

BEC 2009

Bose-Einstein Condensation 2009
Frontiers in Quantum Gases
www.iqoqi.at/bec2009

Sant Feliu de Guixols (Costa Brava) Spain
05 - 11 September 2009

Complete program info available at
<http://www.iqoqi.at/bec2009>

Chair: Peter Zoller (IQOQI, University of Innsbruck)

Vice-chair: Tilman Esslinger (ETH, Zurich)

Organizers:

Innsbruck Team (IQOQI):

Mikhail Baranov - hotel / organize local contact

Andrew Daley - finances

Sebastian Diehl - program

Andrea Micheli - program

Guido Pupillo - webpage and registration

Barcelona Team (ICFO):

Maciej Lewenstein, Anna Sanpera, Artur Polls, Jordi Boronat

Local contact:

Hotel Eden Roc Reception +34-972-320100

Conference Secretaries (located at office desk, next to conference room):

Manuela Zine, manuela.zine@uibk.ac.at

Laura Grau, laura.grau@icfo.es

Sponsors:



Institute for Quantum Optics and Quantum Information, Innsbruck

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Conference Schedule

	Sunday 09/06	Monday 09/07	Tuesday 09/08	Wednesday 09/09	Thursday 09/10
Breakfast 8:00 - 8:45					
Chair:	Shlyapnikov	Dalibard	Sengstock	Stamper-Kurn	Grimm
9:00 - 9:45	Inguscio & Clément	Phillips	Ye	Reichel	Ketterle
9:45 - 10:30	Aspect & Sanchez-Palencia	Oberthaler	Näger/Löw	Cirac	Jin
Coffee					
Chair:	Salomon	Spielman	Pfau	Görlitz	Walraven
11:00 - 11:45	Troyer	Schumm/Doyle	Büchler	Takahashi	Schreck/Petrov
11:45 - 12:30	Bloch	Steinhauer	Merkt	Chin/Strohmaier	Stringari
Lunch					
Chair:	Baranov	Ertmer	Esslinger		Ueda
16:00 - 16:45	Hulet	Cornell	Aspelmeyer	Departure 15:30	Altman/Vengalattore
16:45 - 17:30	Jochim/Zwierlein	Sanpera	Treutlein		Greiner (-> 17:15)
Coffee					van Druten
Chair:	Fetter	Bulgac	Ho	Excursion	18:00 - 18:25: Riehle
18:00 - 18:45	Cooper	Giamarchi	Davis		18:25 - 18:50: Snoke
18:45 - 19:30	Das Sarma	Georges	Törmä/Liu		
Dinner					
	Chair: Levin				
20:45	Delgado Tutorial	Poster I	Poster II	19:30 Conference Dinner	Poster III
				Speech: Lewenstein	

Long Talk

Short Talk / Hot topic Talk

Excursion

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Invited talks

Ehud Altman, Many body Rabi oscillations of ultracold atoms in coupled one-dimensional tubes

Alain Aspect and Laurent Sanchez Palencia, Anderson localization of ultra-cold atoms in 1D optical speckles: surprises in a simple problem

Markus Aspelmeyer, Quantum-Opto-Mechanics: Micro- and Nanomechanical Devices for Hybrid Quantum Systems

Immanuel Bloch, Non-equilibrium Dynamics of Strongly Interacting Bosonic and Fermionic Quantum Gases

Hans Peter Büchler, Coherent and dissipative quantum simulations of many-body interactions with cold Rydberg atoms

Cheng Chin, Formation of Mott-insulating domains in optical lattices

Ignacio Cirac, Collective effects in the interaction of light and atoms

Nigel Cooper, Topological superfluid phase of polar fermionic molecules

Eric Cornell, Recent BEC results at JILA

Sankar Das Sarma, Studying Unusual Quantum Phases using Cold Atoms

Matthew Davis, Topological defects in the formation of Bose-Einstein condensates

John Doyle, A buffer-gas cooled Bose-Einstein condensate

Antoine Georges, Cooling and probing fermions in optical lattices

Thierry Giamarchi, Quantum Simulations of the Hubbard model: The attractive route

Markus Greiner, Quantum Gas Microscope - A Next Generation Quantum Simulator

Randy Hulet, Widely Tunable Interactions in a Bose Gas: From Anderson Localization to Beyond Mean Field

Massimo Inguscio and David Clément, Disorder, interactions and localization of ultracold atoms

