissilä: *Unraveling correlation in quantum master equations for open system dynamics*
- 08:50 – 09:20 Aurel Bulgac: *Non-Markovian character, irreversibility, and entanglement entropy of real-time quantum many-body dynamics*
- 09:20 – 09:50 Jens Eisert: *Typical thermalization*
- 09:50 – 10:10 Coffee break

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10:10 – 12:10 **2 session: Quantum computing and simulation**

*Location: Pyramida Hotel Lecture Hall A*

- 10:10 – 10:40 Richard Jozsa: *Classically simulatable quantum computations*
- 10:40 – 11:10 Franco Nori: *Machine Learning Techniques Applied to Quantum Physics*  
**online**
- 11:10 – 11:40 Giuseppe A. Falci: *Adiabatic passage in solid state: from ultrastrong coupling to noise sensing*
- 11:40 – 12:10 P. Zapletal: *Quantum convolutional neural networks for the recognition of many-body topological phases of matter*
- 12:10 – 13:00 Lunch

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13:00 – 15:10 **3 session - A parallel: Foundations of quantum mechanics**

*Location: Pyramida Hotel Lecture Hall A*

- 13:00 – 13:30 Bryan Dalton: *Can quantum theory be underpinned by a non-local hidden variable theory?*  
**online**
- 13:30 – 14:00 Ana Maria Cetto: *Physical explanation for the emergence of the quantum operator formalism and its connection with linear response theory*
- 14:00 – 14:30 Stephen A. Fulling: *Detailed Semiclassical Propagators for Simple but Nontrivial Systems*

- 14:30 – 14:50 Yutaka Shikano: *On Observer-Dependent Description of Quantum State on Identical Particles*
- 14:50 – 15:10 Nicole Yunger Halpern: *Beyond the first law: Peculiarly quantum conservation laws in thermodynamics*

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13:00 – 15:10 **3 session - B parallel: Quantum dynamics**

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*Location: Pyramida Hotel Lecture Hall B*

- 13:00 – 13:30 Yigal Meir: *Backaction and Anderson overlap catastrophe in quantum dots*
- 13:30 – 14:00 Michael Thoss: *Quantum transport and thermodynamics using the hierarchical equations of motion method*
- 14:00 – 14:30 Elisabetta Paladino: *Heat transport in the quantum Rabi model: Universality and ultrastrong coupling effects*
- 14:30 – 14:50 Mark Mitchison: *Optimal time estimation and the clock uncertainty relation for Markovian stochastic processes*
- 14:50 – 15:10 Klaus Ensslin: *Graphene quantum devices*

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13:00 – 15:10 **3 session - C parallel: Topological states, Anyons**

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*Location: Pyramida Hotel Lecture Hall C*

- 13:00 – 13:30 Ady Stern: *The return of the Anyons - news from the fractional quantum Hall effect*  
**online**
- 13:30 – 14:00 Eric Akkermans: *Topological Defects: Creating and Imaging Quantum Matter*
- 14:00 – 14:30 Marcelo Lozada-Cassou: *Impact of nanopore's topology on the electrical double layer and capacitance*
- 14:30 – 14:50 Flavio Ronetti: *Finite width of anyons changes their braiding signatures*
- 14:50 – 15:10 Frédéric Chevy: *The quasi-1D polaron problem. When is 1D still 1D?*

15:10 – 15:30 Coffee break

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15:30 – 16:30 **Afternoon session: Public lecture of Peter Hänggi**

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*Location: Pyramida Hotel Lecture Hall A*

- 15:30 – 16:20 Public lecture
- 15:30 – 16:20 **Peter Hänggi:** *The ring of Brownian motion: Its beneficial use for physics and elsewhere*

16:20 – 16:30 Discussion after the lecture of Peter Hanggi

16:30 – 17:45 Free time

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17:45 – 22:00 **Evening session: Public lectures of Theo Geisel, Allen Hermann  
and concert**

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*Location: Pyramida Hotel Lecture Hall A*

17:45 – 18:00 Opening address

18:00 – 18:50 Public lecture

18:00 – 18:50 **Theo Geisel:** *Musical Synchronization and the Secrets  
of Swing*

