

Dynamic Slope Stability Analysis During Sabah Earthquake

RINI ASNIDA ABDULLAH*, MOHD NUR ASMAWISHAM ALEL, MOHD ZAMRI RAMLI
& LEE SZE SHAN

Faculty of Civil Engineering, Universiti Teknologi Malaysia, 81310 Johor Bahru, Malaysia

*Corresponding author: asnida@utm.my

An earthquake commonly triggers widespread and destructive damages; these can be building collapse, tsunami, liquefaction and landslide. The earthquake that struck west region of Sabah on June 5th, 2015, with a local magnitude of 5.9, has induced severe and extensive land instabilities in areas such as Ranau, Tambunan, Tuaran, Kota Kinabalu, and Kota Belud. Unfortunately, there is a very limited study on the earthquake induced landslide in Malaysia. Therefore, the aim of this study is to understand the mechanism of earthquake induced landslide. The slope instability at Sekolah Menengah

Kebangsaan (SMK) Ranau is modelled using the 2D finite element method in RS² with imposing the seismic load. The earthquake time history from Kota Kinabalu station has been used. The displacement measured from the slope at SMK Ranau is used to verify the model and the effect of the seismic load has been monitored. It is important to understand the mechanism of earthquake induced landslide, in order to prevent the future slope failure and mitigation work that requires when dealing with the earthquake prone zone, in Sabah specifically.