



**ICTP** | International Centre for Theoretical Physics  
**SAIFR** | South American Institute for Fundamental Research

**Campus of IFT-UNESP - São Paulo, Brasil**



**PHILIPPE W COURTEILLE**  
**IFSC-USP, Brazil**

*Basics on light-atom interaction,  
 laser cooling and trapping*



**MARCELO MARTINELLI**  
**IFUSP – USP, Brazil**

*Quantum optics &  
 quantum information*



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**University of Trento, Italy**

*Bose Gases*



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**Technion, Israel**

*Mesoscopic physics of photons*



**LUCAS MADEIRA**  
**IFSC-USP, Brazil**

*Numerical solutions of  
 Schrödinger's equation*



**FRÉDÉRIC CHEVY**  
**École Normale Supérieure-  
 Paris, France**

*BEC-BCS crossover*



**JOSEPH THYWISSEN**  
**University of Toronto, Canada**

*Optical lattices*

**March 6-17, 2023**

# SCHOOL ON LIGHT AND COLD ATOMS

The progress made during the past four decades in techniques for producing and controlling cold matter gave rise to the experimental manipulation of quantum gases, exotic states of matter, and the implementation of quantum simulators for condensed matter Hamiltonians. In addition, the progress in the production and manipulation of quantum states of light and the suppression of classical noise allowed for the emergence and control of special coherence properties and quantum statistics, for both matter and light. These developments brought the fields of quantum optics and ultracold matter closer to applications, for example, in quantum sensing and quantum information processing. This common field of research represents today a privileged platform for fundamental discoveries of non-classical properties of light and matter, and an incubator of new quantum technologies.

This school aims at training PhD students, post-docs and outstanding master students in the physics of optics and cold atoms, introducing them to the basics, and familiarizing them with applications in modern technologies.

*There is no registration fee and limited funds are available for travel and local expenses.*

**Application deadline: December 25, 2022**

**Online application and more information:**

**[www.ictp-saifr.org/lca2023/](http://www.ictp-saifr.org/lca2023/)**



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