SUNDAY EVENING, DECEMBER 4

Meeting at MODENA DESIGN
Avda. Figueroa Alcorta 2270

Registration will start at 19:00. All participants and accompanying persons are invited to join the *Welcome Reception* at 19:30. There will be abundant fingerfood, drinks, a tango exhibition and (optional) tango lesson for beginners.

MONDAY MORNING, DECEMBER 5

8:30-8:40 *Opening remarks*

Session: **FEENBERG CEREMONY**

Chair: *Susana Hernández*

8:40-9:00 Charles Campbell (University of Minnesota, USA) :
Feenberg Prizewinner Laudatio.

9:00-9:40 Hermann Kümmel (Ruhr Universität, Bochum, Germany):
Quantum theory without measurement.

9:40-10:20 Ray Bishop (University of Manchester, Great Britain):
Towards a coupled-cluster treatment of SU(N) lattice gauge field theory.

10:20-10:50 **COFFEE BREAK**

Session: **SUPERSOLID HELIUM**

Chair: *Dora Jezek*

10:50-11:30 Luciano Reatto (Università di Milano, Italy):
Bose-Einstein condensation in bulk and in confined solid Helium.

11:30-12:10 Wayne Saslow (Texas A&M University, USA):
Continuum theories of supersolid 4He: a review.

12:30-14:00 **LUNCH at Café Victoria**

MONDAY AFTERNOON, DECEMBER 5

Session: **COLD ATOMS**

Chair: *Pablo Capuzzi*

14:30-15:10 Jorge Dukelsky (Instituto de Estructura de la Materia, CSIC, Spain):
Exact BCS solution in the BCS-BEC crossover.

15:10-15:50 Stefano Giorgini (Dipartimento di Fisica Universit di Trento and BEC-INFM, Italy):
Quantum Monte Carlo study of a fermi gas in the BCS-BEC crossover.

15:50-16:30 Yoshi Ohashi (Institute of Physics, University of Tsukuba, Japan):
BCS-BEC crossover in a superfluid Fermi gas.

16:30-17:00 **COFFEE BREAK**

17:00-17:20 Esteban Calzetta (Universidad de Buenos Aires, Argentina):
Bose-Einstein condensate superfluid-Mott insulator transition in an optical lattice.

17:20-18:00 Masahito Ueda (Tokyo Institute of Technology, Tokyo, Japan):
Symmetry breaking in scalar, spinor, and rotating Bose-Einstein condensates.

TUESDAY MORNING, DECEMBER 6

Session: **PHASE TRANSITIONS**

Chair: *Norma Canosa*

8:30-9:10 Khandker Quader (Dept of Physics, Kent State University, USA):
A tractable crossing-symmetric approach to strongly correlated Fermi systems.

9:10-9:50 Jorge Kurchan (Ècole Supérieure de Physique et de Chimie Industrielles, France):
Mapping reaction paths and separatrices in phase-space.

9:50-10:20 **COFFEE BREAK**

10:20-11:00 José Riccardo (Universidad de San Luis, Argentina):
Applications of quantum fractional statistics.

11:00-11:40 Carlos Wexler (University of Missouri-Columbia, USA):
An extended concept of universality in a statistics mechanics model.

11:40-12:20 Thierry Giamarchi (University of Geneva, Switzerland):
Deconfinement and cold atoms in optical lattices.

12:30-14:00 **LUNCH at Café Victoria**

TUESDAY AFTERNOON, DECEMBER 6

Session: **LOW DIMENSIONAL SYSTEMS**

Chair: *Raúl Rossignoli*

14:30-15:10 Milton Cole (Penn State University, State College, USA):
Matter in nanotubes: crossover from 1D to 3D behavior.

15:10-15:50 Ferrán Mazzanti (Universitat Ramon Llul, Barcelona, Spain):
Variational description of weakly interacting Bose gases in 2 and 3 dimensions.

15:50-16:10 David Hutchinson (University of Otago, New Zealand):
Phase transitions in ultra-cold two-dimensional gases.

16:10-16:40 **COFFEE BREAK**

16:40-17:20 David Neilson (Università di Camerino, Italy):
Unified scaling description of metal-insulator transition: new results for the deep insulating region,

17:20-18:00 Zohar Nussinov (Washington University at St. Louis, USA):
Intermediate symmetries and dimensional reduction.

WEDNESDAY MORNING, DECEMBER 7

Session: **QUANTUM COMPUTATION & EXOTIC PHASES**

Chair: *Cristina Cambiaggio*

8:30-9:10 Hans Peter Büchler (Institute for Theoretical Physics, University of Innsbruck, Austria):
Atomic quantum simulator for lattice gauge theories and ring exchange models.

