WORKSHOP PROGRAM, May 12-16, 2014
“Few-body Universality in Atomic and Nuclear Physics: Recent Experimental and Theoretical Advances”
Organizers: Doerte Blume, Daniel Phillips, Francesca Ferlaino, and Chris H. Greene.

All talks (but the colloquium) are in C520. Colloquium on late Monday afternoon is held in PAA A-102.

In depth talk: 35min. talk + 10min. discussion. Hot topics/research updates: 20min. talk + 5min. discussion.

**Monday, May 12**

Starting at 8am: Registration (INT office, C411)

MORNING SESSION (Session Chair: Daniel Phillips, Ohio University)

8.45am: Welcome by David Kaplan, Director of the INT. Welcome by Daniel Phillips (for the workshop organizers).

9-9.45am: Randy Hulet, Rice University
Finite range corrections near a Feshbach resonance and their role in the Efimov effect

9.45-10.30am: Alejandro Kievsky, INFN, Pisa
Selected topics in three- and four-nucleon systems

10.30-11am: Coffee break (refreshments provided)

11-11.45am: Ania Kwiatkowski, TRIUMF
Benchmarks from high-precision mass measurements at TITAN

11.45-12.30pm: Li You, Tsinghua University
Ultracold collisions in the presence of spin-orbit coupling

12.30-2.30pm: Lunch break
(participants make their own arrangements; there are many small restaurants within 10 minute walking distance (many participants are familiar with the area)
Monday, May 12, continued

AFTERNOON SESSION (Session Chair: Hans-Werner Hammer, University Darmstadt)

2.30-2.55pm: Deep Gupta, University of Washington
Strongly interacting regimes in the Lithium-Ytterbium system

2.55-3.20pm: Hui Zhai, Tsinghua University
Few-Body Problems in Spin-Orbit Coupled Cold Atom System

3.20-3.50pm: Coffee break (refreshments provided)

4.00-5.00pm: Debbie Jin, JILA/NIST
Physics colloquium
Universal Dynamics of a Degenerate Unitary Bose Gas

Tuesday, May 13

MORNING SESSION (Session Chair: Gautam Rupak, Mississippi State University):

9-9.45am: Rudi Grimm, Innsbruck
Efimov and beyond: New twists in few-body physics with ultracold bosons and fermions

9.45-10.30am: Mario Gattobigio, CNRS
Universality and Scaling in Shallow Bound States

10.30-11am: Coffee break (refreshments provided)

11-11.45am: Christophe Salomon, ENS
A Mixture of Bose and Fermi Superfluids

11.45-12.30pm: Yusuke Nishida, Tokyo Institute of Technology
Few-body universality: from Efimov effect to super Efimov effect

12.30-2.30pm: Lunch break
**Tuesday, May 13, continued**

AFTERNOON SESSION (Session Chair: Hui Zhai, Tsinghua University):

2.30-2.55pm: Colin Parker, University of Chicago  
Geometric scaling of three-body collision resonances for a Li-Cs mixture in the Efimov scenario

2.55-3.20pm: Eva Kuhnle, University Heidelberg  
Observation of Efimov Resonances in a Mixture with Extreme Mass Imbalance

3.20-3.50pm: Coffee break (refreshments provided)

3.50-4.35pm: Rituparna Kanungo, TRIUMF  
Exotic properties of halo nuclei investigated through direct reactions

**Wednesday, May 14**

MORNING SESSION (Session Chair: Masahito Ueda, University of Tokyo):

8.45-9.30am: John Thomas, North Carolina State University  
Measuring scale invariance and viscosity in Fermi gases

9.30-10.15am: Takashi Nakamura, Tokyo Institute of Technology  
Weakly-bound and unbound few-body nucleonic systems

10.15-10.40am: Charlotte Elster, Ohio University  
The Coulomb problem in momentum space without screening

10.40-11.10am: Coffee break (refreshments provided)

11.10-11.55am: Chen Ji, TRIUMF  
From cold atoms to halo nuclei: an EFT description of three-body physics

11.55-12.40pm: Reinhard Doerner, University Frankfurt  
Imaging the wave functions of He2, He3 and the He3 Efimov state

Afternoon free for discussions.

6.30pm: Conference dinner (see handout for details)
Thursday, May 15

MORNING SESSION (Session Chair: Chris Greene, Purdue University):

9-9.45am: Johannes Hecker Denschlag, Universitaet Ulm
Cold three-body collisions between atoms and ions

9.45-10.30am: Amy Nicholson, University of Maryland
Universality from a lattice

10.30-11am: Coffee break (refreshments provided)

11-11.45am: Emiko Hiyama, RIKEN
Three- and four-body calculations of 3He and 4He atomic systems and structure of light hypernuclei

11.45-12.30pm: Shimpei Endo, University of Tokyo
Perfect screening of the Efimov effect by the dense Fermi sea

12.30-2.30pm: Lunch break

AFTERNOON SESSION (Session Chair: Fei Zhou, University of British Columbia):

2.30-2.55pm: Lev Khaykovich, Bar Ilan University
Three-body recombination at vanishing scattering length

2.55-3.20pm: Jan Martin Pawlowski, University of Heidelberg
Equation of state and phase structure of ultracold quantum gases in 2 & 3 dimensions

3.20-3.50pm: Coffee break (refreshments provided)

3.50-4.35pm: Chris Ticknor, Los Alamos
2D dipolar scattering with a tilt
**Friday, May 16**

MORNING SESSION (Session Chair: Doerte Blume, Washington State University):

8.45-9.30am: Dmitry Petrov, CNRS and Universite Paris-Sud  
Multi-body interacting bosons

9.30-10.15am: Thomas Lompe, MIT  
From Few to Many: Engineering Quantum Systems one Atom at a Time

10.15-10.40am: Yvan Castin, LKB-ENS, Paris  
At the threshold of the Efimov effect

10.40-11.10am: Coffee break (refreshments provided)

11.10-11.55am: Yujun Wang, Kansas State University  
Predictive three-body physics for ultracold atoms --- the role of van der Waals interactions

11.55-12.20pm: Dean Lee, North Carolina State University  
Adiabatic projection method for lattice scattering and reactions

Closing of workshop.