

Tracking of debris flows using seismic tremor signals

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A debris flow is rapid movement of poorly-sorted, water-saturated sediments, which is caused by intense surface water flow due to heavy precipitation and/or snow melt. Debris flows are highly hazardous in regions where the flows encountered, and commonly observed as long-lasting, high-frequency tremor signals in seismic records. In this paper, we propose a seismic technique to locate the source of tremor signals originated from debris flows. The application of the technique to tremor observed by a seismic network at Cotopaxi Volcano, Ecuador, suggests great potential for our technique to track spatial and temporal evolution of debris flows.