

# Program

## Saturday 4<sup>th</sup>

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

## Sunday 5<sup>th</sup>

- 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 6<sup>th</sup>

- 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**

\*\* School Lecture \* Invited talk

## Tuesday 7<sup>th</sup>

- 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 8<sup>th</sup>

- 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 MoSe<sub>2</sub>"  
 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 9<sup>th</sup>

- 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 - 14:30 **Lunch break (\*two hours)**  
 --- COST WG4 Meeting ---  
 14:30 - 15:30 Discussion on WG4 future activities (COST members only)  
 15:30 - 16:00 H. Zoubi, "Photon-photon interactions in nanophotonics"  
 16:00 - 16:30 G. Calajo, "Atom-field dressed states in slow-light waveguide QED"  
 16:30 - 17:00 C. Couteau, "Coupling metamaterials and plasmons with quantum states of light"  
 17:00 - 17:30 **Coffee break**  
 17:30 - 18:00 V. Sandoghdar "A one-dimensional controllable polaritonic system: from order to disorder"  
 18:00 - 18:30 E. Paspalakis, "Controlled optical absorption and resonance fluoresce from a quantum emitter near a plasmonic nanostructure"  
 18:30 - 19:00 S. N. Chormaic, "Atom-light interactions using ultra-thin optical fibres"  
 19:00 - 19:30 I. D'Amico, "DFI-inspired method to calculate work distribution and average work of a quantum many-body system"  
 19:30 - 20:00 R. Olton-"Special event: Gender Issues in Science" 20:00 - 21:00 **Dinner** 21:00 - 21:30 R. Olton-continue

## Friday 10<sup>th</sup>

- 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..."  
 13:00 - 14:15 **Lunch break**  
 14:15 - 15:00 A. Bramati\*, "Lattices of quantized vortices in polariton Superfluids"  
 15:00 - 15:35 A. G. Tudela, "Atom-nanophotonics: a platform for quantum information and simulation"  
 15:35 - 16:10 M. J. Gullans, "Effective field theory for Rydberg polaritons"  
 16:10 - 16:45 G. Tsironis "Electromagnetic control of qubits through quantum breathers"  
 16:45 - 17:15 **Coffee break**  
 17:15 - 18:00 J. C. F. Matthews\*, "Analogue and digital quantum simulation of quantum walks with photons"  
 18:00 - 18:45 M. Pletyukhov\*, "Multiphoton scattering theory for waveguide QED: various applications"  
 18:45 - 19:15 M. Milicevic, "Orbital edge states in honeycomb lattices"  
 19:15 - 20:00 Closing remarks 20:00 - 21:30 **Dinner**