

## Thursday, June 17th

08,30 – 09,00	Registration
09,00 – 09,10	Opening
09,10 – 09,40	Contact of particles in fluids <b>P. Wriggers</b> , B. Avci
09,40 – 10,00	Domain decomposition methods for granular dynamics using discrete elements and application to railway ballast <b>P. Alart</b> , D.Dureisseix, TMP Hoang, G. Saussine
10,00 – 10,20	Mathematical and numerical treatments of elastic rods with frictionless self contact <b>M. Moakher</b>
10,20 – 10,40	Multiscale Modeling of Non-Cohesive Granular Materials <b>C. Wellmann</b> , P. Wriggers
10,40 – 11,00	<i>Palmanova the most famous radial-plan fortress-city: a model for military planning in the 17<sup>th</sup> century</i> <b>T. Colletta</b>
11,00 – 11,30	Coffee break
11,30 – 12,00	Energetic consistency conditions for perfect collisions <b>C. Glocker</b>
12,00 – 12,20	On multi-scale methods in contact mechanics <b>P. Wriggers</b> , I. Temizer
12,20 – 12,40	Qualitative dynamics of a simple system with unilateral contact and Coulomb friction A.Leger, <b>E. Pratt</b>
12,40 – 13,00	Rigid Body Dynamics with Quaternions and Perfect Constraints <b>M. Möller</b> , C. Glocker
13,00 – 15,00	Pause and Lunch
15,00 – 15,30	Qualitative analysis of discrete static contact problems with Coulomb friction <b>J. Haslinger</b>
15,30 – 15,50	Analysis of some unilateral conditions with local friction in contact mechanics <b>M. Cocou</b>
15,50 – 16,10	Rolling/sliding contact of coated bodies <b>E. V. Torskaya</b>
16,10 – 16,30	On uniqueness of solutions of frictional contact problems in linear elasticity <b>P. Ballard</b>
16,30 – 17,00	Coffee break
17,00 – 17,20	A survey of variational and numerical formulations using bipotentials in mechanics of structures <b>G. de Saxcé</b>
17,20 – 17,40	From yielding function and plastic potential to pseudo-potentials and bipotential : a constructive procedure <b>N. Point</b> , S. Erlicher
17,40 – 18,00	Debonding problems in reinforcing masonry with FRP plates <b>L. Ascione</b>
18,00 – 18,20	On the statics of no-tension masonry-like vaults and shells <b>A. Baratta</b> , O. Corbi

## Friday, June 18th

08,30 – 09,00	Self-contact, self-collisions and large deformations <b>M. Frémond</b> , F. Nerilli
09,00 – 09,20	Modeling by virtual working <b>P. Podio-Guidugli</b>
09,20 – 09,40	Gradient damage models and their use to approximate brittle fracture K. Pham, J.J. Marigo, <b>C. Maurini</b>
09,40 – 10,00	Homogenized models of failure of defected composite microstructures with contact effects D. Bruno, <b>F. Greco</b> , P. Lonetti, P. Nevone Blasi
10,00 – 10,20	<i>Palmanova picta in the liagò of Doge's palace in Venice</i> <b>M.G. D'Amelio</b>
10,20 – 11,00	Coffee break
11,00 – 11,30	Unilateral structural analysis of monuments <b>G.E. Stavroulakis</b> , G. Drosopoulos, M.E. Stavroulaki
11,30 – 11,50	Statically admissible singular stress fields for masonry-like vaults <b>M. Angelillo</b> , A. Fortunato, M. Lippiello
11,50 – 12,10	On the equilibrium problem for masonry beams <b>M. Lucchesi</b> , M. Silhavy, N. Zani
12,10 – 12,30	Integration of measures and admissible stress fields for masonry bodies M. Lucchesi, <b>M. Silhavy</b> , N. Zani
12,30 – 14,30	Pause and Lunch
14,30 – 17,00	Guided visit to Palmanova ( <i>G. Del Frate</i> )
17,00 – 17,30	Bifurcations and attractors in vibration conveyors <b>F. Pfeiffer</b>
17,30 – 17,50	Non-smooth contact phenomena and surface damage <b>E. Bonetti</b>
17,50 – 18,10	Glued solids: a coupled predictive theory <b>F. Freddi</b>
18,10 – 18,20	Pause
18,20 – 18,40	Theoretically supported scalable algorithms for contact problems <b>Z. Dostál</b> , T. Kozubek, V. Vondrák, A. Markopoulos, T. Brzobohatý
18,40 – 19,00	A numerical approach to the dynamic soil-pipeline interaction under degradating environmental effects <b>A.Liolios</b> , S. Radev, K. Liolios
20,30	Banquet

## Saturday, June 19th

- 08,30 - 09,00 Interface models for faults in geophysics  
**M. Raous**, C. Henninger, J.-P. Vilotte, G. Festa
- 09,00 – 09,20 A Multi-level interface model taking into account unilateral conditions and crack evolution  
**F. Lebon**, A. Rezik
- 09,20 – 09,40 An axiomatic for adhesive interfaces  
**G. Del Piero**, M. Raous
- 09,40 – 10,00 A interface model based on micromechanical analysis  
F. Lebon, **E. Sacco**
- 10,00 – 10,30 Coffee break
- 10,30 – 11,00 On the stability of quasi-static paths for elastic-plastic systems with hardening  
**M. D.P. Monteiro Marques**
- 11,00 – 11,20 Dynamic delamination phenomena in composite laminated structures  
D. Bruno, F. Greco, **P. Lonetti**, G. Sgambiterra
- 11,20 – 11,40 On fast augmentation of penalty-based contact algorithms  
**G. Zavarise**, L. De Lorenzis
- 11,40 – 12,00 Modelling the mechanical response of collagenous bio-structures  
**F. Maceri**, M. Marino, G. Vairo
- 12,00–12,10 Closure
- 12,10 – 13,00 Lunch

### SPONSORS:

*Gruppo Nazionale per la Fisica Matematica of the Istituto Nazionale di Alta Matematica,  
Comune di Palmanova.*

### ORGANIZING COMMITTEE

*Gianpietro Del Piero (Università di Ferrara), Franco Maceri (Università di Roma "Tor Vergata")*

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## Seventh Meeting

# UNILATERAL PROBLEMS IN STRUCTURAL ANALYSIS



*Palmanova*

*June 17 – 19, 2010*