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MONITORING WHILE DRILLING

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ABSTRACT

Measurements While Drilling (MWD) is an in situ test designed to continuously characterize the subsurface while drilling any type of borehole in any ground condition. MWD records all aspects of drilling in real-time (e.g., advance rate, rotation, torque, fluid pressure) and can be easily installed on any drill rig. From this information, it is possible to define stratigraphic features and estimate ground properties. MWD can also be used as a QA/QC tool in bored piles (e.g. drilled shafts) to estimate rock strength and rock quality. Using MWD as an in situ for geotechnical design can potentially reduce the number of required sampling boreholes (e.g. SPT), increase reliability, reduce uncertainty, and is more productive and economical.

The session will include papers on MWD current technology, implementation on various drill rigs, drilling mechanics, empirical use of MWD data for geotechnical characterization, case histories on design based MWD in deep foundations and normalization efforts.

Note that it also matches several of the conference themes:

-100 Technological developments in geotechnical and geophysical field testing instruments and procedures

-200 Interpretation of In situ test results

-300 Data driven site characterization

-500 Direct design of geotechnical structures based on in situ test results

-1200 Uncertainty and variability in site characterization

-1300 Rock and residual soil characterization