18:50 – 19:00 Discussion after the lecture of Theo Geisel

19:00 – 19:15 Break

19:15 – 20:05 Public lecture

19:15 – 20:05 **Allen Hermann:** *Fundamental Aspects of the Physics of  
Music*

20:05 – 20:15 Discussion after the lecture of Allen Hermann

20:15 – 20:30 Break

20:30 – 22:00 Concert of jazz music

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## Wednesday, 24 July 2024

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07:50	–	09:50	<b>1 session: Bose Einstein condensation, Gravity, Sensors</b>
<i>Location: Pyramida Hotel Lecture Hall A</i>			
07:50	–	08:20	Vanderlei S. Bagnato: <i>Time evolution of a far-from-equilibrium BEC: turbulence, scalability, reversing cascade, and thermalization</i>
08:20	–	08:50	Ernst Maria Rasel: <i>Interferometry with Bose-Einstein condensates in microgravity</i>
08:50	–	09:20	Hansjörg Dittus: <i>Quantum sensors in spacetime</i>
09:20	–	09:50	Frank Narducci: <i>Measuring the period of a pendulum with a tall atom interferometer</i>
09:50	–	10:10	Coffee break
10:10	–	12:10	<b>2 session: Quantum optics, plasmons</b>
<i>Location: Pyramida Hotel Lecture Hall A</i>			
10:10	–	10:40	Wolfgang Schleich: <i>Equivalence of Hamiltonians in Atom Optics</i>
10:40	–	11:10	Ortwin Hess: <i>Quantum Coherent Perfect Absorption in Nanoplasmonic Cavities</i>
11:10	–	11:40	Walter Pfeiffer: <i>Quantumness in plasmon assisted multi-photon photoemission</i>
11:40	–	12:10	Norbert Kroo: <i>High field nanoplasmonics (On the way to nuclear fusion)</i>
12:10	–	13:00	Lunch
13:00	–	14:40	<b>3 session - A parallel: Quantum optics</b>
<i>Location: Pyramida Hotel Lecture Hall A</i>			
13:00	–	13:30	Yuri Rostovtsev: <i>Correlated quantum photon states generated by vacuum fields</i>
13:30	–	14:00	Nir Navon: <i>Many-body physics with Fermions in an Optical Box</i>
14:00	–	14:20	Vincenzo Macrì: <i>Spontaneous scattering of Raman photons from cavity-QED systems in the ultrastrong coupling regime</i>



13:00	–	14:40	<b>3 session - B parallel: Quantum transport</b>	
<i>Location: Pyramida Hotel Lecture Hall B</i>				
13:00	–	13:30	Eugene Sukhorukov:	<i>Charge-conserving equilibration of quantum Hall edge states</i>
13:30	–	14:00	Alessandro Braggio:	<i>Nonlocal thermoelectric detection of interaction and correlations in Quantum Hall edge states</i>
14:00	–	14:20	Efrat Shimshoni:	<i>New view on the quantum Hall phase diagram of bilayer graphene</i>
14:20	–	14:40	Michael Kastner:	<i>Cooling towards a quantum critical point: Universality and scaling in open quantum systems</i>
13:00	–	14:40	<b>3 session - C parallel: Quantum structures and dynamics</b>	
<i>Location: Pyramida Hotel Lecture Hall C</i>				
13:00	–	13:30	Peter Samuelsson:	<i>Quantum measurement and control of a Maxwell demon in double quantum dots</i>
13:30	–	14:00	Björn Sothmann:	<i>Higgs-like pair amplitude dynamics in superconductor-quantum dot hybrids</i>
14:00	–	14:20	H. B. Chan:	<i>Controlled asymmetric Ising model implemented with parametric micromechanical oscillators</i>
14:20	–	14:40	Gergely Zaránd:	<i>Loss-induced quantum information jet in an infinite temperature Hubbard chain</i>
14:40	–	15:00	Coffee break	
15:00	–	17:10	<b>4 session - A parallel: Quantum transport</b>	
<i>Location: Pyramida Hotel Lecture Hall A</i>				
15:00	–	15:30	Shmuel Gurvitz:	<i>New approach beyond Floquet to tunneling current under external periodic drive of arbitrary shape</i>
15:30	–	16:00	Fernando Sols:	<i>Simultaneous symmetry breaking in spontaneous Floquet states: Floquet-Nambu-Goldstone modes, Floquet thermodynamics, and the time operator</i>
16:00	–	16:30	Oren Tal:	<i>Experimental demonstration of an atomic-scale heat pump</i>
16:30	–	16:50	Thomas L Schmidt:	<i>Quantum geometry and semiclassical dynamics in inhomogeneous fields</i>

16:50 – 17:10 Jakub Spiechowicz: *Effective mass approach to memory in non-Markovian systems*

