



Landslide hazard assessment on the northern slopes of Fruška Gora Mountain (Vojvodina, Serbia)

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Fruška gora is a low (539 m) mountain surrounded by plains on the southern rim of the Pannonian Basin, situated between two large urban areas in Serbia and an important regional and local transport routes. The Danube flows along entire length of the northern and eastern side of the mountain (more than 80 km), permanently eroding the base of Quaternary sediments, causing slope instability. These mass movements often result in damages to railroad tracks, roads, infrastructure, and housing. Most of the northern slopes near Danube are affected by landslides, although many areas are considered temporarily stabilized after earlier movements. Uncontrolled building activities can be observed in some of these zones, increasing the risk of landslide reactivation.

In this study we evaluate the potential mass movements hazard over a wider area of the mountain using the Stability Index Mapping (SINMAP) model. The model calibration was supported with terrain survey, high resolution aerial and stereo-satellite images interpretation. The primary input for the analysis is a Digital Elevation Model (DEM) obtained from a 1:25000 topographic map with previous landslide inventory and data describing local modifying factors such as geologic, vegetation, climatic, and soil cover data. As a result of the analysis, a map of landslide hazard zones was created, along with an updated landslide inventory of the Fruška gora, providing overview of landslide risk distribution based on more objective methodology. The results of this large scale assessment highlight the locations of interest for planning smaller scale and more detailed examination.