9:10-9:50 Juan Pablo Paz (Universidad de Buenos Aires, Argentina):
Universal decoherence induced by an environmental quantum phase transition

9:50-10:20 **COFFEE BREAK**

10:20-11:00 Gerardo Ortiz (Theoretical Division, Los Alamos National Lab, USA):
Limits on the power of quantum computation.

11:00-11:40 Ignacio Cirac (Max-Planck-Institute of Quantum Optics, Garching, Germany):
Quantum simulations in many-body systems.

11:40-13:00 **POSTER SESSION**

13:00-14:30 **LUNCH at Café Victoria**

FREE AFTERNOON

THURSDAY MORNING, DECEMBER 8

Session: **QUANTUM MONTE CARLO & MOLECULAR DYNAMICS**

Chair: *Guillermo Dussel*

8:30-9:10 Leandra Vranjes (University of Split, Croatia):
Quantum Monte Carlo study of overpressurised liquid 4He at zero temperature.

9:10-9:50 Miguel Kiwi (Pontificia Universidad Católica, Chile):
Nanoscale sliding friction versus commesuration ratio: molecular dynamics simulation.

9:50-10:30 Saverio Moroni (INFN La Sapienza, Rome, Italy):
Free rotation of dopants in superfluid He clusters.

10:30-11:00 **COFFEE BREAK**

11:00-11:40 John Shumway (Arizona State University, USA):
Path-Integral Monte Carlo simulations of semiconductor nanostructures.

11:40-12:20 K. Birgitta Whaley (University of California at Berkeley, USA):
Superfluids and condensates in strongly modulated potentials.

12:30-14:00 **LUNCH at Café Victoria**

THURSDAY AFTERNOON, DECEMBER 8

Session: **A TRIBUTE TO SEVEN DECADES: PHYSICS AND MUCH MORE**

Chair: *Angel Plastino*

14:30-14:50 Charles Campbell (University of Minnesota):

14:50-15:30 John Clark (Washington University, St. Louis, USA):
Support vector machine predictions of nuclear properties.

15:30-16:10 Manfred Ristig (Köln Universität, Germany):
The physics of liquid para-hydrogen.

16:10-16:40 **COFFEE BREAK**

Session: **FLUID HELIUM**

Chair: *Leszek Szybisz*

16:40-17:20 Eckhard Krotscheck (Institute for Theoretical Physics, JKU Linz, Austria):
Quantum condensation, transmission and evaporation in the He-4 surface.

17:20-18:00 Jesús Navarro (IFIC, CSIC - University of Valencia, Spain):
The spectra of mixed 3He-4He droplets.

20:30-∞ **CONFERENCE DINNER**

FRIDAY MORNING, DECEMBER 9

Session: **ELECTRON SYSTEMS**

Chair: *Mariana Weissmann*

8:30-9:10 Ravindra Bhatt (Princeton University, USA):
Ferromagnetism versus antiferromagnetism in low carrier density many body systems.

9:10-9:50 Sonia Frota Pessoa (Instituto de Física, Universidade de Sao Paulo):
Theoretical investigation of 3d nanostructures on Cu surfaces: the influence of the local environment.

9:50-10:20 **COFFEE BREAK**

10:20-11:00 Martí Pi (Universitat de Barcelona, Spain):
Electron bubbles in liquid helium revisited.

11:00-11:40 Massimo Rontani (CNR-INFM National Research Center S3, Modena, Italy):
Theory of electron spectroscopies in strongly correlated semiconductor quantum dots.

11:40-12:20 Eduardo Miranda (Universidade Estadual de Campinas, Brasil):
Dissipative spin liquids and electronic Griffiths phases in disordered metallic systems.

12:30-14:00 **LUNCH at Café Victoria**

FRIDAY AFTERNOON, DECEMBER 9

Session: **NUCLEI & FERMION SYSTEMS**

Chair: *Daniel Bes*

14:30-15:10 Joseph Carlson (Los Alamos National Lab., USA):
Cold fermions in the universal regime.

15:10-15:50 Thomas Papenbrock (University of Tennessee, USA):
Coupled-cluster theory for nuclei.

15:50-16:10 Alejandro Kievsky (Instituto Nazionale di Fisica Nucleare, Pisa, Italy):
Variational description of few-nucleon systems: bound and scattering states.

16:10-16:40 **COFFEE BREAK**

16:40-17:00 Artur Polls (Universitat de Barcelona, Spain):
Correlations in hot asymmetric nuclear matter.

17:20-17:40 Massimiliano Alvioli (Università di Perugia & INFN, Italy):
A many-body calculation of the effects of nucleon-nucleon correlations in high-energy scattering processes off complex nuclei.

17:40-18:00 Joaquín Drut (University of Washington, USA):
Spin 1/2 fermions in the unitary regime at finite temperature.

18:00-18:15 Siu A. Chin (Texas A& M University, USA):
Closing remarks.