

*Workshop on*  
**Nonequilibrium Transport in Low-Dimensional Systems**

**Sunday, April 29 – Thursday, May 3, 2012**

**Kfar Blum, Israel**

**PROGRAM**

**Sunday, April 29**

- |                      |  |
|----------------------|--|
| 15:00 – 15:10        | <b>Welcome Remarks</b>   |
| 15:10 - 19:10        | <b>Afternoon Session</b><br>Chair: <b>Yuval Gefen</b> (Weizmann)   |
| 15:10 - 15:35        | <b>Seigo Tarucha</b> (Tokyo)<br><i>Single and double InAs quantum dot Josephson junctions: Kondo-superconductivity interplay and Cooper pair splitting</i> |
| 15:35 – 15:40        | Discussion   |
| 15:40 – 16:05        | <b>Josh Folk</b> (Vancouver)<br><i>Differential Thermopower Spectroscopy in Quantum Point Contacts</i>   |
| 16:05 – 16:10        | Discussion   |
| 16:10 – 16:35        | <b>Misha Reznikov</b> (Technion)<br><i>Counting Statistics in a Quantum Point Contact</i>  |
| 16:35 – 16:40        | Discussion   |
| 16:40 - 17:05        | <b>Richard Berkovits</b> (BIU)<br><i>Entanglement Entropy of Excited States in Disordered Interacting 1D Systems: Signs of Many-Body Delocalization</i>    |
| 17:05 – 17:10        | Discussion   |
| <b>17:10 - 17:40</b> | <b>Coffee break</b>  |



## Monday, April 30

07:00

*Breakfast*

09:00 - 12:30

*Morning Session*

Chair: **Ady Stern** (Weizmann)

09:00 – 09:25

**Thierry Giamarchi** (Geneva)

*Luttinger Liquids in Presence of External Baths*

09:25 – 09:30

Discussion

09:30 – 09:55

**Leonid Glazman** (Yale)

*Inelastic Electron Backscattering in a Generic Helical Edge*

09:55 – 10:00

Discussion

10:00 – 10:25

**Alexander Shnirman** (Karlsruhe)

*Cooper pair transport in 1-D Josephson arrays*

10:25 – 10:30

Discussion

10:30 – 11:00

*Coffee break*

11:00 – 11:25

**Dima Gutman** (BIU)

*Πάντα ρεῖ (everything flows): The Hydrodynamic Theory of Electrons in one Dimension*

11:25 – 11:30

Discussion

11:30 – 11:55

**Eldad Bettelheim** (HU)

*Exact expectation values and matrix elements within Richardson's approach for the pairing Hamiltonian in a macroscopic system*

11:55 – 12:00

Discussion

12:00 – 12:25

**Avi Schiller** (HU)

*Quench Dynamics in Quantum Impurity Systems: a new hybrid NRG-DMRG approach*

12:25 – 12:30

Discussion

*Lunch*



## Tuesday, May 1

**07:00**

***Breakfast***

09:00 - 11:30

***Morning Session***

Chair: **Robert Englman** (Soreq)

09:00 – 09:25

**Moty Heiblum**

(Weizmann)

*Coupled 'electron interferometers': Physics Revealed via Controlled Dephasing*

09:25 – 09:30

Discussion

09:30 – 09:55

**Amnon Aharony**

(BGU)

*Partial Decoherence in Mesoscopic Systems*

09:55 – 10:00

Discussion

**10:00 - 10:30**

***Coffee break***

10:30 – 10:55

**Amir Yacoby**

(Harvard)

*Local Thermometry of Neutral Modes on the Quantum Hall Edge*

10:55 – 11:00

Discussion

11:00 – 11:25

**John Chalker**

(Oxford)

*Relaxation in driven integer quantum Hall edge states*

11:25 – 11:30

Discussion

***Lunch***

14:30

*APS - Sponsored Excursion and Dinner*

Depart for a tour of Nimrod Fortress (Kalat al-Subeiba in Arabic), a medieval stronghold situated in the Hermon Mountain chain. Time will be spent exploring the excavated and restored portions of the site.

Continue to the Mount Ben-Tal observation point in the northern Golan Heights for an explanation on Israel's geostrategic position in the region.

At the conclusion of the tour, travel to Dubrovin Farm in the Hula Valley. Dinner will be served at the farm following a short instruction and explanatory film on the history of Dubrovin.

