



## **The risk assessment model for typhoon-triggered debris flow disasters – Taking two counties in Taiwan as examples**

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In order to develop a methodology for interactive risk assessments of physical infrastructure and spatially distributed response systems subject to debris flows, an overall predictive model framework was set up. The proposed predictive model framework was composed of three fields, namely geotechnical engineering, GIS and disaster management, with the integration of slope stability analysis, hazard scenario and microzonation, respectively, into these individual fields. The geological conditions were considered temporary static data, while meteorological conditions were treated as dynamic data with a focus on the hazards resulted from typhoons. In this research, the relevant parameters required for database building were defined, and the procedures for building geological database and meteorological data sets were described. Based on the concepts and database, the Nantou and Hualien counties in Taiwan were taken as areas for the case study in order to illustrate the relevance of proposed methodology.

**Keywords:** debris flow, disaster, hazard, risk assessment, vulnerability analysis, hazard scenario, microzonation, slope stability.