

Program

Saturday 4th

- 17:00 - 20:00 Registration
 19:45 - 22:30 Welcome reception 19:45 followed by dinner at OAC at 20:45

Sunday 5th

- 07:30 - 09:00 **Breakfast**
 09:00 - 09:10 **Welcome address by the Conference Chair and OAC Director**
 09:10 - 10:30 D. Jaksch**, "Numerical methods for strongly correlated quantum systems"
 10:30 - 11:00 **Coffee break**
 11:00 - 12:30 J.K. Pachos**, "Topological quantum information"
 12:30 - 15:35 **Lunch break**
 15:35 - 16:10 D. Rossini, "Cluster mean-field approach to the steady-state phase diagram"
 16:10 - 16:45 W. Casteels, "Power-laws in the dynamic hysteresis of quantum nonlinear photonic resonators"
 16:45 - 17:30 J. Koch*, "Promises and challenges of studying dissipative phase transitions in circuit QED lattices"
 17:30 - 18:00 **Coffee break**
 18:00 - 18:45 R. Keil*, "Waveguide lattices as integrated optical simulators: from gauge transformations to unphysical phenomena"
 18:45 - 19:30 Yannopoulos*, "Topological photonics in heavy photon bands"
 19:30 - 20:15 Poster session 1
 20:15 - 21:30 **Dinner**

Monday 6th

- 07:30 - 09:00 **Breakfast**
 09:00 - 10:30 P. Zoller**, "Quantum simulation with quantum optical systems"
 10:30 - 11:00 **Coffee break**
 11:00 - 11:45 D. Jaksch**, "Numerical methods for strongly correlated quantum systems"
 11:45 - 12:30 J. K. Pachos**, "Topological quantum information"
 12:30 - 15:35 **Lunch break**
 15:35 - 16:10 J. Tangpanitanon, "Topological pumping of interacting photons and novel phases in driven dissipative resonator arrays"
 16:10 - 16:45 J. S. Douglas, "Molecular states of photons in atomic gases trapped near photonic crystal waveguides"
 16:45 - 17:30 H. Ritsch*, "Spontaneous crystallisation of a BEC and light in 1D trap"
 17:30 - 18:00 **Coffee break**
 18:00 - 18:45 P. Roushan*, "Chiral ground state currents of interacting photons in a synthetic magnetic field"
 18:45 - 19:30 M. Hafezi*, "Quantum transport in topological photonic structures"
 19:45 - 22:30 **Conference Dinner and Cretan Concert**

Tuesday 7th

- 07:30 - 09:00 **Breakfast**
 09:00 - 09:45 P. Zoller**, "Quantum simulation with quantum optical systems"
 09:45 - 10:30 A. Wallraff**, "Exploring quantum simulations with superconducting circuits"
 10:30 - 11:00 **Coffee break**
 11:00 - 12:30 A. Wallraff**, "Exploring quantum..."
 12:30 - 15:35 **Lunch break**

Wednesday 8th

- 07:30 - 09:00 **Breakfast**
 09:00 - 10:30 S. Diehl**, "Keldysh field theory for driven open quantum systems and some applications"
 10:30 - 11:00 **Coffee break**
 11:00 - 12:30 A. Szameit**, "Integrated optical circuits for classical and quantum light"
 12:30 - 14:00 **Lunch break (*one and a half hour)**
 14:00 - 14:30 M. Sidler, "Fermi polaron-polaritons in MoSe₂"
 14:30 - 15:00 S. Schutz, "Thermodynamics and relaxation in a system of photon-mediated long-range interactions"
 15:00 - 15:45 I. Carusotto*, "Unitary dynamics of quantum fluids of light in propagating geometries"
 15:45 - 16:15 **Coffee break**
 16:15 - 17:00 M. Weitz, "Bose-Einstein condensation of photons and periodic potentials for light"
 17:00 - 17:45 D. Gerace*, "Digital quantum simulation of condensed matter models with hybrid qubits"
 18:00 - 22:30 **Excursion and free evening in Chania,**

