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Full Program | Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday

Times in program corresponds to [Prague time zone](#) (UTC/GMT +2 hours).

Sunday, 21 July 2024

17:00 - 21:00 Registration and welcome refreshment

Location: **Pyramida hotel - lobby**

Monday, 22 July 2024

07:50 - 8:20 **Opening address**

Location: **Pyramida Hotel Lecture Hall A**

chairperson: [Václav Špička](#)

08:20 - 9:50 **1 session: Stochastic and quantum thermodynamics**

Location: **Pyramida Hotel Lecture Hall A**

chairperson: [Peter Hänggi](#)

08:20 - 08:50 [Udo Seifert](#)

[Stochastic thermodynamics: From concepts to model-free inference](#)

08:50 - 09:20 [Cheolhee Han](#), [Doron Cohen](#), and [Eran Sela](#)

[Measuring stochastic thermodynamics in mesoscopic systems using a quantum work agent](#)

09:20 - 09:50 [Gershon Kurizki](#)

[Quantum nonlinear thermodynamics from polaritons and spins to black holes](#)

09:50 - 10:10 **Coffee break**

10:10 - 12:10 **2 session: Quantum measurement**

Location: **Pyramida Hotel Lecture Hall A**

chairperson: [Anna Maria Cetto](#)

10:10 - 10:40 [Andrew N Jordan](#) and [Irfan A Siddiqi](#)

[Quantum Measurement: Theory and Practice](#)

10:40 - 11:10 [Aritro Mukherjee](#), [Lotte Mertens](#), and [Jasper van Wezel](#)

[Spontaneous unitarity violation as a model for quantum state reduction](#)

11:10 - 11:40 [Dirk Bouwmeester](#), [Vitaly Fedoseev](#), [Ian Hedgepeth](#), [Fernando Luna](#), [Xinrui Wei](#), [Leon Raabe](#), [Wolfgang Loeffler](#), [Geert Timmerman](#), [Hidde Kanger](#), [Harmen van der Meer](#), [Kier Heeck](#), and [Enrique Morell](#)

[Quantum optomechanics for investigating the collapse of the quantum wave function](#)

11:40 - 12:10 [Josias Langbehn](#), [Kyrylo Snizhko](#), [Igor Gornyi](#), [Giovanna Morigi](#), [Yuval Gefen](#), and [Christiane Koch](#)

[Measurement-assisted quantum cooling](#)

12:10 - 13:00 **Lunch**

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

Location: **Pyramida Hotel Lecture Hall A**

chairperson: [Michael Thoss](#)

13:00 - 13:30 [Alexander Kemper](#), [Chao Yang](#), and [Emanuel Gull](#)

[Denoising and Extension of Real- and Imaginary-time Green's Functions](#)

13:30 - 14:00 [Michael Bonitz](#), [Jan-Philip Joost](#), [Karsten Balzer](#), [Christopher Makait](#), and [Erik K Schroedter](#)

[Accelerating nonequilibrium Green functions simulations: the G1-G2 scheme](#)

14:00 - 14:20 [Rafael Sánchez](#) and José Balduque
[Scattering theory of thermal and thermoelectric diodes](#)

13:00 - 15:10 3 session - B parallel : Quantum optics

Location: Pyramida Hotel Lecture Hall B

chairperson: [Walter Pfeiffer](#)

- 13:00 - 13:30 Noah S Everett, Keith A Wyman, and [Anil K Patnaik](#)
[Reconstructing the Quantum State of Photon Propagating Through Atmospheric Turbulence Simulator](#)
- 13:30 - 14:00 Radim Filip
[Quantum non-Gaussian coherence and correlation of light and atoms](#)
- 14:00 - 14:30 Jacek Grela, [Maciej A. Nowak](#), and Wojciech Tarnowski ([online](#))
[Eikonal formulation of large dynamical random matrix models](#)
- 14:30 - 14:50 Matthias Krüger
[Theory of thermal transport via photons within media](#)
- 14:50 - 15:10 Evgeniy Narimanov ([online](#))
[The Effective Permittivity of a Composite Material](#)
-

13:00 - 15:10 3 session - C parallel: Many body physics

Location: Pyramida Hotel Lecture Hall C

chairperson: [Eric Akkermans](#)

