Program

Monday, August 29

09:00 - 09:10 Opening

09:10 - 09:35 **Edie Sevick** (The Australian National University, Canberra, Australia)
Interpreting force spectroscopy of soft matter using dynamic umbrella sampling

09:35 - 10:00 **Sergio Ciliberto** (Ecole Normale Supérieure de Lyon and CNRS, France)
Heat fluctuations in and out of equilibrium bath

10:00 - 10:25 **Udo Seifert** (University of Stuttgart, Germany)
Stochastic thermodynamics of nonequilibrium steady states

10:25 - 10:50 Coffee break

10:50 - 11:15 **Paddy Royall** (University of Bristol, UK)
The nature of the glass and gel transitions: structural and dynamic insights from colloids

11:15 - 11:40 **Roberto Livi** (University of Florence, Italy)
Negative temperature states in the discrete nonlinear Schrödinger equation

11:40 - 12:05 **Matthew Dobson** (Ecole des Ponts, Paris Tech, France)
A Langevin dynamics for systems immersed in a linear nonequilibrium flow

12:05 - 12:30 **Matteo Colangeli** (Politecnico di Torino, Italy)
Projection operator methods in nonequilibrium response theory

Lunch break

14:30 - 14:55 **Stephen Williams** (The Australian National University, Canberra, Australia)
Quasi-equilibrium and the emergence of solid behaviour in amorphous materials

14:55 - 15:20 **James Reid** (Griffith University, Brisbane, Australia)
*An optically trapped particle and the fluctuation relations:
applying two decades of developments to one simple system*

15:20 - 15:45 **Ian Snook** (RMIT University, Melbourne, Australia)
*The formation and annihilation of solitons and standing strainwave
superstructures in a two-dimensional colloidal crystal:
a new non-equilibrium state?*

15:45 - 16:10 **Gary Morriss** (University of New South Wales, Sydney, Australia)
Lyapunov exponents and modes for a quasi-onedimensional system

16:10 - 16:35 Coffee break

16:35 - 17:00 **Hadrien Bosetti** (University of Vienna, Austria)
Local covariant Lyapunov exponents and vectors for particle systems

17:00 - 17:25 **Farinaz Roshani** (Alzahra University, Iran)
Directed diffusion in complex social networks

17:25 - 17:50 **Helmuth Hüffel** (University of Vienna, Austria)
Swarms with canonical active Brownian motion

Tuesday, August 30

09:00 - 09:25 **Giancarlo Benettin** (Universitá di Padova, Italy)
The process of approach to equilibrium in the Fermi-Pasta-Ulam problem

09:25 - 09:50 **Henk van Beijeren** (Utrecht University, The Netherlands)
The anomalous dynamics of one-dimensional Hamiltonian systems

09:50 - 10:15 **Jean-Pierre Eckmann** (University of Geneva, Switzerland)
Rattling and freezing in a 1-D transport model

10:15 - 10:40 Coffee break

10:40 - 11:05 **Herbert Spohn** (TU München, Germany)
The motion of 1-D driven interfaces: exact solutions of the KPZ equation

11:05 - 11:30 **Carl Dettmann** (University of Bristol, UK)
Diffusion processes in molecular dynamics

11:30 - 11:55 **Jesper Hansen** (Roskilde University, Denmark)
Spin-coupling in nanofluidics

11:55 - 12:20 **Antonio Politi** (CNR Istituto dei Sistemi Complessi, Firenze, Italy)
Heat conduction in the hard point chain

Lunch break

15:00 - 15:25 **Jorge Kurchan** (École Supérieure de Physique et de
Chimie Industrielles, Paris, France)
An infinite family of Second Law-like inequalities

15:25 - 15:50 **Michel Mareschal** (Universite Libre de Bruxelles, Belgium)
Going beyond Navier-Stokes to describe strong shock waves in fluids

15:50 - 16:15 **Hugo Touchette** (Queen Mary, University of London, UK)
Fluctuations of a Brownian particle with dry friction

16:15 - 16:40 Coffee break

16:40 - 17:05 **Bill van Megen** (RMIT University, Melbourne, Australia)
*Scaling of the current time correlation function of fluids of hard sphere particles:
exposing the difference between thermodynamic stability and metastability*

17:05 - 17:30 **Sohail Murad** (University of Illinois at Chicago, USA)
*The role of external electric fields in enhancing ion mobility, drift velocity and
drift-diffusion rates in aqueous electrolyte solutions*

Dinner

20:30 - 21:30 **Poster session**

Wednesday, August 31

09:00 - 09:25 **Giovanni Ciccotti** (Università di Roma "La Sapienza", Italy)
Time-dependent non-equilibrium molecular dynamics

09:25 - 09:50 **Billy Todd** (Swinburne University of Technology, Hawthorn, Australia)
Accurate prediction of fluid slip

