

Triaxial testing of a Cemented Agricultural Soil under Varying Soil Water Levels

Abstract:

The soil-water characteristic curve can be used to estimate various parameters used to describe unsaturated soil behaviour. A general equation for the soil-water characteristic curve is proposed. A nonlinear, least-squares computer program is used to determine the best-fit parameters for experimental data presented in the literature. The equation is based on the assumption that the shape of the soil-water characteristic curve is dependent upon the pore-size distribution of the soil (i.e., the desaturation is a function of the pore-size distribution). The equation has the form of an integrated frequency distribution curve. The equation provides a good fit for sand, silt, and clay soils over the entire suction range from 0 to 106 kPa. Key words : soil-water characteristic curve, pore-size distribution, nonlinear curve fitting, soil suction, water content.