The Abdus Salam International Centre for Theoretical Physics

Workshop on Frontiers in Ultracold Fermi Gases

Cosponsor(s): INTELBIOMAT - European Science Foundation (ESF)
Organizer(s): Directors: W. Ketterle, M. Koehl, G. Mussardo, S. Stringari, A. Trombettoni.
Trieste - Italy, 06 - 10 June 2011

Venue: Adriatico Guest House Kastler Lecture Hall

Programme

Monday, 6 June 2011 (Room:Adriatico Guest House Kastler Lecture Hall)

08:00 - 08:45	(Room: Adriatico Guest House (Lower Level 1)) **Registration**
08:45 - 09:00	**Welcome address**
09:00 - 09:40	**R. Grimm** / *University of Innsbruck, Austria* **Strongly Interacting Fermi-Fermi Mixture: Creation and First Experiments**
09:40 - 10:20	**S. Jochim** / *Ruprecht-Karls-Universitat Heidelberg, Germany* **Fermionization of two distinguishable fermions**
10:20 - 10:50	(Room: Adriatico Guest House Cafeteria) --- Coffee Break ---
10:50 - 11:30	**A. Georges** / *Centre de Physique Theorique, France* **Trapping, cooling and probing fermionic atoms into the Mott and Neel states**
11:30 - 15:30	--- Lunch Break ---
15:30 - 16:10	**M. Ueda** / *The University of Tokyo, Japan* **Efimov States in Fermionic Lithium**

16:10 - 16:50 **T. Mukaiyama** / *University of ElectroCommunications, Japan*
Measurement of an Efimov Trimer Binding Energy in a Three-Component Mixture of 6Li

16:50 - 17:20 (Room: Adriatico Guest House Cafeteria)
--- Coffee Break ---

17:20 - 18:00 **N. Cooper** / *Cavendish Laboratory, United Kingdom*
Optical Flux Lattices for Ultracold Atomic Gases

Tuesday, 7 June 2011 (Room:Adriatico Guest House Kastler Lecture Hall)

09:00 - 09:40 **T. Esslinger** / *ETH Zürich, Switzerland*
Synthetic Quantum Many-Body Systems

09:40 - 10:20 **U. Schneider** / *Ludwig-Maximilians-Universitaet, Germany*
Interacting Fermionic Atoms in Optical Lattices - In- or Out-of-Equilibrium?

10:20 - 10:50 (Room: Adriatico Guest House Cafeteria)
--- Coffee Break ---

10:50 - 11:30 **T.L. Ho** / *The Ohio State University, United States of America*
The nature of the "upper branch" Fermi gas, and a new route to strong interaction

11:30 - 12:10 **P. Drummond** / *Swinburne University of Technology, Australia*
Entropy in strongly interacting Fermi gases

12:10 - 15:30 --- Lunch Break ---

15:30 - 16:10 **S. Ospelkaus** / *Leibniz Universitaet Hannover, Germany*
Molecular collisions and chemical reactions in the quantum regime

16:10 - 16:50 **G. Shlyapnikov** / *Universite XI Paris Sud, France*
Novel physics with fermionic polar molecules

16:50 - 17:20 (Room: Adriatico Guest House Cafeteria)
--- Coffee Break ---

17:20 - 18:00 **G. Pupillo** / *IQOQI Innsbruck, Austria*
Quantum and classical dynamics of dipolar gases in low dimensions

18:00 - 18:40 **B. Capogrosso-Sansone** / *Harvard University, United States of America*
Quantum phases of bosonic polar molecules in optical lattice geometries

Wednesday, 8 June 2011 (Room:Adriatico Guest House Kastler Lecture Hall)

09:00 - 09:40 **C. Salomon** / *Ecole Normale Superieure, France*
Thermodynamics of Quantum Gases

09:40 - 10:20 **M. Zwierlein** / *Massachusetts Institute of Technology MIT, United States of America*
TBA

10:20 - 10:50 (Room: Adriatico Guest House Cafeteria)
--- Coffee Break ---

10:50 - 11:30 **A. Rosch** / *Universität zu Köln, Germany*
Dynamics of ultracold fermions in optical lattices

11:30 - 12:10 **C. Kollath** / *Universite\' de Geneve, Switzerland*
Cooling and detection of fermionic gases in optical lattices

12:10 - 12:35 **N. Bluemer** / *Johannes Gutenberg-Universität, Germany*
Double occupancy as a universal probe for antiferromagnetic correlations and entropy in cold fermions on optical lattices

12:35 - 19:45 --- Free Afternoon ---

19:45 - 21:45 (Room: Adriatico Guest House Cafeteria)
--- Social Dinner ---

Thursday, 9 June 2011 (Room:Adriatico Guest House Kastler Lecture Hall)

09:00 - 09:40 **W. Zwerger** / *Massachusetts Institute of Technology MIT, United States of America*
Tan relations, 1D Fermi gases and Stoner Ferromagnetism

09:40 - 10:05 **A. Foerster** / *Instituto de Fisica da UFRGS, Brazil*
Exactly solvable models and ultracold atoms

10:05 - 10:45 **C.A.R. Sa De Melo** / *Georgia Institute of Technology, United States of America*
Compressibility and spin susceptibility in the evolution from BCS to BEC superfluids

10:45 - 11:15 (Room: Adriatico Guest House Cafeteria)
--- Coffee Break ---

11:15 - 11:55 **M. McNeil Forbes** / *University of Washington, United States of America*
Benchmarking the Fermion Many-body Problem: Precision bounds for the Unitary Fermi Gas

11:55 - 15:30 --- Lunch Break ---

15:30 - 16:10 **S. Giorgini** / *Universita\' degli Studi di Trento, Italy*
Itinerant ferromagnetism in a repulsive Fermi gas and normal Fermi liquid behavior

16:10 - 16:50 **E. Altman** / *The Weizmann Institute of Science, Israel*
Non equilibrium spin dynamics in strongly interacting Fermi gases

16:50 - 17:20 (Room: Adriatico Guest House Cafeteria)
--- Coffee Break ---

18:00 - 19:30 **Poster Session**

Friday, 10 June 2011 (Room:Adriatico Guest House Kastler Lecture Hall)

09:00 - 09:40 **L.P. Pitaevskii** / *Consiglio Nazionale delle Ricerche CNR, Itlay*
Dynamics of trapped solitons across BCS-BEC crossover

09:40 - 10:05 **J. Brand** / *Massey University, New Zealand*
Traveling dark solitons in the superfluid Fermi gas across the BEC-BCS crossover

10:05 - 10:35 (Room: Adriatico Guest House Cafeteria)
--- Coffee Break ---

10:35 - 11:15 **C. Vale** / *Swinburne University of Technology, Australia*
Bragg spectroscopic studies of the universal contact in a Fermi gas

11:15 - 11:55 **A. Turlapov** / *Russian Academy of Sciences, Russian Federation*
Two-dimensional Fermi gas of atoms

11:55 - 12:35 **M. Koehl** / *Cavendish Laboratory, United Kingdom*
TBA

12:35 - 12:45 **Closing Remarks**