09:50 - 10:15 **Sten Sarman** (Stockholm University, Sweden)
Nonequilibrium phenomena in liquid crystals

10:15 - 10:40 Coffee break

10:40 - 11:05 **Andrea Puglisi** (Università di Roma "La Sapienza", Italy)
Non-equilibrium statistical mechanics of granular fluids:
from experiment to theory

11:05 - 11:30 **Maxim Belushkin** (Ecole Polytechnique Fédérale de Lausanne, Switzerland)
Influence of hydrodynamics on the fluctuation theorem

11:30 - 11:55 **Stefano Bernardi** (Griffith University, Brisbane, Australia)
Lyapunov exponents in highly confined fluids

11:55 - 12:20 **Nicola Pugno** (Politecnico di Torino, Italy)
Simultaneous material and structural optimization in the spider
web attachment disk

Lunch break

17:30 - 18:30 **Reception at the Hohe Mut Alm**
18:30 - 22:00 **Conference Dinner hosted by ANU**

Thursday, September 1

09:00 - 09:30 **Rainer Klages** (Queen Mary, University of London, UK)
Fluctuation relations for anomalous dynamics

09:30 - 10:00 **Siegfried Hess** (TU Berlin, Germany)
Rotating molecules and polymers subjected to a shear flow, thermostats and twirler

10:00 - 10:30 **Gunter Schuetz** (Forschungszentrum Jülich, Germany)
Space-time correlations in the ASEP conditioned on carrying a large flux

10:30 - 11:00 Coffee break

11:00 - 11:30 **Antoine Gerschenfeld** (Ecole Normale Supérieure, Paris, France)
Current fluctuations at a phase transition

11:30 - 12:00 **Peter T. Cummings** (Vanderbilt Univ. and Oak Ridge National Laboratory)
Non-equilibrium and equilibrium molecular dynamics of nanoconfined fluids and nanostructured materials

12:00 - 12:30 **Owen Jepps** (Griffith University, Brisbane, Australia)
Deterministic thermostats, theories of nonequilibrium systems, and parallels with the ergodic condition

Lunch break

14:30 - 15:00 **Michael Wilkinson** (Open University, Milton Keynes, UK)
Test-tube model for rain

15:00 - 15:30 **Guenter Radons** (TU Chemnitz, Germany)
Hyperbolicity and effective degrees of freedom of extended dynamical systems

15:30 - 16:00 **Jürgen Vollmer** (MPI for Dynamics and Selforganization, Göttingen, Germany)
Notions of entropy and entropy production in non-equilibrium systems

16:00 - 16:30 Coffee break

16:30 - 17:00 **Michael Allen** (University of Warwick, UK)
Polymer folding kinetics

17:00 - 17:30 **Peter Daivis** (RMIT University, Melbourne, Australia)
Non-equilibrium molecular dynamics study of permeation through a polymer membrane

Dinner

Friday, September 2

09:00 - 09:25 **Karl Travis** (University of Sheffield, UK)
Fragmentation of liquid droplets

09:25 - 09:50 **Livia Conti** (Istituto Nationale di Fisica Nucleare, Padova, Italy)
Nonequilibrium issues in macroscopic experiments

09:50 - 10:05 **Paolo De Gregorio** (Politecnico di Torino, Italy)
Modelling nonequilibrium macroscopic oscillators of interest to experimentalists

10:05 - 10:20 **Zhanchun Tu** (Beijing Normal University, China)
Efficiency at maximum power of Feynman's ratchet as a heat engine

10:20 - 11:00 Coffee break

11:00 - 12:00 **Denis Evans** (The Australian National University, Canberra, Australia)
Dissipation and the foundations of classical statistical mechanics

12:00 - 12:15 **Concluding remarks**

Lunch and end of the conference

13:30 Bus departure to Innsbruck Airport and Main Station.

Poster Session
Tuesday, August 30, 2011, at 20:30

(still incomplete)

1. **Bernhard Altaner**   (MPI for Dynamics and Self-Organization, Göttingen, Germany)
   A new paradigm for (steady-state) coarse graining of stochastic dynamics

2. **Michele Bonaldi, Paolo De Gregorio, Lamberto Rondoni, and Livia Conti**
   (Institute of Materials for Electronics and Magnetism,Trento, Italy)
   Thermodynamic fluctuations in actively cooled resonators

3. **Hadrien Bosetti and Harald A. Posch**
   (Faculty of Physics, University of Vienna, Austria)
   Lyapunov instability of rough hard disks

4. **James Miller** (University of Sheffield, UK)
   Modeling non-equilibrium properties in nuclear waste vitrification

5. **Daniel Truant**   (The University of New South Wales, Sydney, Australia)
   The evolution of covariant Lyapunov modes

6. **Jeroen Wouters**   (University of Reading, UK)
   Relevance of sampling schemes in light of Ruelle's linear response theory