Stress-strain Modelling Of Soils

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Experimental and Numerical Research of Stress-Strain State of Soils. ABSTRACT. Testing of unreinforced and reinforced residual soil were conducted using a computer controlled shear box apparatus with stress levels ranging from 0 to 50 kPa. The results showed that the stress-strain behavior of soils under undrained conditions is significantly affected by the presence of fines. A hyperbolic model was proposed to describe the stress-strain behavior of soils. In general, the model agrees well with the experimental data. The model is applicable to a wide range of soil types, including clays, sands, and silts. The model parameters were determined using a least-squares regression method. The proposed model provides a useful tool for predicting the stress-strain behavior of soils under undrained conditions. Therefore, the model can be used for the design and analysis of geotechnical structures and foundations. The results of this study can be useful for the development of new design codes and guidelines for the analysis and design of geotechnical structures.
Study on Modelling the Plane Strain Behaviour of Sand and its development of a constitutive model for predicting the generalized small-strain behaviour of soils. The model incorporates non-linear stress-strain behaviour.