



4th IMA Conference on Dense Granular Flows

Monday 23rd June 2025 – Thursday 26th June 2025

Buckingham House Conference Centre

Murray Edwards College, Huntingdon Road, Cambridge, CB3 0DF

Monday 23rd June

10:00 – 10:50	Registration. Tea & coffee on arrival
10:50 – 11:00	Welcome
	Session Chair: Chris Johnson
11:00 – 12:00	Keynote Talk Nonmonotonic flow curves and shear banding in granular flows Chris Ness, University of Edinburgh
12:00 – 12:20	Rheology of a sheared granular suspension Vicente Garzó
12:20 – 12:40	Granular material in a rotating drum: cohesion and size effects Antonio Pol
12:40 – 14:00	Lunch
	Session Chair: Lis Bowman
14:00 – 14:20	Unsteady rheology of dense inertial granular flows Jin Sun
14:20 – 14:40	Pressure-controlled granular shear flows between bumpy planes: kinetic theory and numerical simulations Dalila Vescovi
14:40 – 15:00	Rheology of coated granular materials: Cohesion vs Lubrication Francisco Rocha
15:00 – 16:00	Tea & coffee break
16:00 – 16:20	Experiments of wet unsaturated grains flowing over a rough inclined plane: rheology with friction, cohesion and aggregates Stéphanie Deboeuf
16:20 – 16:40	General scaling law for the velocity of steady, homogeneous granular flows down rough inclines Thomas Paehtz
16:40 – 17:40	Poster preview with tea, coffee and fresh cookies

Tuesday 24th June

08:30 – 09:20	Registration. Tea & coffee on arrival
	Session Chair: Chris Ness
09:20 – 09:40	Surface curvature and secondary vortices in dense shallow granular flows Cyril Gadal
09:40 – 10:00	Clogging of continuum wet granular suspensions in confined channels Duncan Hewitt
10:00 – 10:20	Effect of particle shape on the flow of an hourglass Tamas Borzsonyi
10:20 – 11:00	Tea & coffee break
	Session Chair: Cyril Gadal
11:00 – 12:00	Keynote Talk Constitutive relations for idealised granular flow – are we there yet? Thomas Barker, Cardiff University
12:00 – 12:20	Robust, simple and efficient time-stepping schemes for dense granular flow models with pressure-dependent viscosity Nicolás Espinoza Contreras
12:20 – 12:40	Exploring Noisy Jeffery Orbits: A Combined Fokker-Planck and Langevin Analysis Julian Talbot
12:40 – 13:40	Lunch
13:40 – 14:40	Poster Session
	Session Chair: Dongri Song
14:40 – 15:00	Energetics of particle-size segregation Tomas Trewhela
15:00 – 15:20	Particle-size segregation in confined dense granular flows Patrick Richard
15:20 – 16:00	Tea & coffee break
	Session Chair: Xiannan Meng
16:00 – 16:20	Transient segregation of different density granular mixtures Soniya Kumawat
16:20 – 16:40	Size segregation of granular mixtures in recirculating flows Yanan Chen
16:40 – 17:00	Segregation in convecting granular flows Amber Pearse
19:30	Conference dinner – Fellows’ Suite, Murray Edwards College

Wednesday 25th June

08:30 – 09:20	Registration. Tea & coffee on arrival
	Session Chair: Chris Johnson
09:20 – 10:20	Keynote Talk From seismic waves to landslide and tsunami processes Anne Mangeney, Université Paris Cité
10:20 – 10:40	Granular Approach for the Continuum Modeling of Sea Ice Felix St-Denis
10:40 – 11:20	Tea & coffee break
	Session Chair: Vanessa Magnanimo
11:20 – 11:40	Monitoring flow dynamics of natural debris flows Maximilian Ender & Felix Maximilian Klein
11:40 – 12:00	Phase separation in debris flows and their feedback on bulk dynamics Xiannan Meng
12:00 – 12:20	Regolith dynamics and long-term surface evolution on asteroids Kumar Gaurav
12:20 – 12:40	Shallow debris flow models with multiple phases are often ill posed Jake Langham
12:40 – 13:40	Lunch
	Session Chair: Jake Langham
13:40 – 14:40	Keynote Talk Field Observation of Erosion-deposition Debris-flow Surges Dongri Song, Institute of Mountain Hazards and Environment (IMHE), Chinese Academy of Sciences, Chengdu, China
14:40 – 15:00	Flows of ice powders at very low temperatures Riccardo Artoni
15:00 – 15:20	Three-dimensional simulations of snow-avalanche flow with incompressible granular $\mu(I)$ rheology Tómas Jóhannesson
15:20 – 16:00	Tea & coffee break
	Session Chair: Tom Barker
16:00 – 16:20	Modelling debris flow waves Jamie Webb
16:20 – 16:40	Steady parallel flows of dense granular suspensions Jonathan Watts
16:40 – 17:00	MPM Modeling of Alpine Mass Movements with Granular Rheologies Lars Blatny

Thursday 26th June

08:30 – 09:20	Registration. Tea & coffee on arrival
	Session Chair: Anne Mangeney
09:20 – 09:40	Wind-blown sand: Intermittent and periodic transport events in moist environment Alexandre Valance
09:40 – 10:00	Sliding block analogy for gravity-driven free-surface granular flows Anurag Tripathi
10:00 – 10:20	Kinetic theory of granular flow during bedload transport: insights from discrete simulations and continuum modeling. Rémi Chassagne
10:20 – 11:00	Tea & coffee break
	Session Chair: Nico Gray
11:00 – 12:00	Keynote Talk Vanessa Magnanimo, University of Twente
12:00 – 12:20	Size segregation due to finer grain infiltration in bedload transport Philippe Frey
12:20 – 12:40	The mechanics of entangled fibers Olivier Pouliquen
12:40 – 13:40	Lunch
13:40	Conference close

Poster Session Tuesday 24th June 13:40 – 14:40

Two-dimensional Granular Gas in Microgravity	Rawad Sadah
On the Forchheimer – extended Darcy-Brinkman flow through thin domains	Marko Radulovic
Numerical investigations on wall slip phenomena in cohesive granular flow	Fanshuo Ma
An MPM Solver Designed for Granular Mechanics and Flow Modeling	Lars Blatny
AvaFrame – a real world example of snow avalanches seen as granular flow	Anna Wirbel
Continuum modelling of segregation at large size ratios	Philip Gamble
Measuring interparticle adhesion in cohesive granular media	Maxime Lajeunesse
Effects of silt and clay particle suspension on fluid rheology and the mobility of granular flows	Hannah Nichols
Fluid-grain interaction plays an intricate role in the behavior of granular flows	Aadi Bhure