Thursday 9th

- 07:30 - 09:00 **Breakfast**
 09:00 - 09:45 S. Diehl**, "Keldysh field theory for driven open quantum systems and some applications"
 09:45 - 10:30 A. Szameit**, "Integrated optical circuits for classical and quantum light"
 10:30 - 11:00 **Coffee break**
 11:00 - 11:45 V. Savona*, "Variational approach to the non equilibrium steady state: Matrix-product-operators and beyond"
 11:45 - 12:30 M. Hartmann*, "A superconducting quantum simulator for topological order and the toric code"
 12:30 - 15:00 **Lunch break (*two and a half hour)**
 --- COST WG4 Meeting ---
 15:00 - 16:00 Discussion (COST member only)
 16:00 - 16:30 H. Zoubi, "Photon-photon interactions in nanophotonics"
 16:30 - 17:00 G. Calajo, "Atom-field dressed states in slow-light waveguide QED"
 17:00 - 17:30 C. Couteau, "Coupling metamaterials and plasmons with quantum states of light"
 17:30 - 18:00 **Coffee break**
 18:00 - 18:30 V. Sandoghdar "A one-dimensional controllable polaritonic system: from order to disorder"
 18:30 - 19:00 E. Paspalakis, "Controlled optical absorption and resonance fluoresce from a quantum emitter near a plasmonic nanostructure"
 19:00 - 19:30 S. N. Chormaic, "Atom-light interactions using ultra-thin optical fibres"
 19:30 - 20:00 I. D'Amico, "DFI-inspired method to calculate work distribution and average work of a quantum many-body system"
 20:00 - 20:15 R. Olton- "Special event: Gender Issues in Science " 20:15 - 21:30 **Dinner** 21:30 - 22:00 R. Olton-continue

- 15:35 - 16:10 M. J. Hwang, "Quantum phase transition of light in a finite system"
 16:10 - 16:45 A. Roulet, "Rabi oscillation in a quantum cavity: Markovian and non-Markovian dynamics"
 16:45 - 17:30 P. Walter*, "Single photons for simulating spin interactions and investigating new computational schemes"
 17:30 - 18:00 **Coffee break**
 18:00 - 18:45 E. Figueroa*, "Towards simulating the Jackiw-Rebbi model using photons and atoms"
 18:45 - 19:30 S. Schmidt*, "Flat bands in interacting light matter systems"
 19:30 - 20:15 Poster session 2
 20:15 - 21:30 **Dinner**

Friday 10th

- 7:30 - 09:00 **Breakfast**
 09:00 - 10:30 J. J. Baumberg**, "Microcavity polaritonics: Optically-steering interacting quantum liquids on a chip"
 10:30 - 11:00 **Coffee break**
 11:00 - 11:45 J. J. Baumberg**, "Microcavity polaritons..."
 11:45 - 12:30 A. Bramati*, "Lattices of quantized vortices in polariton Superfluids"
 12:30 - 15:35 **Lunch break**
 15:35 - 16:10 A. G. Tudela, "Atom-nanophotonics: a platform for quantum information and simulation"
 16:10 - 16:45 M. J. Gullans, "Effective field theory for Rydberg polaritons"
 16:45 - 17:20 G. Tsironis "Electromagnetic control of qubits through quantum breathers"
 17:30 - 18:00 **Coffee break**
 18:00 - 18:45 J. C. F. Matthews*, "Analogue and digital quantum simulation of quantum walks with photons"
 18:45 - 19:30 M. Pletyukhov*, "Multiphoton scattering theory for waveguide QED: various applications"
 19:30 - 20:05 M. Milicevic, "Orbital edge states in honeycomb lattices"
 20:05 - 20:30 Closing remarks 20:30 - 21:30 **Dinner**

** School Lecture * Invited talk