



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



## Workshop and Conference on Geometrical Aspects of Quantum States in Condensed Matter

Organizer(s): Dam Thanh Son (USA), A. Ludwig (USA), P. Wiegmann (USA). ICTP Local Organizer: V.E. Kravtsov  
Trieste - Italy, 01 - 05 July 2013

**Venue: Adriatico Guest House Kastler Lecture Hall**

### Programme

**Monday** (Room:Adriatico Guest House Kastler Lecture Hall)

**1 July 2013**

**08:30 - 09:15** (Room: Adriatico Guest House - Kastler Lecture Hall Area (Lower Level 1))  
--- Registration Formalities ---

**09:15 - 09:30** **Opening Comments**

**09:30 - 10:30** **Petr Horava** / *University of California, Berkeley*

**10:30 - 10:45** (Room: Adriatico Guest House (Terrace))  
--- Coffee Break ---

**10:45 - 11:45** **Hiroshi Ooguri** / *California Institute of Technology*

**11:45 - 12:45** **Christopher P. Herzog** / *State University of New York at Stony Brook*  
**Entanglement Entropy and Temperature**

**12:45 - 14:00** --- Lunch ---

**14:00 - 15:00** **Andrea Cappelli** / *INFN and Department of Physics, Florence, Italy*  
**Partition functions and stability criteria of topological insulators**

**15:00 - 16:00**     **Alexander Abanov** / *State University of New York at Stony Brook*

**16:00 - 16:15**     (Room: Adriatico Guest House (Terrace))  
--- Coffee Break ---

**16:15 - 17:35**     **C. Benjamin, X. Dong, U. Fischer, S. Kourtis**  
**Participants' Talks**  
Please see the activity notice board for timings and titles.

**19:30 - 22:00**     (Room: Adriatico Guest House (Terrace))  
--- Welcome Reception ---  
Buffet reception for all Faculty and Participants

**Tuesday** (Room:Adriatico Guest House Kastler Lecture Hall)

**2 July 2013**

**09:00 - 10:00**     **Subir Sachdev** / *Harvard University*  
**The quantum criticality of metals in two dimensions: the interplay of antiferromagnetism, d-wave superconductivity, and bond order**

**10:00 - 11:00**     **Denis Bernard** / *Ecole Normale Supérieure, Paris*  
**Non-demolition measurement and real time imaging of quantum and thermal fluctuations**

**11:00 - 11:30**     (Room: Adriatico Guest House (Terrace))  
--- Coffee Break ---

**11:30 - 12:30**     **Shamit Kachru** / *Stanford University*

**12:30 - 14:00**     --- Lunch ---

**14:00 - 15:00**     **Eldad Bettelheim** / *The Hebrew University of Jerusalem*  
**2D hydrodynamics of 1D integrable models in phase space**

**15:00 - 16:00**     **Ashvin Vishwanath** / *University of California, Berkeley*  
**Novel Topological Phases and Surface States in Interacting Systems**

**16:00 - 16:15**     (Room: Adriatico Guest House (Terrace))  
--- Coffee Break ---

**16:15 - 17:35**     **J.M. Matera, D. Monaco, J.N. Fuchs, W. Witczak-Krempa, T. Can**  
**Participants' Talks**  
Please see the activity notice board for timings and titles.

**Wednesday** (Room:Adriatico Guest House Kastler Lecture Hall)

**3 July 2013**

**09:00 - 10:00**     **Charles Kane** / *University of Pennsylvania*  
**Topological Order at the Surface of a Topological Insulator**

**10:00 - 11:00**     **Sean Hartnoll** / *Stanford University*  
**Holographic entanglement beyond classical gravity**

- 11:00 - 11:30** (Room: Adriatico Guest House (Terrace))  
--- Coffee Break ---
- 11:30 - 12:30** **ShouCheng Zhang** / *Stanford University*
- 12:30 - 14:00** --- Lunch ---
- 14:00 - 15:00** **Discusssion time**
- 15:00 - 16:00** **M.P. Heller, A. Amoretti, A. Protopenov**  
**Participants' Talks**  
Please see the activity notice board for timings and titles.
- 16:00 - 16:15** (Room: Adriatico Guest House (Terrace))  
--- Coffee Break ---
- 16:15 - 17:50** **D.V. Khveshchenko, A. Shapere, S. Dickmann, Q.H. Liu**  
**Participants' Talks**  
Please see the activity notice board for timings and titles.
- 19:30 - 22:30** --- Conference Dinner ---  
Full details are on the board and on the leaflet given to you at registration. Those who wish to go to the conference dinner should sign up with the secretary (room 3) and pay the quota by 12 noon on Tuesday 2 July.

**Thursday** (Room:Adriatico Guest House Kastler Lecture Hall)

**4 July 2013**

- 09:00 - 10:00** **Grigori E. Volovik** / *Aalto University, Helsinki and Landau Institute, Moscow*  
**Momentum space topology in Standard Model and in condensed matter**
- 10:00 - 11:00** **Andrei Bernevig** / *Princeton University*
- 11:00 - 11:30** (Room: Adriatico Guest House (Terrace))  
--- Coffee Break ---
- 11:30 - 12:30** **Emil Martinec** / *University of Chicago*  
**Inflation from Chern-Simons Terms**
- 12:30 - 14:00** --- Lunch ---
- 14:00 - 17:00** (Room: Leonardo da Vinci Building Main Lecture Hall)  
**Dirac Medal Ceremony**

**Friday** (Room:Adriatico Guest House Kastler Lecture Hall)

**5 July 2013**

- 09:00 - 10:00** **Duncan Haldane** / *Princeton University*

**10:00 - 11:00**     **Sung-sik Lee / *McMaster University***  
**Quantum Renormalization Group and Quantum Gravity**

**11:00 - 11:30**     **Closing Comments**