

Thipmanee Chaingtong 2009: Strength of Landslide Behaviors in Phuket Province.
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This research aims to study the engineering behaviors of the landslide in Phuket Province. The soil conditions were investigated and the samples were collected for unsaturated strength determination. Moreover, the “Tensiometer” was installed at several depths on soil slope for the pilot area (Kamala and Patong Districts) to measure the matric suction in the soil. Then, the data was analysed to see infiltration behaviors due to rainfall. Finite Element Method is used to analyse infiltration on soil slope. Then, the degree of saturation relates to soil strength and stability on soil slope due to particular rainfall patterns were calculated. The result shows that the Critical Rainfall Envelope can be used for warning to the people on the area.

The study found that the soil slope has potential of failure at the depth of 0.60 - 1.30 m. This soil layer is known as “B horizon” which is the accumulation of fine particles and high degree of saturation. The soil saturation of 92% which causes the unstable slope of factor safety of 1.00. The suggested Critical Rainfall Envelope showed the relationship between the trigger rainfall on that day and the accumulated rainfall on the previous four days. The critical soil slope is 24.5 degrees. Three warning levels, namely alert, alarm and action levels are proposed. After the analysis from the model, the safety of factors at each warning levels are 1.40, 1.20 and 1.00 respectively are established.

Student's signature

Thesis Advisor's signature