

Curriculum Vitae (October 2012)

Mohammad Monfared

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Research Interests

Advanced experimental testing:

- Experimental investigation on the effect of damage and temperature on hydro-mechanical properties of clayey materials

Numerical modeling:

- Assessment of soil desiccation cracking
- Back-analysis of the response of saturated and unsaturated soils under hydro-mechanical loading

Constitutive modeling:

- Swelling behavior of clayey materials
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Education

2007-2011

Ph.D., Geotechnical Engineering

Paris-Est University (UPE), France

Ph.D. Advisor : Dr. J. Sulem

- Thesis entitled: Effect of temperature on damage and permeability of clayey soils and rocks

2006-2007

Master of Science, Soil and Rock Mechanics and Environmental Geomechanics,

Ecole des Ponts ParisTech, France

M.Sc. Advisor: Dr. J. Sulem

- Thesis entitled: Thermo-hydro-mechanical behavior of clayey soils and rocks

2002-2006

Bachelor of Science, Civil Engineering

- University of Tehran, Iran
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Awards & Honors

ALERT Geomaterials Ph.D. Prize

Award of the best European PhD thesis in Geomechanics in 2011, granted by the Alliance of Laboratories in Europe for Research and Technologies (2012)

Mirko Roš Student Prize granted by EMPA (Swiss Federal Laboratories for Materials Testing and Research)

Award of the excellent design and fabrication of a lightweight concrete structure, reinforced with FRP (Fiber reinforced polymer) bars, showing high load bearing capacity (2006)

Appointments

2011-present

Ecole Polytechnique Fédérale de Lausanne, Switzerland
Postdoctoral Scholar, Laboratory of Soil Mechanics (LMS)

2007-2011

Ecole des Ponts ParisTech
Ph.D. candidate, Navier/CERMES

Teaching Experience

2011-present

Teaching assistant, Soil mechanics and underground seepage
Bachelor course, Ecole Polytechnique Fédérale de Lausanne

2009-2010

Supervisor-assistant, in-situ tests in soil mechanics
Bachelor course, Ecole des Ponts ParisTech

2007-2010

Supervisor-assistant, laboratory tests in soil mechanics
Bachelor course, Ecole des Ponts ParisTech

Language Skill

English: Fluent, study and research language

French: Fluent, study and research language

Persian: mother tongue

Publications

International Journals

- 1) **M. Monfared**, A.Koliji, L.Laloui, (2012). A coupled hydro-mechanical model to predict soil desiccation crack initiation. *In preparation*.
- 2) M. Mohajerani, P. Delage, J. Sulem, **M. Monfared**, A.M. Tang, B. Gatmiri, (2012). The thermal volume changes of the Callovo-Oxfordian claystone, *submitted to "International Journal of Rock Mechanics and Rock Engineering"*.
- 3) **M. Monfared**, J.Sulem, P. Delage, M. Mohajerani, H. Menaceur (2012). Thermal impact on the permeability of a clay stone, *accepted for publication at "International Journal of Rock Mechanics and Rock Engineering"*.
- 4) M. Mohajerani, P. Delage, J. Sulem, **M. Monfared**, A.M. Tang, B. Gatmiri, (2012). A laboratory investigation of thermally induced pore pressures in the Callovo-Oxfordian Claystone, *International Journal of Rock Mechanics and Mining Sciences*, DOI:10.1016/j.ijrmms.2012.02.012.
- 5) **M. Monfared**, J. Sulem, P. Delage, M. Mohajerani, (2012). On the THM behaviour of a sheared Boom clay sample: application to the behaviour and sealing properties of the EDZ, *International Journal of Engineering Geology*, 124: 47-58.
- 6) **M. Monfared**, P. Delage, J. Sulem, M. Mohajerani, A.M. Tang, E. De Laure, (2011). A new hollow cylinder triaxial cell to study the behavior of geo-materials with low permeability, *International Journal of Rock Mechanics and Mining Sciences* 48(4): 637-649.
- 7) **M. Monfared**, J. Sulem, P. Delage, M. Mohajerani, (2011). A laboratory investigation on thermal properties of the Opalinus claystone, *International Journal of Rock Mechanics and Rock Engineering*, 44(6): 735-747.
- 8) M. Mohajerani, P. Delage, **M. Monfared**, A.M. Tang, J. Sulem, B. Gatmiri, (2011). Oedometric compression and swelling behaviour of the Callovo-Oxfordian argillite, *International Journal of Rock Mechanics and Mining Sciences* 48(4): 606-615.

Conference Proceedings with Reviewing Committee

- 1) L.B. Hu, **M. Monfared**, B. Mielniczuk, L. Laloui, T. Hueckel, M. S. El Youssoufi. Multi-scale approach to cracking criteria for drying silty soils. Accepted for Geo-Congress, 3-6 March 2013, USA.
- 2) M. Mohajerani, P. Delage, **M. Monfared**, J. Sulem, A.M. Tang, B. Gatmiri. Effet de la contrainte et de la température sur la perméabilité de l'argilite du Callovo-Oxfordien, Transfert 2012, 20-22 March 2012, Lille, France.
- 3) **M. Monfared**, J. Sulem, M. Mohajerani, P. Delage. Effet d'un plan de cisaillement sur la perméabilité d'un échantillon d'argile de Boom. Transfert 2012, 20-22 March 2012, Lille, France.
- 4) **M. Monfared**, J. Sulem, M. Mohajerani, P. Delage, A.M. Tang, E. De Laure. Permeability measurement of low permeability clay by means of a transient test, Impact of Thermo-Hydro-Mechanical-Chemical (THMC) processes on the safety of underground radioactive waste repositories, 29 September-1 October 2009, Luxemburg.
- 5) M. Mohajerani, P. Delage, **M. Monfared**, A.M. Tang, J. Sulem, E. De Laure, C. Schroeder. Some results on the thermal pressurization coefficient of the Callovo-oxfordian clay. Impact of Thermo-Hydro-Mechanical-Chemical (THMC) processes on the safety of underground radioactive waste repositories. 29 September -1 October 2009, Luxemburg.
- 6) **M. Monfared**, J. Sulem, M. Mohajerani, P. Delage, A.M. Tang, E. De Laure, Détermination de la perméabilité de l'argile de Boom et condition de réalisation des essais drainés. 20ème congrès français de mécanique, 24-28 August 2009, Marseille, France.