- 13:00 - 13:30 [Thomas Vojta](#), Martin Puschmann, Pulloor Kuttanikkad Vishnu, and Rajesh Narayanan
[Critical Behavior and Collective Modes at the Superfluid Transition in Amorphous Systems](#)
- 13:30 - 14:00 Mauro Antezza
[Spontaneous Breaking of Time Reversal Symmetry and Time-Crystal States in Chiral Atomic Systems](#)
- 14:00 - 14:30 [Grégoire Lthier](#), Rémi Lefèvre, and Hovan Lee
[Typicality and unconventional stationary states of a system of interacting spinless fermions](#)
- 14:30 - 14:50 Yohann Machu, Andrés Durán Hernández, Gautier Creutzer, Aurore-Alice Young, Paul Méhaignerie, Jean-Michel Raimond, Michel Brune, and [Clément Sayrin](#)
[Interacting laser-trapped circular Rydberg atoms](#)
- 14:50 - 15:10 [Jeremy R Armstrong](#), Neelam Shukla, and Artem G Volosniev
[Static properties of an asymmetric impurity in a dipolar BEC](#)
-

15:10 - 15:30 Coffee break

15:30 - 16:00 Opening address: 20th Anniversary of the first FQMT conference

Location: Pyramida Hotel Lecture Hall A

chairperson: [Udo Seifert](#)

16:00 - 18:00 4 session: 20th Anniversary of the first FQMT conference

Location: Pyramida Hotel Lecture Hall A

chairperson: [Václav Špička](#)

- 16:00 - 16:30 Marlan O. Scully ([online](#))
[Entanglement in Unruh and Hawking radiation from a quantum optical perspective](#)
- 16:30 - 17:00 Heiner Linke
[Symmetry-breaking as a tool for increasing power and efficiency in thermal-to-electric energy conversion](#)
- 17:00 - 17:30 Gabriel A. Weiderpass, Gustavo M. Monteiro, and [Amir O. Caldeira](#)
[Exact Solution for the Heat Conductance in Harmonic Chains](#)
- 17:30 - 18:00 Peter Hänggi
[Aspects of Quantum Thermodynamics: Facts, debatable issues and unsolved issues](#)
-

18:00 - 19:00 Free time and transfer to Wallenstein Palace

19:00 - 22:00 Welcome party

Location: Wallenstein Palace and its Garden

19:00 - 19:30 Opening

Tuesday, 23 July 2024

07:50 - 9:50 1 session: Nonequilibrium, quantum dynamics

Location: Pyramida Hotel Lecture Hall A

chairperson: Jürgen Stockburger

- 07:50 - 08:20 Meng Xu, Stockburger Jürgen, and [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

10:10 - 12:10 2 session: Quantum computing and simulation

Location: Pyramida Hotel Lecture Hall A

chairperson: Elisabetta Paladino

- 10:10 - 10:40 Richard Jozsa
[Classically simulatable quantum computations](#)
- 10:40 - 11:10 Franco Nori ([online](#))
[Machine Learning Techniques Applied to Quantum Physics](#)
- 11:10 - 11:40 Giuseppe A. Falci
[Adiabatic passage in solid state: from ultrastrong coupling to noise sensing](#)
- 11:40 - 12:10 [P. Zapletal](#), L. Sander, M. K. Hoffmann, N. A. McMahon, and M. J. Hartmann
[Quantum convolutional neural networks for the recognition of many-body topological phases of matter](#)
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12:10 - 13:00 Lunch

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

Location: Pyramida Hotel Lecture Hall A

chairperson: Theo Nieuwenhuizen

- 13:00 - 13:30 Bryan Dalton ([online](#))
[Can quantum theory be underpinned by a non-local hidden variable theory?](#)
- 13:30 - 14:00 [Ana Maria Cetto](#) and Luis de la Peña
[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](#)
-

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

Location: Pyramida Hotel Lecture Hall B

chairperson: Joachim Ankerhold

- 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 Luca Magazzù, [Elisabetta Paladino](#), and Milena Grifoni
[Heat transport in the quantum Rabi model: Universality and ultrastrong coupling effects](#)
- 14:30 - 14:50 Kacper Prech, Gabriel Landi, Florian Meier, Nuriya Nurgalieva, Patrick Potts, Ralph Silva, and [Mark Mitchison](#)

