

IWBDG2008 PROGRAM - FINAL

	Wednesday, May 28	Thursday, May 29	Friday, May 30	Saturday, May 31
8:30	Opening Ceremony			
8:55	Z. Mroz	Z. Chen	F. Darve	M.I. Alsaleh
9:20	H. Muhlhaus	P. Guo	F. Nicot	M.I. Alsaleh
9:45	A.M. Puzrin	S. Sivathayalan	P-Y. Hicher	J.G. Gaidos
10:10	T. Nakai	X.S. Li	R. Wan	J.P. Hambleton
10:35	Coffee Break	F. Laouafa	A. Tordesillas	J. Maciejewski
10:55	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:20	G. Viggiani	I. Vardoulakis	D.I. Garagash	R.Y. Moghaddam
11:45	N. Lenoir	D. Chan	S. Kimoto	J.S. Chen
12:10	Y. Yamakawa	G. Marketos	J. Grozic	R. Regueiro
12:35	A. Rechenmacher	T-F. Wong	M. Iwata	M. Zeghal
12:35	Lunch	Lunch	Lunch	Lunch
14:10	R. Nova	F. Oka	Free Afternoon	A. Dyskin
14:35	W. Wu	K. Oda		E. Pasternak
15:00	D. Peric	H. Nonoyama		C. Dascalu
15:25	K-T. Chau	F. Zhang		A. Daouadji
15:50	K. Issen	R.I. Borja		I. Einav
16:15	Coffee Break	Coffee Break		Coffee Break
16:35	R. Chambon	S. Bonelli		K. Hill
17:00	J. Tejchman	J. Graham		J. Labuz
17:25	C.D. Foster	M. Gutierrez		DISCUSSION
17:50	Y. Higo	H. Huang		CLOSURE
19:30	Welcome Reception	Dinner		Banquet
	Brewster Dance Barn	Chateau Lake Louise		Chateau Lake Louise

WEDNESDAY, MAY 28TH, 2008

8:30 – 8:55 *Opening Ceremony*

Anisotropy and Structured Media

Chairperson: M. Gutierrez

- 8:55 – 9:20** *Critical plane approach to analysis of failure criteria and damage evolution rules in anisotropic geomaterials*
[Z. Mroz] and J. Maciejewski
- 9:20 – 9:45** *Modelling of noncoaxial viscoplastic deformations in geodynamics*
[H-B. Muhlhaus] and L. Moresi
- 9:45 – 10:10** *Experimental and numerical validation of the energy balance approach to the shear band propagation in soils*
[A.M. Puzrin] and E. Saurer
- 10:10 – 10:35** *A simple method to consider density and bonding effects in modeling of geomaterials*
[T. Nakai], M. Kikumoto, H. Kyokawa and F. Zhang

10:35 – 10:55 *Coffee Break*

Physical Models & Lab Experiments

Chairperson: I. Vardoulakis

- 10:55 – 11:20** *Combining X-ray CT and 3D digital image correlation for studying localized deformation in stiff clay under triaxial compression*
[G. Viggiani], S.A. Hall, N. Lenoir, P. Bésuelle and J. Desrues
- 11:20 – 11:45** *Combining X-ray CT and 3D digital image correlation for studying strain localization in granular materials*
[N. Lenoir], Y. Pannier, S.A. Hall, M. Bornert, P. Bésuelle, J. Desrues and G. Viggiani
- 11:45 – 12:10** *Image analysis of diversified geometrical patterns of shear bands on granular material engendered by bifurcations*
[Y. Yamakawa] and K. Ikeda
- 12:10 – 12:35** *Grain column evolution in shear bands in sand*
[A. Rechenmacher]

12:35 – 14:10 *Lunch*

Instability and Localization Analyses of Geomaterials Using Constitutive Models

Chairperson: F. Darve

- 14:10 – 14:35** *Loss of controllability in partially saturated soils*
G. Buscarnera and [R. Nova]
- 14:35 – 15:00** *Localization analysis with strain-gradient extended hypoplasticity*
[V.A. Osinov] and W. Wu
- 15:00 – 15:25** *Strain localization in elastic-plastic composites subjected to plane stress loading*
[D. Peric] and H. Rasheed
- 15:25 – 15:50** *Fluttering instability in geomaterials*
[K-T. Chau]
- 15:50 – 16:15** *Theoretical and experimental implications of true triaxial testing of porous sandstone*
[K.A. Issen], T.A. Dewers and D.J. Holcomb

