Next event

Title: **Advances in characterization of water retention behaviour of highly expansive clays**
Author: **Ali Seiphoori**
Date: **11.12. 2012**
Time: **17h00 - 18h00**
Location: **GC A1 416, EPFL**

Summary

Granular MX-80 bentonite (highly swelling clay mineral) is going to be used as buffer material in engineering barrier systems for disposal of high level radioactive wastes. To certify the efficiency of waste isolation system, it is essential to characterize the thermo-hydro-mechanical response of this material. In this sense, the new advances in characterization and modeling of soil water retention behaviour of MX-80 bentonite are presented in this seminar. In order to precisely obtain the water retention response of highly expansive clays in terms of void ratio, temperature and hysteresis of the retention curve a new experimental technique is presented. A micro-structural approach is pointed out in order to specify different roles of suction terms for highly swelling material. Finally, modeling of soil water retention behaviour, relating the degree of saturation to the matric suction, is proposed for MX-80 bentonite used in this context.

Speaker

Ali Seiphoori is a PhD student at the Laboratory for Soil Mechanics at the Ecole Polytechnique Fédérale de Lausanne. He obtained his Master degrees in Civil Engineering from Sharif University of Technology (Iran) and the State University at Buffalo (US) respectively in 2008 and 2010. His PhD research is focused on the experimental investigation and modeling of the thermo-hydro-mechanical behaviour of MX-80 bentonite used as buffer material for disposal of nuclear wastes.

List of recent publications

An advanced calibration process for a thermo-hydro-mechanical triaxial system, A. Seiphoori, A. Ferrari and L. Laloui, International Symposium on Deformation Characteristics of Geomaterials, Pp. 396-403. September 1-3, 2011, Seoul, Korea

An innovative triaxial cell for thermo-hydo-mechanical investigation in unsaturated geomechanics, A. Seiphoori, A. Ferrari, L. Laloui, AMTSS workshop, Septemebr 3-5, 2012, Lausanne, Switzerland.

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The seminar room GC A1 416 is located at the following link: http://plan.epfl.ch/?lang=en&room=gca1416
The seminar will be followed by refreshments. Thank you for registering by e-mail to lms@epfl.ch before Dec 1st, 2012.
It is helpful for the organisers to know the number of attendees.

Layout: Chao LI

LMS Seminar Series 2012

The laboratory of soil mechanics (LMS) is pleased to invite you to the seminar series introducing state of the art and practise in geotechnical engineering. Topics covers the environmental impact of natural hazards as well as new technologies such as nuclear waste disposal, energy structures and activites related to CO2 storage.

- Prof. Lyesse Laloui

Thermo-hydro-mechanical behaviour of bentonite
06.12.2012
Ali Seiphoori, P.E., Ph.D student
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Thermo-hydro-mechanical testing of shales
10.01.2013
Alessio Ferrari, P.E., Ph.D, Researcher
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Heat exchanger anchors for thermo-active tunnels
07.02.2013
Thomas Mimouni, P.E., Ph.D student
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Gas flow propagation and related chemo-hydro-mechanical response of sand-bentonite mixture - 07.03.2013
Donatella Manca, P.E., Ph.D student
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Multiphase hydromechanical processes induced by CO2 injection into deep saline aquifers - 10.04.2013
Chao Li, P.E., Ph.D student
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Analysis of opalinus clay behaviour in a thermo-hydro-mechanical Framework - 10.05.2013
Valentina Favero, P.E., Ph.D Student
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Experimental investigation on the mechanical behaviour of reservoir materials as a result of CO2 injection and storage - 10.06.2013
Samuel González Maceda, P.E., Ph.D Student
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Thermo-hydro-mechanical modeling for opalinus clay
12.07.2013
Francesco Parisio, P.E., Ph.D Student
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Hydromechanical coupling in landslides induced by rainfall
13.09.2013
Abudushalamu Aili, P.E., Ph.D student
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Geotechnical design of energy pile foundations
17.10.2013
Alice Di Donna, P.E., Ph.D student
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