

Geotechnical Characterization of Landslide in Dounia Park, Algiers, Algeria

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Abstract : Most landslides in Algiers take place in Piacenzian marls of the Sahel (port in Arabic) and cause severe damage to properties and infrastructures. The aim of this paper is to describe the results of experimental as well as theoretical analysis of landslides. In order to understand the process which caused this slope instabilities, the results of geotechnical investigation carried out by the laboratory of construction (LNHC) laboratory in the area of Dounia park were analyzed, including particle size distribution, Atterberg limits, shear strength, odometer and pressuremeter tests. The study shows that the soils exhibited a high capacity to swelling according to index plasticity and clay content. High limit liquidity (LL) (53.45%) means that the soils are susceptible to landslides. The stability analysis carried out using finite element method, shows that the slope is stable ($F_s > 1$) in dry condition and in static state. Despite this results, the stable site could be described as only conditionally stable because slope failure can occur under combined effect of different factors. In fact the safety factor obtained by applying load when the phreatic surface is at ground, less than 1.5.

Keywords : index properties, landslides, safety factor, slope stability

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