



ALERT Geomaterials

Alliance of Laboratories in Europe for Education, Research and Technology
<http://alertgeomaterials.eu>

37th ALERT Workshop and School

Aussois, September 28th to October 3rd 2026

Final Program

(September 2026)



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37th ALERT Workshop Program

Aussois, 28th September 2026

Session 1: "In honor of T. Hueckel's 80th anniversary: Thermo-chemo-mechanical couplings in geomaterials" organized by: M. Veveakis, M. Ciantia and F. Collin

08:30 – 08:40 Opening of the 37th ALERT Workshop

08:40 – 08:55 Opening Session

M. Veveakis (Duke university), M. Ciantia (University of Dundee) and F. Collin (University of Liège)

08:55 – 09:35 Keynote lecture

Environmental Geomechanics for Subsurface Energy Engineering
Manman Hu (University of Hong Kong)

09:35 – 10:00 Neutron and X-Ray Imaging for the Investigation of Coupled Multiphysics Processes

Alessandro Tengattini, Stefano Dal Pont (Université Grenoble-Alpes)

10:00 – 10:15 Lightning poster session (1/4)

10:20 – 10:45 COFFEE BREAK

10:45 – 11:10 Integration of microscale chemical debonding into underground reservoir modelling

Alexandre Sac-Morane (Navier), Maria Olarte-Garzon (Navier), Fanyu Wu (University of Hong-Kong), Philipp Braun (Navier), Jean-Michel Pereira (Navier), Manman Hu (University of Hong-Kong), Manolis Veveakis (Duke University), Hadrien Rattez (UCLouvain)

11:10 – 11:35 Advancing Thermo-Chemo-Mechanical Modelling of swelling clays within a double structure framework

Han Ming Lai, Lidija Zdravkovic, David M. Potts, Matthew Kirby (Imperial College London)

11:35 – 12:00 Reactive transport and chemo-mechanical behaviour of carbonate–clay caprock



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for CO₂ storage applications

Guido Musso (Politecnico di Torino), Vincenzo Sergio Vespo (Politecnico di Torino), Gabriele Della Vecchia (Politecnico di Milano)

12:00 – 14:00 LUNCH

14:00 – 14:40 Keynote lecture

Geomechanics of carbon mineralization in rocks with reaction-driven volume expansion

G. Buscarnera (Northwestern University)

14:40 – 15:05 Multiphysics modelling of hydro-thermal cracks in multiphase porous materials

Zechao Chen (University of Padova), Ziad Sahlab (EPFL), Laura De Lorenzis (ETHZ), Lyesse Laloui (EPFL), Lorenzo Sanavia (University of Padova)

15:05 – 15:30 Investigating the microscopic hydro-mechanical behaviour of Callovo-Oxfordian claystone using NMR Relaxometry

Gerges Abboud (Andra), Rahima Sidi-Boulenouar (Navier), Benjamin Maillet (Navier), Philipp Braun (Navier), Michel Bornert (Navier), Patrick Aïmedieu (Navier), Minh-Ngoc Vu (Andra), Jean Talandier (Andra), Rémi De La Vaissière (Andra), Anh-Minh Tang (Navier)

15:30 – 15:45 Lightning poster session (2/4)

15:45 – 16:15 COFFEE BREAK

16:15 – 16:40 Ab-Initio Micro-Scale Derivation of Fluid-Solid Mechanical Interactions

Gary Couples (Heriot Watt)

16:40 – 17:05 DEM modeling of flash heating in fault gouges

Rafael Rangel, Hongyang Cheng (University of Twente)

17:05 – 17:40 Discussions, Perspectives and Closure

17:40 – 18:00 ALERT General Assembly

18:00 – 19:45 Poster Session and aperitif (at the intermediate level of the Center)

19:45 DINNER



37th ALERT Workshop Program

Aussois, 29th September 2026

Session 2: “The mechanics of interfaces”

organized by: D. Frost, R. Fuentes and C. Couture

08:20 – 08:35 Opening Session

D. Frost (Georgia Tech), R. Fuentes (RWTH Aachen) and C. Couture (Univ. Grenoble Alpes)

08:35 – 09:15 Keynote Lecture

Fractured Rocks: Properties, Processes and Engineering Implications
J.C. Santamarina (Georgia Tech)

