

Program

Tuesday, 16 December 2014

14:00 – 18:00 Arrival and Registration

from 16:00 *COFFEE and CAKE*

17:00 – 17:15 Axel Pelster (Kaiserslautern – Germany)

Welcome and Opening

Ernst Dreisigacker (Hanau – Germany)

About the Wilhelm and Else Heraeus Foundation

Session 1 Turbulence

17:15 – 18:00 Vanderlei Bagnato (São Carlos – Brazil)

New experiments in the investigation of quantum turbulence in a trapped superfluid

18:00 – 18:45 Makoto Tsubota (Osaka – Japan)

Quantum hydrodynamics and turbulence in atomic Bose-Einstein condensates

from 19:00 *HERAEUS DINNER*

(cold & warm buffet, free beverages)

Wednesday, 17 December 2014

08:00 *BREAKFAST*

Session 2 Hybrid systems

09:00 – 09:45 Artur Widera (Kaiserslautern – Germany)

Immersing single atoms in quantum gases

09:45 – 10:30 Tilman Pfau (Stuttgart – Germany)

Single charges in a quantum gas

10:30 – 11:00 *COFFEE BREAK*

11:00 – 11:45 Christophe Salomon (Paris – France)

A mixture of Bose and Fermi superfluids

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Wednesday, 17 December 2014

Session 3 Special invited talk

11:45 – 12:30 Yonko Millev (Ridge – USA)

Physical Review Letters: Raising the bar

12:30 – 12:40 **Conference Photo**

12:40 *LUNCH*

Session 4 Dipolar gases

14:00 – 14:45 Francesca Ferlaino (Innsbruck – Austria)

Dipolar physics with ultracold fermionic magnets

14:45 – 15:30 Silke Ospelkaus (Hannover – Germany)

Towards dipolar quantum many-body physics with ultracold polar molecules

15:30 – 16:00 *COFFEE BREAK*

16:00 – 19:00 **Plenary Poster Flash Presentations**

19:00 *DINNER*

20:00 – 22:00 **Poster Session I**

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Thursday, 18 December 2014

08:00 *BREAKFAST*

Session 4 Disorder

09:00 – 09:45 Vincent Josse (Palaiseau – France)

Weak and Anderson localization of ultracold atoms

09:45 – 10:30 Markus Holzmann (Grenoble – France)

Superfluid and transport properties of disordered Bose gases in two dimensions

10:30 – 11:00 *COFFEE BREAK*

11:00 – 11:45 Boris Svistunov (Amherst – USA)

Weak-link scenario of strong-disorder criticality in one dimensional superfluids

11:45 – 12:30 Hans Kroha (Bonn – Germany)

Many-body Anderson localization of strongly interacting Bose-Einstein condensates on disordered lattices

12:30 *LUNCH*

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Session 5 Contributed talks

- 14:00 – 14:30 Ernst Rasel (Hannover – Germany)
BEC interferometry
- 14:30 – 15:00 Gerhard Birkl (Darmstadt – Germany)
Coherent matter wave dynamics of BECs for atom interferometry and ATOMTRONICS quantum devices
- 15:00 – 15:30 Catherine Klauss (Boulder – USA)
The degenerate unitary Bose gas
- 15:30 – 16:00 Antun Balaž (Belgrade – Serbia)
Controlling BEC properties via disorder and driving
- 16:00 – 16:30 *COFFEE BREAK*
- 16:30 – 17:00 Anna Minguzzi (Grenoble – France)
Persistent currents and macroscopic superpositions of current states for interacting bosons on a ring with a gauge field
- 17:00 – 17:30 Tim Langen (Boulder – USA)
Trapping and cooling of polar hydroxyl molecules
- 17:30 – 18:00 Jeroen Devreese (Antwerpen – Belgium)
Effects of spin-orbit coupling on the Berezinskii-Kosterlitz-Thouless transition and the vortex-antivortex structure in a 2D Fermi gas
- 18:00 – 18:30 Xue-Feng Zhang (Kaiserslautern – Germany)
Exotic phenomena on the Kagome lattice
- 18:30 *DINNER*

Session 6 Evening talk

- 20:00 – 21:00 Immanuel Bloch (Garching – Germany)
From topological Bloch bands to long-range interacting Rydberg gases - New frontiers for ultracold atoms

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Friday, 19 December 2014

08:00 *BREAKFAST*

Session 7 Artificial gauge fields

09:00 – 09:45 Ian Spielman (Gaithersburg – USA)

Large artificial magnetic fields in synthetic dimensions

09:45 – 10:30 Chris Greene (West Lafayette – USA)

Theoretical developments with Rashba spin-orbit coupled systems and novel confinement-induced resonance geometries

10:30 – 11:00 *COFFEE BREAK*

11:00 – 11:45 Klaus Sengstock (Hamburg – Germany)

Magnetism with and without magnetism: Different regimes of magnetic interactions in quantum gases

Session 8 Non-equilibrium

11:45 – 12:30 André Eckardt (Dresden – Germany)

Odd Bose condensation in non-equilibrium steady states

12:30 *LUNCH*

14:00 – 19:00 **Excursion to medieval Christmas market in Siegburg**

19:00 *DINNER*

20:00 – 22:00 **Poster Session II**

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Saturday, 20 December 2014

08:00 *BREAKFAST*

Session 9 Lower dimensions

09:00 – 09:45 Susanne Viefers (Oslo – Norway)

Rotational properties of two-component Bose gases in the lowest Landau level

09:45 – 10:30 Michael Köhl (Bonn – Germany)

Two-dimensional Fermi gases

10:30 – 11:00 *COFFEE BREAK*

11:00 - 11:45 Matteo Rizzi (Mainz – Germany)

Strongly correlated states of trapped ultracold fermions in a U(2) gauge potential

Session 10 Optical Lattices

11:45 – 12:30 Ippei Danshita (Kyoto – Japan)

Quantum tricriticality and heavy solitary waves of binary Bose mixtures in optical lattices

12:30 – 12:40 Carlos Sá de Melo (Atlanta – USA)

Concluding remarks and Poster Awards

12:40 *LUNCH*

End of the seminar and departure