

SAMPLING DISTURBANCE: A PERENNIAL PROBLEM IN GEOTECHNICAL ENGINEERING

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ABSTRACT

Disturbance of soil specimens is a well-known and highly relevant problem in geotechnical engineering [1]. Recommendations on sampling equipment are available in literature and new sampling equipment have been developed to reach a better sampling quality in a wide range of materials, ranging from soft clays to coarse grained soils [2, 3].

Different procedures for assessing the sampling disturbance have been elaborated and are for example based on (i) visual (non-destructive) inspections of soil specimens [4], (ii) changes in void ratio and (iii) shear wave velocity when reconsolidating the soil specimen to the in-situ stress state [5,6] as well as numerical simulations [7]. Different possibilities of assessing sampling disturbance were compared by various researchers in the past; however, different procedures do not always lead to consistent results.

Unfortunately, high-quality specimens are not always available in practical engineering and soil parameters are often derived from partially to fully disturbed or remolded specimens for the geotechnical design. Consequently, a non-sufficient sampling technique or characterization of sampling disturbance can lead to conservative or non-conservative geotechnical design, depending on the skill and experience of the engineer to identify the disturbance and its consequences.

This mini-Symposium is intended to provide an overview of high-quality sampling and testing techniques in natural soils and artificial materials. Works aiming to quantify sampling disturbance by means of new and well-established procedures are welcome, either relying on field studies, laboratory modelling or numerical analysis. We especially welcome submissions focusing on (i) new or further development of high-quality sampling techniques, (ii) new possibilities of quantifying sample disturbance, (iii) the comparison of different procedures for assessing sampling disturbance and (iv) the effects of sample disturbance on geotechnical design.

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