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# Effect of wetting process on a natural weathered clay

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The rainfall-induced slide-flows affect many countries and are widespread all over the world including large portions of the Calabria Region (Southern Italy). An intense rainstorm of September 2000 triggered many shallow instabilities, more than 700 failures were identified. The effects of weathering on soil properties and environmental conditions played an important role in spatial distribution of triggered events. In order to evaluate the effect of this process, a detailed in situ and laboratory investigation program was set up. The paper illustrates the part of research relative to the study of the effect of wetting process on a natural weathered clay involved in the shallow instabilities. The results of the microstructure investigation carried out using the scanning electron microscopy (SEM) are shown. The relationships between the soil-water content and matric suction, obtained using a pressure plate extractor, conventionally referred to as the soil-water characteristic curve (SWCC) are also presented. The SWCC were used to interpret the results of direct shear tests at constant water content, developed using traditional equipment. The obtained results show the shear strength decreases with the fall of matric suction. This aspect could have triggered some slide-flows on the natural clay. The study provides a preliminary approach to the knowledge of the shear strength of unsaturated natural clay when more sophisticated equipment is not available.