Geological Society of Greece – Committee of Remote Sensing and Space Applications

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Landslide susceptibility mapping using Differential Interferometric Synthetic Aperture Radar (DInSAR) and Bayesian statistics

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Abstract

The development of landslide susceptibility maps is a necessary task for landslide disaster prevention. Conventionally, for the derivation of landslide susceptibility models, inventory maps of past landslide events are used. However, evidence of many landslides may be lost due to erosional processes, vegetation growth and anthropic influences. We propose a method for the detection of active landslides using Differential Interferometric Synthetic Aperture Radar (DInSAR) techniques. The Weight-of-Evidence (WoE) technique is applied to determine the weights of seven geomorphological and hydrological parameters to landslide occurrence and compile a susceptibility model. This methodology can provide updated landslide activity information at frequent intervals which is valuable for landslide assessment.

CV: Skevi Perdikou is an experienced satellite remote sensing and geotechnical expert at the consultancy Geofem Ltd. The combination of engineering and satellite remote sensing expertise enable Geofem to offer advanced Earth Observation techniques for engineering applications and interpretation of results. Skevi's work includes the use of DInSAR for landslides, transportation networks, forensic investigations and urban monitoring for both commercial and research projects.