



Application of DTM and GIS techniques to identify debris-flow-prone watersheds

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Debris flow is a major disaster in Taiwan because Taiwan is located on the tectonic zone of Philippine Sea Plate and Eurasian Plate, and is on the path of typhoons developed from Pacific Ocean. Debris flows usually triggered by severe rainfall in Taiwan. To identify debris-flow-prone watersheds become an important issue in disaster prevention.

It is difficult to identify debris-flow-prone watersheds by an ordinary field survey, especially in determining the source and outlet of a potential debris flow torrent. The location of source and outlet is very important in getting characters of debris flow.

In this paper, we have developed a method to identify debris-flow-prone watersheds, basing on the Geographic Information Systems (GIS) technique, hydrological theory, debris flow mechanism, Horton's law and 5 meter resolution Digital terrain model (DTM). Based on the developed method, we can identify debris-flow-prone watersheds more fast and unbiased than that by ordinary field survey.