



Hydro-meteorological thresholds for landslide initiation along railway tracks - A comparison for different environmental settings in Austria

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Effects of landslides on infrastructures and lifelines are reported globally. This study is investigating the effects of landslides triggered by extreme precipitation events on railway lines in different environmental settings in Austria. Hereby, landslide records of events having been damaging the Austrian Railway tracks will be compared with the spatial and temporal distribution of the triggering rainfall events. The principle aim is to delineate hydro-meteorological threshold values for extreme precipitation events triggering landslides for a variety of catchments along railway tracks in different Austrian landscapes.

Records of damaging events and available corresponding precipitation information from different sources will be calculated. The resulting thresholds will be compared for different environmental setting in Austria. Hereby, the evaluation of the calculated thresholds is carried out by splitting the available datasets into training and validating sets. Potential regularities of changing hydro-meteorological conditions are assessed. Finally, the calculated thresholds will be applied to potential future rainfall events based on climate change scenarios.

The derived landslide-triggering rainfall thresholds have the potential to be utilized in an early warning system along railway tracks. This might improve the forecast of landslides which is a great challenge in the daily railway operation.