

# Program

**Sunday, December 16, 2018**

17:00 – 21:00 Registration

from 18:30 *BUFFET SUPPER / Informal get together*

**Monday, December 17, 2018**

07:30 *BREAKFAST*

08:45 – 09:00 Carlos Sá de Melo **Opening and Welcome**

**Session 1: Photons**

09:00 – 09:45 Martin Weitz **Bose-Einstein condensation of photons and periodic potentials for light**

09:45 – 10:30 Michiel Wouters **Quantum fluids of exciton-polariton**

10:30 – 11:00 *COFFEE BREAK*

**Session 2: Quantum Droplets**

11:00 – 11:45 Tilman Pfau **Dipolar quantum gases and liquids**

11:45 – 12:30 Leticia Tarruell **Solitons and droplets in two-component Bose-Einstein condensates with tunable interactions**

12:30 **Conference Photo** (in the foyer of the lecture hall)

12:45 *LUNCH*

# Program

**Monday, December 17, 2018**

**Session 3: Long-Range Interactions**

- 14:00 – 14:45    Giovanna Morigi    **Collective dynamics of atomic ensembles interacting via long-range forces**
- 14:45 – 15:30    Laurent Sanchez-Palencia    **Universal scaling laws for correlation spreading in long-range quantum systems**

15:30 – 16:00    *COFFEE BREAK*

**Session 4: Memorial**

- 16:00 – 16:30    Carlos Sá de Melo    **Remembrances and Legacy of Debbie Jin**
- 16:30 – 17:30    **Plenary Poster Flash Presentations I**
- 17:30 – 17:45    Stefan Jorda    **About the Wilhelm and Else Heraeus-Foundation**
- 17:45 – 18:45    **Working Group Discussions I**
- 18:45 – 20:15    *HERAEUS DINNER at the Physikzentrum (cold & warm buffet, free beverages)*
- 20:15 – 22:00    **Poster Session I**

# Program

Tuesday, December 18, 2018

08:00	<i>BREAKFAST</i>	
<b>Session 5:</b>	<b>Hybrid Systems</b>	
09:00 – 09:45	Arno Rauschenbeutel	<b>Observation of ultra-strong spin-motion coupling for cold atoms in optical microtraps</b>
09:45 – 10:30	Michael Thorwart	<b>Nonequilibrium quantum phase transitions in a hybrid atom-optomechanical system</b>
10:30 – 11:00	<i>COFFEE BREAK</i>	
<b>Session 6:</b>	<b>Cosmology</b>	
11:00 – 11:45	James Anglin	<b>Noise and turbulence in 2D sonic black holes</b>
11:45 – 12:30	Gretchen Campbell	<b>A supersonically expanding BEC: An expanding universe in the lab?</b>
12:30	<i>LUNCH</i>	

# Program

**Tuesday, December 18, 2018**

**Session 7: Contributed Talks**

14:00 – 14:30	Uwe Fischer	<b>Experimental quantum cosmology: Probing analogue trans-Planckian physics in dipolar Bose-Einstein condensates</b>
14:30 – 15:00	Philipp Preiss	<b>Quantum optics with massive particles</b>
15:00 – 15:30	Richard Schmidt	<b>Many-body physics with quantum impurities in cold atoms and beyond</b>
15:30 – 16:00	Julian Léonard	<b>Exploring quantum correlations in a many-body localized system</b>
16:00 – 16:30	<i>COFFEE BREAK</i>	
16:30 – 17:00	Emi Yukawa	<b>Nonholonomy of order parameters and <math>su(3)</math> vortices in spin-1 Bose-Einstein condensates</b>
17:00 – 17:30	Ednilson dos Santos	<b>Quantum turbulence in trapped atomic Bose-Einstein condensates</b>
17:30 – 18:30	<b>Plenary Poster Flash Presentations II</b>	
18:30 – 20:00	<i>DINNER</i>	
20:00 – 22:00	<b>Poster Session II</b>	

# Program

Wednesday, December 19, 2018

08:00	<i>BREAKFAST</i>	
<b>Session 8:</b>	<b>Many-Body Physics</b>	
09:00 – 09:45	Selim Jochim	Probing many body physics in a 2D Fermi gas
09:45 – 10:30	Carsten Robens	Energy and short-range correlations of strong coupling Bose polarons
10:30 – 11:00	<i>COFFEE BREAK</i>	
<b>Session 9:</b>	<b>Lattices</b>	
11:00 – 11:45	Johann Blatter	Van der Waals type gas-liquid transition in the driven-dissipative Bose-Hubbard model
11:45 – 12:30	Christian Gross	From incommensurate magnetism to magnetic polarons in Fermi-Hubbard systems
12:30	<i>LUNCH</i>	
14:00 – 18:30	Excursion to the museum 'Haus der Geschichte', Bonn - Experience history -	
18:30 – 20:00	<i>DINNER</i>	
<b>Session 10:</b>	<b>Evening Lecture</b>	
20:00 – 21:00	Wolfgang Ketterle	How to dress RF photons with tunable momentum and magnetic spin-orbit coupling

# Program

Thursday, December 20, 2018

08:00	<i>BREAKFAST</i>	
<b>Session 11:</b>	<b>Two-Electron Atoms</b>	
09:00 – 09:45	Leonardo Fallani	<b>Experiments with synthetic quantum systems of ultracold two-electron fermions</b>
09:45 – 10:30	Yoshiro Takahashi	<b>Quantum simulation using two-electron atoms in an optical lattice</b>
10:30 – 11:00	<i>COFFEE BREAK</i>	
<b>Session 12:</b>	<b>Complex Dynamics</b>	
11:00 – 11:45	Dieter Jaksch	<b>Dissipation induced non-stationary complex ultracold atom dynamics</b>
11:45 – 12:30	Masahito Ueda	<b>Dynamics of continuously monitored quantum many-body systems</b>
12:30	<i>LUNCH</i>	
<b>Session 13:</b>	<b>Dipolar Atoms and Molecules</b>	
14:00 – 14:45	Lauriane Chomaz	<b>Experiments on dipolar quantum gases of erbium atoms: roton mode in dipolar BECs and spin mixtures of dipolar fermions</b>
14:45 – 15:30	Silke Ospelkaus	<b>Preparing ultracold polar molecules</b>
15:30 – 16:00	<i>COFFEE BREAK</i>	
16:00 – 17:00	<b>Plenary Poster Flash Presentations III</b>	
17:00 – 18:30	<b>Working Group Discussions II</b>	
18:30 – 20:00	<i>DINNER</i>	
20:00 – 22:00	<b>Poster Session III</b>	

# Program

Friday, December 21, 2018

08:00	<i>BREAKFAST</i>	
<b>Session 14:</b>	<b>Solitons and Vortices</b>	
09:00 – 09:45	Joachim Brand	<b>Quantum dark solitons in 1D quantum gases</b>
09:45 – 10:30	Franco Dalfovo	<b>Vortex structure and dynamics in a temperature quenched BEC</b>
10:30 – 11:00	<i>COFFEE BREAK</i>	
<b>Session 15:</b>	<b>Spin Liquids</b>	
11:00 – 11:45	Anna Sanpera	<b>Signatures of quantum spin liquids in small lattices</b>
11:45 – 12:00	Axel Pelster	<b>Poster awards, summary and closing remarks</b>
12:00 – 13:30	<i>LUNCH</i>	

***End of the seminar and FAREWELL COFFEE / Departure***

*Please note that there will be **no** dinner at the Physikzentrum on Friday evening for participants leaving the next morning.*