

# Kangaroo Island

## Cold Atoms Workshop 26 - 29 November

# Program

### Thursday Afternoon - 26 November

Welcome	14:10:00	5 min	Welcome remarks - Organisers	
<i>Session Chair - C Vale</i>				
Talk 1	14:15:00	40 min	Invited talk - R Blatt	Quantum simulations with cold trapped ions
Talk 2	14:55:00	40 min	Invited talk - A Truscott	Fundamental tests with ultra-cold He* atoms
Talk 3	15:35:00	25 min	Contributed talk - R Scholten	Cold Atom Electron ION Source.
	16:00:00	30 min	<b>COFFEE BREAK</b>	
<i>Session Chair - K Helmerson</i>				
Talk 4	16:30:00	40 min	Invited talk - W Bowen	Controlling optomechanical systems via atomic-recoil,
Talk 5	17:10:00	25 min	Contributed talk - A Bradley	Reservoir interactions in Bose-Einstein condensates
Talk 6	17:35:00	25 min	Contributed talk - T Stace	Quantum Limits of Thermometry
Talk 7	18:00:00	25 min	Contributed talk - P Drummond	Quantum simulations of the early universe with cold atoms
	18:25:00		<b>FINISH</b>	
	18:30:00		Meet and greet drinks at the Ozone Hotel provided - followed by a local dinner at Bellas (at own cost)	

### Friday morning - 27 November

<i>Session Chair - A Luiten</i>				
Talk 8	9:00:00	40 min	Invited talk - N Robins	Precision measurement of gravity with a Bose-Einstein condensate.
Talk 9	9:40:00	25 min	Contributed talk - M Piotrowski	Two independent strontium optical lattice clocks for practical realization of the metre and secondary representation of the second
Talk 10	10:05:00	25 min	Contributed talk - M Baker	BEC dynamics in time averaged optical potentials
	10:30:00	30 min	<b>COFFEE BREAK</b>	
<i>Session Chair - K Dieckmann</i>				
Talk 11	11:00:00	40 min	Invited talk - A Daley	Engineered dissipation in interacting systems of cold atoms.
Talk 12	11:40:00	25 min	Contributed talk - M Olsen	Stirapping atoms through an occupational dark state
Talk 13	12:05:00	25 min	Contributed talk - M Reid	Mesoscopic entangled, steerable states and Leggett-Garg tests for Bose-Einstein condensates.
	12:30:00		<b>FINISH</b>	
<b>LUNCH BREAK (2 hours)</b>				

### Friday afternoon - 27 November

<i>Session Chair - P Drummond</i>				
Talk 14	14:30:00	40 min	Invited talk - E Hinds	Enhanced oscillation lifetime of a Bose-Einstein condensate in the 3D/1D crossover
Talk 15	15:10:00	25 min	Contributed talk - S Hoinka	Low-momentum Bragg spectroscopy of a strongly interacting Fermi gas
Talk 16	15:35:00	25 min	Contributed talk - E Streed	Prospects for measuring a single biomolecule's charge distribution using trapped ion imaging
	16:00:00	30 min	<b>COFFEE BREAK</b>	
<i>Session Chair - P Hannaford</i>				
Talk 17	16:30:00	40 min	Invited talk - J Schmiedmayer	Does an isolated quantum system relax?
Talk 18	17:10:00	40 min	Invited talk - K Kheruntsyan	Nonequilibrium dynamics of 1D Bose gases
	17:50:00		<b>FINISH</b>	

