



ALERT Geomaterials

NEWSLETTER – February 2012
N°10 - year 6

<http://alertgeomaterials.eu>

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EDITORIAL

Dear ALERT member,

organization and representation issues of the ALERT Geomaterials association are managed by the Bureau. Its work over the last six years has enabled successful organization of the annual meetings held in Aussois, contributed to the growth of the association and raised its reputation. Felix Darve, Lyesse Laloui, Claudio di Prisco, Bruno Chareyre and Andrea Galli achieved this success and I would like to express my sincere thanks for their commitment.

In October 2011, Manolo Pastor was elected as a new President of the ALERT Geomaterials association. He asked me to become a new Director and I accepted his request first after a certain delay. I was honoured by his confidence but simultaneously I was aware of the responsibility and the additional workload. Finally I agreed, knowing that together with Andrea Galli as Vice-Director for the Administrative and Bruno Chareyre as Vice-Director for Economy we compose a well-balanced and faithful team which is able to continue in the excellent work of our predecessors.

Our first and already visible step was the creation of a new website in our own domain alertgeomaterials.eu. This change gives us the opportunity to use modern techniques for the webpage administration and update. I hope that you like the dynamic layout of the news in form of a blog which replaces the regular announcements sent by the Bureau

monthly in the past. If you want to advertise open positions or upcoming events, please send an email with a short text (and possibly a link to a more detailed description) to news@alertgeomaterials.eu.

I hope that the further information in this Newsletter about the last meeting in Aussois and about the next activities will be of interest for you. I wish successful upcoming years for all of us and see you in October in Aussois at the latest!

Yours sincerely,

Ivo Herle
Director of ALERT Geomaterials

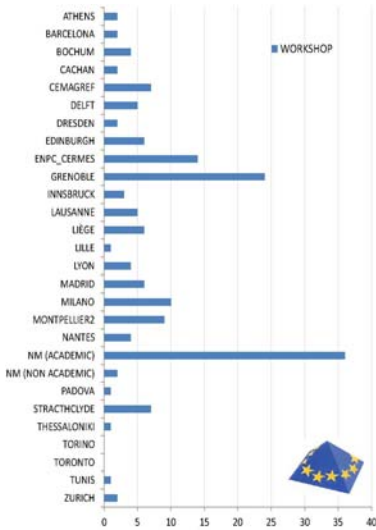


NEW ALERT MEMBERS

During the last meeting of the Board of Directors, held in Aussois on the October 4th 2011, the Université de Pau et des Pays de l'Adour represented by Professor Gilles Pijaudier-Cabot was accepted as a new member of the ALERT Geomaterials association. Its spectrum of research interests is very wide and includes fracture and damage of quasi-brittle geomaterials, durability mechanics and coupled effects, thermomdiffusion in porous media, fluid rock interaction, wave propagation in porous media and further topics.



*The logo of the new member
of ALERT Geomaterials*



Participants of the ALERT Workshop 2011

ALERT Workshop 2011

This year the ALERT Workshop was held in Aussois, France, on October 3rd to 5th 2011.

On the left hand side, the regional distribution of the participants from institutional members of ALERT Geomaterials for the year 2011 is shown.

It is also worth mentioning that this year the number of non-ALERT (both academic and non-academic) members which shows a strong interest in the ALERT activities. In total 166 participants were registered this year, which is after 2007 the highest number of participants.

The number of selected contributions was 14 for the session 1 and 13 for sessions 2 and 3, respectively. The number of the submitted contributions was substantially higher

The three topics of the ALERT Workshop are listed below:

1. Multiscale geomechanics: from fabric to material properties

coord. G. Couples & B. Chareyre

2. Geomechanical issues in CO₂ storage

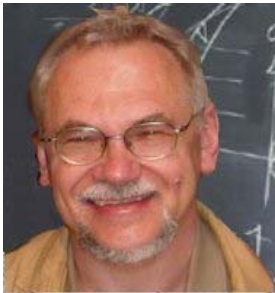
coord. G. Pijaudier-Cabot & J.M. Pereira

3. Localised versus diffuse failure in geomaterials

coord. M. Hicks & G. Viggiani

We thank all active participants and coordinators for their effort.

Next year's ALERT Workshop will take place on October 1st to 3rd 2012.



The ALERT Invited Lecturer 2011
Dr. Tomasz A. Hueckel

Invited Lecture 2011: Prof. Tomasz A. Hueckel

As a special guest this year during the ALERT Workshop 2011 we were grateful to welcome Dr. Tomasz A. Hueckel from the Duke University in North Carolina, USA. The topic of his talk was

Plasticity of geomaterials in a variable environment

The lecture was digitized during hosting and will be soon available for downloading on the new ALERT website.

