COMPUTATIONAL GEOMECHANICS

DORIVAL M. PEDROSO[*], JOSE E. ANDRADE[#], PATRICIA FARIA[+]

[*] School of Civil Engineering, The University of Queensland, Brisbane, Australia
d.pedroso@uq.edu.au

[#] Civil and Mechanical Engineering, Caltech Institute of Technology, Pasadena, USA
jandrade@caltech.edu

[+] Department of Civil Engineering, Federal University of Santa Catarina, Florianopolis, Brazil
patricia.faria@ufsc.br

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ABSTRACT

This mini-symposium aims to provide a forum for discussions on recent advances in Computational Geomechanics. Both continuum and discrete methods to model porous and granular media are the main part of it. Nonetheless, experimental studies and physical modelling are also welcome; especially works that can provide verification data for material models and numerical simulations.

One particular area of interest of this symposium is the development of methods to represent the geometry of granular assemblies. Another area of interest is the modelling aspects required to upscale the microscopic aspects of porous media. Methods to include the coupling between fluids and solids are also of great interest to this symposium.

With regards to numerical simulations, advances on modelling flow within porous media, such as seepage and interactions between liquids and gases, are given some stronger focus; however observations and modelling of general coupled phenomena are also included. The modelling of hydraulic fracturing is of particular interest to this mini-symposium.

In summary, topics for discussion are (not limited to):
- Continuum methods for solving the equations of porous media
- Discrete methods for granular materials
- Computational geometry applied to granular materials
- Multi-scale modelling of porous and granular media
- New approaches for experimental and physical investigations of porous media, with intentions of calibrating models and simulations
- Applications:
    - Prediction of instabilities in porous media, such as quantification of bearing capacity and slope stability assessment
    - Large deformations in porous media (landslides)
    - Modelling of hydraulic fracturing