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aUncertainties in the Estimation of the Unsaturated Shear Strength from Soil-Water Characteristic Curve

The research focused on the estimation of the unsaturated shear strength and the uncertainties associated with the prediction equation. Based on the typical desaturation behaviour of a soil, the unsaturated shear strength was reinterpreted and an equation to estimate the unsaturated shear strength was proposed. Uncertainties in the estimation of the unsaturated shear strength were assessed and quantified.

The proposed equation indicates an improved predictive capability compared to existing prediction equations for the unsaturated shear strength. Uncertainty analyses indicate that the variability in the estimated shear strength at the cohesion intercept is in the same order of magnitude as the reported variability from direct measurements.

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