

NUMERICAL METHODS IN GEOMECHANICS

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ABSTRACT

Geomaterials commonly consist of soil particles, pore water and pore air, and occasionally include additional other materials, such as oils and chemical agents; therefore, it is indispensable to understand the coupled behavior among these intricate phases with different physical properties as represented by thermo-hydro-mechanical-chemical coupled simulations. TC103 (Numerical Methods in Geomechanics), one of the technical committees of International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE), organizes this session to share recent developments of advanced numerical methods to solve *coupled problems* relevant to soil mechanics and geotechnical engineering. This session will deal with the following technical issues:

- a) Constitutive modeling, calibrations of complex soil behavior and engineering problems such as instability, strain localization and progressive failure of soil or rock structures;
- b) Advanced procedures for model validation and verification;
- c) The development of accurate, robust and efficient numerical methods for applications of varying needs;
- d) Modeling of coupled phenomena that are useful across geotechnical engineering, rock engineering, petroleum engineering and geothermal engineering;
- e) Assisting and promotion of exchange of knowledge and expertise between the academia and practicing engineers.