## Friday evening - 27 November

Posters/ Reception	18:30:00	3 hrs	Dinner and drinks provided at Emu Ridge Eucalyptus Distillery, Willsons Rd, South Australia	
List of poster presentations below				
Poster 1	Alex	Henry	Exploring Trap-Imbalanced Heteronuclear Few-Body Systems	
Poster 2	Alexander	Wood	Measurement and elimination of vector light shifts in optical dipole traps	
Poster 3	Andy	McCulloch	Ultracold electron and ion beams from a laser-cooled neutral atom beam	
Poster 4	Ken	Baldwin	The First Measurement of the Tune-Out Wavelength for Metastable Helium	
Poster 5	Kris	Helmerson	High Efficiency DOEs for Atom Trapping	
Poster 6	Peng	Zou	Traveling Majorana solitons in a one-dimensional spin-orbit coupled Fermi superfluid	
Poster 7	Phil	Light	Transport of Laser Cooled Rubidium in Hollow Photonic Crystal Optical Fibres	
Poster 8	Robert	Swan	Proposal for a motional-state Bell inequality test with ultracold atoms	
Poster 9	Roman	Khakimov	Single-Atom Source in the Picokelvin Regime	
Poster 10	Russell	Anderson	Measuring and controlling spinor condensates with magnetic resonance	
Poster 11	Stephen	Gensemer	An Atomic Clock Network for Precision Gravity Measurement	
Poster 12	Guillaume	Gauthier	87Rb and 41K Bose-Einstein condensates in configurable optical potentials	
Poster 13	Xiaoquan	Yu	Clustering Transitions in Two-Dimensional Quantum Fluids	
Poster 14	Yibo	Wang	Sub-Micron Period 2D Magnetic Lattices for Ultracold Atoms	
Poster 15	Patrick	Everitt	Observation of Breathers in an Attractive Bose Gas	

## Saturday morning - 28 November

<i>Session Chair - H Bacher</i>				
Talk 19	9:00:00	40 min	Invited talk - A Glaetzle	Designing Quantum Spin Models with Laser-Dressed Rydberg Atoms
Talk 20	9:40:00	25 min	Contributed talk - P Hannaford	Simulation of Lattice Spin Models with Ultracold Rydberg Atoms in a Magnetic Lattice
Talk 21	10:05:00	25 min	Contributed talk - J Wang	Rydberg Electrons in a Bose-Einstein Condensate
	10:30:00	30 min	<b>COFFEE BREAK</b>	
<i>Session Chair - N Robins</i>				
Talk 22	11:00:00	40 min	Invited talk - M Parish	Ultrafast dynamics of impurities coupled to a Fermi sea
Talk 23	11:40:00	25 min	Contributed talk - P Dyke	A kinematically 2D interacting Fermi gas
Talk 24	12:05:00	25 min	Contributed talk - B Mulkern	Beyond the Gaussian fluctuation theory for two- and three-dimensional Fermi gases
	12:30:00		FINISH	
<b>BREAK (1/2 hour)</b>				
Activity	13:00:00		Depart for Lunch and afternoon of activities	
Dinner	19:00:00		Conference Dinner at Rock Pool Café, LOT 93 N Coast Rd, Stokes Bay, SA 5223	

## Sunday morning - 29 November

<i>Session Chair - A Glatzle</i>				
Talk 25	9:00:00	40 min	Invited talk - K Dieckman	Spectroscopy of ultracold LiK molecules
Talk 26	9:40:00	25 min	Contributed talk - J Levinsen	Impurity in a Bose-Einstein Condensate and the Efimov effect
Talk 27	10:05:00	25 min	Contributed talk - C Bradly	Few-body physics of strongly-interacting trapped quantum gases
Talk 28	10:30:00	25 min	Contributed talk - S Hodgman	Experimental Observation of Many-Body Localisation using Ultracold Fermions in a Quasirandom Optical Lattice
	10:55:00	35 min	<b>COFFEE BREAK</b>	
<i>Session Chair - K Baldwin</i>				
Talk 29	11:30:00	40 min	Invited talk - D Hutchinson	Some Quantum Highlights from the Dodd-Walls Centre - New Zealand's new national Centre of Research Excellence
Talk 30	12:10:00	25 min	Contributed talk - A Sidorov	Radiofrequency-induced association and precision spectroscopy of Rb <sub>2</sub> molecules
Talk 31	12:35:00	25 min	Contributed talk - B Sparkes	A High-Speed Single Ion Source using a Cold Atom Beam and Rydberg Blockade
	13:00:00		FINISH - Conference Close	
<b>LUNCH BREAK (1 hour)</b>				
Depart				