



MTiG IV

Modern Trends in Geomechanics
Assisi, 16-18 May 2016

Book of Abstracts

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16 May 2016

08:15-09:00 **Registration**

09:15-09:30 **Opening Address**

Session 1: Micromechanics I

Chairman: C. Santamarina

09:30-10:00 J.M. Pereira: *Micromechanical insights into the behaviour of unsaturated granular materials: experiments and modelling*

10:00-10:30 I. Herle: *Links between phenomenological and micromechanical soil behaviour*

10:30-11:00 **BREAK**

Session 2: Micromechanics II

Chairman: I. Herle

11:00-11:30 T. Matsushima: *Micromechanical aspects of natural formation process of geological grains*

11:30-12:00 S. Hall: *Measurement of force and strain distribution in granular materials*

12:00-12:30 J. Ooi: *DEM modelling of cohesive and cementitious materials – model conceptualisation, calibration and validation*

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Session 3: Micromechanics III

Chairman: J. Ooi

14:00-14:30 J. Andrade: *Level-Set DEM (LS-DEM): a new tool for computational particle mechanics*

14:30-15:00 G. Buscarnera: *Continuum modeling of delayed breakage: exploring the role of grain-scale fracture kinetics*

15:00-15:30 G. Della Vecchia: *A microstructural model for hydraulic conductivity evolution due to brittle damage*

15:30-15:50 **BREAK**

Session 4: Multiphysics I

Chairman: I. Einav

- 15:50-16:20 M. Veveakis: *Unconventional Geomechanics: Constitutive modelling and energy-based bifurcation analysis of multiscale, multiphysical mechanisms driving the macroscopic response of Geomaterials*
- 16:20-16:50 C. Jommi: *Investigating the bio-hydro-mechanical behaviour of peats*
- 16:50-17:20 C. Santamarina: *Mineral Dissolution and Precipitation - Implications*
- 17:20-17:40 **BREAK**

Session 5: Multiphysics II

Chairman: J. Sulem

- 17:40-18:10 W. Sun: *A multiscale eigenerosion method for propagating fractures in fluid-infiltrating porous media*
- 18:10-18:40 G. Musso: *Some geomechanical issues of relevance for energy production*

17 May 2016

Session 6: Analytical and Numerical Methods I

Chairman: W. Wu

- 09:00-09:30 M. Sanchez: *Mechanical and Numerical Modeling of Gas Hydrate Bearing Sediments*
- 09:30-10:00 K. Soga: *Large deformation modelling in geomechanics*
- 10:00-10:30 J. Desrues: *From discrete to continuum approach of BVP in geomechanics: FEM-DEM integrated approach*
- 10:30-11:00 **BREAK**

Session 7: Constitutive Modelling I

Chairman: J. Desrues

11:00-11:30 I. Einav: *Thermodynamics of effective stress of partially saturated soils*

11:30-12:00 R.I. Borja: *A constitutive framework for double-porosity materials with evolving internal structure*

12:00-12:30 D. Kolymbas: *Some aspects of barodesy*

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Session 8: Constitutive Modelling II

Chairman: R.I. Borja

14:00-14:30 D. Mašin: *Recent advances on hypoplasticity with explicit asymptotic states*

14:30-15:00 B. Chareyre: *From plasticity to viscoplasticity in flowing geomaterials: what do we learn from numerical models?*

15:00-15:30 A. Papadimitriou: *Fabric evolution of sands and its effects on the response of surface foundations*

15:30-15:50 **BREAK**

Session 9: Constitutive Modelling III

Chairman: D. Kolymbas

15:50-16:20 C. di Prisco: *A constitutive modelling approach for the description of rapid granular flows: from the inception to the arrest*

16:20-16:50 J. Vaunat: *A macroscopic framework to model materials with evolving pore size distribution*

16:50-17:10 **BREAK**

Session 10: Analytical and Numerical Methods II

Chairman: J. Andrade

17:10-17:40	J. Sulem: <i>Multiphysics couplings and instability in Geomechanics</i>
17:40-18:10	R. Conti: <i>Viscous regularization for Cam-Clay plasticity: how to handle subcritical softening</i>
20:30	WORKSHOP BANQUET

18 May 2016

Session 11: Experimental Geomechanics

Chairman: T. Matsushima

09:00-09:30	W. Wu: <i>Experimental and numerical study of debris flow</i>
09:30-10:00	S. Foti: <i>Data integration in site characterization</i>
10:00-10:30	E. Romero: <i>Exploring air migration in argillaceous formations: experimental results and numerical modelling</i>
10:30-11:00	M. Santagata: <i>Behavior of ultra-soft clay-water systems</i>
11:00-11:20	BREAK

Session 12: Engineering Applications

Chairman: K. Soga

11:20-11:50	M. Taiebat: <i>Influence of the mechanical behavior of natural structured soils on the system response in mechanized tunneling</i>
11:50-12:20	E. Bilotta: <i>Seismic behaviour of tunnels in sand</i>
12:20-12:50	L. de Sanctis: <i>Importance of dynamic soil structure interaction in the seismic performance analysis of buildings founded on piles</i>
12:50	Closure