



The Abdus Salam
International Centre for Theoretical Physics



Autumn College on Non-Equilibrium Quantum Systems
2 - 13 May 2011
Buenos Aires, Argentina

*held at University of Buenos Aires, Dept. of Physics, Mathematics and Computer Science
Aula Magna of Pabellon I*

co-sponsored by:
Alexander-von-Humboldt Foundation, Bonn
Universidad de Buenos Aires (UBA)
Institute for Complex Adaptive Matter (ICAM), Davis

PRELIMINARY PROGRAMME (as of 10th May)

Monday, 2 May

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|---------------|---|
| 9:00 - 10:30 | REGISTRATION |
| 10:30 - 11:00 | OPENING - Mussardo, Kiselev, Paz, Arrachea, Lozano |
| 11:00 - 12:00 | I. Cirac
Time-dependent methods for many body quantum systems. |
| 12:00 - 13:30 | LUNCH BREAK |
| 13:30 - 14:30 | R. Shekhter
Electronic cooling of nanomechanical shuttle devices. |
| 14:30 - 15:30 | F. von Oppen
Topological phases and Majorana endstates in disordered wires. |
| 15:30 - 15:45 | Coffee Break |
| 15:45 - 16:45 | A. Stern
Majorana fermions in two-dimensional quantum Hall systems and one dimensional quantum wires. |
| 16:45 - 18:00 | Get together |

Tuesday, 3 May

- 9:15 - 10:15 **M. Kiselev**
Thermo-electric transport through Kondo quantum dots.
- 10:15 - 10:45 Contributed talk - **T. Karzig**
Energy relaxation and thermalization of hot electrons in quantum wires.
- 10:45 - 11:00 Coffee Break
- 11:00 - 11:30 Contributed talk - **O. Levchenko**
Interaction effects on transport in quantum wires.
- 11:30 - 12:00 Contributed talk - **C. Naón**
Four-terminal resistance of a quantum wire with weakly invasive contacts.
- 12:00 - 13:30 LUNCH BREAK
- 13:30 - 14:30 **G. Mussardo**
Quenches in conformal and integrable theories.
- 14:30 - 15:30 **H. Pastawski**
Harnessing the quantum dynamical phase transition in experimental systems.
- 15:30 - 16:00 Contributed talk - **L. Foini**
Fluctuation-dissipation relations after a quantum quench in the transverse field ising chain.
- 16:00 - 18:00 Coffee Break and POSTER SESSION no.1

Wednesday, 4 May

- 10:30 - 11:30 **Y. Gefen**
Luttinger liquid out of equilibrium.
- 11:30 - 12:00 Contributed talk - **A. Aligia**
Nonequilibrium dynamics of a singlet-triplet Anderson impurity near the quantum phase transition.
- 12:00 - 13:30 LUNCH BREAK

(cont.)

- 13:30 - 15:00 **L. Glazman**
Dynamics of quantum liquids in one dimension - Lect. 1
- 15:00 - 15:15 Coffee Break
- 15:15 - 16:15 **F. Marquardt**
Thermalization in quantum many-body systems.
- 16:15 - 16:45 Contributed talk - **D. Cabra**
Anharmonic effects in magnetic systems.

Thursday, 5 May

- 9:15 - 10:45 **L. Glazman**
Dynamics of quantum liquids in one dimension - Lect. 2
- 10:45 - 11:00 Coffee Break
- 11:00 - 12:00 **J. von Delft**
Quantum quench of Kondo correlations in optical absorption.
- 12:00 – 14:00 LUNCH BREAK
- 14:00 – 15:00 **Colloquium by Y. Gefen**
How to measure fractional statistics.
- 15:00 - 15:30 Coffee Break
- 15:30 - 17:00 **A. Kamenev**
Kinetics of Bose condensation - Lect. 1

