



**The Abdus Salam
International Centre for Theoretical Physics**



**Workshop and School on
TOPOLOGICAL ASPECTS OF
CONDENSED MATTER PHYSICS**

**27 June - 8 July 2011
(ICTP, Miramare, Trieste, Italy)**

The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste is organizing a **Workshop and School on "Topological Aspects of Condensed Matter Physics"**, to take place from 27 June to 8 July 2011. This event is co-sponsored by the **Institute for Complex Adaptive Matter (ICAM-12CAM)**.

Topological phenomena are ubiquitous in electronic condensed matter physics. The study of these phenomena has been developed independently, but in recent years there has been a great amount of convergence. On one hand, topological phenomena have played a central role in the quantum Hall effect for many years. More recently, the non-Abelian quantum Hall states have attracted a great deal of attention, both experimentally and theoretically. On the other hand, in a completely different development taking place within the past five years, topological band insulators have been discovered theoretically, and soon after experimentally. This has led to a high level of activity in this field. The area of topological phenomena in electronic condensed matter physics is an emergent field revealing most fundamental aspects of quantum many-body physics, with potential applications to quantum computation. This two-week event will bring together leading experts in these areas with the aim of nucleating new ideas and conceptual developments.

TOPICS:

- i) **New Theoretical Developments;**
- ii) **New Materials Exhibiting various Topological Properties and New Experiments that Probe Them;**
- iii) **Mathematical Structures underlying such Phenomena.**

The Workshop and School are followed by the **Fifth Stig Lundqvist Conference on Advancing Frontiers of Condensed Matter Physics, from 11 to 15 July**, which will continue to focus on many of the themes mentioned above.

PARTICIPATION

Scientists and students from all countries that are members of the United Nations, UNESCO or IAEA may attend the activity. As it will be conducted in English, participants must have an adequate working knowledge of this language. Although the main purpose of the Centre is to help researchers from developing countries through a programme of training activities within a framework of international cooperation, a limited number of students and post-doctoral scientists from developed countries are also welcome to attend.

As a rule, travel and subsistence expenses of the participants are borne by their home institutions. However, limited funds are available for some participants, who are nationals of, and working in, a developing country, and who are not more than 45 years of age. Such support is available only to those attending the entire activity. Every effort should be made by candidates to secure support for their fare (or at least half-fare). **There is no registration fee for attending the activity.**

HOW TO APPLY FOR PARTICIPATION

The Application Form can be accessed at the activity website: <http://agenda.ictp.it/smr.php?2248>. Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

DEADLINE for receipt of applications: 1 MARCH 2011

Activity Secretariat:

Telephone: +39-040-2240305

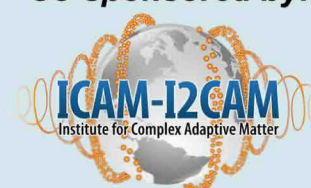
E-mail: smr2248@ictp.it

Telefax: +39-040-224163

ICTP Home Page: <http://www.ictp.it>

(Trieste, updated May 2011)

Co-sponsored by:



ORGANIZERS:

M. Zahid HASAN
(Princeton, USA)

Charles L. KANE
(Pennsylvania, USA)

Andreas W.W. LUDWIG
(Santa Barbara, USA)

Paul B. WIEGMANN
(Chicago, USA)

LOCAL ORGANIZER:
Vladimir E. KRAVTSOV
(ICTP, Trieste, Italy)

SPEAKERS:

Alexander ABANOV (Stony Brook)
Eddy ARDONNE (NORDITA, Sweden)
Andrei BERNEVIG (Princeton)
Andrea CAPPELLI (INFN, Florence)
Claudio CHAMON (Boston)
Nigel COOPER (Cambridge, UK)
Sankar DAS SARMA (Maryland)
Marcel FRANZ (British Columbia, Canada)
Liang FU (Harvard)
Akira FURUSAKI (RIKEN, Japan)
David GOLDHABER-GORDON (Stanford)
Bert HALPERIN (Harvard)
Hans HANSSON (Stockholm)
Yasuhiro HATSUGAI (Tokyo)
Woowon KANG (Chicago)
Aharon KAPITULNIK (Stanford)
Mahito KOHMOTO (Univ. Tokyo)
Leo KOUWENHOVEN (Delft, Netherlands)
Dung Hai LEE (Berkeley)
Michael LEVIN (Maryland)
Leonid LEVITOV (MIT)
Hari MANOHARAN (Stanford)
Charles MARCUS (Harvard)
Alexander MIRLIN (Karlsruhe)
Laurens MOLENKAMP (Würzburg)
Joel MOORE (Berkeley, USA)
Naoto NAGAOSA (Tokyo)
Chetan NAYAK (Microsoft, Santa Barbara)
Qian NIU (Texas)
Phuan ONG (Princeton)
Masaki OSHIKAWA (Tokyo)
Xiaoliang QI (Stanford)
Shinsei RYU (Berkeley)
Kareljan SCHOUTENS (Amsterdam)
Zhi Xun SHEN (Stanford)
Steve SIMON (Oxford, UK)
Ady STERN (Weizmann, Israel)
Michael STONE (Urbana, Illinois)
Ashvin VISHWANATH (Berkeley)
Grigory VOLOVIK (Helsinki)
Xiao-Gang WEN (MIT, USA)
Robert WILLETT (Alcatel Lucent)
Yong-Shi WU (Utah)
Qi Kun XUE (IOP Beijing, China)
Ali YAZDANI (Princeton)
Shou Cheng ZHANG (Stanford)