



## **Rainfall threshold for the initiation of debris slide in Taiwan**

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In Taiwan, catastrophic landslides such as the typhoon Morakot caused in Hsiaolin village have occurred more frequently in recent years, causing many casualties and economic damage. For the purpose of reducing loss caused by landslides, this study collected 498 landslide cases (414 from field investigations and 84 from the literature) which contain the information including occurrence time, location, rainfall mean intensity (I) and rainfall duration (D). This data is used to establish a rainfall threshold for landslide early warning system. In order to inspect the effect of the geology setting, this study also tries to divide Taiwan into 15 different geological zones. Precipitation data from the 498 landslide cases are plotted relative to geological zone, in the form of Intensity-Duration graphs. Using the frequentist method, which allowed the identification of multiple rainfall thresholds based on the probability of landslide occurrence, the rainfall threshold of each geological zone is determined and discussed.

Keywords: landslide, debris slide, rainfall threshold