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Estimation of sediment yield for geo-climatically diverse watersheds

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Abstract Because the route of eroded sediment is complicated, estimating watershed erosion during storms is difficult. The objective of this study is to develop a sediment transport model which can be used to simulate sedimentgraphs in geo-climatically diverse watersheds. A physically-based soil erosion simulation model was developed for sediment yield estimation. The studied watersheds are the Goodwin Creek watershed in USA and the Hsia-Yun watershed in Taiwan. The good agreement between the simulated and recorded sedimentgraphs has shown the capability of the developed erosion model for sediment yield simulation in the Goodwin Creek watershed, USA. However, because the erosion model did not consider sediment inflow due to landslides, the sediment quantity was underestimated during the peak-flow period in the Hsia-Yun watershed, Taiwan, when severe landslides occurred in the simulated typhoon events.

Key words sediment transport model; soil erosion; landslide