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15:00 – 17:10 **4 session - B parallel: Out of equilibrium systems, Active matter**

*Location: Pyramida Hotel Lecture Hall B*

15:00 – 15:30 Kimball A Milton: *Quantum Self-Propulsion of an Inhomogeneous Object out of Thermal Equilibrium*  
**online**

15:30 – 16:00 Hartmut Löwen: *Nonequilibrium phase transitions in active matter*

16:00 – 16:30 Saar Rahav: *Can auxiliary sites accelerate enzymatic reactions?*

16:30 – 16:50 Daniel M Dantchev: *On ensemble dependence of fluctuation-induced forces: Exact results for Casimir and Helmholtz forces*

16:50 – 17:10 Ido Siovitz: *Non-linear excitations and low-energy effective theories of spinor gases far from equilibrium*

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15:00 – 17:10 **4 session - C parallel: General physics - models and methods**

*Location: Pyramida Hotel Lecture Hall C*

15:00 – 15:30 Ofer Biham: *The distribution of first passage times of random walks on random regular graphs*

15:30 – 16:00 Gianluca Rastelli: *Entangled photon-pair emission in circuit QED from a Cooper pair splitter*

16:00 – 16:30 Peter Schmitteckert: *NMR: From Molecules to Spectra*

16:30 – 16:50 Alexandre Zagoskin: *Generalized Pechukas-Yukawa formalism for quantum systems with discrete energy spectra*  
**online**

16:50 – 17:10 Mauro Paternostro: *Informational steady-states and conditional entropy production in continuously monitored systems*

17:10 – 19:00 Free time and transfer to the Church of Our Lady before Týn

19:00 – 20:30 **Concert of classical music**

*Location: Church of Our Lady before Týn*

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## Thursday, 25 July 2024

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07:50 – 09:50 **1 session: Foundations of quantum physics**

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*Location: Pyramida Hotel Lecture Hall A*

07:50 – 08:20 Thomas Udem: *Fundamental Physics with atomic Hydrogen*

08:20 – 08:50 Georgi Gary Rozenman: *Quantum Mechanical and Optical Inspirations in Surface Gravity Water Waves: An Analogy Exploration*

08:50 – 09:20 Fabrizio Piacentini: *Entanglement-preserving single-pair measurement of the Bell parameter*

09:20 – 09:50 Dana Zachary Anderson: *Maxwell Matter Waves: Coherence Properties, Generation, and Applications*

09:50 – 10:10 Coffee break

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10:10 – 12:10 **2 session - A parallel: Biophysics**

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*Location: Pyramida Hotel Lecture Hall A*

10:10 – 10:40 Philip Hemmer: *Engineering Nanodiamonds for Quantum-enhanced Bio-sensing*

10:40 – 11:10 Lev Mourokh: *VitaCrystallography: Old Approach to New Challenges*

11:10 – 11:40 Yaroslav M. Blanter: *Electron transport in cable bacteria*

11:40 – 12:10 Václav Špička: *Physical processes controlling biological neural networks*

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10:10 – 12:10 **2 session - B parallel: Thermodynamics**

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*Location: Pyramida Hotel Lecture Hall B*

10:10 – 10:40 Eric Lutz: *Nonequilibrium thermodynamics of quantum coherence beyond linear response*

10:40 – 11:10 Ewa Gudowska-Nowak: *Non-orthogonal eigenvectors, fluctuation-dissipation relations and entropy production*  
**online**

11:10 – 11:40 David A Kessler: *Stretched Exponential Relaxation of Weakly-Confined Brownian Particles*

