

**Programme on  
“Topological Phases of Quantum Matter”**

**organized by**

**Nicholas Read (Yale U), Jakob Yngvason (U Vienna), Martin Zirnbauer (U Cologne)**

**Schedule of Final Conference: September 8 - 12, 2014:**

• **Monday, September 8, 2014**

09:00 – 09:10 **Opening**

09:10 – 10:00 **Yosi Avron**

*Braiding fluxes in Pauli Hamiltonians*

10:10 – 11:00 **Jakob Yngvason**

*Incompressibility estimates in the Laughlin phase*

11:10 – 11:40 *coffee/tea break*

11:40 – 12:20 **Robert Seiringer**

*Validity of spin wave theory for the quantum Heisenberg model*

12:30 – 14:00 *lunch break*

14:00 – 14:50 **Sebastian Diehl**

*Dissipatively induced quantum phases of atomic fermions*

15:00 – 15:50 **Johannes Kellendonk**

*Topological interpretation of Levinson's theorem*

16:00 – 16:20 *coffee/tea break*

16:20 – 17:10 **Alexander Altland**

*Quantum criticality of the Anderson insulator*

17:20 – 18:00 **Ricardo Kennedy**

*Homotopy theory of topological insulators*

• **Tuesday, September 9, 2014**

09:00 – 09:50 **Jean Bellissard**

*Periodic approximant to aperiodic Hamiltonian*

10:00 – 10:50 **Paul Fendley**

*Parafermions and topological order*

11:00 – 11:30 *coffee/tea break*

11:30 – 12:20 **Karsten Flensberg**

*Tunneling spectroscopy of Majorana bound states*

12:30 – 14:00 *lunch break*

14:00 – 14:50 **Reinhold Egger**

*Topological Kondo effect*

15:00 – 15:50 **Alan Huckleberry**

*Constructions in low-dimensional complex geometry related to topological insulators and their symmetry classes*

16:00 – 16:20 *coffee/tea break*

16:20 – 17:10 **Simon Trebst**

*Chiral spin liquids, network models, and fractional quantum Hall states*

17:20 – 18:00 **Maria Hermanns**

*Majorana metals and quantum spin liquids*

● **Wednesday, September 10, 2014**

09:00 – 09:50 **Christoph Schweigert**

*Topological surface defects, symmetries and dualities*

10:00 – 10:50 **Zheng-Cheng Gu**

*Emergence of  $p + ip$  superconductivity in 2D strongly correlated Dirac fermions*

11:00 – 11:30 *coffee/tea break*

11:30 – 12:20 **Gian-Michele Graf**

*Bulk-boundary duality for topological insulators*

12:30 – 14:30 *lunch break*

14:30 – 18:30 **Organized Social Event**

19:00 **Conference Dinner**

● **Thursday, September 11, 2014**

09:00 – 09:50 **Xiao-Liang Qi**

*Generalized Kitaev models and slave genons*

10:00 – 10:50 **Achim Rosch**

*Skyrmions and emergent monopoles in chiral magnets*

11:00 – 11:30 *coffee/tea break*

11:30 – 12:20 **Immanuel Bloch**

*Probing and controlling topological Bloch bands using ultracold quantum gases*

12:30 – 14:00 *lunch break*

14:00 – 14:50 **Thomas Quella**

*Topological aspects of  $SU(N)$  magnetism and its cold atom realization*

15:00 – 15:50 **Anton Akhmerov**

*Breaking Kramers degeneracy by superconducting phase differences*

16:00 – 16:20 *coffee/tea break*

16:20 – 17:10 **Jürg Fröhlich**

*Gauge theory of states of matter – old and new*

17:20 – 18:00 **Roberto Bondesan**

*Lattice conformal fields at quantum Hall transitions*

• **Friday, September 12, 2014**

09:00 – 09:50 **Bruno Nachtergaele**

*Invariants for gapped ground state phases in dimensions one and higher*

10:00 – 10:50 **Eddy Ardonne**

*Constructing critical spin chains using modular invariance*

11:00 – 11:30 *coffee/tea break*

11:30 – 12:20 **Hermann Schulz-Baldes**

*Invariants of disordered topological insulators*

12:30 – 14:00 *lunch break*

14:00 – 14:50 **Heinz Siedentop**

*Dipoles in 2d have infinitely many bound states*

15:00 – 15:50 **Ilya Eremin**

*Proximity-induced magnetization dynamics, interaction effects, and phase transitions on a topological surface*

16:00 – 16:30 *coffee/tea*

**All talks take place at the ESI, Boltzmann Lecture Hall**