

CUI: Functionalities of Rydberg Matter (FORM2025)

Conference Schedule: May 5th – 7th 2025

Day 1 – May 5 (Monday)

Time	Session
till 14:00	Arrival and Welcome
14:00 – 14:30	Dr. Nina Stiesdal , <i>University of Bonn</i> <i>Magic wavelength traps for collective Rydberg excitations</i>
14:30 – 15:00	Iason Tsiamis , <i>FU-Berlin</i> <i>Quantum Control with Rydberg Atoms: Quantum Gates and CW Transistors</i>
15:00 – 15:30	Dr. Simon Balthasar Jäger , <i>University of Bonn</i> <i>Effective Lindblad master equations for atoms coupled to dissipative bosonic modes</i>
15:30 – 16:00	 Coffee Break
16:00 – 16:30	Milena Simić , <i>MPIPKS Dresden</i> <i>Permanent Dipole Moments in Long-range Rydberg Molecules</i>
16:30 – 17:00	Aileen Durst , <i>MPIPKS Dresden</i> <i>Rydberg Impurities in Bose-Einstein Condensates</i>

Research presentation: 20 minutes + 10 minutes (questions)

Day 2 – May 6 (Tuesday)

Time	Session
09:00 – 09:30	Dr. Moritz Berngruber , <i>University of Stuttgart</i> <i>Direct observation of ion-Rydberg atom interactions using a high-resolution ion microscope</i>
09:30 – 10:00	Markus Exner , <i>RPTU Kaiserslautern</i> <i>High precision spectroscopy of trilobite Rydberg molecules</i>
10:00 – 10:30	Neethu Abraham , <i>MPIPKS Dresden</i> <i>Non-adiabatic Coupling in Charged Rydberg Molecules: The Delicate Balance Between Stability and Decay</i>
10:30 – 11:00	☕ Coffee Break
11:00 – 11:45	Dr. Giacomo Giudici , <i>PLANQC Garching</i> <i>Fast entangling gates for Rydberg atoms via resonant dipole-dipole interaction</i>
11:45 – 14:00	🍴 Lunch Break
14:00 – 14:30	Dr. Sebastian Weber , <i>University of Stuttgart</i> <i>Designing Rydberg Quantum Gates</i>
14:30 – 15:00	Dr. Titus Franz , <i>MPQ Garching</i> <i>Simulating Chemistry with Fermionic Optical Superlattices</i>
15:00 – 15:30	Dr. Pascal Weckesser , <i>MPQ Garching</i> <i>A Single Rydberg-Atom-Controlled Optical Mirror Based on Subwavelength Atomic Arrays</i>
15:30 – 16:00	☕ Coffee Break
16:00 – 16:30	Kapil Goswami , <i>University of Hamburg</i>
16:30 – 17:00	Achim Scholz , <i>University of Stuttgart</i> <i>Towards Local Single- and Two-Qubit Control in a Neutral Atom Quantum Computer</i>

Day 3 – May 7 (Wednesday)

Time	Session
09:00 – 09:30	Dr. Gerhard Zürn , <i>University of Heidelberg</i> <i>Observation of hysteresis in a disordered Heisenberg quantum spin system</i>
09:30 – 10:00	Chris Nill , <i>University of Tübingen</i> <i>Resonant Stroboscopic Rydberg Dressing: Electron-Motion Coupling and Multi-Body Interactions</i>
10:00 – 10:30	Eran Reches , <i>MPQ Garching</i> <i>Towards quantum simulation and computation with Sr atom arrays</i>
10:30 – 11:00	 Coffee Break
11:00 – 11:30	Dr. Aslam Parvej , <i>University of Hamburg</i> <i>Lamb-Dicke Dynamics of Rydberg Atoms in Optical Tweezers</i>
11:30 – 12:00	Lia Kley , <i>University of Hamburg</i> <i>Optimal recoil-free state preparation protocols in an optical atom tweezer</i>
12:00	Closing Remarks and Departure