



Risk assessment of debris flow hazards in natural slope

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The study area is located at north-east part of South Korea. Referring to the map of landslide susceptibility (KIGAM, 2009) from Korea Institute of Geoscience and Mineral Resources (KIGAM for short), there are large areas of potential landslide in high probability on slope land of mountain near the study area. Besides, recently some severe landslide-induced debris flow hazards occurred in this area. So this site is convinced to be prone to debris flow hazards. In order to mitigate the influence of hazards, the assessment of potential debris flow hazards is very important and essential. In this assessment, we use Debris-2D, debris flow numerical program, to assess the potential debris flow hazards. The worst scenario is considered for simulation. The input mass sources are determined using landslide susceptibility map. The water input is referred to the daily accumulative rainfall in the past debris flow event in study area. The only one input material property, i.e. yield stress, is obtained using calibration test. The simulation results show that the study area has potential to be impacted by debris flow. Therefore, based on simulation results, to mitigate debris flow hazards, we can propose countermeasures, including building check dams, constructing a protection wall in study area, and installing instruments for active monitoring of debris flow hazards.

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