09:15 – 09:40 Bedding Planes as First-Order Interfaces in Flexural-Slip Deformations

H. Lewis (Heriot-Watt) and G. Couples (Heriot-Watt)

09:40 – 10:05 Velocity Dependence in Marble during Single-Asperity Sliding

A. Clerc (ISterre, Univ. Savoie Mont Blanc), G. Mollon (LaMCoS, INSA Lyon), A. Ferrieux (LaMCoS, INSA Lyon), L. Lafarge (LaMCoS, INSA Lyon) and A. Saulot (LaMCoS, INSA Lyon)

10:05 – 10:20 Lightning poster session (3/4)

10:20 – 10:50 COFFEE BREAK

10:50 – 11:15 Frozen Soil–Structure Interfaces Beyond Mohr–Coulomb: Toward Rate-Dependent Damage Modelling

F. Sahragard (Carleton University), M. Pouragha (Carleton University) and M. Rayhani (Carleton University)

11:15 – 11:40 Exploring Crystallization Pressure Across Scales: Molecular Simulations and Microfluidic Experiments

B.M. Hawchar (Navier, ENPC), T. Honorio (Univ. Paris-Saclay, CEA), M. Vandamme (Navier, ENPC), F. Osselin (Vema Hydrogen), J.M. Pereira (Navier, ENPC), L. Mercury (ISTO, Univ. d'Orléans) and L. Brochard (Navier, ENPC)

11:40 – 12:15 Discussions, Perspectives and Closure

12:15 – 12:30 Lightning poster session (4/4)

12:30 – 14:00 LUNCH



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14:30 – 17:00 ALERT Board of Directors

17:15 – 18:30 ALERT Poster and PhD Prizes 2026

18:30 – 19:30 ALERT Special Lecture 2026

Multiscale and Multiphysics Modeling of Coupled Processes in Granular Media

J. Zhao (Hong Kong University of Science and Technology)

19:45 BANQUET



37th ALERT Workshop Program

Aussois, 30th September 2026

Session 3: Geomechanics for Natural Hazards

organized by: S. Cuomo, D. Manzanal, N. Benahmed

08:30 – 08:45 Opening Session

S. Cuomo (University of Salerno), D. Manzanal (Universidad Politécnica de Madrid), N. Benahmed (INRAE)

08:45 – 09:25 Keynote lecture

Beyond modelling of landslide propagation

M. Pastor (Universidad Politécnica de Madrid)

09:25 – 09:50 A sliding-consolidation model for rainfall-induced creeping landslides motion

F. Rollo (Sapienza University of Rome), G. Buscarnera (Northwestern University), and A. Amorosi (Sapienza University of Rome)

09:50 – 10:05 Why are slow landslides slow? Grain-scale viscosity as a self-regulating mechanism in basal shear zones

A. Taboada (Université de Montpellier), S. Nezamabadi (Université de Montpellier, Montpellier, France), and F. Radjaï (Université de Montpellier)

10:05 – 10:35 COFFEE BREAK

10:35 – 11:00 A mechanical model to reproduce complex compaction patterns in the deformation of snow

M. Bonnetier (Univ. Grenoble Alpes), L. Blatny (Sorbonne Université), G. Chambon (Univ. Grenoble Alpes), J. Gaume (ETH Zürich), and M. Montagnat (Univ. Grenoble Alpes)

11:00 – 11:25 DEM analysis of dry granular flow impact on rigid obstacles

(AffiliaMatteo Zerbi (Politecnico di Milano), Francesco Calvetti (Politecnico di Milano), and Claudio di Prisco (Politecnico di Milano)

11:25 – 11:50 Assessing Liquefaction Susceptibility of Materials for Engineered Slopes