14:50 - 15:10 Klaus Ensslin
Graphene quantum devices

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

Location: Pyramida Hotel Lecture Hall C

chairperson: Petr Zapletal

13:00 - 13:30 Ady Stern ([online](#))
The return of the Anyons - news from the fractional quantum Hall effect

13:30 - 14:00 [Eric Akkermans](#), Amit Gof, Yuval Abulafia, and Nadav Orion
Topological Defects: Creating and Imaging Quantum Matter

14:00 - 14:30 [Marcelo Lozada-Cassou](#), Adrián Silva-Caballero, and Alejandra Lozada-Hidalgo
Impact of nanopore's topology on the electrical double layer and capacitance

14:30 - 14:50 Kishore Iyer, [Flavio Ronetti](#), Benoît Grémaud, Thierry Martin, Jérôme Rech, and Thibaut Jonckheere
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

15:30 - 16:30 Afternoon session: Public lecture of Peter Hanggi

Location: Pyramida Hotel Lecture Hall A

chairperson: Udo Seifert

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

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

Location: Pyramida Hotel Lecture Hall A

chairperson: Václav Špička

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

Wednesday, 24 July 2024

07:50 - 9:50 1 session: Bose Einstein condensation, Gravity, Sensors

Location: Pyramida Hotel Lecture Hall A

chairperson: [Wolfgang Schleich](#)

- 07:50 - 08:20 [Vanderlei S. Bagnato](#) ([online](#))
[Time evolution of a far-from-equilibrium BEC: turbulence, scalability, reversing cascade, and thermalization](#)
- 08:20 - 08:50 [Ernst Maria Rase](#)
[Interferometry with Bose-Einstein condensates in microgravity](#)
- 08:50 - 09:20 [Hansjörg Dittus](#)
[Quantum sensors in spacetime](#)
- 09:20 - 09:50 [Vanessa Ortiz](#), [Jens Berdahl](#), [Michael Manicchia](#), and [Frank Narducci](#)
[Measuring the period of a pendulum with a tall atom interferometer](#)
-

09:50 - 10:10 Coffee break

10:10 - 12:10 2 session: Quantum optics, plasmons

Location: Pyramida Hotel Lecture Hall A

chairperson: [Frank Narducci](#)

- 10:10 - 10:40 [Wolfgang Schleich](#)
[Equivalence of Hamiltonians in Atom Optics](#)
- 10:40 - 11:10 [Ortwin Hess](#)
[Quantum Coherent Perfect Absorption in Nanoplasmonic Cavities](#)
- 11:10 - 11:40 [Walter Pfeiffer](#)
[Quantumness in plasmon assisted multiphoton photoemission](#)
- 11:40 - 12:10 [Norbert Kroo](#)
[High field nanoplasmonics \(On the way to nuclear fusion\)](#)
-

12:10 - 13:00 Lunch

13:00 - 14:40 3 session - A parallel: Quantum optics

Location: Pyramida Hotel Lecture Hall A

chairperson: [Anil Patnaik](#)

- 13:00 - 13:30 [Jacob Emerick](#), [Trevor Harborth](#), and [Yuri Rostovtsev](#)
[Correlated quantum photon states generated by vacuum fields](#)
- 13:30 - 14:00 [Nir Navon](#)
[Many-body physics with Fermions in an Optical Box](#)
- 14:00 - 14:20 [Vincenzo Macri](#), [Alberto Mercurio](#), [Franco Nori](#), [Salvatore Savasta](#), and [Carlos Sánchez Muñoz](#)
[Spontaneous scattering of Raman photons from cavity-QED systems in the ultrastrong coupling regime](#)
- 14:20 - 14:40 [Ian Joel David](#), [Ilya Sinayskiy](#), and [Francesco Petruccione](#) ([online](#))
[Quantum Simulation of Markovian Open Quantum Systems](#)
-

13:00 - 14:40 3 session - B parallel: Quantum transport

Location: Pyramida Hotel Lecture Hall B

chairperson: [Joachim Ankerhold](#)

