

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:00	Opening	Simon Cornish	Andreas Hemmerich	Tilman Esslinger	Rudolf Grimm
9:15	Tilman Pfau				
10:00		Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:15	Coffee Break	Session TU1	Session WE1	Session TH1	Session FR1
10:35	Session MO1				
10:55					
11:15		Klaus Sengstock			
11:35					
11:55	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Closing Remarks
13:15	Gianvito Lucivero	Session TU2	Lauriane Chomaz	Free Time	
13:35					
13:55					
14:15	Session MO2		Session WE2		
14:35					
14:55					
15:15	Coffee Break	Coffee Break	Coffee Break		
15:30	Session MO2	Monika Aidselburger	Session WE2		
15:50					
16:10					
16:30	IQST, Thorlabs	Q.ANT	Toptica		
	Poster Session MO	Poster Session TU	Poster Session WE	Conference Dinner	

Conference Schedule

Sunday, 31 July

Arrival and Check-In at the Hotels, Stuttgart Vaihingen

Monday, 1 August

9:00 **Opening**, Conference Venue: V57.03, Pfaffenwaldring 57

Session MO1 - General BEC Physics I:

9:15 **Invited Speaker:**

Tilman Pfau, University of Stuttgart

Observation of a Molecular Bond between Ions and Rydberg Atoms using a High-Resolution Pulsed Ion Microscope

10:15 **Coffee Break**

10:35 **Contribution Talks:**

Joseph Muchovo, Leibniz Universität Hannover

Single-beam laser cooling using a nano-structured atom chip

Jan-Philipp Bureik, Université Paris-Saclay

Experimental observation of Bogoliubov's correlated atom pairs

Lorenzo Pizzino, DQMP, University of Geneva

Dimensional crossover in weakly-coupled chains

Eric Boltersdorf, Universität Bonn

Spectroscopy of heteronuclear Xenon-noble gas dimers – towards Bose-Einstein condensation of vacuum-UV photons

11:55 **Lunch Break**

Session MO2 - Hot Quantum Optics:

13:15 **Invited Speaker:**

Gianvito Lucivero, Barcelona Institute of Science and Technology

Quantum-enhanced Atomic Sensors and Optical Magnetometry

14:15 **Contribution Talks:****María Hernández Ruiz**, ICFO Castelldefels

Cavity-enhanced detection of atomic polarization by Pound-Drever-Hall technique

Chung Chuan Hsu, University of Cambridge

Towards a large-scale Atomic Interferometer Observatory and Network using ultracold strontium atoms

Lukas Heller, ICFO Castelldefels

Low-noise quantum memory for quasi-deterministic single photons generated by Rydberg collective atomic excitations

15:15 **Coffee Break (15 min)****Daniel Häupl**, University of Erlangen-Nürnberg

Spatially resolved spectroscopy of alkali metal vapour diffusing inside hollow-core photonic crystal fibres

Guanchen Peng, Imperial College London

Light-pulse atom interferometry and Chameleon screened dark energy

Gloria Clausen, ETH Zurich

High-resolution spectroscopy of metastable helium atoms using beam-manipulation methods

16:30 **Industry Partner: IQST**16:40 **Industry Partner: Thorlabs** Thorlabs Crystalline Solutions16:50 **Poster Session MO****Tuesday, 2 August**

Session TU1 - Molecular Physics:9:00 **Invited Speaker:****Simon Cornish**, Durham University*Building a Molecular Quantum Simulator*10:00 **Coffee break**10:15 **Contribution Talks:****Adarsh Raghuram**, Durham University

Towards a Quantum Gas Microscope with Ultracold Molecules

Einius Pultinevicius, University of Stuttgart

Towards Direct Laser Cooling of Barium Monofluoride

Philipp Neufeld, University of Stuttgart

High Resolution Continuous Wave Spectroscopy on the A-X transition in Nitric Oxide

11:15 **Invited Speaker:**

Klaus Sengstock, Universität Hamburg

A View Into Optical Lattices - A Quantum Gas Magnifier

12:15 **Lunch Break**

Session TU2 - Quantum Simulation I:

13:15 **Contribution Talks:**

Sophie Häfele, LMU Munich

Using deep learning for single-site reconstruction in a caesium quantum gas microscope

Daniel Braund, University of Cambridge

Towards Single Site Resolved Imaging of Ultracold Atoms in an Optical Kagome Lattice

Perrin Segura, Harvard University

Realizing a bosonic fractional quantum Hall state with ultracold atoms in an optical lattice

