

## Thursday, 31st January

- 0840-0845** Welcome
- 0845-1030** Session 1: Multi-phase and multi-scale fluid physics (chair: Fabien Montiel)
- 0845** **Invited Speaker:** Ashton Bradley (Otago)  
*Observing a quantum storm in a superfluid teacup*
- 0930** Emilia Nowak (Massey)  
*On the vortex formation upon drops coalescence*
- 0945** Bradley Boyd (Canterbury)  
*Numerical simulations of an acoustically-driven cavitation bubble near a wall: investigation of the growth and collapse behavior at various standoff distances*
- 1000** Zhifa Sun (Otago)  
*Rayleigh-Bénard-Marangoni cellular convection with transient gas-liquid mass transfer*
- 1015** Jonathan Squire (Otago)  
*The interesting fluid dynamics of planet formation*
- 1030-1100** Coffee + poster session
- 1100-1230** Session 2: Fundamental fluid mechanics (chair: Colin Whittaker)
- 1100** Natalia Kabaliuk (Canterbury)  
*Dynamics of drip bloodstain formation on fabrics: how big can small be?*
- 1115** James Ramsay (Canterbury)  
*Preventing boundary layer separation with non-uniform suction*
- 1130** Jacob Cohen  
*Subcritical transition in wall-bounded shear flows*
- 1145** Alex Meredith (Canterbury)  
*Interactions between developed gravity currents and rough boundaries*
- 1200** Craig McConnochie (Canterbury)  
*Enhanced entrainment into turbulent plumes driven by suspended sediment*
- 1215** Ryan McKinlay (Callaghan Innovation)  
*Water tunnel design and commissioning*
- 1230-1330** Lunch
- 1330-1515** Session 3: Flows in geophysics (chair: Ata Suanda)
- 1330** Craig Stevens (NIWA/Auckland)  
*Ocean mixing at large Reynolds number: observations from Cook Strait*
- 1345** Pete Russell (Otago)  
*High resolution observations of an outer bank cell of secondary circulation in a natural river bend*
- 1430** Natalie Robinson (NIWA)  
*Physics of the ice-ocean boundary layer in the presence of accreted ice crystals*
- 1445** Martin Forbes (Otago)  
*Modelling rifts of the Ross Ice Shelf*
- 1430** **Invited Speaker:** Christina Hulbe (Otago)  
*Dynamics of the marine ice sheet instability on Thwaites Glacier, West Antarctica*
- 1515-1545** Coffee

**Thursday, 31st January (ctd)**

- 1545-1715** Session 4: fluids in energy and engineering (chair: Alice Harang)
- 1545** Ben Wilks (Otago)  
*Scattering modes of cylindrical Helmholtz resonators*
- 1600** James Hewett (Canterbury)  
*Viscous dampers with circular orifices using silicone oil*
- 1615** Illia Chryva (Canterbury)  
*Rotor-rotor interaction of remotely piloted multicopters and their influence on an on-board spraying system*
- 1630** Alan Caughley (Callaghan Innovation) & Nikhil Vishwanath (Road Science)  
*Modelling of bitumen emulsion*
- 1645** Zeineldin Elserfy (Auckland)  
*Reduction of wind turbine noise using porous trailing edges*
- 1700** Sarah Wakes (Otago)  
*Understanding the stall behaviour of a one-blade wind turbine*
- 1730-1830** General meeting
- 1830-2030** Conference BBQ

