

Comparison Between FLO-2D and Debris-2D on the Application of Assessment
of Granular Debris Flow Hazards with Case Study

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Abstract

Numerical simulation has been widely applied to the assessment of debris flow hazards. In East Asia and especially Taiwan, the most widely used numerical programs are FLO-2D and Debris-2D. Although these two programs are applied to the same engineering tasks, they are different in many aspects. These two programs were compared according to their fundamental theories, input and output data, computational algorithms and results. Using both programs, the simulations of a real debris flow with abundant granular material induced by landslides at Xinfu village in southern Taiwan are performed for comparison. The simulation results show that Debris-2D gives better assessment in hazard area delineating and flow depth predicting. Therefore, Debris-2D is better for simulation of granular debris flows.

Key words : Debris flow assessment; Program comparison; FLO-2D; Debris-2D