Fundamental physics with LIGHT & ATOMS

Celebration of the International Year of Light

Immanuel Bloch

Thomas Udem

Anton Zeilinger

Wolfgang

Ketterle

Élisabeth Giacobino Patrick Gill

Wim Ubachs

Torino, January 27th, 2015

INRIM, Strada della Cacce, 91

This Workshop is the first event of the IYL following the official opening ceremony in the Senate Chamber of Palazzo Madama

The second

Chairmen:

Massimo Inguscio (INRIM, LENS and University of Firenze)

Filippo Levi (INRIM)

Sandro Stringari (University of Trento)

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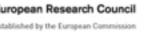








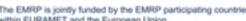




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PROGRAM	
9:00 - 9:10	Opening remarks: Massimo Inguscio and Sandro Stringari
9:10 - 9:55	"Light as a tool to study new forms of matter near absolute zero temperature" Wolfgang Ketterle, John D. MacArthur Professor of Physics, Research Laboratory for Electronics, MIT-Harvard Center for Ultracold Atoms, and MIT Department of Physics (USA)
9:55 - 10:40	"Superfluid properties of light in a nonlinear medium" Elisabeth Giacobino, Laboratoire Kastler Brossel, Université Pierre et Marie Curie, Ecole Normale Supérieure, and CNRS (France)
10:40 - 11:00	Coffe break
11:00 - 11:45	"Light and the most accurate frequency measurements" Patrick Gill, National Physical Laboratory (UK)
11:45 - 12:30	"From topological Bloch bands to quantum magnetism with Rydberg atoms - New perspectives for ultracold gases" Immanuel Bloch, Max Planck Institute of Quantum Optics and Ludwig-Maximilians University, Physics Department (Germany)
12:30 - 14:00	Lunch
14:00 - 14:15	International Holocaust remembrance day
14:15 - 15:00	"Precision spectroscopy of atomic hydrogen" Thomas Udem, Max Planck Institute of Quantum Optics (Germany)
15:00 - 15:45	"Frontiers of photon entanglement" Anton Zeilinger, University of Vienna and Austrian Academy of Sciences (Austria)
15:45 - 16:30	"Light from the early Universe and the nature of physical law" Wim Ubachs, VU University Amsterdam, Department of Physics and Astronomy (The Netherlands)
16:30 - 18:00	Poster Session (chair Francesco Minardi , CNR-INO and LENS)

Discussant of the lectures will be:

Davide Calonico (INRIM), Paolo De Natale (CNR-INO and LENS), Marco Genovese (INRIM), Stefano Giorgini (University of Trento), Leonardo Fallani (University of Firenze and LENS), Gabriele Ferrari (CNR and University of Trento), Paolo Mataloni (University of Roma "La Sapienza")

Scientific Committee: Filippo Levi (INRIM), Massimo Inguscio (INRIM, LENS and University of Firenze), Sandro Stringari (University of Trento)