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An introduction on debris flow monitoring station in Taiwan - a case study on Shen-Mu monitoring station

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Debris flow is a tremendous threat to humans' living environment and safety. The landforms and geologic structure in Taiwan are peculiar, and terrains are easily broken and unstable. Washout and rainstorms which result in debris flows and landslides in mountain areas occur frequently during the typhoon season. To protect inhabitant's life and properties, scholars and precaution agencies continuously search for the cause of debris flow occurrence and try to build a preventive mechanism. The Soil and Water Conservation Bureau had set up 13 debris flow monitoring stations and 2 debris flow monitoring vehicles since 2002. They are used for data collection and disaster observation and monitor. The operation mechanism of debris flow monitoring and control in Taiwan is introduced in the first part of this paper. The digital processing techniques are employed to analyze the CCD images based on color, texture and edge. The analysis of debris flow events and estimation of velocity, take Shen-Mu monitoring station for an example, are brought to a conclusion in the end.

Key word: debris flow, monitoring station, digital image processing