Winter College on Optics: Quantum Photonics and Information

10-21 February 2020
Trieste, Italy

Further information:
http://indico.ictp.it/event/9021/
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The aim of the Winter College is to offer Ph.D. students and early career researchers training in quantum optics and quantum information. The College will also offer insight in the new quantum technologies involving the generation and manipulation of photonic and matter-like states.

Directors:

V. AHUFINGER, Universitat Autònoma de Barcelona, Spain
A. BASSI, University of Trieste, Italy
M. PATERNOSTRO, Queen's University Belfast, UK

Description:

Quantum Optics, which studies how individual quanta of light interact with atoms and molecules, has been one of the most active research fields in the last years. Such endeavours have led to a deep understanding of the fundamental properties of light-matter interaction and its use to control and engineer quantum systems. Currently, taking advantage from properties like entanglement, nonlocality and coherence, photons and atoms are the key elements for quantum technologies applications. In particular, quantum information science has flourished everywhere in the world, including developing countries. Theoretical and experimental research is thriving, and leading the way to new technological developments. The Winter College will present the basic concepts as well as the most up-to-date research in Quantum Optics. An ICTP PREPARATORY SCHOOL will be organized the week before the College (from 4 - 8 February 2020) for a limited number of selected participants.

Topics:

- Introduction to quantum optics
- From quantum optics to quantum information
- Open quantum systems
- Modern Technologies for Quantum Photonics
- Hybrid quantum optics platforms for quantum technologies
- Quantum optics platforms for quantum simulation
- Continuous-variable quantum information processing
- Quantum cyber-security
- Quantum optomechanics
- Machine learning for quantum technologies
- Beyond quantum mechanics

Local Organizer:

J. NIEMELA, ICTP

Lecturers:

M. Barbieri, University Roma Tre (Italy)
A. Bassi, University of Trieste (Italy)
I. Bloch, LMU, Munich and Max Plank Institute for Quantum Optics (Germany)
B. Brecht, University of Paderborn (Germany)
M. Danailov, ELETTRA (Italy)
I. De Vega, LMU Munich (Germany)
V. Dunjko, Leiden University (The Netherlands)
E. Karimi, University of Ottawa (Canada)
V. Karimipour, Sharif University of Technology (Iran)
M. Kim, Imperial College London (UK)
K.-S. Lim, University of Malaya (Malaysia)
M. Malik, Heriot-Watt, Edinburgh (UK)
M. Palma, University of Palermo (Italy)
S. Pirandola, University of York (UK)
O. Romero-Isart, Institute for Quantum Optics and Quantum Information (Austria)
A. Serafini, University College London (UK)

How to apply:

Online application:
http://indico.ictp.it/event/9021/

Female scientists are encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

Deadline:

28 October 2019

The Abdus Salam International Centre for Theoretical Physics
www.ictp.it
Trieste, Italy