



ALERT Geomaterials

NEWSLETTER – January 2013
N°11 - year 7

<http://alertgeomaterials.eu>

Summary

Editorial

page 1

New ALERT members

page 1

ALERT Workshop 2012

page 2

ALERT Special Lecture 2012

page 2

ALERT Workshop & School 2013

page 2

ALERT Doctoral School 2012

page 3

ALERT PhD Prize 2013

page 4

Zienkiewicz Course 2012 & 2013

page 4

EDITORIAL

Dear ALERT member,

I do not know if you have missed the summer issue of the ALERT Newsletter. I hope you have not. Using the blog system of the new ALERT webpage, we proceed all information to you without any delays. At the webpage, you can find also all contributions from the past which makes this Newsletter a little bit superfluous. Still, the ALERT Bureau would like to publish at least one Newsletter per year which summarizes the previous twelve months and can serve as a fast collection of the records.

The new ALERT webpage started in the end of November 2011 and has been called 46 thousand times until the mid of January 2013. Obviously, the interest of the geomechanical community in the ALERT activities is large. This is not surprising - the website offers not only the news but also some high quality publications. Besides the selected workshop and school presentations one can find there the Proceedings of the ALERT Doctoral school 2012 for free download.

The last ALERT meeting in Aussois continued in the tradition but also revealed two critical issues:

1. The number of rooms for the accommodation in the Centre Paul Langevin is limited and therefore some participants received their rooms in the hotel in the village. At the same time, some rooms in the Centre remained vacant because their reservation was not

canceled by those participants who did not arrive. We would like to avoid this situation in the future and to restrict the registration procedure. The details will be announced later.

2. The time schedule of the meeting was overloaded which made many spontaneous and fruitful discussions, so typical for the Aussois meeting, difficult to arrange. Therefore, the next meeting will introduce a new form of an exploratory workshop (on Tuesday) which will last only half a day. In this way we obtain some time not filled in advance with scheduled activities.

In the name of the ALERT Bureau I would like to wish you a prosperous year 2013 and hope to see you at the next ALERT meeting in Aussois!

Yours sincerely

Ivo Herle
Director of ALERT Geomaterials

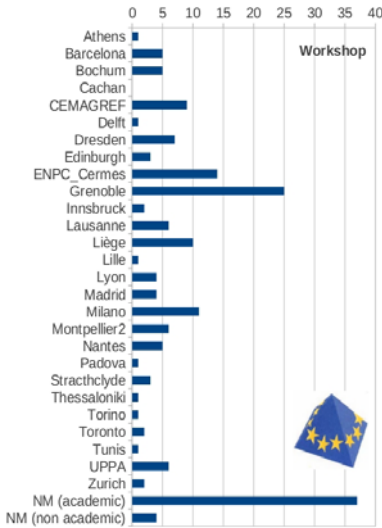
NEW ALERT MEMBERS

During the last meeting of the Board of Directors in Aussois on the October 2nd 2012, the Charles University in Prague represented by David Mašín, the University of Southampton represented by Antonis Zervos and the Technical University of Bari represented by Federica Cotecchia were accepted as new members of the ALERT Geomaterials association.



UNIVERSITY OF
Southampton

*The logo of the new members
of ALERT Geomaterials*



Participants of the ALERT Workshop 2012

ALERT Workshop 2012

In 2012 the ALERT Workshop was held on October 1st to 3rd again in Aussois, France.

On the left hand side, the regional distribution of the participants from the institutional members of ALERT Geomaterials is shown. In total, 177 participants registered for the ALERT workshop 2012, which is the highest number of participants since the initiation of the ALERT Workshop.

The number of the selected contributions was 13 for session 1 and 17 for the sessions 2 and 3, respectively. The number of the submitted contributions was substantially higher.