Deborah Jin, Photoemission spectroscopy of a strongly interacting Fermi gas

Selim Jochim, Universal trimer states in a three-component Fermi gas

Wolfgang Ketterle, Ultracold fermions with strong interactions

W. Vincent Liu, Analytic thermodynamics and thermometry of 1D imbalanced Fermi gases at strong interaction

Robert Loew, Ordered States in Strongly Interacting Rydberg Gases

Miguel A. Martin-Delgado, Challenges for New States of Matter: Quantum Topology and Beyond

Frederic Merkt, Stark and Zeeman deceleration of atoms and molecules

Hanns-Christoph Nägerl, Realization of a Super-Tonks-Girardeau gas in 1D geometry with strong attractive interactions

Markus Oberthaler, Quantum atom optics with Bose Einstein condensates

Dmitry Petrov, Atom-dimer scattering and trimer states in fermionic mixtures

William Phillips, Quantum Bose Gases in Two Dimensions

Jakob Reichel, Cavity QED with BECs in fiber cavities and atom number squeezing in a double well

Fritz Riehle, Bose-Einstein condensation of calcium

Anna Sanpera, Quantum interfaces, dynamical correlations and disorder in many body physics

Florian Schreck, Collisional stability of 40K immersed in a strongly interacting Fermi gas of 6Li

Thorsten Schumm, Second-order correlations across the BEC phase transition

David Snoke, Bose-Einstein Condensation of Polaritons in a Trap

Jeff Steinhauer, An in-situ view of stochastic losses, tunneling, and number squeezing in an optical lattice

Sandro Stringari, Excitation of sound in ultracold Fermi gases

Niels Strohmaier, Interacting fermions in an optical lattice

Yoshiro Takahashi, Quantum gases of ytterbium in an optical lattice

Päivi Törmä, Quantum dynamics in Fermi gases

Philipp Treutlein, Ultracold atoms interacting with solid-state micro- and nanostructures

Matthias Troyer, Quantum simulations of interacting many body systems

Mukund Vengalattore, Spontaneous spatial order in a dipolar spinor quantum fluid

Jun Ye, Dipolar molecular gas near quantum degeneracy

Martin Zwierlein, Observation of Fermi Polarons in a tunable Fermi liquid of ultracold atoms

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Poster Session I (Monday)

Veronica Ahufinger, Coherent Patterning of Matter Waves with Subwavelength Localization

Jan Joachim Arlt, Parametric amplification of vacuum fluctuations with a spinor gas

Grigori Astrakharchik, Two-dimensional weakly interacting Bose gas: equation of state

Alexander Avdeenkov, Collisions of ultracold polar molecules in microwave traps

Egor Babaev, Fluctuation-induced unusual states of vortex matter in BEC mixtures

Mikhail Baranov, Attractive Lattice Bosons with Three-Body Hardcore Constraint

Nuria Barberan, Rotating BEC: Modeling single shots of TOF experiments.

Jean Sebastien Bernier, Strongly correlated fermions in optical lattices

Martin Berninger, Evidence of a pair of universal four-body states tied to an Efimov Trimer

Gerhard Birkl, BEC and guided atoms optics in dipole potentials

P Blair Blakie, Finite temperature theory for the dipolar Bose gas

Sebastian Blatt, Ultracold collisions with Optically Trapped Strontium

Thomas Bourdel, All-optical runaway evaporation to Bose-Einstein condensation

Thomas Busch, Detection and engineering of spatial mode entanglement with ultra-cold bosons

Krzysztof Byczuk, Dynamical mean-field theory for Bose-Einstein condensed and normal phases of lattice bosons

Iacopo Carusotto, Non-equilibrium quantum many-body physics with optical systems

Yvan Castin, Phase spreading of a BEC at non-zero temperature

Jacopo Catani, Efimov physics and entropy manipulation in an ultracold Bose-Bose mixture

Robert Cherng, Magnetoroton softening in Rb spinor condensates with dipolar interactions

Charles Clark, no title

David Clement, Exploring Correlated 1D Bose Gases from the Superfluid to the Mott-Insulator State by Inelastic Light Scattering

Simon Cornish, Formation, dynamics and quantum reflection of bright matter-wave solitons

Matteo Cristiani, Cold Ytterbium atoms for cavity QED experiments

Andrew Daley, Atomic three-body loss as a dynamical three-body interaction

Matthew J. Davis, Topological defects in the formation of Bose-Einstein condensates

Stephan Dürr, Control of a magnetic Feshbach resonance with laser light

Gabriele De Chiara, Mott-insulator states of ultracold atoms in optical resonators

Johannes Deiglmayr, Formation of polar molecules in the rovibrational ground state by photoassociation

