

Spins in a Quantum 1D Multi-particle Environment: from Exotic Phases and Non-trivial Topology to Protected Transport

(LMU, 02.09.2019 – 05.09.2019)

Venue: Theresienstr. 37 D-80333 München (entrance from Theresienstr., the nearest to the coloured building of Brandhorst museum), 3d floor, room A348 (large lecture room)

Monday, September 2

- 08:50 **OPENING** 10'
- 09:00 L. Glazman (Yale University, USA) 40'
Microwave spectroscopy of charge-density wave in a 1D super-inductor
- 09:40 T. Giamarchi (University of Geneva, CH) 40'
Transport and Spin Transport in 1D structures
- 10:20 **Coffee break** 30'
- 10:50 Yu. Gefen (Weizmann Institute, IL) 40'
Steering of spins by quantum measurement
- 11:30 Yu. Oreg (Weizmann Institute, IL) 40'
Fractional Conductance in strongly Interacting 1D Systems
- 12:10 **Lunch break** 2h00'
- 14:10 M. Hafezi (University of Maryland, USA) 40'
Quantum optics of correlated states of matter
- 14:50 I. Zaliznyak (BNL, USA) 40'
Spinons, Gapless Longitudinal Mode, and Dark Magnon of Orbital Moments in f-Electron Metal Yb₂Pt₂Pb
- 15:30 **Coffee break** 30'
- 16:00 O. Starykh (University of Utah, USA) 40'
Majorana zero modes at the edge of an interacting quantum wire with spin-orbit interaction
- 16:40 H. Johannesson (University of Gothenburg, SW) 30'
Topological multicriticality of spin-orbit coupled electrons in one dimension
- 17:30 **WELCOME RECEPTION** 2h30'

Tuesday, September 3

- 09:00 A. Yazdani (Princeton University, USA) 40'
Majorana in a Topological Edge Channel
- 09:40 D. Zumbühl (University of Basel, CH) 40'
Edge State Spectroscopy with a GaAs Quantum Wire
- 10:20 **Coffee break** 30'
- 10:50 A. Mirlin (Karlsruhe Inst. of Techn., D) 40'
Transport in fractional quantum Hall edges with counterpropagating modes
- 11:30 A. Altland (University of Cologne, D) 40'
Correlated quantum matter via the SYK paradigm
- 12:10 **Lunch break** 2h00'
- 14:10 A. Auerbach (Technion, IL) 40'
Doped Kondo chain, a heavy Luttinger liquid
- 14:50 D. Loss (University of Basel, CH) 40'
Boundary Charges in Band Insulators
- 15:30 **Coffee break** 30'
- 16:00 J. Klinovaja (University of Basel, CH) 40'
Andreev Bound States and Majorana fermions in helical 1D systems
- 16:40 M. Foster (Rice University, USA) 40'
Dephasing in quasi-1D wires redux: Non-Markovian noise and correlations beyond Born due to itinerant spin interactions
- 18:00 **POSTER SESSION** 1h30'

Wednesday, September 4

- 09:00 I. Bloch (LMU, D) 40'
Quantum Gas Microscopy of the Fermi Hubbard Model
- 09:40 S. Fölling (LMU, D) 40'
Realizing two-orbital physics with ultracold alkaline-earth atoms
- 10:20 **Coffee break** 30'
- 10:50 P. Brouwer (Freie Universität Berlin, D) 40'
Higher-order boundary states of topological crystalline insulators

- 11:30 S. Carr (University of Kent, UK) 30'
Topology and transport in interacting one-dimensional systems
- 12:00 **Lunch break** 2h00'
- 14:00 I. Burmistrov (Landau Institute, RU) 40'
Unrestricted electron bunching at the helical edge
- 14:40 L. Molenkamp (University of Würzburg, D) 40'
Emergent quantum Hall effects in a two-dimensional topological insulator
- 15:20 **Coffee break** 30'
- 15:50 J. von Delft (LMU, D) 40'
Uncovering non-Fermi-liquid behavior in Hund metals: critical behavior of a three-orbital Kondo model
- 16:30 A. Weichselbaum (BNL, USA) 40'
Unified phase diagram of antiferromagnetic $SU(N)$ spin ladders
- 19:30 **CONFERENCE DINNER**

Thursday, September 5

- 09:00 M. Oshikawa (University of Tokyo, JP) 40'
Quantum quench and f -sum rules for (non)linear conductivities
- 09:40 Ch. Mudry (Paul Scherrer Institute, CH) 40'
Deconfined quantum criticality revisited
- 10:20 **Coffee break** 30'
- 10:50 D. Bagrets (University of Cologne, D) 40'
SYK non-Fermi Liquid Correlations in Nanoscopic Quantum Transport
- 11:30 Hong-Hao Tu (TU Dresden, D) 30'
Exactly solvable quantum impurity model with inverse-square interactions
- 12:00 **CLOSING REMARKS** 10'