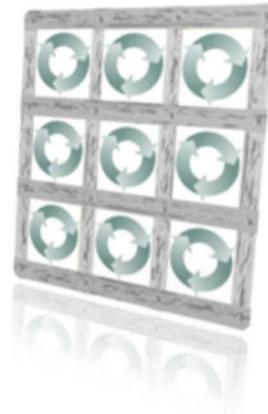




# *Workshop on Ultracold Atoms & Gauge Theories*

*13 – 17 May 2013*

*Trieste, Italy*



The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, is organizing a **Workshop on Ultracold Atoms and Gauge Theories**, to be held in Trieste from 13 to 17 May 2013.

In the last years, synthetic gauge fields for ultracold atoms have attracted a huge interest. This technique has been applied to Bose and Fermi gases where a spin-orbit coupling has been realized: it is foreseeable that the combined use of different ingredients experimentally available, including the use of optical lattices, could lead to the experimental simulation and characterization of (eventually non-Abelian) quantum Hall states and superfluids with spin-orbit coupling. Also the simulation of dynamic Abelian and non-Abelian gauge fields will be the subject of deep investigations and intense research.

These advancements call for the contribution not only from quantum optics and condensed matter, but also from field theory and the high energy communities (ranging from non-Abelian and topological field theory to QCD and gauge theory).

This Workshop aims at bringing together active researchers working in these fields and is intended to be a timely occasion to discuss the interdisciplinary approach to the study of ultracold atoms in synthetic gauge potentials.

## MAIN TOPICS

- synthetic electromagnetic fields
- non-Abelian gauge potentials
- spin-orbit couplings
- quantum Hall physics with ultracold atoms
- color superconductivity
- AdS/CFT and AdS/CMT
- simulation of gauge fields

## PARTICIPATION

Researchers and students from all countries that are members of the UN, UNESCO or IAEA can attend the Workshop. The Organizers will select participants upon evaluation of the application forms. The main purpose of the Centre is to help researchers from developing countries within the framework of international cooperation. However, scientists from developed countries are most welcome to attend. As the Workshop will be conducted in English, participants must have an adequate working knowledge of that language.

As a rule, travel and subsistence expenses of the participants are borne by their home institutions. Limited funds are available for a limited number of applicants who are nationals of, and working in, developing countries. As scarcity of funds allows travel to be granted only in a few exceptional cases, every effort should be made by candidates to secure support for their fare from their home country. Such financial support is available only to those attending the entire Workshop. There is no registration fee to attend this activity.

## HOW TO APPLY

The online application form can be accessed at the activity website:

<http://agenda.ictp.it/smr.php?2462>

The closing date for requesting participation with funding and/or visa support is **15 FEBRUARY 2013**, other applications may be done within **15 MARCH 2013**.

## WORKSHOP SECRETARIAT:

c/o Ms. Nicoletta Ivanissevich, ICTP

E-mail: [smr2462@ictp.it](mailto:smr2462@ictp.it)

Fax: +39-040-22407383

Phone: +39-040-2240383

## DIRECTORS

**J. DALIBARD**

*Collège de France  
& ENS, France*

**M. LEWENSTEIN**

*ICFO & ICREA, Spain*

**G. MUSSARDO**

*SISSA, Italy*

**C. SA DE MELO**

*Georgia Tech, USA*

**A. TROMBETTONI**

*CNR-IOM DEMOCRITOS  
& SISSA, Italy*

## LOCAL ORGANIZER

**M. MÜLLER**

*ICTP, Italy*

## **DEADLINES**

**for requesting participation:**

- **15 February 2013**  
(if financial support  
and/or visa are needed)
- **15 March 2013**  
(otherwise)

**Workshop webpage:**

<http://agenda.ictp.it/smr.php?2462>