- 13:00 - 13:30 [Edvin Idrisov](#), [Ivan Levkivskiy](#), and [Eugene Sukhorukov](#)
[Charge-conserving equilibration of quantum Hall edge states](#)
- 13:30 - 14:00 [Alessandro Braggio](#), [Matteo Carrega](#), [Bjoern Sothmann](#), and [Rafael Sanchez](#)
[Nonlocal thermoelectric detection of interaction and correlations in Quantum Hall edge states](#)
- 14:00 - 14:20 [Udit Khanna](#), [Ke Huang](#), [Ganpathy Murthy](#), [Herbert Abraham Fertig](#), [Kenji Watanabe](#), [Takashi Taniguchi](#), [Jun Zhu](#), and [Efrat Shimshoni](#)
[New view on the quantum Hall phase diagram of bilayer graphene](#)
- 14:20 - 14:40 [Michael Kastner](#), [Emma C. King](#), and [Johannes N. Kriel](#)
[Cooling towards a quantum critical point: Universality and scaling in open quantum systems](#)
-

13:00 - 14:40 3 session - C parallel: Quantum structures and dynamics

Location: Pyramida Hotel Lecture Hall C

chairperson: Frithjof Anders

- 13:00 - 13:30 Peter Samuelsson ([online](#))
[Quantum measurement and control of a Maxwell demon in double quantum dots](#)
- 13:30 - 14:00 Björn Sothmann
[Higgs-like pair amplitude dynamics in superconductor-quantum dot hybrids](#)
- 14:00 - 14:20 C. Han, M. Wang, B. Zhang, M. I. Dykman, and [H. B. Chan](#)
[Controlled asymmetric Ising model implemented with parametric micromechanical oscillators](#)
- 14:20 - 14:40 [Gergely Zaránd](#), Patrik Penc, Pascu Moca, Örs Legeza, Tomaz Prosen, and Miklós Werner
[Loss-induced quantum information jet in an infinite temperature Hubbard chain](#)
-

14:40 - 15:00 Coffee break

15:00 - 17:10 4 session - A parallel: Quantum transport

Location: Pyramida Hotel Lecture Hall A

chairperson: Mauro Antezza

- 15:00 - 15:30 [Shmuel Gurvitz](#) and Dmitri Sokolovski
[New approach beyond Floquet to tunneling current under external periodic drive of arbitrary shape](#)
- 15:30 - 16:00 [Fernando Sols](#) and Juan Ramón Muñoz de Nova
[Simultaneous symmetry breaking in spontaneous Floquet states: Floquet-Nambu-Goldstone modes, Floquet thermodynamics, and the time operator](#)
- 16:00 - 16:30 Oren Tal
[Experimental demonstration of an atomic-scale heat pump](#)
- 16:30 - 16:50 Chen Xu, Andreas Haller, Suraj Hegde, Tobias Meng, and [Thomas L Schmidt](#)
[Quantum geometry and semiclassical dynamics in inhomogeneous fields](#)
- 16:50 - 17:10 Mateusz Wiśniewski, Jerzy Łuczka, and [Jakub Spiechowicz](#)
[Effective mass approach to memory in non-Markovian systems](#)
-

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

Location: Pyramida Hotel Lecture Hall B

chairperson: Lev Mourokh

- 15:00 - 15:30 [Kimball A Milton](#), Nima Poutolami, Gerard Kennedy, and Xin Guo ([online](#))
[Quantum Self-Propulsion of an Inhomogeneous Object out of Thermal Equilibrium](#)
- 15:30 - 16:00 Hartmut Löwen
[Nonequilibrium phase transitions in active matter](#)
- 16:00 - 16:30 Hila Katznelson and [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](#), Yannick Deller, Alexander Schmutz, Helmut Strobel, Markus K. Oberthaler, and Thomas Gasenzer
[Non-linear excitations and low-energy effective theories of spinor gases far from equilibrium](#)
-

