



Prediction of rainfall-induced landslides using the soil water status model

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The relationship between rainfall and landslide is very complex. Great efforts have been made on the study of regional rainfall induced landslides forecasting models in recent years. There is no commonly accepted method for rainfall-induced landslide prediction available. The previous study models can be divided into three major categories: The actual rainfall approaches (intensity, amount, and duration of rainfall), concepts including antecedent conditions and models also considering environmental settings, e.g. the soil water status model (ASWM).

In this paper, a quantitative method based on historical landslide data, effective daily rainfall, antecedent conditions and selected environmental settings is proposed. Data from the Longnan region are explored and landslide-triggering rainfall thresholds are determined. Antecedent conditions are considered using the decay function of soil drainage. Results show, that this concept has the potential to be applied to rainfall forecasts in order to forecast the probability of landslides for the forecasted period.