



Regional hydrological characteristics to assess landslides triggering rainfall thresholds in Ialomita Subcarpathians

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Landslides are a widespread geomorphic process that affects most of the hills in the Subcarpathians area. It is general knowledge that landslides represent the combined result of the predisposing factors (lithology, faults, slope, land-use, land cover, etc.) that affect for long term the slope stability and triggering factors (rainfall, snow melt, earthquakes) that temporarily change the hydrogeological conditions. The recent studies regarding the temporal occurrence of landslides in Subcarpathians area reveal that rainfall represents the most important triggering factor for landslides. Depending on rainfall characteristics and environmental factors different types of landslides were recorded: slumps, earthflows and complex landslides. This work aims to investigate regional hydrological characteristics for a preliminary estimation of rainfall thresholds that are responsible for landslides in Ialomita Subcarpathians. This area, located in the western part of Curvature Subcarpathians, is characterized by a very complex geology whose main features are represented by the nappes system, the post tectonic covers, the diapirism phenomena and vertical faults. In this specific area rainfall thresholds act in two different ways, depending on the amount and duration of the rainfall and soil moisture conditions: either by increasing infiltration rates during prolonged rainfall when subsurface runoff is significant, either by erosion of the slope toe in the case of intense and rapid storms when direct runoff is predominantly. Several hydrological indicators will be used to describe hydrological state of (sub-)catchments. The preliminary results of this approach will be presented and discussed.