# On the landslide susceptibility in different scale with consideration of climate change

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Due to the impact of climate change, the increasing frequency of extreme rainfall events, with concentrated and intensive rainfalls, commonly cause landslide hazard in the mountain areas of Taiwan. Although the extraordinary rainfall behavior is critical for the geohazard, it is significantly affected by the topography, the route of typhoon, etc. Therefore, the predicted rainfall could be quite different in different catchment, which also suggests the scale effect on the predicted rainfall.

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 adopted study area in Central Taiwan. To investigate the scale effect, three catchments in Central Taiwan, i.e. Ta-Chia River, Wu River, and Chuoshui River were adopted as the study area. For a better prediction of rainfall, the rainfall behavior was analyzed in different scales. To assess the hazard of the landslides, logistic regression methods and supporting vector machines method were applied, in which the control factors were analyzed and discussed. The results of predictive analysis can be applied for risk prevention and management in the study area.