

COLLABORATIVE RESEARCH CENTER 837

INTERACTION MODELING IN MECHANIZED TUNNELING

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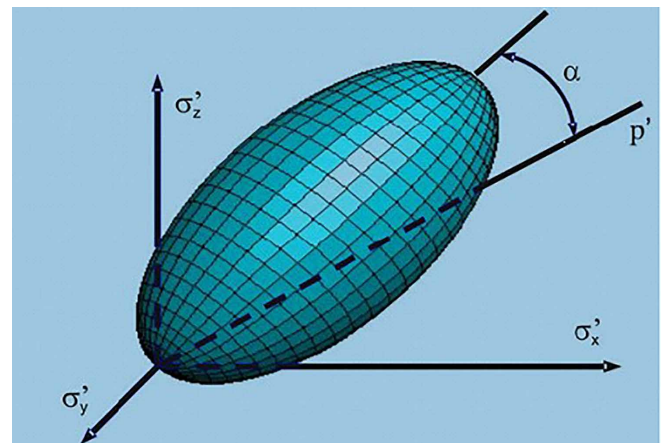
Modelling of Anisotropy, Creep and Destructuration in Clay

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Natural soft soils exhibit bonding between particles. During straining, some of these bonds can be progressively destroyed by a process called 'destructuration'. In recent years, a number of constitutive models incorporating bonding and destructuration have been proposed. The various models differ in the precise form of the destructuration law and in the form of the underlying reference model used for the 'unbounded' material. A model for soft clay, including rate dependency by utilizing the time resistance concept, is presented. The model is primarily meant for soft clays and the calibration of the model is performed with focus on the 'wet' side. However, the conceptual basis can be applied to higher degree of over-consolidation which will produce similar results as high strain rates will for 'normal-consolidated' clay. More details on the model can be found in e.g. Grimstad and Degago (2010).



Recently NTNU has been administrating an EU project called 'Creep of Geomaterials' (www.ntnu.edu/creep). The aim of the project is partly to get to a consensus on creep modelling in the engineering practice. The reasonable modelling of creep deformation in the soft clays in e.g. Norway and Sweden for engineering practice is important to ensure a good design that reduces e.g. maintenance costs or ensures the integrity of the construction. The presentation will also touch upon the work that has been done in the 'CREEP' project.

Guests are welcome!