Sandra Buob, ICFO Castelldefels

Towards optical lattices of ultracold strontium with single-site resolved imaging

Christopher Oliver, University of Birmingham

Bloch oscillations along a synthetic dimension of atomic trap states

Romain Duverger, Université Paris-Saclay

Quantum metrology of electromagnetic fields using individually controlled cold Rydberg atoms

15:15 **Coffee Break**

15:30 **Invited Speaker:**

Monika Aidelsburger, LMU Munich

Quantum simulation with ultracold atoms - from Hubbard models to gauge theories

16:30 **Industry Partner: Q.ANT** Company introduction & current research

17:00 **Poster Session TU**

Session WE1 - Cavity Quantum Electrodynamics:

9:00 **Invited Speaker:**

Andreas Hemmerich, Universität Hamburg

Discrete and Continuous Dissipative Time Crystals in an Atom-Cavity System

10:00 **Coffee Break**

10:15 **Contribution Talks:**

Phatthamon Kongkhambut, Universität Hamburg

Observation of a Continuous Time Crystal

Constance Poulain, Laboratoire Kastler Brossel Paris

A versatile platform for quantum simulation: an array of single atoms strongly coupled to a cavity

Francesca Orsi, EPFL

Cavity-QED Quantum Simulator of Random Spin Models

Kai Müller, Technische Universität Dresden

Atomic dynamics in strongly coupled multimode cavities under continuous measurement

Niels Wolf, Universität Bonn

Effective photon-photon interactions from cascaded second order nonlinearities in a resonator

11:55 **Lunch Break**

Session WE2 - BECs II:

13:15 **Invited Speaker:**

Lauriane Chomaz, University of Heidelberg

Novel Many-Body States in Dipolar Quantum Gases of Magnetic Atoms

14:15 **Contribution Talks:**

Gevorg Martirosyan, University of Cambridge

Turbulence, Efimov universalities and Bose polarons with ultracold ^{39}K in a 3D box trap

Nicolò Antolini, University of Florence

The Superfluid-Supersolid Quantum Phase Transition

Tomas Lamich, ICFO, Castelldefels

Towards adaptive experimental control using machine learning algorithms

15:15 **Coffee Break (15 min)**

Damian Włodzyński, Institute of Physics, Warsaw

Confinement-induced spatial rearrangement in a mass-imbalanced few-fermion mixture

Giacomo Morpurgo, University of Geneva

Effects of (non)-magnetic disorder in quasi-1D singlet superconductors

Rui Li, Leibniz Universität Hannover

Full 3D Simulations of Guided BEC Interferometers

16:30 **Industry Partner: Toptica** Phase and Frequency Stabilization

16:50 **Poster Session WE**

Thursday, 4 August

Session TH1 - Quantum Simulation II:

9:00 **Invited Speaker:**

Tilman Esslinger, ETH Zurich

Self-oscillating and interacting topological pumps

10:00 **Coffee Break**

10:15 **Contribution Talks:**

Marius Gächter, ETH Zurich

Interaction-induced breakdown of topological pumping

Maximilian Kaiser, University of Heidelberg

Towards fast, deterministic preparation of few-fermion states

Eduard Braun, University of Heidelberg

Relaxation dynamics of a disordered Rydberg spin system

Tangi Legrand, University of Bonn

Helicoidal point-spread function imaging for three-dimensional quantum gas microscopy

Louis Lafforgue, University of Innsbruck

Dipolar gases in one dimensional optical lattice: Bloch oscillations and localization

11:55 **Lunch Break**

13:00 **Free Time Afternoon**

19:00 **Conference Dinner**

Session FR1 - Quantum Computation:

- 9:00 **Invited Speaker:**
Rudolf Grimm, University of Innsbruck
Dysprosium Meets Potassium - Adventures with a New Fermion Mixture
- 10:00 **Coffee Break**
- 10:15 **Contribution Talks:**
Manuel Morgado, Université de Strasbourg
From Rydberg atoms to Rydberg qubits
Andreas von Haaren, MPI für Quantenoptik Garching
FermiQP - A Fermion Quantum Processor
Tirumalasetty Panduranga Mahesh, National Institutes of Natural Sciences, Japan
Observation of Rabi oscillations between electronic orbitals using ultrafast pulsed lasers
Hendrik Hegels, MPI für Quantenoptik Garching
Quantum-Logic Gate between Two Optical Photons with an Average Efficiency above 40%
Susanne Otto, University of Otago
Towards an Experimental Platform for Rydberg Quantum Information Processing with Ultracold K-Rb
- 11:55 **Closing remarks**