11:40 – 12:10 Gabriele De Chiara: *Thermodynamics of quantum time crystals*

10:10	–	12:10	<b>2 session - C parallel: Quantum computing</b>
<i>Location: Pyramida Hotel Lecture Hall C</i>			
10:10	–	10:40	Matthias Zimmermann: <i>Quantum computing with continuous quantum systems</i>
10:40	–	11:10	Ivan Rungger: <i>Modelling non-Markovian noise in superconducting qubits</i>
11:10	–	11:40	Paolo Piergentili: <i>Low Noise Opto-Electro-Mechanical Modulator for RF-to-Optical Transduction in Quantum Communications</i>
11:40	–	12:10	Thomas Walther: <i>A scalable quantum key distribution network based on time-bin entanglement - reloaded</i>
12:10	–	13:00	Lunch
13:00	–	14:30	<b>3 session: Biophysics</b>
<i>Location: Pyramida Hotel Lecture Hall A</i>			
13:00	–	13:30	Michael Thorwart: <i>Unraveling quantum coherences in photosynthetic protein complexes at ultralow temperatures</i>
13:30	–	14:00	J. M. Rubi: <i>Optimal transport of active particles induced by substrate concentration oscillations</i>
14:00	–	14:30	Stefan Klumpp: <i>Patterns of active filaments</i>
14:30	–	14:50	Coffee break
14:50	–	16:20	<b>4 session: Non-equilibrium statistical physics</b>
<i>Location: Pyramida Hotel Lecture Hall A</i>			
14:50	–	15:20	Uri Peskin: <i>Emergence of Boltzmann subspaces in open quantum systems far from equilibrium</i>
15:20	–	15:50	Rudolf Hilfer: <i>Statistical Ensembles for Unstable Quantum and Classical Systems</i>
15:50	–	16:20	Aneta Stefanovska: <i>Stability in multiscale oscillatory systems away from equilibrium</i>
16:20	–	18:10	<b>Poster session and refreshment</b>
<i>Location: Pyramida hotel - first floor</i>			

18:10 – 18:30 Free time

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18:30 – 22:00 **Evening session: Public lecture of John Mather and concert**

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*Location: Pyramida Hotel Lecture Hall A*

18:30 – 18:45 Opening address and music introduction

18:45 – 19:45 Public lecture

18:45 – 19:45 **John C Mather:**                    *Discoveries with the James Webb Space  
Telescope*

19:45 – 20:00 Discussion after the lecture of John Mather

20:00 – 20:30 Break

20:30 – 22:00 Concert of classical music

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## Friday, 26 July 2024

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07:50	–	09:50	<b>1 session: Topological states, Non-equilibrium physics</b>
<i>Location: Pyramida Hotel Lecture Hall A</i>			
07:50	–	08:20	Wolfgang Belzig: <i>Topology, Weyl physics and quartets in multi-terminal superconducting structures</i>
08:20	–	08:50	Daniele Di Miceli: <i>Quantum-anomalous-Hall current patterns and interference in thin slabs of chiral topological superconductors</i>
08:50	–	09:20	Linda E Reichl: <i>Particle-hole thermalization in a composite super and normal conducting nanowire</i>
09:20	–	09:50	Jian-wei Pan: <i>From multi-photon entanglement to quantum computational advantage</i> <b>online</b>
09:50	–	10:10	Coffee break
10:10	–	12:10	<b>2 session - A parallel: General physics</b>
<i>Location: Pyramida Hotel Lecture Hall A</i>			
10:10	–	10:40	Jiří J. Mareš: <i>On the Nature of Physical Constants</i>
10:40	–	11:10	Sreenath K. Manikandan: <i>Detecting single gravitons with quantum sensing</i>
11:10	–	11:40	Yanbei Chen: <i>Toward Experimental Signatures of Semi-classical Gravity</i>
11:40	–	12:10	Gerard Kennedy: <i>Blackbody Friction on a Moving Nanoparticle: An Exactly Soluble Model</i>
10:10	–	12:10	<b>2 session - B parallel: Nonequilibrium physics</b>
<i>Location: Pyramida Hotel Lecture Hall B</i>			
10:10	–	10:40	Yaroslav Pavlyukh: <i>Time-Linear Quantum Transport Simulations: Electroluminescence rectification and high harmonic generation in molecular junctions</i>
10:40	–	11:10	Frithjof Anders: <i>Restoring the continuum limit in the time-dependent numerical renormalization group approach</i>