Adolfo del Campo, How to prepare atomic Fock states

Kai Dieckmann, Ultracold Heteronuclear Fermi-Fermi Molecules

Sebastian Diehl, Dissipative Many-Body Quantum States: From Nonequilibrium Phase Transitions to d-Wave Paired Fermions

Peter Domokos, Collective excitations of one-dimensional optical lattices due to opto-mechanical coupling

André Eckardt, Exploring quantum frustration with dressed matter waves

Peter Engels, Formation of solitons during the BEC phase transition

Serena Fagnocchi, Dynamical Casimir Effect in splitting of a one-dimensional Bose Einstein condensate

Francesca Ferlaino, Exploring Exotic Quantum Matter with Erbium Atoms

Michael Fleischhauer, Many-body physics of attractively bound pairs in the Bose-Hubbard model

James Freericks, Using an optical lattice to improve the efficiency of dipolar molecule formation

Takeshi Fukuhara, Mott insulator of ytterbium atoms

John Gaebler, Photoemission Spectroscopy of a Strongly Interacting Fermi Gas

Mariusz Gajda, Distillation of a Bose-Einstein condensate

Juan Jose Garcia-Ripoll, Pairing of bosonic atoms

Jean-Claude Garreau, Quasiclassical chaos with Bose-Einstein condensates

Axel Görlitz, An ultracold mixture of Yb and Rb close to quantum degeneracy

Kenneth Günter, Two-dimensional Bose gases and geometric potentials

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Poster Session II (Tuesday)

Nate Gemelke, In-situ Imaging of Interacting Bose Gases in Optical Lattices

Marvin D Girardeau, Properties of strongly correlated ultracold gases in tight de Broglie waveguides

Allan Griffin, First and second sound in a trapped superfluid Fermi gas at unitarity

Koos Gubbels, Renormalization group theory for the imbalanced Fermi gas

Muntsa Guilleumas, Josephson oscillations in binary mixtures of F=1 spinor BECs

Peter Hannaford, Bragg Spectroscopy of the BEC-BCS Crossover in Lithium-6

Andreas Hemmerich, Optical lattice with a staggered magnetic field

Sebastian Huber, Coherent pumping of a localized Fermi system

Zbigniew Idziaszek, Quantum-defect modeling of ultracold collisions between polar molecules

Hughes Ifan, Mobile traps for ultracold atoms based on domain walls in magnetic nanowires

Gediminas Juzeliunas, Transfer of orbital angular momentum between slow light and cold atoms

Robin Kaiser, Lévy Flight of Photons

Aviv Keshet, Repulsively Interacting Ultracold Fermions in Optical Lattices

Karen Kheruntsyan, Atom-atom correlations in colliding Bose-Einstein condensates

Servaas Kokkelmans, Efimov trimers in a harmonic potential

Svetlana Kotochigova, Exploring anisotropic properties of polar molecules

Peter Krüger, Traps with Multiply Connected Topologies on Atom Chips

Johann Kroha, Nonequilibrium Josephson oscillations in Bose-Einstein condensates without dissipation

Thierry Lahaye, Interaction of a guided atom lasers with optical potentials

Michele Leduc, Optical Traps for ultracold metastable helium atoms

Ye-ryoung Lee, Strongly Interacting Fermi and Bose-Fermi Gases

Wenhui Li, Measurements of the Paired Fraction in the BEC-BCS Crossover

Vincent Liu, Analytic thermodynamics and thermometry of 1D imbalanced Fermi gases at strong interaction

Robert Loew, Ordered States in Strongly Interacting Rydberg Gases

Pietro Massignan, Topological Quantum Computation with a Bose-Fermi mixture

Michal Matuszewski, Excited spin states and phase separation in spin-1 condensates

Mikko Möttönen, Creation of Dirac monopoles in spinor Bose-Einstein condensates

Patrick Medley, Spin gradient thermometry for ultracold atoms in optical lattices

Chiara Menotti, Pair-supersolid phase in a bilayer system of dipolar lattice bosons

Andrea Micheli, Mesoscopic phases of dipolar ensembles with polar molecules and Rydberg atoms

Takeshi Mizushima, Zero energy Majorana fermions topologically protected against vortex interaction in p-wave superfluids

Michele Modugno, Localization of Bose-Einstein condensates in quasi-periodic lattices

William Mullin, Classical phases and quantum angles in the description of interfering Bose-Einstein condensates

Sylvain Nascimbene, Collective Oscillations of an Imbalanced Fermi Gas: Axial Compression Modes and Polaron Effective Mass

