Morning Session

8:00 – 8:30 Opening

8:30 - 9:15 A Plasticity Model for Metals with Dependency on all the Stress Invariants
G.Z. Voyiadjis*, S. H. Hoseini, G. H. Farrahi (Louisiana State Univ.)

9:15 – 9:45 The influence of single crystal plastic deformation mechanisms on damage distribution in porous materials
O. Cazacu*, B. Revil-Baudard (Univ. of Florida, REEF)

9:45 – 10:15 Effects of Some External Parameters on the Behavior of a Passive Safety Concept Made from Several Metallic Materials
A. Abdul-Latif (Univ. Paris 8 – LISMA)

Coffe Break

10:45 – 11:30 A New approach for the change of scale in granular materials
B. Cambou*, S. K. Nguyen, E. Vincens, H. Magoariec (Ecole Centrale Lyon - LTDS)

11:30 -12:00 A Continuum Model for Deformable, Second Gradient Porous Media Partially Saturated with Compressible Fluids
A. Madeo*, F. dell'Isola, F. Darve (INSA Lyon - LOCIE)

12:00 – 12:30 What is "mean stress" in three phase granular materials?
B. Chareyre*, L. Scholtès (Grenoble INP – 3SR)

Lunch

Afternoon session

14:00 – 14:45 Micromechanics of mean-stress dependent polycrystalline materials
R.A. Lebensohn*, O. Cazacu, PP. Castañeda (Los Alamos Nat. Lab)

14:45 – 15:15 A homogenization Mori-Tanaka scheme for elastic-viscoplastic heterogeneous materials based on «Translated Fields»: applications to linear and non linear two-phase composites
S. Berbenni (Univ. Lorraine – LEM3)

Break

15:45 – 16:30 Multi-scale Characterization of Constitutive Behavior of Silica Sand
K.A. Alshibli*, M.B. Cil, A.M. Druckrey (*University of Tennessee, Knoxville)

16:30 – 17:00 Effects of Multiscale Heterogeneity on Transport
A. Cortis (ION Geophysical Corporation)
Thursday 23rd of may 2013

*Mathematical and numerical modeling of mean-stress dependent material*

**Morning session**

8:30 – 9:15 Granular plastic flow and fabric-based internal variables
F. Radjai*, S. Roux (Univ. Montpellier 2 - LMGC)

9:15 – 9:45 Lattice Boltzmann simulation of capillary regimes in a granular material
J.Y. Delenne*, V. Richefeu, F. Radjai (’CIRAD, LMGC – Montpellier)

9:45 – 10:15 Experimental micromechanics of 2D granular materials
G. Combe (Univ. Grenoble I – 3SR)

**Break**

10:45 – 11:30 Micromechanically-based analysis of failure in geomaterials
F. Nicot*, N. Hadda, F. Bourrier, L. Sibille, F. Darve (IRSTEA – Grenoble)

11:30 – 12:00 Discrete modelling of failure in granular materials

12:00 – 12:30 A polycrystalline approach for plastic and viscoplastic behaviors of cohesive geomaterials
T. Zeng, J.F. Shao* ( Polytech Lille - Lab. of Mechanics of Lille)

**Lunch**

**Afternoon session**

14:00 – 14:45 Decoding the mechanics and physics of granular avalanches: combined experiments and simulations across scales
J.E. Andrade*, E. Marteau, G. Ravichandran, C. Avila, (’California Institute of Technology)

14:45 – 15:15 Discrete modelling of rock avalanches
G. Mollon*, P. Villard, V. Richefeu, D. Daudon ( Univ. Grenoble I – 3SR)

15:15 – 16:00 Impact of Fabric on Low- and Large Strain Response of Granular Soils
M. Zeghal*, C. Tsigginos ( ’Rensselaer Polytechnic Institute, Troy)

**Break**

16:30 – 17:15 Multiscale analysis : experimental and numerical advances
J. Desrues*, E. Andò, T.K. Nguyen (CNRS – 3SR Grenoble)

17:15 – 17:45 Micromechanical Modelling for the delayed strains in concrete
F. Grondin*, M. Matallah, J. Saliba, A. Loukili (’LUNAM Univ. - GeM, Nantes)
Friday 14th of may 2013
Applications to natural media & risks

8:30 – 9:15 How seismic waves can be used to constrain landslide dynamics and rheology

9:15 – 9:45 DEM modeling of progressive failure in jointed rock slopes

9:45 – 10:15 Strength of fractured rock masses using a DEM-DFN model
B. Hartong, L. Scholtès, F.V. Donzé. Univ. (Grenoble 1 – 3SR)

Break

10:45 – 11:30 The Triggering of Flow Slides Induced by Pore Pressure Increase
G. Buscarrnera (Northwestern Univ.)

11:30 – 12:00 The role of the density on the diffuse instability of cohesionless granular materials
A. Daouadji*, M. Jrad, B. Sukumaran, F. Darve. (Université de Lorraine - LEM3)

12:00 – 12:30 Numerical modelling in a unique framework of landslides: initiation, runout with obstacles and final deposit
F. Dufour*, N. Prime, F. Darve. (*Grenoble INP – 3SR)

Lunch

Afternoon Session

14:00 – 14:45 Role of pore pressure gradients in geophysical flows over permeable substrates

14:45 – 15:15 A micromechanical approach to the understanding of sudden levee failure during a flood
S. Bonelli (IRSTEA – Aix en Provence)

15:15 – 15:45 Liquefaction around coastal structure: role of soil gas content
H. Michallet (CNRS – LEGI, Grenoble)

Break

16:15 – 16:45 Dense avalanche friction coefficients: influence of physical properties of snow

16:45 – 17:15 Mechanical behavior of rock joints and stability of rock slopes
J. Duriez*, F. Darve, F.V. Donzé. (Ecole Centrale de Lyon - LTDS)

17:15 – 17:45 Closure