

Thermomechanical Constitutive Model for Saturated Clays

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چکیده :

A thermomechanical constitutive model for predicting the isothermal behavior of saturated clays in different temperatures is presented in this paper. This model is developed based on the general framework of critical state soil mechanics and modified Cam-clay formulation. Most of the characteristics of saturated clays in temperatures lower than water's boiling temperature have been taken into account. An attempt has been made to use the lowest possible number of extra parameters compared with the original Cam-clay model and to ensure that these new parameters have clear physical interpretations. An important feature in the model is thermal dependency of the critical state line in the deviatoric stress plane. The predictions have been compared with two sets of laboratory data available in the literature

کلید واژه : Constitutive model; Thermal behavior; Critical state line; Volume change; Saturated clays

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