16:15 – 16:35 *Coffee Break*

Numerical Issues in Capturing Localization

Chairperson: R. Borja

- 16:35 – 17:00** *Are problems involving non controllable geomaterials computable?*
[R. Chambon]
- 17:00 – 17:25** *FE-calculations of a deterministic and statistical size effect in granular bodies including shear localization*
[J. Tejchman], J. Gorski
- 17:25 – 17:50** *Localization analysis of a three-invariant geomaterial model with isotropic and kinematic hardening: analytical and numerical insights*
[C.D. Foster] and R.A. Regueiro
- 17:50 – 18:15** *An elasto-viscoplastic model for diatomaceous mudstone and numerical simulation of compaction bands*
F. Oka, S. Kimoto, [Y. Higo], H. Ohta and T. Sanagawa

19:30 – 22:00 *Welcome Reception – Western BBQ Dinner at Brewster Dance Barn*

THURSDAY, MAY 29TH, 2008

Physical Models & Lab Experiments

Chairperson: F. Oka

- 8:30 – 8:55** *An analytical and experimental study of the post-peak response of hierarchical structures*
[Z. Chen] and J.F. Labuz
- 8:55 – 9:20** *Fabric and particle shape dependency of suction and its influence on strength anisotropy of moist sand*
[P. Guo]
- 9:20 – 9:45** *Experimental characterization of instability: Effects of fabric and shear-volume coupled deformation*
[S. Sivathayalan], A. Mehrabi Yazdi and P. Logeswaran
- 9:45 – 10:10** *Phase transformation, critical state and liquefaction*
[X.S. Li] and X. Li
- 10:10 – 10:35** *Experimental and numerical modelling of diffuse mode of failure in very loose sands*
F. Laouafa, [A. Daouadji] and F. Darve

10:35 – 10:55 *Coffee Break*

Numerical Issues in Capturing Localization

Chairperson: R. Regueiro

- 10:55 – 11:20** *Stability of steady creep of thermally driven slides*
[I. Vardoulakis] and Emanouil Veveakis S.A.
- 11:20 – 11:45** *Fracture modelling using the Discrete Finite Element method*
[D. Chan] and G. Bala
- 11:45 – 12:10** *Reproduction of a compaction band in DEM simulations*
[G. Marketos] and M. Bolton
- 12:10 – 12:35** *Compaction localization and grain crushing in porous sandstone: constitutive modeling, microstructural evolution and discrete element simulation*
[T-F. Wong]

12:35 – 14:10 *Lunch*

Geomechanics Applications

Chairperson: D. Peric

- 14:10 – 14:35** *A multiphase numerical analysis of the strain localization of unsaturated embankment associated with seepage flow*
[F. Oka], S. Kimoto and S. Yamazaki
- 14:35 – 15:00** *CIP-based numerical simulation of soil/snow avalanche*
[K. Oda], A. Yashima, K. Sawada, M. Goshima, S. Moriguchi, A. Sato and I. Kamiishi
- 15:00 – 15:25** *Performance of SPH method for deformation analyses of geomaterials*
[H. Nonoyama], A. Yashima, K. Sawada and S. Moriguchi
- 15:25 – 15:50** *Cyclic mobility of sand and its simulation in boundary value problems*
[F. Zhang], T. Nakai, Y.J. Jin, B. Ye and K. Noda
- 15:50 – 16:15** *Deformation and failure processes in geologic materials at scales from grains to basins*
[R.I. Borja]

16:15 – 16:35 *Coffee Break*

Degradation and Internal Erosion

Chairperson: F. Nicot

- 16:35 – 17:00** *Piping erosion: testing and modelling*
[S. Bonelli]
- 17:00 – 17:25** *Natural processes and strength degradation*
[J. Graham] and M. Alfaro
- 17:25 – 17:50** *Pore-fluid induced degradation of soft rocks*
[M. Gutierrez] and R. Hickman
- 17:50 – 18:15** *Fluid injection in granular media*
[H. Huang] and R. Wu

19:30 – 22:00 *Dinner – Chateau Lake Louise*

FRIDAY, MAY 30TH, 2008

Micromechanical Origins of Instability using Discrete or Micromechanical-Continuum Approach

