

Some main challenges of the 21st century are linked to interactions between society and the environment and, in particular, the geosphere. Demographic pressures, ageing of existing infrastructures and the limitation of natural resources are the principal limiting factors of the development, and hence the continuing impetus for acceptable engineering solutions for a sustainable development. The topic of this volume is placed in that context and is devoted to Coupled multiphysics processes in geomechanics with a special concern for Environmental Geomechanics.

The rapidly expanding field of coupled multiphysics processes in geomechanics deals with the behaviour of underground structures, of surface structures, of natural sites as well as the use of the geosphere. Very often, the problems in this area involve the study of heat, mass and contaminant transport in a number of engineering situations, as well as the effects of these phenomena on the thermo-hydro-mechanical behaviour of geomaterials. Generally, the various phenomena interact with each other increasing the complexity of the engineering problems, the evolution of which must be examined over significant periods of time, especially when issues of durability are concerned.

This volume may provide to the postgraduate student, researcher or practitioner, a valuable introduction and a sound basis for further progress in the challenging field of coupled multiphysics processes in geomechanics.



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