

Monday 9<sup>th</sup> September

**Welcoming session**

17h00-20h00

*Registration of participants and Welcome Cocktail*  
in the building of the Mechanics and Civil Engineering Institute (Sart-Tilman - B52)

**LAGAMINE team**

# Tuesday 10<sup>th</sup> September

## Introduction Session (chairwoman: Anne-Catherine Dieudonné)

08h00-08h30	<i>Registration of participants</i>	<b>LAGAMINE team</b>
08h30-08h40	<i>Welcome</i>	
08h40-09h00	<i>History of LAGAMINE</i>	<b>S. Cescotto</b>
09h00-10h30	<i>Finite element formulation and couplings</i>	<b>A. M. Habraken, F. Collin</b>
10h30-11h00	COFFEE BREAK	
11h00-12h30	<i>Multiphysical couplings in (geo)materials</i>	<b>L. Laloui</b>
12h30-14h00	LUNCH	

## THMC Session (chairwoman: Anne-Marie Habraken)

14h00-14h25	<i>Introduction in LAGAMINE of the stress path dependency extension for the ACMEG-T model</i>	<b>A. Di Donna</b> , F. Dupray, L. Laloui
14h25-14h50	<i>Application of the thermo-hydro-mechanical finite element code LAGAMINE for the study of the nuclear waste disposal in argillaceous formation in Belgium</i>	<b>A. Dizier</b> , X.L. Li
14h50-15h15	<i>Study of phase transformations through dilatometer and compression tests and their FEM simulations</i>	<b>I. Neira Torres</b> , J. Tchoufang Tchoundjang, O. Millis, G. Gilles, J. Lecomte-Beckers, A.M. Habraken,
15h15-15h40	<i>Effect of groundwater flow on the THM behaviour of an energy pile</i>	<b>F. Dupray</b> , M. Baehler, L. Laloui
15h40-16h15	COFFEE BREAK	

## Gas Transfer Session (chairman: Lyesse Laloui)

16h15-16h40	<i>Modelling of gas migration in clay formations</i>	<b>P. Gerard</b> , R. Charlier, J.P. Radu, J. Talandier, J. Harrington, F. Collin
16h40-17h05	<i>Geomechanical modelling of carbon dioxide injection in deep aquifer</i>	<b>C. Li</b> , L. Laloui
17h05-17h30	<i>Numerical modelling of the thermo-hydro-chemical (THC) coupled processes of underground coal seam fire</i>	X.F. Liu, <b>F. Collin</b> , O. Buzzi
17h30-17h55	<i>Different phases of water transfer during rock drying</i>	<b>N. Prime</b> , Z. Housni, R. Charlier, S. Levasseur
19h30	BANQUET at "Ô cocottes" brasserie	

# Wednesday 11<sup>th</sup> September

## Multi-Scale Session (chairman: Laurent Duchêne)

08h30-09h30	<i>Micromechanics of brittle and ductile damage: The Good, the Bad and the Ugly</i>	<b>D. Kondo</b>
09h30-9h55	<i>FEM-DEM multiscale analysis in LAGAMINE : recent advances</i>	<b>J. Desrues</b> , T.K. Nguyen, G. Combe, D. Caillerie
9h55-10h30	COFFEE BREAK	
10h30-10h55	<i>Dynamic damage model implemented in a finite element code to model rock blasting</i>	<b>O. Keita</b> , B. François, C. Dascalu
10h55-11h20	<i>Modelling hydro-mechanical coupling using a FE<sup>2</sup> double scale approach</i>	<b>B. van den Eijnden</b> , F. Collin, P. Bésuelle, R. Chambon
11h20-11h30	SHORT BREAK	

## Bentonite Session (chairwoman: Séverine Levasseur)

11h30-11h55	<i>Study of thermo-hydro-mechanical coupling behaviours of GMZ bentonite</i>	<b>S. Cao</b> , L. Chen, Y. Liu, J. Xie, Y. Li, L. Ma
11h55-12h20	<i>Case study on thermoplasticity and swelling processes in bentonite included in a multiscale system for nuclear waste disposal</i>	F. Dupray, <b>B. François</b> , L. Laloui
12h20-12h45	<i>On the hydromechanical modelling of swelling materials: recent advances in LAGAMINE</i>	<b>A.C. Dieudonné</b> , S. Levasseur, R. Charlier, F. Collin
12h45-14h15	LUNCH	

## Advanced Numerical Tools Session (chairman: Frédéric Collin)

14h15-15h00	<i>Reordering methods and iterative methods</i>	<b>B. Cerfontaine</b>
15h00-15h25	<i>Using GMSH as a mesh generator and post-processor for LAGAMINE</i>	<b>C.F. Guzmán</b> , T. Mouton, A.M. Habraken
15h25-15h50	<i>LAGARES, a post-processor for finite element code LAGAMINE</i>	<b>C. Li</b> , F. Dupray, J. Eichenbreger, L. Laloui
15h50-16h20	COFFEE BREAK	
16h20-16h45	<i>Adaptative remeshing technique for single point incremental forming simulations using solid-shell elements</i>	<b>J. Illído Velosa de Sena</b> , C.F. Guzman, L. Duchêne, A.M. Habraken, R.J. Alves de Sousa, R.A.F. Valente
16h45-17h10	<i>Accurate single point incremental forming simulations using solid-shell elements</i>	<b>C.F. Guzmán</b> , J. Illído Velosa de Sena, L. Duchêne, A.M. Habraken
17h10-17h35	<i>A new consistent thick plate finite element based on strain approach with transverse shear effect</i>	M. Himeur, A. Benmarce, <b>M. Guenfoud</b>
17h35-18h00	<i>Back Analysis and optimization methods with LAGAMINE</i>	<b>S. Levasseur</b> , <b>Ch. Bouffioux</b>

# Thursday 12<sup>th</sup> September

## Localization Session (chairman: Jacques Desrues)

08h30-09h30	<i>Numerical modelling of the strain localization in soils and rocks</i>	<b>F. Collin</b>
09h30-09h55	<i>Hydro-mechanical modelling with second-gradient continuum : non uniqueness studies</i>	<b>F. Marinelli, Y. Sieffert, R. Chambon</b>
09h55-10h30	COFFEE BREAK	
10h30-10h55	<i>A plane stress second-gradient finite element</i>	<b>M. Soufflet, P. Kotronis, F. Collin</b>
10h55-11h20	<i>Modeling of strain localization characteristics in Boom Clay</i>	<b>F. Salehnia, S. Levasseur, R. Charlier</b>
11h20-11h45	<i>Identification of enriched constitutive models for geomaterials in the presence of strain localization</i>	<b>K. El Moustapha, P. Bésuelle, Y. Sieffert, R. Chambon</b>
11h45-12h10	<i>Modelling strain localization and fracture in concrete with LAGAMINE second gradient elements</i>	<b>G. Jouan, P. Kotronis, F. Collin</b>
12h10-12h35	<i>Excavation damaged zone modelling with shear strain localization in claystone</i>	<b>B. Pardoën, S. Levasseur, F. Collin</b>
12h35-12h45	<i>Closure</i>	<b>R. Charlier</b>
12h45	LUNCH	