Session 34

Earthquake Induced Landslides: from triggering to stabilization, methods and techniques of monitoring

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Landslides are common secondary effects during earthquakes. Their classification is difficult representing the complexity of their underlying triggering mechanism. Recent examples from New Zealand and Wenchuan strong earthquakes indicate that landslides are widespread but also during less strong earthquakes (i.e. recent Cephalonia and Lefkada), equally important and disastrous landslides took place. In now days it is recognized worldwide the increasing role of geology along with the seismic ground motion in the landslide inventory. Remote sensing inventory, UAVs, monitoring systems and statistical analysis are used to determine how the occurrence of landslides correlates with the following factors: distance from the earthquake epicenter, slope steepness and aspect, drainage pattern, seismic intensity, rock type and tectonic setting. Thus, inventory and monitoring of earthquake-induced landslides contribute in understanding social and economic impact of the earthquakes.

We separate earthquake induced landslide inventory in large and small scale. Notably several discussions and approaches exist, regarding the best research methodology for mitigation practice of the ongoing earthquake-induced landslides when their number is enormous. When the affected area is quite big satellite imagery is applicable. However, in cases of landslides affecting man-made structures, UAV data are more effective. In this session we welcome papers focusing on both large and small scale inventory, monitoring and transient evolution of earthquake induced landslides based on different methodologies in complex growing talus slopes and isolated landslides. In our session welcome also papers with a special focus on achieving inventory maps based on remote sensing data in combination with ground control points (GCPs) measured using Global Navigation Satellite System (GNSS) sensors, papers focusing on UAV, SAR and Terrestrial Laser Scanner data and processing.