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## **EVALUATION OF STREAM BED DYNAMICS FROM VIDAS TORRENTIAL VALLEY USING TERRESTRIAL MEASUREMENTS AND GIS TECHNIQUES**

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### **Abstract**

Quantification of geomorphological changes and rates of landscape evolution is a matter of primary importance, as much in natural hazards studies as in calibration of landscape evolution models. In this paper it is investigated the influence of dams to morphological processes on a corrected torrential valley situated in mountainous area of Romania.

Several approaches were applied for evaluating the stream bed dynamics by using terrestrial measurements and GIS techniques. The methodology is based on comparing the horizontal dynamics measured in different periods based on transversal profiles extracted from digital elevation models, by assessing the vertical dynamics measured in different periods based on longitudinal profiles extracted from digital elevation models and by monitoring of the degree of siltation behind the dams using raster calculator on digital elevation models.

The results from the study verified some well know hypothesis related to the stream bed dynamics of a torrential valley but also led to conceiving interesting hypothesis for future research in this field.

*Key words:* GIS, monitoring, stream bed dynamics, torrent

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