Analysis of CPTU data for the geotechnical characterization of intermediate sediments - DTU Orbit (21/10/2019)

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The intermediate soil (e.g. silt, sandy silt, clayey silt) response at the standard cone penetration (CPT) velocity of 20 mm/s is generally partially drained, falling between that of sand and clay. As a result, a proper interpretation of CPT (or CPTU) in such mixed soils is not always straightforward. In order to properly analyse the in situ soil response and avoid incorrect estimates of soil parameters, the preliminary assessment of drainage conditions is essential. In this paper, changes in normalized CPTU measurements caused by changes in cone velocity are analysed. Penetration rate effects are assessed by means of No. 8 piezocone tests, with penetration rates ranging from about 0.9 to 61.7 mm/s. Tests were performed at a site located at the southern margin of the Po river valley (Northern Italy), where the subsoil mainly consists in a clayey silt deposit. Limitations on the applicability of some widely used empirical correlations, proposed for sands, are investigated and some preliminary results are shown.

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