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

Location: Pyramida Hotel Lecture Hall C

chairperson: Giuseppe Falci

- 15:00 - 15:30 [Ofar Biham](#), Ido Tishby, and Eytan Katzav
[The distribution of first passage times of random walks on random regular graphs](#)
- 15:30 - 16:00 [Gianluca Rastelli](#), Michele Governale, Pasquale Scarlino, and Christian Schönenberger
[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 ([online](#))
[Generalized Pechukas-Yukawa formalism for quantum systems with discrete energy spectra](#)
- 16:50 - 17:10 Mauro Paternostro ([online](#))
[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

Thursday, 25 July 2024

07:50 - 9:50 1 session: Foundations of quantum physics

Location: Pyramida Hotel Lecture Hall A

chairperson: Dirk Bouwmeester

- 07:50 - 08:20 Vitaly Wirthl, Omer Amit, Derya Taray, Vincent Weis, Lothar Maisenbacher, Theodor Hänsch, and [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 Salvatore Virzi, Enrico Rebufello, Francesco Atzori, Alessio Avella, [Fabrizio Piacentini](#), Rudi Lussana, Iris Cusini, Francesca Madonini, Federica Villa, Marco Gramegna, Eliahu Cohen, Ivo Pietro Degiovanni, and Marco Genovese
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

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

Location: Pyramida Hotel Lecture Hall A

chairperson: Stefan Klumpp

- 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 Jiří J. Mareš, [Václav Špička](#), and Pavel Hubík
Physical processes controlling biological neural networks
-

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

Location: Pyramida Hotel Lecture Hall B

chairperson: Karen Hovhannisyan

- 10:10 - 10:40 Franklin Rodrigues and [Eric Lutz](#)
Nonequilibrium thermodynamics of quantum coherence beyond linear response
- 10:40 - 11:10 Yan Fyodorov, [Ewa Gudowska-Nowak](#), Maciej A. Nowak, and Wojciech Tarnowski ([online](#))
Non-orthogonal eigenvectors, fluctuation-dissipation relations and entropy production
- 11:10 - 11:40 Luciano Defaveri, Eli Barkai, and [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 2 session - C parallel: Quantum computing

Location: Pyramida Hotel Lecture Hall C

chairperson: Giuseppe Falci

- 10:10 - 10:40 Sebastian Luhn, Freyja Ullinger, and [Matthias Zimmermann](#)
Quantum computing with continuous quantum systems
- 10:40 - 11:10 [Ivan Rungger](#), Abhishek Agarwal, Lachlan Lindoy, Deep Lall, and Francois Jamet
Modelling non-Markovian noise in superconducting qubits
- 11:10 - 11:40 [Paolo Piergentili](#), Francesco Marzoni, Michele Bonaldi, Antonio Borrielli, Riccardo Natali, Nicola Malossi, Enrico Serra, David Vitali, and Giovanni Di Giuseppe
Low Noise Opto-Electro-Mechanical Modulator for RF-to-Optical Transduction in Quantum Communications
- 11:40 - 12:10 Maximilian Tippmann, Jakob Kaltwasser, Maximilian Mengler, and [Thomas Walthers](#)
A scalable quantum key distribution network based on time-bin entanglement - reloaded
-

12:10 - 13:00 Lunch

13:00 - 14:30 3 session: Biophysics

Location: Pyramida Hotel Lecture Hall A

chairperson: Lev Mourokh

- 13:00 - 13:30 Hong-Guang Duan, Ajay Jha, Pan-Pan Zhang, Vandana Tiwari, Lipeng Chen, Richard J. Cogdell, Khuram Ashraf, Valentyn I. Prokhorenko, [Michael Thorwart](#), and R.J. Dwayne Miller
[Unraveling quantum coherences in photosynthetic protein complexes at ultralow temperatures](#)
- 13:30 - 14:00 J. D. Torrenegra-Rico, A. Arango-Resprepo, and [J. M. Rubi](#)
[Optimal transport of active particles induced by substrate concentration oscillations](#)
- 14:00 - 14:30 Stefan Klumpp
[Patterns of active filaments](#)
-