**Please meet in the hotel lobby at 14:15. Buses will depart promptly at 14:30. Comfortable walking shoes, a hat and sunscreen are recommended.**

## Wednesday, May 2

**07:00**

***Breakfast***

09:00 - 13:00

***Morning Session***

Chair: **Issai Shlimak** (BIU)

09:00 – 09:25

**Klaus Ensslin** (Zurich)  
*Irreversibility in Single-Electron Tunneling*

09:25 – 09:30

Discussion

09:30 – 09:55

**Victor Fleurov** (TAU)  
*Real Time Tunneling Transport*

09:55 – 10:00

Discussion

10:00 – 10:25

**Natan Andrei** (Rutgers)  
*Quench Dynamics of Interacting Bosons in 1-d*

10:25 – 10:30

Discussion

**10:30 - 11:00**

***Coffee break***

11:00– 11:25

**Yosi Avron** (Technion)  
*Adiabatic Response in Lindblad Dynamics*

11:25 – 11:30

Discussion

11:30 – 11:55

**Alex Kamenev** (Minnesota)  
*Dynamics of Mobile Impurities in 1D Quantum Liquids*

11:55 – 12:00

Discussion

12:00 – 12:25

**Baruch Horovitz** (BGU)  
*Rings, Boxes and Spins in Dissipative Environments*

12:25 – 12:30

Discussion

12:30 – 12:55

**Assa Auerbach** (Technion)  
*Conductivity of Two Dimensional Lattice Bosons*

12:55 – 13:00

Discussion

***Lunch***

15:30 - 19:30	<b>Afternoon Session</b> Chair: <b>Grzegorz Jung</b> (BGU)
15:30 – 15:55	<b>Aviad Frydman</b> (BIU) <i>Ultra-Slow Relaxation in Discontinuous-Film Based Electron Glasses</i>
15:55 – 16:00	Discussion
16:00 – 16:25	<b>Moshe Schechter</b> (BGU) <i>Two Level Systems, Inversion Symmetry, and the Low Temperature Properties of Glasses</i>
16:25 – 16:30	Discussion
16:30 – 16:55	<b>Yuli Nazarov</b> (Delft) <i>Quantum Phase-Slips in Superconducting Wires</i>
16:55 – 17:00	Discussion
<b>17:00 - 17:30</b>	<b>Coffee break</b>
17:30 – 17:55	<b>Yosi Yeshurun</b> (BIU) <i>Broadening of the Resistive Transition in Y-Ba-Cu-O nano wires</i>
17:55 – 18:00	Discussion
18:00 – 18:25	<b>Lior Klein</b> (BIU) <i>Charge trapping in LAO/STO and its possible interplay with magnetism</i>
18:25 – 18:30	Discussion
18:30 – 18:55	<b>Ophir Auslaender</b> (Technion) <i>The Behavior of Superconducting Vortices Near Twin Boundaries</i>
18:55 – 19:00	Discussion
19:00 – 19:25	<b>Nadav Katz</b> (HU) <i>Macroscopic and Microscopic Coherence in Superconducting Circuits</i>
19:25 – 19:30	Discussion
<b>20:00</b>	<b>Dinner</b>



## Thursday, May 3

**07:00**

***Breakfast***

09:00 - 13:00

***Morning Session***

Chair: **Dan Shahar** (Weizmann)

09:00 – 09:25

**Alberto Morpurgo** (Geneva)

Transport Through Graphene on SrTiO<sub>3</sub> Substrates and with Ionic Liquid Gates

09:25 – 09:30

Discussion

09:30 – 09:55

**Heung-Sun Sim** (KAIST)

*Geometric phase by Chiral Scattering of Dirac Fermions*

09:55 – 10:00

Discussion

10:00 – 10:25

**Piet Brouwer** (Berlin)

*Subgap States in Spinless p-Wave Superconducting Wires*

10:25 – 10:30

Discussion

**10:30 - 11:00**

***Coffee break***

11:00 – 11:25

**Yuval Oreg** (Weizmann)

*Majoranas in Wire Networks*

11:25 – 11:30

Discussion

11:30 – 11:55

**Eytan Grosfeld** (BGU)

*Topological Josephson junctions and non-Abelian solitons*

11:55 – 12:00

Discussion

12:00 – 12:25

**Netanel Lindner** (Technion, Caltech)

*Non abelian statistics of fractionalized Majoranas*

12:25 – 12:30

Discussion

12:30 – 12:55

**Pablo Jarillo-Herrero** (MIT)

*Quantum Transport and Optoelectronics on Graphene on hBN devices*

12:55 – 13:00

Discussion

***Lunch***

**15:00**

**Departure**