**DEVELOPMENT OF A WARNING ASSESSMENT MODEL FOR RAINFALL-INDUCED LANDSLIDES HAZARD BASED ON VULNERABILITY CURVES**

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**ABSTRACT:** In Taiwan, the hillside is about over 70% of total area. These areas also have steep topography and geological vulnerability. When an event of torrential rain comes during a typhoon, the landslide disasters usually occur at these areas due to the long duration and high intensity of rainfall. Therefore, a design which considers the potential landslide has become an important issue in Taiwan. In this study, a temporal characteristic of Landslide Vulnerability Curve (LVC) was developed, based on the geomorphological and vegetation condition factors using landslides at the Chen-Yu-Lan Watershed in Taiwan, during Typhoon Sinlaku (Sep. 2008) and Typhoon Morakot (Aug. 2009). This study addressed an effective landslide hazard assessment process, linking together the post-landslide damage and post-rainfall data for LVC model. The Kriging method was used to interpolate the rainfall indicates (R0, R, I) for numerical analysis. Remote sensing data from SPOT images were applied to analyze the landslide ratio and vegetation conditions. The 5-M DEM (digital elevation model) was used for slope variation and slope unit analysis in the watershed, and the Grid-based clustering maximum likelihood estimate (GC-MLE) was conducted to determine the mean and standard deviation parameters of the proposed empirical LVC model. The model can express the probability of exceeding a damage state for a certain classification (or conditions) of landslides by considering a specific hazard index for a given event. Finally, this result can be used to assess the loss and warning from landslides, and, in the future, to manage the landslide risk in the watershed for disaster victims.

**Suggested topics:** Data Processing: Automatic Classification

**Proposed presenter:** Meng-Hsun Hsieh

**Presenters’ preference:** Oral presentation