Z. M. Karslioglu (Dresden University of Technology)

12:00 – 14:00 LUNCH

14:00 – 14:40 Keynote lecture

A Unified Computational Continuum Framework for Natural Hazards



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H. Bui (Monash University, Australia)

14:40 – 15:05 Physics-informed machine learning for granular flows

K. Karapiperis (EPFL)

15:05 – 15:30 Experimental and Numerical Assessment of CO₂ Effects on Discontinuities in Geological Storage Reservoirs

C. B. Laskowski Orlandi (Universidad Politécnica de Madrid), Diego Manzanal (Universidad Politécnica de Madrid), M. Muñiz-Menéndez (Laboratorio de Geotecnia, CEDEX), M. Pastor (Universidad Politécnica de Madrid) M. Martín (Universidad Politécnica de Madrid)

15:30 – 16:00 **COFFEE BREAK**

16:00 – 16:25 Deciphering the physics of rockfall fragmentation: A FBM-DEM framework for predicting run-out and hazard footprints

Á. Vergara (RWTH Aachen), and R. Fuentes (RWTH Aachen)

16:25 – 17:00 Discussion, Perspectives and Closure

19:45 **DINNER**



37th ALERT Doctoral School Program

Aussois, 1st October 2026

Doctoral School

"Experimental Geomechanics for Beginners"

organized by: N. Benahmed, M. Cabrera, J. Dijkstra, E. Gerolymatou, A. Tarantino and A. Tengattini

Day 1: "Theory"

- 08:45 – 09:00** Introduction
N. Benahmed, M. Cabrera, J. Dijkstra, E. Gerolymatou, A. Tarantino, A. Tengattini
- 09:00 – 10:30** Introduction to geotechnical testing (J. Dijkstra, X. Cheng)
- 10:30 – 11:00** **COFFEE BREAK**
- 11:00 – 12:00** Sensors: fundamentals of measurement & electronics for experimentalists (A. Tengattini)
- 12:00 – 13:30** **LUNCH**
- 13:30 – 14:30** Sensors: fundamentals of measurement & electronics for experimentalists (A. Tengattini)
- 14:30 – 16:00** Triaxial testing of geomaterials: From specimen preparation to strength interpretation (N. Benahmed)
- 16:00 – 16:30** **COFFEE BREAK**
- 16:30 – 18:00** Dimensioning and construction of experimental apparatus with examples (E. Gerolymatou, U. Düsterloh, R. Castellanza)
- 19:45** **DINNER**



37th ALERT Doctoral School Program

Aussois, 2nd October 2026

Day 2: "Theory and hands on sessions"

09:00 – 10:30 Unsaturated soil mechanics and hydraulics (A. Tarantino)

10:30 – 11:00 **COFFEE BREAK**

11:00 – 12:00 Physical modelling: from abstraction to experimental design (M. Cabrera)

12:30 – 14:00 **LUNCH**

14:00 – 15:00 Physical modelling: from abstraction to experimental design (M. Cabrera)

15:00 – 16:30 Hands on session 1 (N. Benahmed, M. Cabrera, A. Tarantino, A. Tengattini)

16:30 – 17:00 **COFFEE BREAK**

17:00 – 18:30 Hands on session 2 (N. Benahmed, M. Cabrera, A. Tarantino, A. Tengattini)

19:45 **DINNER**



37th ALERT Doctoral School Program

Aussois, 3rd October 2026

Day 3 (Half-Day): "Hands on sessions"

09:00 – 10:30 Hands on session 3 (N. Benahmed, M. Cabrera, A. Tarantino, A. Tengattini)

10:30 – 11:00 **COFFEE BREAK**

11:00 – 12:30 Hands on session 4 (N. Benahmed, M. Cabrera, A. Tarantino, A. Tengattini)

12:30 – 14:00 **LUNCH (take-away)**

Hands on sessions:

Activity	Organiser
Soil specimen preparation	M. Cabrera
Mini triaxial	N. Benahmed
Measurement of suction and water content	A. Tarantino
Sensors–Hands on with an Arduino-based setup	A. Tengattini

During these, the participants will be rotated through the different sessions.

