

**Tel Aviv University – Freie Universität Berlin
Joint Research Workshops**

Organizers: Eran Sela (TAU) & Felix v. Oppen (FUB)

Spin-Orbit Materials

Kaplun building room 118, Tel Aviv University

Workshop program

Day 1 (*Feb 23*)

9:00 – 9:30 **Amit Kanigel**: Superconductivity in Cu intercalated Bi₂Se₃

9:30 – 10:00 **Moshe Goldstein** Edge Resistance in 2D Topological Insulators Introduced by Charge Puddles

10:00 – 10:30 **Sophia Ketterl** Electron dynamics of the topological insulator Sb₂Te₂S

10:30 – 11:00 Coffee break

11:00 – 11:30 **Alexandra Junck** Photocurrents in Topological Insulators

11:30 – 12:00 **B Andrei Bernevig** New surface platforms for quantum spin Hall effect and for Majorana Fermions

12:00 – 12:30 **Yang Peng** Strong localization of Majorana end states in chains of magnetic adatoms

12:30 – 14:00 Lunch

14:00 – 14:30 **Tobias Meng** Strongly correlated topological insulators and spontaneous time reversal symmetry breaking

14:30 – 15:00 **Maciej Koch-Janusz** Two-dimensional Valence Bond Solid (AKLT) states from t_{2g} electrons

15:00 – 15:30: Coffee break

15:30 – 16:00 **Eran Sela**: Chiral spin liquids from arrays of spin chains

16:00 – 16:30 **Bjoern Sbierski** Quantum criticality in disordered Weyl semimetals

17:30 Excursion

19:30 Dinner

Day 2 (*Feb 24*)

9:00 – 9:30 **Felix von Oppen** Shortcuts to nonabelian statistics

9:30 – 10:00 **Dganit Meidan**: Topological classification of spin pumps

10:00 – 10:30 **Katharina Franke** Quantum phase transition and anisotropy splitting of impurity-induced Shiba bound states

10:30 – 11:00 Coffee break

11:00 – 11:30 **Beena Kalisky** Probing the physics of complex oxide interfaces with scanning SQUID microscopy

11:30 – 12:00 **Eran Maniv** Electronic correlations as a possible explanation for the superconducting phase diagram and the normal state transport in LaAlO₃/SrTiO₃ interface

12:00 – 12:30 **Alon Ron** Anomalous Magnetic Ground State in an LaAlO₃/SrTiO₃ Interface Probed by Transport through Nanowires

12:30 – 14:00 Lunch

14:00 – 14:30 **Baruch Rosenstein**: Nontopological triplet superconductors and their Majorana core states

14:30 – 15:00 **Erez Berg** Gapped and gapless time reversal invariant topological superconductors in one dimension

15:00 – 15:30: Coffee break

15:30 – 16:00 **Michele Filippone**: Violation of the Wiedemann-Franz Law for ultracold atomic gases

16:00 – 16:30 **Eyal Cornfeld**: Fractional Shot-Noise in Partially Gapped Quantum Wires

Day 3 (Feb25)

9:00 – 9:30 **Hadar Steinberg** Transport and tunneling in topological insulator devices

9:30 – 10:00 **Piet Brouwer** Disorder-induced phase transitions in a multichannel Majorana wire

10:00 – 10:30 **Tamara Nunner**: Quasiballistic contribution to the spin Seebeck effect

10:30 – 11:00 Coffee break

11:00 – 11:30 **Amnon Aharony**: Mesoscopic spintronics: spin filters and mobile qubits

11:30 – 12:00 **Benjamin Heinrich**: Inelastic spin excitations in single molecules on superconductors

Lunch and Departure