Chairperson: R. Nova

- 8:30 – 8:55** *3D bifurcation analysis in granular materials*
[F. Darve], F. Prunier, L. Sibille and F. Nicot
- 8:55 – 9:20** *The concept of loss of sustainability in granular materials*
[F. Nicot], L. Sibille and F. Darve
- 9:20 – 9:45** *Investigating instability conditions in granular materials with different initial densities by means of a micro-structural constitutive model*
[P-Y. Hicher] and C.S. Chang
- 9:45 – 10:10** *Plastic flow in granular materials: loading direction dependence and material instability*
[R. Wan], M. Pinhiero and Q. Li
- 10:10 – 10:35** *Glimpses of the promise of micromechanics in modeling granular materials*
[A. Tordesillas]

10:35 – 10:55 *Coffee Break*

Thermal/Mechanical/Chemical Interaction and Coupled Processes

Chairperson: A. Rechenmacher

- 10:55 – 11:20** *Shear heating in localized shear zones: Incipient slip instability and dynamic slip propagation*
[D.I. Garagash]
- 11:20 – 11:45** *A chemo-thermo-mechanically coupled analysis of ground deformation induced by methane hydrate dissociation*
[S. Kimoto] and F. Oka
- 11:45 – 12:10** *Lab experimental testing of synthetic gas hydrates*
[J. Grozic]
- 12:10 – 12:35** *Local behavior of pore water pressure in the specimen during plane-strain compression test of soft rock and its numerical simulation*
[M. Iwata], A. Yashima and K. Sawada

12:35 – 14:10 *Lunch*

FREE AFTERNOON

SATURDAY, MAY 31ST, 2008

Soil-Machine Interaction: Numerical Analysis and Analytical-Based Models

Chairperson: H. Muhlhaus

- 8:30 – 9:20** *A review for numerical tools employed in soil dynamics and soil-machine interaction*
[M.I. Alsaleh]
- 9:20 – 9:45** *Simulation of earthmoving operations using method of corrected smooth particle hydrodynamics (CSPH)*
[J.G. Gaidos]
- 9:45 – 10:10** *Modeling processes involving soil-wheel interaction*
[J.P. Hambleton] and A. Drescher
- 10:10 – 10:35** *Analysis of deformation and damage processes in soil-tool interaction problems*
[J. Maciejewski] and Z. Mroz

10:35 – 10:55 *Coffee Break*

Soil-Machine Interaction: Numerical Analysis and Analytical-Based Models

Chairperson: C. Viggiani

- 10:55 – 11:20** *Dynamic effect of ground looseness on hydraulic shovel performance*
M.G. Lipsett and [R.Y. Moghaddam]
- 11:20 – 11:45** *A semi-lagrangian reproducing kernel formulation for modeling earthmoving operations*
[J.S. Chen], P. Guan, H. Teng, J. Gaidos, K. Hofstetter and M.I. Alsaleh
- 11:45 – 12:10** *Concurrent multiscale computational modeling of particle to continuum length scale mechanics in unbound dense, dry particulate materials*
[R. Regueiro]
- 12:10 – 12:35** *A micro-mechanical study of the interaction of liquefied granular soils with structural elements*
[M. Zeghal], T. Dessalegn, C. Medina, and U. El Shamy

12:35 – 14:10 *Lunch*

Fracture Mechanics and Grain Crushing

Chairperson: W. Wu

- 14:10 – 14:35** *Concept of mesh scalability in mesh-dependent FEM simulations*
[A. Dyskin] and A. Caballero
- 14:35 – 15:00** *Negative Poisson's ratio in geomaterials*
[E. Pasternak] and A. Dyskin
- 15:00 – 15:25** *Micro and macro-structural size effects for damage in brittle materials*
[C. Dascalu] and G. Bilbie
- 15:25 – 15:50** *Modelling undrained behaviour of granular materials at high stresses*
[A. Daouadji] and P.-Y. Hicher
- 15:50 – 16:15** *From self organisation to congestion in comminuting granular systems*
[I. Einav], O. Ben-Nun, A. Tordesillas and Y.Z. Cai

16:15 – 16:35 *Coffee Break*

Miscellaneous

Chairperson: K. Issen

- 16:35 – 17:00** *Kinematics of granular mixtures subjected to shear*
[K.M Hill], J. Zhang and F. Yi
- 17:00 – 17:25** *Shear banding in a brittle material*
J.J. Riedel, Q. Lin, C.-S. Kao and [J.F. Labuz]

Closure

17:25 – 18:15 *Discussion*

19:30 – 22:00 *Workshop Banquet – Chateau Lake Louise*