

SuperFluctuations 2022 – Scientific Program

Timeline of each talk: 25' talk, 3' discussion.

European Central Time zone (Italian time), GMT +2

Wednesday 6 July

13:00-14:00 Welcome reception with light lunch

14:00-14:30 Opening

Flavio Seno, Director of Dep. of Physics and Astronomy “Galileo Galilei”, University of Padova, Italy

David Vitali, Director of the School of Science and Technology, University of Camerino, Italy
Yasutomo Uemura, Columbia University, USA

14:30-15:00: Jordi Boronat, Universitat Politècnica de Catalunya, Barcelona, Spain

Superfluidity in ordered phases

15:00-15:30: Antun Balaz, Institute of Physics Belgrade, Serbia

Stability of quantum degenerate fermionic polar molecules with and without microwave shielding

15:30-16:00: Francesco Minardi, University of Bologna, Italy

Collective oscillations of an atomic Bose-Bose mixture

16:00-16:30: Carlos Sa de Melo, Georgia Institute of Technology, USA ([online talk](#))

Density induced BCS-Bose evolution in gated two-dimensional superconductors: The role of the interaction-range in the Berezinskii-Kosterlitz-Thouless transition

16:30-17:00 – Coffee Break

17:00-17:30: Sergio Caprara, “Sapienza” University of Rome, Italy

Filamentary superconductivity in systems with competing charge density waves

17:30-18:00: Steve Conradson, Washington State University, USA

Saturation of the Superconductivity in $p>0.5$ Cuprates: A Novel Mechanism

18:00-18:30: Laura Fanfarillo, Department of Physics, University of Florida, USA

Pair-Density Wave in anisotropic strongly coupled pairing systems

18:30-19:00: Alessandro De Martino, City, University of London, UK

Phonon-limited transport and Fermi arc lifetime in Weyl semimetals

19:15 Visit to the Museum of Physics “Giovanni Poleni”

Thursday 7 July

09:00-09:30: Massimo Capone, SISSA, Italy

Multi-component Mott systems: (A little) more is different

09:30-10:00: Pierbiagio Pieri, University of Bologna, Italy

Evolution of an attractive polarized Fermi gas from the polaronic limit to the superfluid quantum critical point

10:00-10:30: Matija Čulo, Institute of Physics, Zagreb, Croatia

Anomalous normal and superconducting states in the nematic $FeSe_{1-x}S_x$

10:30-11:00: Antonio Bianconi, RICMASS, Rome, Italy

Multigap superconductivity and shape resonances in superconducting heterostructures with spin-orbit coupling

11:00-11:30 – Coffee Break

11:30-12:00: Nicola Lo Gullo, VTT - Finland

HELMI: a superconducting quantum computer

12:00-12:30: Giacomo Bighin, University of Heidelberg, Germany

An impurity in a heteronuclear two-component Bose mixture

12:30-13:00: Andrea Richaud, SISSA, Trieste, Italy

Dynamics of massive point vortices in a binary mixture of Bose-Einstein condensates

13:00-13:30: Ivan Morera-Navarro, Universitat de Barcelona, Spain

Superexchange liquefaction of strongly correlated lattice dipolar bosons

13:30-15:00 – Lunch Break

15:00-15:30: Doug Natelson, Rice University, USA ([online talk](#))

Shot noise indicating pairing at temperatures above T_c and energies above the gap in LSCO

15:30-16:00: Kin-Fai Mak, Cornell University, USA ([online talk](#))

Excitonic insulators in Coulomb-coupled atomic bilayers

16:00-16:30: Sara Conti, University of Antwerp, Belgium and FLEET, Australia

Chester supersolid of spatially indirect excitons in double-layer semiconductor heterostructures

16:30-17:00: Stefania De Palo, University of Trieste, Italy

Excitonic condensation, pairing gap and quadri-excitons in an electron-hole bilayer with twofold valley degeneracy

17:00-17:30: Thereza Paiva, Univ. Federal do Rio de Janeiro, Brazil ([online talk](#))

Dimensional crossover in the three-dimensional attractive Hubbard model

17:30-19:15 Coffe Break + Poster session and video talks discussion

20:00 Conference dinner at “Isola di Caprera” Restaurant

Friday 8 June

09:00-09:30: Gaetano Senatore, University of Trieste, Italy

Collective excitations and quantum incompressibility in electron-hole fluids

09:30-10:00: Sergei Klimin, University of Antwerp, Belgium

Collective excitations of a Fermi superfluid in the BCS-BEC crossover

10:00-10:30: Francesco Ancilotto, University of Padova, Italy

Spinning superfluid droplets

10:30-11:00: Kazushi Kanoda, University of Tokyo, Japan ([online talk](#))

Mott-Driven BEC-BCS Crossover in a Doped Spin Liquid Candidate

11:00-11:30 Break

11:30-12:00: Andrea Tononi, University of Paris Saclay, France

How many heavy fermions can be bound by a single light atom in 1D?

12:00-12:30: Axel Pelster, University of Kaiserslautern, Germany

On the Theoretical Description of Photon Bose-Einstein Condensates

12:30-13:00: Roberta Citro, University of Salerno, Italy

Formation and fate of quantum droplets in a quasi-1D dipolar Bose gas

13:00-13:30: Luciano Pietronero, CREF, Centro Ric. Enrico Fermi, Rome, Italy ([online talk](#))

Hydrides Superconductors in the Uemura diagram and the possible role of Nonadiabatic Superconductivity

13:30-15:00 – Lunch Break

15:00-15:30: Pieralberto Marchetti, University of Padova, Italy

A FL Solution to the FL /NFL Dichotomy in hole-doped Cuprates*

15:30-16:00: Koichiro Furutani, University of Padova, Italy

Quantum Correction to Josephson Oscillations

16:00-16:30: Andrea Perali, University of Camerino, Italy

The Camerino-Padova collaboration: Fluctuation phenomena in multicomponent superconductors and superfluids

16:30-17:00: Yasutomo Uemura, Columbia University, USA, ([online talk](#))

TBA

17:00-17:30 – Coffee Break + Closing Remarks