

Development of Hydro-debris2D model and its application into Izu Ohsima island

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Hydro-debris2D model has been developed for the purpose of predicting occurrence of the debris flow throughout hydrological regime changes. The model contains three components: (1) Shallow-water based surface flow module in order to predict mountain zone torrential flow regime, (2) rapid subsurface/interflow in the weathered rock, and (3) debris flow components. The model has been applied into Izu Oshima Island debris flow event in 2013. As input data we used observed rainfall station dataset from AMEDAS. With heavy rainfall extensive surface flow occurred in the western part of the island, together with extreme interflow which may induce the initiation process of debris flow in the wall. Simulated debris flow occurrence zone by the model agreed with the real debris flow event on 16 October 2013. Calculation indicated that substantial amount of sediment is flown into ocean, together with the occurrence of the debris flow disaster. Sediment transport from continental(island) zone during extreme weather event should be estimated throughout similar study.

Keywords: Debris Flow, HD2DH, Izu Ohshima, Surface Flow