14:30 - 14:50 Coffee break

14:50 - 16:20 4 session: Non-equilibrium statistical physics

Location: Pyramida Hotel Lecture Hall A

chairperson: Joachim Ankerhold

- 14:50 - 15:20 [Uri Peskin](#), Saar Rahav, and Michael Iv
[Emergence of Boltzmann subspaces in open quantum systems far from equilibrium](#)
- 15:20 - 15:50 Rudolf Hilfer
[Statistical Ensembles for Unstable Quantum and Classical Systems](#)
- 15:50 - 16:20 Aneta Stefanovska
[Stability in multiscale oscillatory systems away from equilibrium](#)
-

16:20 - 18:10 Poster session and refreshment

Location: Pyramida hotel - first floor

18:10 - 18:30 Free time

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

Location: Pyramida Hotel Lecture Hall A

chairperson: Peter Keefe, Václav Špička

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

Friday, 26 July 2024

07:50 - 9:50 1 session: Topological states, Non-equilibrium physics

Location: Pyramida Hotel Lecture Hall A

chairperson: Doron Cohen

- 07:50 - 08:20 Wolfgang Belzig
[Topology, Weyl physics and quartets in multi-terminal superconducting structures](#)
- 08:20 - 08:50 [Daniele Di Miceli](#) and Llorenç Serra
[Quantum-anomalous-Hall current patterns and interference in thin slabs of chiral topological superconductors](#)
- 08:50 - 09:20 [Linda E Reichl](#) and Francisco Estrella
[Particle-hole thermalization in a composite super and normal conducting nanowire](#)

09:50 - 10:10 **Coffee break**

10:10 - 12:10 **2 session - A parallel: General physics**

Location: Pyramida Hotel Lecture Hall A

chairperson: [Giuseppe Falci](#)

- 10:10 - 10:40 [Jiří J. Mareš](#), Václav Špička, and Pavel Hubík
[On the Nature of Physical Constants](#)
- 10:40 - 11:10 Germain Tobar, [Sreenath K. Manikandan](#), Thomas Beitel, and Igor Pikovski
[Detecting single gravitons with quantum sensing](#)
- 11:10 - 11:40 Yanbei Chen
[Toward Experimental Signatures of Semiclassical Gravity](#)
- 11:40 - 12:10 Gerard Kennedy
[Blackbody Friction on a Moving Nanoparticle: An Exactly Soluble Model](#)
-

10:10 - 12:10 **2 session - B parallel: Nonequilibrium physics**

Location: Pyramida Hotel Lecture Hall B

chairperson: [Thierry Martin](#)

- 10:10 - 10:40 Yaroslav Pavlyukh
[Time-Linear Quantum Transport Simulations: Electroluminescence rectification and high harmonic generation in molecular junctions](#)
- 10:40 - 11:10 Frithjof Anders
[Restoring the continuum limit in the time-dependent numerical renormalization group approach](#)
- 11:10 - 11:40 [Yasuhiro Utsumi](#), Takemitsu Kato, Ora Entin-Wohlman, and Amnon Aharony
[Spin states at the edges of a finite p-orbital helical atomic chain attached to a ferromagnetic substrate](#)
- 11:40 - 12:10 [Branislav K. Nikolic](#), Felipe Reyes-Osorio, and Federico Garcia-Gaitan
[Schwinger-Keldysh nonperturbative quantum field theory for driven-dissipative spin systems](#)
-

10:10 - 12:10 **2 session - C parallel: Quantum thermodynamics**

Location: Pyramida Hotel Lecture Hall C

chairperson: [Theo Nieuwenhuizen](#)

- 10:10 - 10:40 Michael Galperin
[Quantum Thermodynamics of Nanoscale Molecular Systems.](#)
- 10:40 - 11:10 [Karen Hovhannissyan](#), Somayyeh Nemati, Carsten Henkel, and Janet Anders
[Long-time equilibration can determine transient thermality](#)
- 11:10 - 11:40 Jacob Leamer, Denys I Bondar, and [Gerard McCaul](#)
[Thermal States via Quantum Dynamical Emulation](#)
- 11:40 - 12:10 Themistoklis Mavrogordatos
[Wave-particle correlations and quantum-fluctuation asymmetry in multiphoton Jaynes-Cummings resonances](#)
-

12:10 - 13:00 **Lunch**

13:00 - 14:30 **3 session: Non-equilibrium statistical physics**

Location: Pyramida Hotel Lecture Hall A

chairperson: [Václav Špička](#)

