

Remote Detection and Measurement of Catastrophic Landslides using Seismology

Göran Ekström

Department of Earth and Environmental Sciences, Lamont-Doherty Earth Observatory, Columbia University

Abstract: Large and catastrophic landslides involve the rapid motion of millions of tons of rock and debris under the influence of gravity but, despite their size, many landslides go undetected since they occur in remote areas. However, the forces active in landslides cause seismic waves that are recorded on seismometers around the globe. This work shows how the seismic signals can be used to detect and locate landslides, as well as to determine the landslide mass and the direction and speed of landslide motion. We thus demonstrate a new way to monitor and investigate landslides remotely.