

**Program for International Workshop  
Low Dimensional Quantum Gases  
Principia Institute, São Paulo, Brazil, March 19–22, 2023**

**Sunday, March 19, 2023**

- 09.00 – 10.00 Registration  
10.00 – 10.10 Arnaldo Gammal (São Paulo, Brazil):  
*Opening: Homage to Mahir Hussein*
- Session 1: Manifolds**
- 10.10 – 11.10 Nathan Lundblad (Lewiston, USA):  
*Studying ultracold bubbles in orbital microgravity with the NASA Cold Atom Laboratory*
- 11.10 – 11.30 Coffee Break  
11.30 – 12.30 Francisco dos Santos (São Carlos, Brazil):  
*Bose-Einstein condensates and the thin-shell limit in anisotropic bubble traps*
- 12.30 – 14.00 Lunch  
14.00 – 15.00 Monica Caracanhas (São Carlos, Brazil):  
*Superfluid vortex dynamics on curved surfaces (Online)*
- 15.00 – 15.20 Coffee Break
- Session 2: Fermions**
- 15.20 – 16.20 Randall Hulet (Rice University, USA):  
*Spin-charge separation with ultra-cold atoms*
- 16.20 – 17.20 Silvio Vitiello (UNICAMP, Campinas, Brazil):  
*Ionic polaron in a degenerate Fermi gas*

**Monday, March 20, 2023**

- Session 3: Solitons and Turbulence**
- 09.00 – 10.00 Vanderlei Bagnato (São Carlos, Brazil):  
*Characterization of a far from equilibrium BEC: from turbulence to scalability relations*
- 10.00 – 11.00 Patricia Castilho (São Carlos, Brazil):  
*Townes soliton in a planar Bose gas*
- 11.00 – 11.20 Coffee Break  
11.20 – 12.20 Hugo Terças (Lisboa, Portugal):  
*Solitonic turbulence in low-dimensional quantum fluids*
- 12.20 – 14.00 Lunch
- Session 4: Equilibrium versus Non-Equilibrium**
- 14.00 – 15.00 Anna Minguzzi (Grenoble, France):  
*Persistent currents in one-dimensional Fermi gases on a ring (Online)*
- 15.00 – 15.20 Coffee Break  
15.20 – 16.20 Nick Proukakis (Newcastle, UK):  
*Criticality, quench dynamics and phase ordering in ultracold gases*
- 16.20 – 17.30 Poster Session I  
20:00 Dinner

## Tuesday, March 21, 2023

### Session 5: Open Systems

- 09.00 – 10.00 Julian Schmitt (University of Bonn, Germany):  
*Compressibility and the equation of state of a two-dimensional optical quantum gas in a box*
- 10.00 – 11.00 Marzena Szymanska (University College London, UK):  
*Novel Non-equilibrium Phenomena in Quantum Fluids of Light*
- 11.00 – 11.20 Coffee Break

### Session 6: Supersolids

- 11.20 – 12.20 Lauriane Chomaz (University of Heidelberg, Germany):  
*Exotic many-body states in dipolar quantum Bose gases of magnetic atoms*
- 12.20 – 14.00 Lunch
- 14.00 – 15.00 Jordi Boronat (Barcelona, Spain):  
*Quantum dipoles in two dimensions*
- 15.00 – 15.20 Coffee Break
- 15.20 – 16.20 Sadhan Adhikari (São Paulo, Brazil):  
*Supersolids in Bose-Einstein condensates*
- 16.20 – 17.30 Poster Session II

## Wednesday, March 22, 2023

### Session 7: Miscellaneous

- 09.00 – 10.00 Tobias Frederico (São José dos Campos, Brazil):  
*Few-boson limit cycles and discrete scale symmetry in integer and non-integer dimensions (Online)*
- 10.00 – 11.00 Tommaso Macri (Natal, Brazil):  
*The ubiquity of the quantum boomerang effect in Anderson-localized systems (Online)*
- 11.00 – 11.20 Coffee Break
- 11.20 – 12.20 Lauro Tomio (São Paulo, Brazil):  
*Dynamical vortex production with periodic time-dependent perturbation applied to dipolar and non-dipolar BEC mixtures*
- 12.20 – 12.30 Axel Pelster (Technical University Kaiserslautern, Germany):  
*Concluding remarks*
- 12.30 – 14.00 Snacks and beverages at Principia Institute
- 14.00 – Departure