



A study on the creep mechanism of slate slope using model test

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Typhoon Morakot struck southern Taiwan in 2009 and brought the most extreme precipitation ever recorded in this area. The extreme amount of rain triggered lots of enormous landslides in the Lawnon River basin. Therefore, this research aims to explore the mechanism of slate slope failure in the Lawnon River basin.

When the slate slope is influenced by wet deterioration and gravitation for a long time, significant creep deformation will develop between the foliation of slate and folds and faults will form in the rock mass. To simulate this phenomenon by discrete element method in the future, a series of physical model experiments with simplified mechanism were firstly performed in the laboratory. Based on the experimental setup, the influencing factors of the sliding behaviors, including the volume of rock block, topography, slope, foliation orientation were investigated. The result of this research showed that the creep deformation may deform more quickly under the condition of higher degree of slopes and foliations.