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A Kinematic Model of the Translational Slide at the Cidu Section 3.1k of Formosan Freeway

Chia-Ming Lo

Chienkuo Technology University, Institute of Technology, Department of Civil Engineering, Changhua City, Taiwan, ROC. (ppb428@yahoo.com.tw)

This paper presents the results of a case study on the translational slide at the Cidu section 3.1k of Formosan freeway, including its kinematic process and the deposition geometry. Before translational slide, there are morphological indications that the potential translation rockslide can be track and find. Numerical modeling of the slides interaction was carried out using a 3D distinct element program. When the friction coefficient of each particle was about 0.03, the predicted maximum velocity was about 23.6m/sec (about 85km/hr) and the debris reached the other side of Formosan freeway. Simulations showed the three cars and Formosan freeway were buried at 2-4sec (the predicted average velocity was about 10.2m/sec) and the translational slide stopped all motions to form the low fragmentation deposit at 7.5sec.

Key Words: translational slide, kinematic process, numerical modeling.