

Parallel 3-d simulations for porous media models in soil mechanics

C. Wieners

with W. Ehlers (Stuttgart), S. Diebels (Saarbrücken), M. Ammann (Stuttgart)

Abstract:

We introduce a general parallel model for solving coupled nonlinear and time-dependent problems in soil mechanics. In particular, we discuss the application to a triphasic porous media model, where we compute the deformation of unsaturated soil together with the pore-fluid flow of water and air in the soil, and where the material behaviour of the skeleton is assumed to be elasto-viscoplastic. In two large-scale numerical experiments we finally present an extended evaluation of our parallel model for demanding 3-d configurations.

References:

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