

# Workshop on Complexity and Topology in Quantum Matter

July 13-14, 2023

Physics Department  
Würzburg, Am Hubland

Thursday, July 13, 2023

Röntgen Lecture Hall  
Physics Department

9:45 a.m.                      OPENING AND WELCOME SPEECH                      Ronny Thomale

10:00 a.m.                      Binghai Yan (Weizmann Institute, Israel)  
“Topology and chirality in chiral quantum materials”

10:35 a.m.                      Coffee Break

11:00 a.m.                      Eugene Demler (ETH Zürich)  
“Magnetism in correlated fermion systems: from electrons in solids to optical lattice simulators”

11:45 a.m.                      Enrico Arrigoni (TU Graz)  
“Correlated impurities and Mott photovoltaics out of equilibrium”

12:20 p.m.                      Lunch Break (Uni Cafeteria)

2:00 p.m.                      Lucia Reining (CNRS Paris)  
“Excitons: from an intuitive concept to rich physics”

2:45 p.m.                      Alexey Chernikov (TU Dresden)  
“Optically detected exciton transport in low-dimensional materials”

3:20 p.m.                      Christian Schneider (University of Oldenburg)  
“Controlling excitons in van der Waals materials via tunable optical cavities”

3:55 p.m.                      Coffee Break

**4:30 a.m.** Domenico Di Sante (University of Bologna)  
“Emergent honeycomb physics from chiral atomic orbitals on a triangular lattice”

**5:05 p.m.** Gang Li (ShanghaiTech)  
“Correlated flat bands in a pristine solid and the cluster Mott insulating state”

**Friday, July 14, 2023**

**Röntgen Lecture Hall**  
**Physics Department**

**9:00 a.m.** Allan H. MacDonald (UT Austin)  
“Quantum Hall effects with and without magnetic fields”

**9:45 a.m.** Laurens W. Molenkamp (JMU Würzburg)  
“Dilute magnetic topological insulators”

**10:30 a.m.** **Coffee Break**

**10:50 a.m.** B. Andrei Bernevig (Princeton University)  
“Quantum geometry: the electron-phonon coupling, a famous superconductor, and the physics of kagome metals”

**11:35 a.m.** Maia Vergniory (MPI CPFS Dresden)  
“Framework to apply topological quantum chemistry to photonics and phononic crystals”

**12:10 p.m.** **CLOSING REMARKS** **Ralph Claessen**