

Correlation Effects in Bose Condensates and Optical Lattices

May 2-4, 2003

Friday, May 2

Room 3-180 Electrical Engineering/Computer Science Building
200 Union Street SE, Minneapolis

- 8:15 - 9:00 Registration - Room 3-176
- 9:00 - 9:05 Welcome and Opening Remarks
Leonid Glazman, University of Minnesota

Session 1: VORTICES AND ROTATING CONDENSATES

Chair: Leonid Glazman, University of Minnesota

- 9:05 - 9:45 Frederic Chevy, Laboratoire Kastler Brossel
Dynamics of a Vortex Array
- 9:45 - 10:25 Nigel Cooper, University of Cambridge
Quantum Phases of Vortices in Atomic BECs
- 10:25 - 11:05 Eric Cornell, NIST/JILA
Rapidly Rotating Condensates, and a Little Bit about Spin Waves
- 11:05 - 11:40 Coffee Break
- 11:40 - 12:20 Jason Ho, The Ohio State University
Strong Interaction and Strong Correlation in Degenerate Quantum Gases
- 12:20 - 1:00 Nicholas Read, Yale University
Quantum Hall States and Spin Textures in Rotating Bose Systems
- 1:00 - 3:10 Lunch Break

Session 2: UNCONVENTIONAL BOSONS

Chair: Steven Girvin, Yale University

- 3:10 - 3:50 Allan MacDonald, University of Texas, Austin
Bosons in the Quantum Hall Regime: Filling Factors Large and Small
- 3:50 - 4:30 Leonid Butov, Lawrence Berkeley National Laboratory
Condensation and Pattern Formation in Cold Exciton Gases

- 4:30 - 5:00 Coffee Break
- 5:00 - 5:40 Rembert Duine, Utrecht University
The Bosonic Kondo Effect
- 5:40 - 6:20 Li You, Georgia Tech
Quantum Entanglement and Correlation of Bose Condensed Atoms
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Saturday, May 3

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Session 3: FESHBACH RESONANCE AND STRONG INTERACTIONS

Chair: Chuck Campbell, University of Minnesota

- 9:00 - 9:40 Randall Hulet, Rice University
Tunable Interactions in Bose and Fermi Gases: Solitons to Superfluids
- 9:40 - 10:20 Peter Fedichev, University of Innsbruck
Strongly Correlated Atomic Systems
- 10:20 - 11:00 Carl Wieman, JILA
Resonant BEC: A New Macroscopic Quantum System
- 11:00 - 11:40 Coffee Break
- 11:40 - 12:20 Kai Dieckmann, MIT
The Strongly Interacting Fermi Gas near a Feshbach Resonance
- 12:20 - 1:00 Murray Holland, JILA and University of Colorado at Boulder
Atom-Molecule Coherence in Quantum Degenerate Gases
- 1:00 - 3:10 Lunch Break

Session 4: OPTICAL LATTICES

Chair: Alex Kamenev, University of Minnesota

- 3:10 - 3:50 Leonid Levitov, MIT
Dynamics of Pairing with a Time-Dependent BCS Coupling: Revival and Integrability
- 3:50 - 4:30 Immanuel Bloch, Ludwig-Maximilians-University of Munich
Controlled Collisions with Neutral Atoms in Optical Lattices
- 4:30 - 5:00 Coffee Break

- 5:00 - 5:40 Subir Sachdev, Yale University
Dynamics of Mott Insulators in Strong Potential Gradients
- 5:40 - 6:20 Steven Rolston, National Institute of Standards and Technology
BECs and Optical Lattices in Lower Dimensions
- 7:15 Conference Dinner, Campus Club, Coffman Memorial Union
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Sunday, May 4

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Session 5: SPIN AND EXCHANGE

Chair: TBA

- 9:00 - 9:40 Steven Girvin, Yale University
Prospects for Strong Cavity QED in Electrical Circuits
- 9:40 - 10:20 Woods Halley, University of Minnesota
Scattering of Identical Atoms from Bose Condensates at Low Energies
- 10:20 - 11:00 Coffee Break
- 11:00 - 11:40 Eugene Demler, Harvard University
Spin Exchange Interactions of Ultracold Bosonic Atoms in Optical Lattices

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