The Invited lecture during the ALERT Workshop 2012 will be presented by Prof. Dr. Carlos Santamarina, from the Georgia Institute of Technology, Atlanta, USA.

Within the next Newsletter an introduction to his presentation will be given.

ALERT PhD Prize 2011

The jury of the ALERT PhD Prize 2011 was composed of Jean SULEM (*ENPC de Paris*), Frans MOLENKAMP (*TU Delft*), Tomasz HUECKEL (*Duke University*) and Felix DARVE (*Institut National Polytechnique de Grenoble*). Only PhD students from one of the institutions belonging to ALERT are eligible candidates for the prize which was dated to 1000 €.

The jury elected three PhD students for a closer selection. For the prize were considered the theses of Benkemoun Nathan (*École Normale Supérieure de Cachan*), Buscarnera Giuseppe (*Politecnico di Milano*), Diambra Andrea (*Bristol University*) and Luison Loris (*Università degli Studi di Padova*).

The prize was awarded to Dr. Giuseppe Buscarnera from Politecnico di Milano for his PhD thesis *Rainfall induced flow slides: constitutive modelling, mechanical instability and theoretical interpretation*.

The thesis by Dr. Buscarnera focuses on fast landslides which are mainly triggered by intense rainfall events. Especially, the author studied the phenomena in which the soil exhibits a phase transition from solid to fluid state. The aim was to investigate and model the onset of such flow slides applying geotechnical principles. Therefore the author developed a new methodology for slope stability using the theory of material stability. Furthermore, well-known theories for saturated soils had been resumed and were modified for the more generic case of unsaturated porous media. A combination of both allowed to conduct stability analysis of unsaturated slopes for hydraulic and mechanical perturbations, respectively.

The video file of the presentation as well as an abstract of the PhD thesis of Dr. Buscarnera are also available at the ALERT website.



Dr. Giuseppe Buscarnera
(Politecnico di Milano)



ALERT Doctoral School 2011

The ALERT Doctoral School 2011 was dedicated to

Hazard Prevention and Protection: Some issues on seismic and gravitational risks

The school was organised by Prof. Claudio di Prisco (*Politecnico di Milano*) and Prof. Yann Malécot (*Université J. Fourier Grenoble*). As in the last years the school lasted three days, from October 6th to 8th 2011. The Doctoral School was attended by 92 PhD students; see the local distribution of participants on the left hand side.

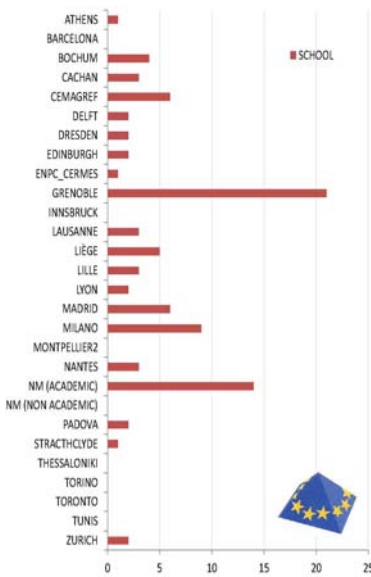
The focus of the school lied, like its title suggests, on the gravitational and seismic risks with which the geotechnical community but also the governments have to deal with to develop prevention strategies and protection solutions. Those arising risks are caused by the growth of the population on the one hand and their impact on nature due to the need of economic development on the other hand. Within the framework of the school several topics concerning natural risk e.g. avalanches, earthquakes, landslides, debris flows and falling boulders were addressed.

The school was started off by a general lecture on hazard analysis and risk assessment and the need for intervention, protection and monitoring. The lectures started with a brief description of the respective phenomena, the evoking problem and the approach of simulating it with theoretical and/or numerical tools. Besides the risks due to natural disasters and its modelling also to their impact on man-made structures was given attention to.

In the name of all the ALERT members we want to thank the lecturers and the organizers for their commitment.

Lecturers:

- P.Y. Bard (*Université J. Fourier de Grenoble*)
- F. Calvetti (*Politecnico di Milano*)
- L. Daudeville (*Laboratoire 3S-R Grenoble*)
- C. di Prisco (*Politecnico di Milano*)
- J. Mazars (*Laboratoire 3S-R Grenoble*)
- F. Nicot (*Cemagref, Grenoble*)
- M. Pastor (*Universidad Politecnica de Madrid*)
- L. Vuillet (*École Polytechnique Fédérale de Lausanne*)



Participants of the ALERT Doctoral School 2011

ALERT Olek Zienkiewicz Course: 4th edition

The 4th edition of the Olek Zienkiewicz Course will be held from Monday September 17 to Friday September 21 in Dresden, Germany.