11:10	–	11:40	Yasuhiro Utsumi:	<i>Spin states at the edges of a finite p-orbital helical atomic chain attached to a ferromagnetic substrate</i>
11:40	–	12:10	Branislav K. Nikolic:	<i>Schwinger-Keldysh nonperturbative quantum field theory for driven-dissipative spin systems</i>
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10:10	–	12:10	<b>2 session - C parallel: Quantum thermodynamics</b>	
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<i>Location: Pyramida Hotel Lecture Hall C</i>				
10:10	–	10:40	Michael Galperin:	<i>Quantum Thermodynamics of Nanoscale Molecular Systems.</i>
10:40	–	11:10	Karen Hovhannisyan:	<i>Long-time equilibration can determine transient thermality</i>
11:10	–	11:40	Gerard McCaul:	<i>Thermal States via Quantum Dynamical Emulation</i>
11:40	–	12:10	Themistoklis Mavrogordatos:	<i>Wave-particle correlations and quantum-fluctuation asymmetry in multiphoton Jaynes-Cummings resonances</i>
12:10	–	13:00	Lunch	
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13:00	–	14:30	<b>3 session: Non-equilibrium statistical physics</b>	
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<i>Location: Pyramida Hotel Lecture Hall A</i>				
13:00	–	13:30	Doron Cohen:	<i>Quantum Irreversibility</i>
13:30	–	14:00	Jürgen T. Stockburger:	<i>Entropy augmentation through subadditive excess: a sane introduction of irreversibility into micro-dynamics</i>
14:00	–	14:30	Vlatko Vedral: <b>online</b>	<i>Emergence of Constructor-Based Irreversibility in Quantum Systems</i>
14:30	–	14:50	Coffee break	
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14:50	–	16:50	<b>4 session: Many body physics, Quantum Hall effect</b>	
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<i>Location: Pyramida Hotel Lecture Hall A</i>				
14:50	–	15:20	E.K.U. Gross:	<i>Mechanisms of decoherence, an ab-initio perspective</i>
15:20	–	15:50	Christian D. Glattli:	<i>Probing the 2/3 fractional Quantum Hall edge channel using electronic Hong Ou Mandel shot noise correlation.</i>

- 15:50 – 16:20 Thierry Martin: *Anyon braiding and interferometry in the Fractional Quantum Hall effect*
- 16:20 – 16:50 Yoram Alhassid: *Exploring the Fermi polaron problem with canonical-ensemble quantum Monte Carlo*  
*online*
- 16:50 – 18:00 Free time and transfer to Břevnov monastery
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- 18:00 – 23:00 **Guided tour, conference dinner and concert**  
*Location: Břevnov Monastery*
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- 18:00 – 19:00 Guided tour through Břevnov monastery
- 19:00 – 19:20 Welcome
- 19:20 – 20:30 First part of the conference dinner
- 20:30 – 21:30 **Concert of classical music**
- 21:30 – 23:00 Second part of the conference dinner



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## Saturday, 27 July 2024

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08:20	–	09:50	<b>1 session: Gravity, Cosmology</b>
<i>Location: Pyramida Hotel Lecture Hall A</i>			
08:20	–	08:50	Daine L Danielson: <i>Black Holes Decohere Quantum Superpositions</i>
08:50	–	09:20	Ron Folman and the Atom Chip Group: <i>Can a Rock be a Wave? From 100 years of De-Broglie's Wave-Particle Duality, to Quantum-Gravity.</i>
09:20	–	09:50	John C Mather: <i>Discoveries with the JWST, and what comes next</i>
09:50	–	10:10	Coffee break
10:10	–	12:10	<b>2 session: Cold atoms</b>
<i>Location: Pyramida Hotel Lecture Hall A</i>			
10:10	–	10:40	Peter McClintock: <i>Experiments on quantum turbulence in superfluid He-4</i>
10:40	–	11:10	Christopher G Baker: <i>Nonlinear hydrodynamics on a chip: wave breaking and multisoliton fission in a superfluid waveflume</i>
11:10	–	11:30	Milan Radonjić: <i>Nanomechanically-induced nonequilibrium quantum phase transition in a Bose-Einstein condensate</i>
11:30	–	11:50	Nicola Grani: <i>Dynamics of vortices in strongly interacting Fermi gases</i>
11:50	–	12:10	Alberto Imparato: <i>A quantum thermodynamics approach to optimization in complex systems</i>
12:10	–	13:00	Lunch
13:00	–	15:30	<b>3 session: General physics</b>
<i>Location: Pyramida Hotel Lecture Hall A</i>			
13:00	–	13:30	James K Freericks: <i>A Modernizing View of Heisenberg's Matrix Mechanics</i>
13:30	–	14:00	Eliahu Cohen: <i>Uncertainty relations and flow of time in inertial and non-inertial quantum reference frames</i>

- 14:00 – 14:30 Theo M. Nieuwenhuizen: *How the vacuum explains the Lorentz electron, regular black hole interiors and the dark matter*
- 14:30 – 15:00 Cyril Elouard: *Extending the Laws of Thermodynamics for Arbitrary Autonomous Quantum Systems*
- 15:00 – 15:30 Peter D. Keefe: *Reflections on the 200th Anniversary of the Second Law*

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15:30 – 16:00 **Closing remarks**

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*Location: Pyramida Hotel Lecture Hall A*