The three topics of the ALERT Workshop 2012 are listed below:

1. Micromechanics and critical steady states in geomaterials

coord. Y. Dafalias & B. Chareyre

2. Geomechanics of underground structures

coord. D. Mašin & C. Tamagnini

3. Geomechanics for Energy Production

coord. L. Laloui & H. Lewis

We thank all active participants and coordinators for their effort.



The ALERT Special Lecturer 2012 Prof. J. Carlos Santamarina

Special Lecture 2012: Prof. Carlos Santamarina

For the ALERT Special lecture 2012 it was a pleasure to welcome Prof. J. Carlos Santamarina from the Georgia Institute of Technology, Atlanta, USA.

The title of the lecture was

Geophysical Characterization

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

The Invited lecture during the ALERT Workshop 2013 will be presented by Prof. Rolando Borja, from Stanford University, USA. He will talk about

Triggering a shear band in heterogeneous porous media.

On the ALERT website a summary of his presentation will be published soon.



ALERT Workshop & School 2013

The ALERT Workshop in 2013 will be organized from Monday September 30th to Wednesday October 2nd. The workshop will take part in Aussois, France.

The focus of the three workshop sessions and the responsible organizers are listed below:

1. Geomechanics of slopes

coord. C. di Prisco & L. Cascini
cdiprisc@stru.polimi.it
l.cascini@unisa.it

2. Contact problems in geomechanics

coord. E. Papamichos & J. Sulem
epapamic@civil.auth.gr
jean.sulem@enpc.fr

3. Degradation in geomaterials

coord. A. Daouadji & C. Dano & E. Bauer
ali.daouadji@univ-metz.fr
Christophe.Dano@ec-nantes.fr
erich.bauer@tugraz.at

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 2013.

Subsequent to the workshop the ALERT Doctoral School will be hosted from Thursday October 3rd to Saturday October 5th also in Aussois. The school will be dedicated to

Soil-structure interaction

and will be organized by Panagiotis Kotronis (EC Nantes), Claudio Tamagnini (University of Perugia) and Stephane Grange (UJF Grenoble).

Online registration for the Workshop and the School will open in May 2013 on the ALERT website and will be announced in advance again.



ALERT Doctoral School 2012

The ALERT Doctoral School 2012 was dedicated to

Advanced experimental techniques in geomechanics

The school was organised by Cino Viggiani (*Laboratoire 3SR/ Université Joseph Fourier Grenoble*), Steve Hall (*Lund University*) and Enrique Romero (*UPC Barcelona*).

As in the previous years the school lasted three days, from Thursday October 4th to Saturday October 6th 2013. The Doctoral School was attended by 115 PhD students, which is after 2007 the year with the highest number of participants since the existence of the school (see the distribution of the participants and their origin on the left hand side).

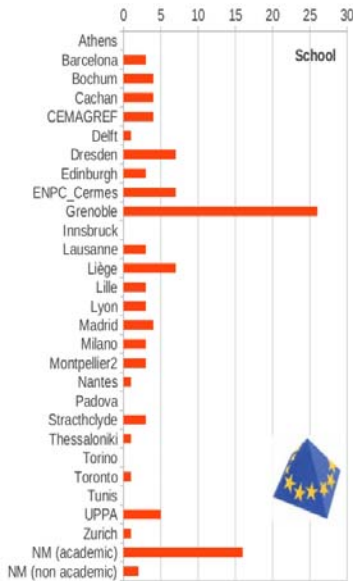
One of the main drawbacks of traditional experimental approaches is that they provide information related to macro-scale, 'average' responses and no details on internal structural evolution and deformation mechanisms, e.g. shear band development. The school started with an introduction in full-field

measurements in experimental geomechanics including optical and x-ray methods as well as ultrasonic tomography. This was followed by a closer look at the Digital Image Correlation (DIC), which has become a key tool in experimental mechanics in the recent years. Further lectures concentrated on laboratory tests investigating processes involving different thermo-chemo-hydro-mechanical couplings. Concluding, an insight into geophysical measurements to explore elastic, electromagnetic and thermal soil characteristics was given.