The Summer School in 2012 will be devoted to

Constitutive Modelling of Soils

For those five days the tentative program is the following:

- Monday, 17 September: **What do we want to model?**
- Tuesday, 18 September: **What can and what cannot we achieve with basic models?**
- Wednesday, 19 September: **Why is the critical state so important?**
- Thursday, 20 September: **What is further important, especially in case of natural soils?**
- Friday, 21 September: **Can we do predictions now?**

The participation is free for students coming from the ALERT member institutions. For other participants, the registration fee is 200 Euros. Accommodation and meals are not included.

A formless application for the participation should be submitted by e-mail to Erik Nacke Erik.Nacke@tu-dresden.de not later than May 31, 2012. The number of participants is limited and the registration will be confirmed until June, 10.

The content of the summerschool will be prepared and taught by

- Ivo Herle (Technische Universität Dresden)
- David Masin (Charles University in Prague)
- Claudio Tamagnini (Università degli Studi di Perugia)
- David Muir Wood (University of Dundee)



Organizing Institutions



ALERT Workshop & School 2012

The **ALERT Workshop** in 2012 will take part in Aussois from 1st to 3rd October. The topics of the three workshop sessions and the responsible organizers are listed below:

1. Micromechanics and critical steady states in geomaterials

coord. Y. Dafalias & B. Chareyre
ydfafalis@central.ntua.gr
bruno.chareyre@hmg.inpg.fr

2. Geomechanics of underground structures

coord. C. Tamagnini & D. Mašin
tamag@unipg.it
masin@natur.cuni.cz

3. Geomechanics for energy production

coord. L. Laloui & H. Lewis
lyesse.laloui@epfl.ch
helen.lewis@pet.hw.ac.uk

Please do not forget to submit your abstract by email directly to the coordinators using the abstract form which can be downloaded at the ALERT site <http://alertgeomaterials.eu>. **The deadline for the submission of abstracts is 30th April 2012.**

Subsequent to the workshop the ALERT Doctoral School will be hosted from October 4th to 6th also in Aussois, France. The school will be dedicated to

Advanced experimental techniques in geomechanics

and will be organized by Cino Viggiani, Steve Hall and Enrique Romero. Online registration for the Workshop and the School will open in May 2012 on the ALERT website.

Organizing Institutions

LARAM School and the research on "Landslide Risk Assessment and Mitigation"

LARAM is an International School on "Landslide Risk Assessment and Mitigation" (LARAM), which was founded by the University of Salerno (Italy) on April, 12th 2005 with the main aim of offering a systematic and continuous forum among young researcher and renowned experts in the field of landslide risk.

LARAM has been developing high educational interdisciplinary programs for assessing, forecasting and mitigating landslide risk over large areas; particularly, LARAM promotes training and research programs aimed at solving real landslide risk problems using the most advanced theories and methodologies in the fields of: geotechnical engineering, geomechanics, geology, mathematical modelling, monitoring and GIS techniques.

The main yearly initiative of LARAM is the Doctoral School, which is held in Italy in the month of September for 40 PhD selected students, with 10 places reserved to Italian PhD students. The courses include frontal lessons, tutorials and field training. From 2006, the LARAM School's lectures have been attended by 238 students belonging to over 150 different European and extra-European Universities from many different Countries. A yearly Workshop, held in Italy in the same period of the School, was also organized dealing with specific landslide risk issues and attended by researchers,

professionals and authorities in charge of the territory governance in Italy and Europe.

ALERT Network and LARAM experienced several fruitful interactions: i) students from ALERT Network yearly attended the LARAM School, ii) ALERT experts joined the LARAM Scientific Committee from its beginning, also participating as lecturers, iii) geomechanics-related topics were regularly taught at LARAM School and iv) LARAM acted as a gathering centre for ALERT researchers to participate in the SAFELAND project "Living with landslide risk in Europe", a European funded 3-year long cooperative project among researchers from 25 different Institutions.

The success of LARAM has brought interest from Countries like China and a first LARAM-Asia Course School has been organized in 2011. Consequently, the scale of LARAM School has been enlarging its work.

After six years of successful collaborations, a new ALERT-LARAM joint venture has been proposed. It consists in joining the scientific resources of both ALERT and LARAM to launch a cooperative research Programme on the landslides geomechanics. This new Programme would include: i) those members of ALERT interested on the topic, ii) members of the LARAM Scientific Committee interested in the project, iii) other members who would be invited in the future.

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