Friday, 6 May

- 9:15 - 10:45 **L. Glazman**
Dynamics of quantum liquids in one dimension - Lect. 3
- 10:45 - 11:00 Coffee Break
- 11:00 - 12:00 **G. Refael**
Floquet topological insulators.
- 12:00 - 13:30 LUNCH BREAK
- 13:30 - 15:00 **A. Kamenev**
Kinetics of Bose condensation - Lect. 2
- 15:00 - 15:15 Coffee break
- 15:15 - 16:45 **I. Aleiner**
Many-body localization - Lect. 1

Monday, 9 May

- 9:15 - 10:45 **M. Büttiker**
Noise of quantum coherent conductors: Introduction.
- 10:45 - 11:00 Coffee Break
- 11:00 - 12:00 **L.W. Molenkamp**
Dirac fermions in HgTe quantum wells.
- 12:00 - 13:30 LUNCH BREAK
- 13:30 - 15:00 **A. Kamenev**
Kinetics of Bose condensation - Lect. 3
- 15:00 - 15:15 Coffee Break
- 15:15 - 16:45 **I. Aleiner**
Many-body localization - Lect. 2
- 16:45 - 18:00 Get together

Tuesday, 10 May

- 9:15 - 10:45 **M. Büttiker**
Noise of quantum coherent conductors: Correlations.
- 10:45 - 11:00 Coffee Break
- 11:00 - 12:30 **N. Birge**
Measurements out of equilibrium in normal and superconducting metals
- Lect. 1
- 12:30 - 14:00 LUNCH BREAK
- 14:00 - 15:30 **C. Salomon**
Ultracold quantum gases: Introduction - Lect. 1
- 15:30 - 15:45 Coffee Break
- 15:45 - 17:15 **I. Aleiner**
Many-body localization - Lect. 3

Wednesday, 11 May

- 9:15 - 10:45 **M. Büttiker**
Noise of quantum coherent conductors: Current topics.
- 10:45 - 11:00 Coffee Break
- 11:00 - 12:30 **N. Birge**
Measurements out of equilibrium in normal and superconducting metals
- Lect. 2
- 12:30 - 14:00 LUNCH BREAK
- 14:00 - 15:30 **C. Salomon**
Ultracold quantum gases: From the ideal Fermi gas to strongly interacting
fermions - Lect. 2
- 15:30 - 15:45 Coffee break
- 15:45 - 16:45 **C. Chamon**
Zero modes, Majorana fermions, and topological qubits - Lect. 1
- 16:45 - 18:00 POSTER SESSION no 2.

Thursday, 12 May

- 9:15 - 10:45 **N. Birge**
Measurements out of equilibrium in normal and superconducting metals
- Lect. 3
- 10:45 - 11:00 Coffee Break
- 11:00 - 12:30 **C. Chamon**
Zero modes, Majorana fermions, and topological qubits - Lect. 2
- 12:30 - 14:00 LUNCH BREAK
- 14:00 - 15:30 **C. Salomon**
Ultracold quantum gases: Dynamics and thermodynamics of quantum gases.
(Part 1) - Lect. 3
- 15:30–16:00 Contributed talk - **M.J. Sánchez**
Large amplitude harmonic driving of flux qubits.

Friday, 13 May

- 9:15 - 10:45 **C. Chamon**
Zero modes, Majorana fermions, and topological qubits - Lect. 3
- 10:45 - 11:00 Coffee Break
- 11:00 – 11:30 Contributed talk - **K. Hallberg**
Coherence and interference effects in transport through molecules.
- 11:30 - 12:00 Contributed talk - **C.A. Iucci**
Quantum quench dynamics of some exactly solvable models in one
dimension.
- 12:00 - 13:30 LUNCH BREAK
- 13:30 - 14:30 **C. Salomon**
Ultracold quantum gases: Dynamics and thermodynamics of quantum gases.
(Part 2) - Lect. 4
- 14:30 - 15:30 **L. Cugliandolo**
Dynamics across phase transitions.
- 15:30 - 15:45 CLOSING - Lozano, Arrachea
- 15:45 - 16:00 Coffee Break