



## **Predictive landslide susceptibility analysis along the mountain highway in central Taiwan**

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Climate change caused by global warming affects Taiwan significantly for the past decade. The increasing frequency of extreme rainfall events, in which concentrated and intensive rainfalls generally cause geohazards including landslides and debris flows. The extraordinary Typhoon Morakot hit Southern Taiwan, on August 8, 2009, and induced serious flooding and landslides. Considering the existence of various types of large scale landslides (shallow and deep-seated) and the importance of protection targets (the landslide might affect a residential area, cut a road, isolate a village, etc.), this study aims to analyze the landslide susceptibility along the Nantou County Road # 89 of Taiwan, in the upstream of Wu River.

This study employs rainfall frequency analysis together with the atmospheric general circulation model (AGCM) downscaling estimation to understand the temporal rainfall trends, distributions, and intensities in the Wu River watershed. Based on the data of Li-DAR and the information from boreholes, the temporal behavior and the complex mechanism of large scale landslides were analyzed. To assess the spatial hazard of the landslides, landslide susceptibility analysis was also implemented. The results of this study can be applied for risk prevention and management in the study area.