

Seismic Response of Dip-Slope with Various Roughness of Weakness Revealed by Shaking Table Test

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The long-term interaction between the Eurasian Plate and the Philippine sea plate has caused frequent earthquakes and slope disasters in Taiwan. There are approximately 18,500 earthquakes in Taiwan per year which is alleged by Central Weather Bureau. It is obvious that slope disasters seriously threaten the safety of transportation facilities and residents. In the research of seismic-induced landslides, dip slope failure has always been an important issue in Taiwan. This study aims to investigate the seismic response of dip-slope with various joint roughness coefficient (JRC) of weakness and consider the influence of dynamic loading with various combinations of frequency and amplitude of cyclic motions

The preliminary results of this study are as follows: (1) As JRC increases, the critical acceleration that causes the block sliding increases; (2) when the inclination angle of joints increases, the critical acceleration decreases; (3) When the number of model layers increases, the acceleration at the top of the model is amplified.

Keywords: dip-slope, joint roughness coefficient, shaking table test