Kang-Kuen Ni, Collisions in an ultracold trapped gas of polar molecules

Nicolai Nygaard, Superfluid density profile in a trapped Fermi gas

Herwig Ott, Electron Microscopy of Ultracold Quantum Gases

Axel Pelster, Collapse and Revival of Matter Waves in Bosonic Optical Lattices

Tilman Pfau, Rydberg excitation in microscopic vapor cells

Sebastiano Pilati, Superfluid Transition of an interacting Bose gas in a random potential: a Path Integral Monte Carlo study

Ludovic Pricoupenko, Three Resonant Ultra-Cold Bosons: Off-Resonance Effects

Guido Pupillo, Quantum Phases of Cold Polar Molecules in 2D Optical Lattices

Ernst Maria Rasel, Physics with Bose-Einstein Condensation in Microgravity

Poster Session III (Thursday)

Matteo Rizzi, Quantum-Hall States in Cold Atomic Rotating Traps with Strong Dissipation
Giacomo Roati, Effects of interactions on an Anderson insulator in a disordered lattice
Stefan Rombouts, Pair blocking and FFLO phases in imbalanced lattice models.
Oriol Romero-Isart, Cooling nano dielectrics to the quantum regime
Marco Roncaglia, Quantum-Hall States in Cold Atomic Rotating Traps with Strong Dissipation
Tommaso Roscilde, no title
Janne Ruostekoski, Diffractive light scattering from fermionic atomic gases in optical lattices
Kazimierz Rzazewski, Statistics of Bose-Einstein condensate and the classical fields
Alejandro Saenz, Few atoms in optical lattices
Luis Santos, Dipolar condensates in 2D traps and optical lattices
Ulrich Schneider, Fermionic Quantum gases with tunable interactions in optical lattices
Klaus Sengstock, 1) Quantum gases in triangular lattices 2) Bragg-spectroscopy of lattices
Carlo Sias, Impurities in a Bose gas
Augusto Smerzi, Vortex-Induced Phase Slip Dissipation in a Toroidal Bose-Einstein Condensate Flowing Through a Barrier
Kathy-Anne Soderberg, Scalable Quantum Information Processing with Two Atomic Species in Independent Optical Lattices
Ian Spielman, Synthetic vector potentials and electromagnetic fields
Robert Spreeuw, Array of mesoscopic ensembles on a magnetic atom chip
Dan Stamper-Kurn, Opto-mechanics and interferometry with ultracold atoms
Alexej I. Streltsov, Many-body quantum dynamics of attractive Bose gases
Masaki Tezuka, Imbalanced Fermi condensates: effect of trap shapes
Joseph Thywissen, Towards in-situ imaging of fermions in an optical lattice
Eite Tiesinga, Tunneling phase gate for neutral atoms in a double-well lattice
Marek Trippenbach, Optical detection of quantum phases in ultracold gases
Andrea Trombettoni, Quantum devices with cold atoms
Andrew Truscott, Guiding, Locking and Four Wave Mixing with a He* Atom Laser
Michael Urban, Collective modes of trapped Fermi gases with in-medium interaction
Klaasjan van Druten, Experiments on integrability in the 1D Bose gas using atom chips and RF dressing
Kris Van Houcke, Diagrammatic Monte Carlo: towards an exact solution for strongly correlated fermions
Erik van Ooijen, Time-averaged optical potentials for Bose-Einstein Condensates
Peter van der Straten, Hydrodynamic excitations in a Bose-Einstein condensate
Wim Vassen, Metastable helium in a 1557-nm dipole trap
Laurent Vernac, Study and Control of Dipolar Relaxation in a Cr BEC
Andras Vukics, Cavity nonlinear optics with few photons and ultracold quantum particles
Jook Walraven, Search for a broad Feshbach resonance in the 6Li -40K mixture
Daw-Wei Wang, Quantum depletion of condensate fraction during the time-of-flight expansion
Hendrik Weimer, Digital Coherent and Dissipative Quantum Simulations with Rydberg Atoms
Christoph Westbrook, correlated pairs in collisions of Bose-Einstein condensates
Birgitta Whaley, Squeezing and superposing many-body states of Bose gases in confining potentials
Andrew Wilson, Experiments with Ultracold Mixtures
Vladimir Yurovsky, Quantum-chaotic behavior of trapped ultracold atoms
Jakub Zakrzewski, Towards a Bose glass with cold atoms
Claus Zimmermann, Bragg-Spectroscopy of Rubidium Lithium Mixtures