Computational Methods for Strength Analysis in Geomechanics Under Step-by-Step Loading

Track Number 1600

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Key words: Geomechanics, Engineering Geophysics, Computational Methods, Strength Analysis, Step-by-step Loading, Superimposed Finite Strains.

Abstract

The minisymposium will be devoted to development of mathematical models, numerical methods, algorithms, and software for engineering strength analysis of rocks and drilling equipment under step-by-step loading.

Topics to be addressed include:

- numerical modeling of thermodynamical processes that take place during oil and gas borehole drilling, building and use of underground structures;
- effective mechanical and thermophysical material properties of rocks with account for presence and origination of cracks;
- stability of boreholes and mines;
- models of damage accumulation, crack initiation and growth in rocks;
- geoacoustical methods for mineral exploration; verification and validation of software for the modeling of rock deformation processes, analytical solutions within the scope of solid body mechanics;
- industrial monitoring of boreholes, mines, and other underground structures;
- numerical methods and parallel computations for nonlinear problems of geomechanics.

REFERENCES


