

Thursday April, 26th

Registration will be possible from 08:20 onwards.

08:50 Opening

Keynote Lecture 1

09:00 Hierarchical multiscale modeling of granular media: the good, the bad and the ugly

J. Zhao

Session 1 DEM micro-mechanics of discrete materials

09:40 Modelling of flexible composite structures in YADE with an example in rockfall protection

K. Thoeni, A. Effeindzourou and A. Giacomini

10:00 Multi-scale analysis of failure in highly porous cohesive granular materials

T. Mede, G. Chambon, P. Hagenmuller and F. Nicot

10:20 Discrete modeling of clay as a micro-granular assembly of platelets

K. Lampoh, V. Richefeu, Y. F. Dafalias and F. Radjai

10:40 *Coffee break*

11:00 Micro-mechanical investigation of the effect of fine content on mechanical behavior of gap graded granular materials using DEM

N.-S. Nguyen, H. Taha, D. Marot, A. Hijazi and K. Abou-Saleh

11:20 Statistical Analysis of Stress in Wet Granular Materials

R. Wan, M. Pouragha and J. Duriez

11:40 3D simulations of the granulation of wet granular materials

T.-T. Vo, P. Mutabaruka, S. Nezamabadi, J.-Y. Delenne and F. Radjai

12:00 Elasticity and decomposition of strain in granular materials

M. Pouragha and R. Wan

12:20 Microscopic features of liquefaction

C. Thornton, E. Martin and S. Utili

12:40 *Lunch*

Keynote Lecture 2

14:00 Collapse of a water-saturated granular column in air
P. Aussillous and C. Nobili

Session 2 Grain crushing, and severe deformation, in DEM

14:40 Evolution of strength and structure of crushable grain assemblies
D. Cantor, E. Azéma, P. Sornay and F. Radjai

15:00 Dynamic fragmentation of grains under impact
L. F. Orozco, J.-Y. Delenne, P. Sornay and F. Radjai

15:20 Experimental and numerical investigation of highly deformable particle systems
T.-L. Vu, J. Barés, S. Nezamabadi and S. Mora

15:40 Modeling deformable granular materials using Material Point Method
S. Nezamabadi, T. H. Nguyen, J.-Y. Delenne and F. Radjai

16:00 *Coffee break*

Session 3 Coupled DEM simulations

16:20 Numerical and experimental modeling of cemented soils
P. Philippe, F. Brunier-Coulin, Z. Benseghier, P. Cuéllar, J.-Y. Delenne and S. Bonelli

16:40 Use of DEM-LBM modeling to prove the relevance of free jet model for soil erosion by impinging jet
Z. Benseghier, P. Cuéllar, L.-H. Luu, J.-Y. Delenne, S. Bonelli and P. Philippe

17:00 Multiscale numerical investigation of cover-collapse sinkhole in cohesive soils
L.-H. Luu, P. Philippe and G. Noury

17:20 DEM-RANS coupling with YADE: presentation and application to turbulent bedload transport
R. Maurin, J. Chauchat and P. Frey

17:40 YADE simulations of vertical size-segregation in bedload sediment transport
R. Chassagne, P. Frey, J. Chauchat and R. Maurin

18:00 Simulation of Dense Granular Suspension
L. Amarsid, J.-Y. Delenne, Y. Monerie, F. Perales and F. Radjai

18:20 *End of Day 1*

20:00 *Dinner in town*

Friday April, 27th

Keynote Lecture 3

08:30 Coupling DEM and fluids at the pore scale: recent advances and further issues

B. Chareyre, C. Yuan, E. P. Montellà, S. Salager and A. Gens

Session 3 Coupled DEM simulations (contd)

09:10 Micromechanical study of multiphase flow based on the lattice Boltzmann method

E. P. Montellà, B. Chareyre, S. Salager and A. Gens

09:30 Suffusion micro-mechanisms through DEM/PFV simulations

A. Wautier, F. Nicot and S. Bonelli

09:50 DEM model and Suffusion-like Simulations

R. Aboul Hosn, L. Sibille, N. Benahmed and B. Chareyre

10:10 Heat conduction in polydisperse granular media

D. H. Nguyen, B. Collard, É. Azéma, P. Sornay and F. Radjai

10:30 Combined DEM-FEM Modeling of Shot Peening Process

D. Bobba, P. Ramaprabhu and H. P. Cherukuri

10:50 *Coffee break*

Session 4 DEM-based (hydro-)mechanical modeling of rock and concrete

11:10 DFNFlow Engine: Hydraulic fracturing and progressive failure in saturated low permeability quasi brittle materials

E. Papachristos, L. Scholtès, F. Donzé and B. Chareyre

11:30 Modelling of hydraulic fracturing in rocks using VPN fluid flow model in coupled DEM/CFD approach

M. Krzaczek, J. Kozicki and J. Tejchman

11:50 Micromechanical modeling of acoustic emissions using strain energy and numerical wave propagation in heterogeneous rocks

R. Caulk

12:10 DEM and FEM Modeling of Uniaxial and Triaxial Compressive Behavior of Plain Concrete

A. Joshi, N. Tannu, R. Aguilar, H. P. Cherukuri and M. A. Pando

12:30 Numerical Investigation of Earthquake Rupture and Off-Fault Fracture Response with a Coupled Discrete-Continuum environment

S. Emam, C. Darcel, M. H. Tran and J. Suikkanen

12:50 *Lunch*

Keynote Lecture 4

14:00 From discrete particle micromechanics towards continuum theory

S. Luding

Session 5 Making DEM life easy : parameters' calibration and computational cost

14:40 A Bayesian calibration toolbox for YADE

H. Cheng, T. Shuku, K. Thoeni, P. Tempone, S. Luding and V. Magnanimo

15:00 A direct calibration method for cohesive beam bond models

D. André, T. T. Nguyen and M. Huger

15:20 *Coffee break*

15:40 Genetic programming applied to DEM calibration

M. De Simone, M. G. Filho, L. M. S. Souza, F. L. G. Pereira and D. Roehl

16:00 Timing comparison between two different approaches for wire mesh modelling

A. Pol, F. Gabrieli and K. Thoeni

16:20 Building a high performing GPU accelerated Yade PFV computer at low cost

R. Caulk

16:40 *End of conference*