

LMS sponsored workshop on:

Particle Size Segregation, Mixing and Pattern Formation in Granular Materials

St. Martins College, Lancaster, U.K.
11th-16th August 2002

Organizers:

Nico Gray & Tom Mullin

Sunday 11th August

2:00 pm – 7:00 pm	Arrival and check in
5:30 pm	Ice-breaker drinks (<i>address by David Abrahams LMS</i>)
6:00 pm	Dinner
7:30 pm	Invited Lecture Andrew Hogg (Bristol) Rapid flows, slow flows and some avalanche defence strategies.

Monday 12th August: **Talks will be held in the Hugh Pollard Lecture Theatre (HPLT)**

8:00 am – 9:00 am	Breakfast <i>Morning session chairman: Tom Mullin</i>
9:15 am – 9:30 am	Opening Session
9:30 am – 10:30 am	Troy Shinbrot (Rutgers) Non-equilibrium Mixing and Equilibrium Segregation: why can't we predict outcomes of untried granular experiments?
10:30 am	Tea & Coffee
11:00 am – 11:30 am	Natalie Thomas (Marseille) A new segregation pattern of dry granular media in a rotating drum.
11:30 am – 12:30 pm	Colin Thornton (Aston) The transition from fluid-like to solid-like behaviour.
12:30 pm	Lunch <i>Afternoon session chairman: Jim Jenkins</i>
2:30 pm – 3:00 pm	Prabhu Nott (Bangalore) Granular flow in thin layers and its relation to segregation.

3:00 pm – 3:30 pm	Antonio Castellanos (Seville) Mixing in fine cohesive powders.
3:30 pm	Tea & Coffee
4:00 pm – 4:30 pm	Jim McElwaine (Cambridge) Pattern formation in saltation.
4:30 pm – 5:30 pm	Bob Behringer (Duke) The fluid-solid transition in horizontally shaken granular materials.
6:00 pm	Dinner

Tuesday 13th August

8:00 am – 9:00 am	Breakfast <i>Morning session chairman: Tony Rosato</i>
9:00 am – 10:00 am	Jim Jenkins (Cornell) Particle segregation in the context of kinetic theory.
10:00 am – 10:30 am	Sebastien Aumaitre (CNRS-Paris) Segregation in granular matter under horizontal swirling excitation.
10:30 am	Tea & Coffee
11:00 am – 11:50 am	John Davidson (Cambridge) The motion of granular materials in rotary kilns.
11:50 am – 12:10 pm	Nico Gray (Manchester) Granular caustics.
12:10 pm – 12:30 pm	Mark Cooker (UEA) A kinematic model for radial flow in a discharge bin.
12:30 pm	Lunch <i>Afternoon session chairman: Daniel Bonamy</i>
2:30 pm – 3:30 pm	Peter King (Nottingham) Fluid driven formation and separation in binary mixtures under vertical vibration.
3:30 pm	Tea & Coffee
4:00 pm – 4:30 pm	Joseph Antony (Leeds) Mechanics and physics of particulate materials subjected to shearing: Insights from numerical simulations.
4:30 pm – 5:30 pm	Dennis Rapaport (Bar-Ilan) Granular segregation: Simulating the expected and the unexpected.
6:00 pm	Conference Dinner

Wednesday 14th August

8:00 am – 9:00 am	Breakfast <i>Morning session chairman: Troy Shinbrot</i>
9:00 am – 10:00 am	Daniel Bonamy (Paris) Experimental investigations of the texture of granular surface flows. Implications on current and future rheological models for dense flows.
10:00 am – 10:30 am	Pedro Reis (Manchester) Granular segregation in forced binary monolayers.
10:30 am	Tea & Coffee
11:00 am – 11:20 am	Alistair Sellar (Bristol) Free-surface rapid granular flows on an incline.
11:20 am – 11:40 am	So Kitsunozaki (Nara) Initial deformation process of granular matter.
11:40 am – 12:30 pm	Joe Goddard (UCSD) (Non) Faraday patterns on vibrated granular layers.
12:30 pm	Lunch <i>Afternoon session chairman: Joe Goddard</i>
2:30 pm – 3:30 pm	Tony Rosato (New Jersey Institute of Technology) Dynamical behaviour of an intruder in a granular Couette flow.
3:30 pm	Tea & Coffee
4:00 pm – 4:30 pm	David Yoon (Cornell) Segregation in a binary mixture of colliding particles under gravity.
4:30 pm – 5:30 pm	Ugur Tuzun (Surrey) Stress, voidage and velocity coupling in an avalanching granular heap.
6:00 pm	Dinner

Thursday 15th August

8:00 am – 9:00 am	Breakfast <i>Morning session chairman: Bob Behringer</i>
9:00 am – 10:00 am	Jon Huntley (Loughborough) Experimental studies of three-dimensional granular flows using positron emission particle tracking.
10:00 am – 10:30 am	David Harris (UMIST) Mixing, segregation and continuum flows.
10:30 am	Tea & Coffee

11:00 am – 11:20 am	Xiaodong Jia (Leeds) Geometrical aspects of size segregation.
11:20 am – 11:40 am	Bruce Pitman (SUNY) Simulation-based risk management of data for rapid mass flows.
11:40 am – 12:30 pm	John Bridgwater (Cambridge) Flow and segregation in stirred vessels.
12:30 pm – 1:00 pm	Michael Swift (Nottingham) The Brazil nut effect and Faraday tilting in fine granular beds.
1:00 pm	Lunch
3:10 pm	Meet at Lancaster Castle Tour Entrance.
3:30 pm	Visit to Lancaster Castle begins.
3:30 pm	Tea & Coffee for those not coming to Lancaster Castle.
6:00 pm	Dinner

Evening session chairman: Dennis Rapaport

7:30 pm – 8:30 pm	Peter Thomas (Warwick) Stars and stripes in jars and pipes: Patterns in rotating suspensions.
8:30 pm – 9:30 pm	Thorsten Pöschel (Berlin) Onset of fluidization in vertically vibrated flows.

Friday 16th August

8:00 am – 9:00 am	Breakfast <i>Morning session chairman: Peter Thomas</i>
9:00 am – 10:00 am	Bob Behringer (Duke) Diffusion and mobility in dense granular materials.
10:00 am – 10:30 am	Denis Fenistein (Leiden) Transition from continuous flow to avalanche at a constant flow rate.
10:30 am – 10:50 am	David Scott (Cambridge) Flow of granular material through rotating cylinders: Modelling transients.
10:50 am	Tea & Coffee
11:20 am – 11:40 am	Anthony Thornton (Manchester) A simple model for kinetic sieving in avalanche flows.
11:40 pm – 12:40 pm	Troy Shinbrot (Rutgers) Patterns and shear instabilities in grains and suspensions.
12:40 pm – 1:00 pm	Closing words
1:00 pm	Lunch