Slide Analysis of Residual Soil By Using Geoelectric Resistivity Method at Ngantang District of Malang

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ABSTRACT

Indonesia's land area is largely the structure of the earth's surface with a high enough elevation differences, such as mountainous or hilly regions. In general, the area covered by residual soil highly vulnerable to landslide. The method used to investigate the landslide, especially to see the bedding under the soil surface and determine the thickness of the layer of potential landslides among other methods of drilling, soil sampling methods, SPT (Standard Penetration Test) methods, sondir (Dutch Cone Penetration Test) test methods and methods of the past few years more frequently used method of geoelectric resistivity.

This study aims to identify slopes stability by using geoelectric resistivity method. Location of the study in Songkorejo, Jombok Village, Ngantang, Malang. The study consists of research conducted in the field during the dry season and the wet season. The results of the slope stability analysis using geoelectric resistivity method will be compared with the analysis of geotechnical stability method is the method of constant slope stability without seepage.

From the analysis in this research noted that the study area had 2 cracks in the track 1, 2 cracks in track 2 and 1 cracks in track 3. Obtained from the safety factor calculation of geophysical methods and geotechnical methods without seepage, slope stability constant for the comparison or difference of less than 10% for the dry season or the initial conditions is 7.74% while the ratio or the difference in the safety factor for the wet season or due to wetting of the smallest 75% was 6.81% and 9.74% at most.

For comparison or difference in analysis safety factor of geophysical method and geotechnical methods with Plaxis obtained more than 10% difference is the smallest difference of 4.69% and 99.22% for the largest dry season or while the initial conditions for the wet season or wetting 75% difference The smallest and the largest 1.16% 91.89%.

For safety factors of geophysical method in accordance with safety factor of geotechnical methods in this study is the analysis of the slope stability safety factor consistently without seepage because the empirical equation proposed based on the results of the geotechnical calculation model of infinite slope with shallow landslide and very local.

Keywords: geoelectric resistivity method, slope stability, safety factor, location: Jombok, Ngantang Malang.