



International Workshop on Bifurcations and Degradations in Geomaterials: Applications to Soil-Machine Interaction and Petroleum Geomechanics

May 28-31, 2008, Lake Louise, Alberta, Canada

June 18, 2007

Dear Colleague,

In view of your outstanding contributions in geomechanics and related fields, you are invited to participate in the 8th International Workshop on Bifurcations and Degradations in Geomechanics (IWBDG 2008) to be held at Lake Louise, Canada, May 28-31, 2008. Please visit the website at <http://www.schulich.ucalgary.ca/civil/IWBDG2008> for pertinent information that will be augmented and updated as the workshop program takes shape.

The novelty of IWBDG 2008 is the addition of new and challenging application areas such as Terramechanics and Petroleum Geomechanics to the central themes of bifurcations and degradations in geomaterials. As such, the workshop will be partially funded by Caterpillar Inc., our major industrial co-sponsor which has an interest in understanding and obtaining the ability to predict soil-machine interactions (SMI). Accordingly, we will plan a post-workshop one-day meeting on June 2, 2008, at Caterpillar Inc. headquarters in Peoria, Illinois, USA, where a selected number of workshop participants will be awarded travel and lodging grants in order to present their work on SMI to Caterpillar engineers. Please send your SMI abstract to Mustafa Alsaleh <ALSALEH_MUSTAFA_I@CAT.COM> if you would like to be considered for this award competition.

We anticipate publishing abstracts before the workshop, so the deadline for submission of abstracts will be on **November 15, 2007**. In conformity with tradition, we will publish a special volume or proceedings, for those who wish to submit a paper, after the workshop. We may also contemplate selecting a number of papers and group them into subtopics that will appear in special issues of a technical journal.

In the main title of IWBDG 2008, the word “Instabilities” has been merged with “Bifurcations”, shifting the focus to “Degradations” in geomaterials, which provides the natural transition to soil machine interactions and petroleum geomechanics applications. We thus propose the following list of topics (although non-exhaustive) around which we will develop the workshop program into various sessions.

1. Instability and localization analyses of geomaterials using constitutive models.
2. Degradation due to physico-chemical interaction and coupled processes. Micro-nano mechanics of clay behavior.
3. Micromechanical origins of instability and localization using discrete or micromechanical-continuum models.
4. Anisotropy and structured media. Grain crushing.
5. Numerical issues in capturing localization: DEM, FEM, other derivatives of FEM.
6. Physical models & lab experiments: microstructural characterization, imaging techniques.
7. Theoretical and analytical models.
8. Applications: (a) petroleum geomechanics – compaction bands, shear bands, hydrodynamic instabilities (fluidization), material degradation due to erosion (sand production), thermal processes. Multi-physics problems. (b) soil – machine interaction; discrete element modeling, finite element analysis, mesh-free method, analytical – based models. Oilsands surface mining.

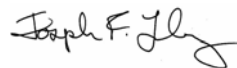
Although the detailed format of each session has not been decided yet, we will allocate plenty of time for discussion, which we value as an important component of the workshop. The preliminary program at a glance is available at the workshop's website for your perusal.

The workshop will be held at the Fairmont Chateau Lake Louise situated in the heart of the Canadian Rockies. Lake Louise is about 180 km from the Calgary International Airport and is easily accessible by bus shuttle or car. Lake Louise offers an ideal setting with the ability to draw people away from the city for discussing the science and engineering in a relaxed atmosphere in the natural beauty of the Canadian Rockies.

The tradition of the workshop has been to encourage participation through a nominal registration fee, so industrial and government sponsorships are critical. We are actively seeking additional co-sponsorship from various sources in Canada, US and elsewhere. We will inform you of the participant fee, which will help to cover meals and lodging, by the end of the year.

Please notify Richard Wan <wan@ucalgary.ca> *as soon as possible and not later than **August 15, 2007*** of your desire to participate and the title of your presentation. Based on the response, the Scientific Committee will develop the program. The presentations will be dependent upon the total number of abstracts. We look forward to hearing from you.

Best regards,



Richard Wan, Mustafa Alsaleh and Joe Labuz
IWBDG2008 Co-chairmen