



STRUCTURES  
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## Schedule

### 1<sup>st</sup> Workshop on Low Dimensional Quantum Many Body Systems

IWH Heidelberg (Germany), 12-16 June 2021

#### Monday, 12 July 2021

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12:00 – 13:00	<b>Registration</b>
13:00 – 14:00	<b>LUNCH BREAK</b>
14:00 – 14:40	<b>Christof Wetterich (Heidelberg University)</b> “Quantum fermions from classical bits”
14:40 – 15:20	<b>Nicolas Dupuis (Sorbonne Université)</b> “FRG approach to one-dimensional quantum fluids”
15:20 – 16:00	<b>Peter Kopietz (Goethe-Universität Frankfurt)</b> “Dissipative spin dynamics in hot quantum paramagnets”
16:00 – 16:20	<b>COFFEE BREAK</b>
16:20 – 18:00	<b>Discussion</b>

#### Tuesday, 13 July 2021

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09:00 – 9:40	<b>José Lorenzana (ISC-CNR)</b> “New dynamical phases in driven BCS systems”
09:40 – 10:00	<b>Hector Pablo Ojeda Collado (ISC-CNR)</b> “Emergent parametric resonances and time-crystal phases in driven BCS systems”
10:00 – 10:20	<b>Lara Ortmanns (RWTH Aachen)</b> “Time-scales of a driven interacting quantum dot with superconducting proximity”
10:30 – 11:00	<b>COFFEE BREAK</b>
11:00 – 11:40	<b>Ramasubramanian Chitra (ETH Zurich)</b> “Simulating a cavity-cold atom quantum simulator”
11:40 – 12:00	<b>Alessio Chiocchetta (University of Cologne)</b> “Cavity-induced quantum spin liquids”

**WLAN-Access:** UNI-WEBACCESS / ID: i5n / Password: 8x7wir15

**Contact:** [mbqs2020@thphys.uni-heidelberg.de](mailto:mbqs2020@thphys.uni-heidelberg.de)



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12:00 – 12:20	<b>Bastien Lapiere (University of Zurich)</b> <i>Geometry and black holes in periodically driven critical quantum systems</i>
12:20 – 13:00	<b>Sabine Andergassen (University of Tübingen)</b> <i>Recent advancements in the functional renormalization group: towards a quantitative theory for 2D lattice models</i>
13:00 – 14:00	<b>LUNCH BREAK</b>
14:00 – 15:30	<b>Discussion</b>
15:30 – 16:00	<b>COFFEE BREAK</b>
16:00 – 16:40	<b>Alessandro Toschi (TU Wien)</b> <i>The nonperturbative fingerprints of many-electron physics and their surprising implications</i>
16:40 – 17:20	<b>Herbert Schoeller (RWTH Aachen)</b> <i>Universal properties of the boundary charge</i>
17:20 – 17:40	<b>Yen-Ting Lin (RWTH Aachen)</b> <i>Interaction effects in band insulators with topological properties</i>
17:40 – 18:00	<b>Mara Caltapanides (RWTH Aachen)</b> <i>Finite-bias transport through the interacting resonant level model coupled to a phonon mode</i>

## Wednesday, 14 July 2021

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09:00 – 9:40	<b>Jan M. Pawłowski (Heidelberg University)</b> TBA
09:40 – 10:00	<b>Matan Lotem (Tel-Aviv University)</b> <i>Chiral numerical renormalization group for quantum impurities coupled to topological edge modes</i>

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10:00 – 10:20	<b>Luca Tocchio (Politecnico di Torino)</b> <i>The Hubbard model on triangular N-leg cylinders: chiral and non-chiral spin liquids</i>
10:30 – 11:00	<b>COFFEE BREAK</b>
11:00 – 11:40	<b>Massimo Capone (SISSA)</b> <i>Flavour-selective localization of interacting lattice fermions</i>
11:40 – 12:00	<b>Pierpaolo Fontana (SISSA)</b> <i>Van Hove singularities at phase transitions in topological metals</i>
12:00 – 12:20	<b>Ammon Fischer (RWTH Aachen)</b> <i>Unconventional Superconductivity in Magic-Angle Twisted Trilayer Graphene</i>
12:20 – 13:00	<b>Felix Werner (Ecole Normale Supérieure, Paris)</b> <i>High-order diagrammatic expansion around BCS</i>
13:00 – 14:00	<b>LUNCH BREAK</b>
14:00 – 15:30	<b>Discussion</b>
15:30 – 16:00	<b>COFFEE BREAK</b>
16:00 – 16:40	<b>Nikolay Prokof'ev (Umass Amherst)</b> <i>Bond polarons</i>
16:40 – 17:20	<b>Emanuel Gull (University of Michigan)</b> <i>Nevanlinna Analytical Continuation</i>
17:20 – 17:40	<b>Noa Feldmano (Tel Aviv University)</b> <i>Estimation of entanglement on tensor network states without full reconstruction of the density matrix</i>
17:40 – 18:00	<b>Aleksandra Ziolkowska (University of Oxford)</b> <i>Yang-Baxter Integrable Lindblad Equations</i>