- 13:00 - 13:30 Doron Cohen
[Quantum Irreversibility](#)
- 13:30 - 14:00 Jürgen T. Stockburger
[Entropy augmentation through subadditive excess: a sane introduction of irreversibility into microdynamics](#)
- 14:00 - 14:30 Vlatko Vedral ([online](#))
[Emergence of Constructor-Based Irreversibility in Quantum Systems](#)
-

14:30 - 14:50 **Coffee break**

14:50 - 16:50 **4 session: Many body physics, Quantum Hall effect**

Location: Pyramida Hotel Lecture Hall A

chairperson: [Frithjof Anders](#)

14:50 - 15:20 E.K.U. Gross
[Mechanisms of decoherence, an ab-initio perspective](#)

15:20 - 15:50 [Christian D. Glattli](#), Avirup De, Charles Boudet, Jayshankar Nath, Maelle Kapfer, Preden Rouleau, David Ritchie, and Ian Farrer
[Probing the 2/3 fractional Quantum Hall edge channel using electronic Hong Ou Mandel shot noise correlation.](#)

15:50 - 16:20 [Thierry Martin](#), Thibaut Jonckheere, Jérôme Rech, Benoit Grémaud, Flavio Ronetti, and Noé Demazure
[Anyon braiding and interferometry in the Fractional Quantum Hall effect](#)

16:20 - 16:50 [Yoram Alhassid](#), Shasta Ramachandran, and Scott Jensen ([online](#))
[Exploring the Fermi polaron problem with canonical-ensemble quantum Monte Carlo](#)

16:50 - 18:00 **Free time and transfer to Břevnov monastery**

18:00 - 23:00 **Guided tour, conference dinner and concert**

Location: **Břevnov Monastery**

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

Saturday, 27 July 2024

08:20 - 9:50 **1 session: Gravity, Cosmology**

Location: **Pyramida Hotel Lecture Hall A**

chairperson: [Theo Nieuwenhuizen](#)

08:20 - 08:50 [Daine L Danielson](#), Gautam Satishchandran, and Robert M Wald
[Black Holes Decohere Quantum Superpositions](#)

08:50 - 09:20 Ron Folman and the Atom Chip Group
[Can a Rock be a Wave? From 100 years of De-Broglie's Wave-Particle Duality, to Quantum-Gravity.](#)

09:20 - 09:50 John C Mather
[Discoveries with the JWST, and what comes next](#)

09:50 - 10:10 **Coffee break**

10:10 - 12:10 **2 session: Cold atoms**

Location: **Pyramida Hotel Lecture Hall A**

chairperson: [Dana Anderson](#)

10:10 - 10:40 [Peter McClintock](#), Malcolm Poole, Roch Schanen, Aneta Stefanovska, Viktor Tsepelin, Dmitry Zmeev, David Schmoranzer, Simon Midlik, Deepak Garg, and Kalpana Devi
[Experiments on quantum turbulence in superfluid He-4](#)

10:40 - 11:00 [Milan Radonjić](#), Leon Mixa, Axel Pelster, and Michael Thorwart
[Nanomechanically-induced nonequilibrium quantum phase transition in a Bose-Einstein condensate](#)

11:00 - 11:20 [Nicola Grani](#), Diego Hernandez-Rajkov, Cyprien Daix, Giulia Del Pace, and Giacomo Roati
[Dynamics of vortices in strongly interacting Fermi gases](#)

11:20 - 11:40 Alberto Imparato
[A quantum thermodynamics approach to optimization in complex systems](#)

11:50 - 13:00 **Lunch**

13:00 - 15:30 **3 session: General physics**

Location: Pyramida Hotel Lecture Hall A

chairperson: Václav Špička

13:00 - 13:30 [James K Freericks](#), Jason Tran, and Leanne Doughty
[A Modernizing View of Heisenberg's Matrix Mechanics](#)

13:30 - 14:00 Eliahu Cohen
[Uncertainty relations and flow of time in inertial and non-inertial quantum reference frames](#)

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](#) and Camille Lombard Latune
[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](#)

15:30 - 16:00 **Closing remarks**

Location: Pyramida Hotel Lecture Hall A

chairperson:
