

Program of Chemistry Meets Physics in Topology, A Workshop for Young Researchers

Max Planck Institute for Solid State Research and Max Planck Institute for Chemical Physics of Solids

Feb 1-4, 2017

Conference site: Schloss Ringberg

Wednesday, Feb-1

12:00 – 23:00 **Arrival**

18:30 **Dinner**

Thursday, Feb-2 (Talk time: 25 mins presentation + 10 mins questions)

8:00 – 9:00 **Breakfast**

Chair: Binghai Yan

09:00 – 09:35 Philip Moll, MPI-CPFS, Hunting Weyl Fermions in microstructured topological semi-metals

09:35 – 10:10 B. Andrei Bernevig, Princeton University, Berry Phases of Berry Phases

10:10 – 10:40 **Coffee Break**

Chair: Leslie Schoop

10:40 – 11:15 Andreas Schnyder, MPI-FKF, Crystalline topological semi-metals

11:15 – 11:50 Maia Vergniory, Donostia International Physics Center and MPI-FKF, Magnetic non-symmorphic topological insulator realization

11:50 – 14:30 **Lunch Break and Coffee**

Chair: B. Andrei Bernevig

14:30 – 15:05 Christian Ast, MPI-FKF, Dirac Cone Protected by Non-Symmorphic Symmetry and 3D Dirac Line Node in ZrSiS and related compounds

15:05 – 15:40 Leslie Schoop MPI-FKF, New Dirac and Weyl materials beyond ZrSiS

15:40 – 16:10 **Coffee Break**

Chair: Maia Vergniory

16:10 – 16:45 Raquel Queiroz, Weizmann Institute of Science, Nonsymmorphic semimetals: topological protection of Dirac fermions

16:45 – 17:20 Lukas Muechler, Princeton University, Moebius Molecules, Fragile Mott Insulators and 2D symmetry protected topological phases

17:20 – 17:55 Andreas Grüneis, MPI-FKF, Ab-initio studies of ZrSiX (X=S,Se,Te) surfaces

18:30 **Dinner**

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Friday, Feb-3

- 8:00 – 9:00** **Breakfast**
Chair: Andreas Rost
- 09:00 – 09:35** Ady Stern, Weizmann Institute of Science, Non-local transport in Weyl semi-metals
- 09:35 – 10:10** Elena Hassinger, MPI-CPfS, Fermi Surface Topology and Chirality in Weyl Semimetals
- 10:10 – 10:40** **Coffee Break**
Chair: Mazhar Ali
- 10:40 – 11:15** Nurit Avraham, Weizmann Institute of Science, Scanning Tunneling Microscopy of Weyl Semimetals
- 11:15 – 11:50** Andreas Rost, MPI-FKF, Control and study of 3D Dirac semimetals
- 11:50 – 14:30** **Lunch Break and Coffee**
Chair: Ady Stern
- 14:30 – 15:05** Binghai Yan, MPI-CPfS and Weizmann Institute, Dirac nodal lines and induced spin Hall effect in metallic rutile oxides
- 15:05 – 15:40** Mazhar Ali, MPI-Halle, A chemist's approach to maximizing the Spin Hall Effect
- 15:40 – 16:10** **Coffee Break**
Chair: Christian Ast
- 16:10 – 16:45** Wolfgang Zeier, Giessen University, Thinking like a chemist - Understanding the chemistry behind moving bands in thermoelectrics
- 16:45 – 17:20** Benjamin Balke, Stuttgart University, Material design of thermoelectrically highly efficient Heusler compounds using phase separations and nano-composites
- 18:30** **Dinner**

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Saturday, Feb-4

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| 8:00 | - | 9:00 | Breakfast |
| | | | Chair: Andreas Schnyder |
| 09:00 | - | 09:35 | Frank Pollman, MPI-PKS, Dynamical signatures of quantum spin liquids |
| 09:35 | - | 10:10 | Tomohiro Takayama MPI-FKF, Honeycomb iridate as a platform for topological spin liquid |
| 10:10 | - | 12:00 | Coffee Break and departure |