## Friday, 1st February

- 0830-1015** Session 5: microfluidics and nanofluidics (chair: Sam Lowrey)
- 0830** **Invited Speaker:** Shaun Hendy (Te Pūnaha Matatini)  
*Molecular dynamics simulations for nano and microfluidic flows*
- 0915** Lily Panton (Auckland)  
*Experimental study of evolution of drop impact force*
- 0930** Santhosh Kumar (Auckland)  
*Drop impact of high viscosity and non-Newtonian fluids on patterned polymer surfaces*
- 0945** Geoff Willmott (Auckland)  
*Inertial capillary uptake of droplets*
- 1000** Matheu Broom (Auckland)  
*Symmetry splitting of impacting droplets on partly wetting surfaces*
- 1015-1045** Coffee + poster session
- 1045-1230** Session 6: fluids in biology (chair: Emilia Nowak)
- 1045** Theodore Lerios (Canterbury)  
*Determining changes in patient respiratory mechanics using non-linear autoregressive models of pulmonary elastance*
- 1100** Thiwanka Palmada Kankanamalage (Auckland)  
*Modelling flow and mixing in the proximal small intestine*
- 1115** Richard Clarke (Auckland)  
*Permeability as a function of microstructure in the endothelial glycocalyx*
- 1130** Arun Kumar Manickavasagam (Canterbury)  
*Effects of non-neighbouring members in small-sized arrays*
- 1145** Sina Yazdi (Canterbury)  
*In-vitro measurement of hemodynamics in rigid and compliant silicone replicas of aortic arch using stereoscopic particle image velocimetry*
- 1200** Paul Docherty (Canterbury)  
*Integral-based reconstruction of static pressure in a compliant axisymmetric vessel using velocity field data from particle image velocimetry (PIV) analysis*
- 1215** Petra Williamson (Canterbury)  
*Particle image velocimetry (PIV) analysis of haemodynamics distal of a frozen elephant trunk stent phantom*
- 1230-1330** Lunch
- 1330-1515** Session 7: coastal hydrodynamics (chair: Natalie Robinson)
- 1330** **Invited Speaker:** Julia Mullarney (Waikato)  
*Reconciling multiple spatial and temporal scales: hydrodynamics within mangrove forests*
- 1415** Mark Battley (Auckland)  
*Characterisation of wave impacts on coastal structures*
- 1430** Ahmadreza Ebadati (Auckland)  
*Modelling of wave run-up for coastal structures*
- 1445** Alice Harang (Otago)  
*Numerical study of mudflow resuspension in estuaries: influence of the viscosity and viscoplastic threshold on shear instabilities*
- 1500** Colin Whittaker (Auckland)  
*Lagrangian particle transport by wave groups in finite water depth*
- 1515-1545** Coffee

## Friday, 1st February (ctd)

- 1545-1715** Session 8: Fluids in geology and agriculture (chair: Sarah Wakes)
- 1545** Boris Baeumer (Otago)  
*Modelling deposition and erosion of clay in an aquifer*
- 1600** Jason Chen (Canterbury)  
*Modelling the lifecycle of amorphous silica scaling during geothermal reinjection*
- 1615** Mathieu Sellier (Canterbury)  
*Modelling the flow in a fracture network by patching Hele-Shaw cells*
- 1630** Luke Longworth (Canterbury)  
*Electrostatic spraying to increase efficiency and reduce pollution*
- 1345** Frederick Wells (Auckland)  
*Milk spray drying without sticking*
- 1700** Miguel Balzan (Auckland)  
*Bubble characteristics inside an effervescent atomizer*
- 1715** Scott Post (Lincoln Agritech)  
*Granular flow properties of lime*
- 1730-1740** Wrap-up

## Poster sessions

Vishnu Charan Kuduva Janarthanan (Auckland)

*Resilient heat exchange surface for fouling environments: can surface functionalization improve heat transfer?*

Michael Coe (Canterbury)

*UC-Ika series of underwater robots*

Bibin Jose (Canterbury)

*A study on the effect of an axisymmetric cavity in coaxial supersonic stream*

Sam Lowrey (Otago)

*A survey of optical lithographic techniques for modified surface wetting*

Ali Mohammadi Sefidan (Canterbury)

*Multi-layer Phase Change Materials in tubular and rectangular shaped cylinders*

Ata Suanda (Otago)

*High-frequency temperature oscillations on the Otago inner shelf*