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Use of the flat dilatometer (DMT) in landslides

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During the last decades we have assisted at a considerable shift from laboratory testing to in situ testing to the point that, today, in situ testing often represent the major part of a geotechnical investigation. Recommendations given in recent State-of-the-Art papers indicate that direct-push in situ tests, such as the Seismic Cone Penetration Test (SCPT) and the Seismic Dilatometer Test (SDMT), are fast and very convenient tests for routine site investigations. The aim of this paper is to describe the use of the flat dilatometer test (DMT) in landslide diagnosis and monitoring. In particular, a method is presented for detecting slip surfaces in overconsolidated clay slopes based on the inspection of the profiles of the horizontal stress index KD from DMT, as developed by Totani et al. (1997). In addition, the relaxation of the in situ horizontal stress σh, estimated from DMT, helps to locate a landslide. The paper illustrates by using different examples the capability of SDMT to identify the shear zones left remoulded by the occurrence of a landslide.

Keywords: flat dilatometer, horizontal stress index, in situ horizontal stress

References

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