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#### Thursday, 15 July 2021

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| 09:00 – 9:40  | <b>Walter Metzner (Max Planck Institute, Stuttgart)</b><br><i>Competition between magnetism and superconductivity in the 2D Hubbard model from weak to strong coupling</i> |
| 09:40 – 10:00 | <b>Yuchi He (RWTH-Aachen)</b><br><i>One-dimensional repulsive Hubbard model with mass imbalance: orders and filling-anomaly</i>  |
| 10:00 – 10:20 | <b>Sarah Heinzemann (University of Tübingen)</b><br><i>Entangled magnetic, charge, and superconducting pairing correlations in the 2D Hubbard model: an fRG analysis</i>   |
| 10:30 – 11:00 | <b>COFFEE BREAK</b>  |
| 11:00 – 11:40 | <b>Aline Ramires Neves de Oliveira (Paul Scherrer Institute)</b><br><i>Twisted Superconductivity in the high field phase of CeRh<sub>2</sub>As</i>                         |
| 11:40 – 12:20 | <b>Imke Schneider (Uni of Kaiserslautern &amp; Uni of Augsburg)</b><br><i>The quasi-1D Lieb-Liniger gas with time-periodically modulated interactions</i>                  |
| 12:20 – 13:00 | <b>Andrea Trombettoni (University of Trieste)</b><br><i>Quasi Off-Diagonal Long-Range Order in Low Dimensions</i>  |
| 13:00 – 14:00 | <b>LUNCH BREAK</b>   |
| 14:00 – 15:30 | <b>Discussion/Poster Session</b>   |
| 15:30 – 16:00 | <b>COFFEE BREAK</b>  |
| 16:00 – 16:40 | <b>Benjamin Doyon (King's College London)</b><br><i>Diffusive hydrodynamics within inhomogeneous fields and integrability breaking</i>                                     |
| 16:40 – 17:20 | <b>Gábor Takács (BME Budapest)</b><br><i>Spin chain dynamics after a quantum quench to a non-integrable Hamiltonian</i>  |

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- 17:20 – 17:40                    **Shachar Fraenkel (Tel Aviv University)**  
*Entanglement Measures in a Nonequilibrium Steady State:  
Exact Results in One Dimension*
- 17:20 – 17:40                    **Jad Halimeh (INO-CNR BEC Center)**  
*Staircase Prethermalization and Constrained Dynamics in One-  
Dimensional Lattice Gauge Theories*

## Friday, 16 July 2021

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- 09:00 – 9:40                    **Lode Pollet (LMU Munich)**  
*The mixed-dimensional  $t - Jz$  model from a lattice gauge theory  
perspective*
- 09:40 – 10:00                   **Lennart Klebl (RWTH Aachen)**  
*Correlations in Moiré Heterostructures from Atomistic Modeling*
- 10:00 – 10:20                   **Pietro Maria Bonetti (Max-Planck Institute Stuttgart)**  
*Bosonic fluctuations in strongly correlated electron systems*
- 10:30 – 11:00                   COFFEE BREAK**
- 11:00 – 11:40                   **Ronny Thomale (Julius-Maximilians-Universität Würzburg)**  
*Kagome metals*
- 11:40 – 12:00                   **Guido Masella (Université de Strasbourg)**  
*Disordered bosonic systems with power-law hoppings : a  
numerical study of phases and conductivity*
- 12:00 – 12:20                   **Per Moosavi (ETH Zurich)**  
*Breaking of Huygens-Fresnel principle in inhomogeneous  
Tomonaga-Luttinger liquids*
- 12:20 – 13:00                   **Dante Kennes (RWTH Aachen)**  
*Moiré heterostructures: a condensed matter quantum simulator*
- 13:00 – 14:00                   LUNCH BREAK**

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