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

Lecturers:

- C. Viggiani (*Laboratoire 3SR*)
- S. Hall (*Lund University*)
- E. Romero (*UPC Barcelona*)
- C. Santamarina (*Georgia Institute of Technology, Atlanta*)



Participants of the ALERT Doctoral School 2012

ALERT Photo Competition

During the ALERT Doctoral School 2012 a photo competition was initiated by Prof. Carlos Santamarina. Six themes regarding a physical concept (Flow, Geo, Food, Fracture, Nature and Light) were given. The students were asked to take a picture during daily life reflecting best one of the categories. The most inventive photo was awarded.

Winners in each category:

- Flow



- Geo



- Food



- Fracture



- Light



- Nature





ALERT PhD Prize 2012



Dr. Thomas Blanc
(Universidad Politécnica de Madrid)

The jury of the ALERT PhD Prize 2012 was composed of Manuel PASTOR (*Universidad Politécnica de Madrid*), Carlos SANTAMARINA (*Georgia Institute of Technology, Atlanta*), Claudio di PRISCO (*Politecnico di Milano*) and Euripides PAPAMICHOS (*Aristotle University of Thessaloniki*). Only PhD students from one of the institutions belonging to ALERT are eligible candidates for the prize which was dated to 1000 €.

The jury had to pick three PhD students out of 13 applicants for a closer selection. For the prize were considered the theses of Blanc Thomas (*Universidad Politécnica de Madrid*), Monfared Mohammad (*École des Pontes – Paris Tech*) and Nadia Mokni (*Universidad Politécnica de Madrid*).



Dr. Mohammad Monfared
(École des Pontes – Paris Tech)

This year the jury awarded two PhD students for their excellent work. Selected were the theses of Dr. Thomas Blanc from Universidad Politécnica de Madrid entitled *The Runge-Kutta Taylor-SPH, A new improved model for soil dynamics problems* and of Dr. Mohammad Monfared from École des Pontes – Paris Tech entitled *Temperature-damage-permeability coupling in clayey soils and rocks*.

The thesis by Dr. Blanc focused on the numerical modeling of dynamic behaviour of dry soils in the framework of small and large deformation theory and of dynamic behaviour of saturated soils in the framework of small deformation theory. A numerical code has been developed by Dr. Blanc to analyse such a behavior. The main concern of the thesis was a proposition of a method to stabilize SPH algorithms.

The thesis by Dr. Monfared studies experimentally the coupling effect between temperature, damage and permeability on Boom Clay and Opalinus Clay due to excavations of underground galleries for the storage of radioactive waste. A new hollow cylinder triaxial cell with short drainage path was designed by Dr. Monfared to study the thermo-hydrromechanical behavior of very low permeable materials. Different undrained and drained heating experiments were conducted to investigate the material responses.

The video file of the presentations as well as an abstract of the PhD theses of Dr. Blanc and Dr. Monfared are available at the ALERT website.

ALERT Olek Zienkiewicz Course

The 5th edition of the *Olek Zienkiewicz Course* will be held from Monday September 17 to Friday September 21, 2013 in Innsbruck, Austria. It will be dedicated to

Geology and Mechanics

Further details will be provided at the ALERT website.

Furthermore, computer exercises, using the software *Octave*, were provided to gain a better insight into programming and working with constitutive models.

The school was attended by 42 participants from 15 different countries.



The ALERT Summer school 2012 was held in September in Dresden, Germany. The school focused on **Constitutive Modelling in Soils**.

The content of the school was prepared and presented by four lecturers:

- Claudio Tamagnini (Perugia)
- David Muir Wood (Dundee)
- David Mašín (Prague)
- Ivo Herle (Dresden).



Organizing Institutions

To subscribe to our mailing list, please go to:

<http://alertgeomaterials.eu>

Newsletter production:
Kornelia Nitzsche