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Seismic detection and characterization of gravitational mass movements

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Rapid gravitational mass movements, such as landslides, rockfalls, or avalanches are repeatedly recognized during routine seismic monitoring at national earthquake observatories. Yet, utilizing the tools of seismology for fast detection and characterization of mass movements is uncommon. Here we present a set of past landslide and rockfall events in Austria and neighboring countries, which were well-recorded by several permanent seismic stations. We aim at identifying seismically observable parameters of the mass movements, where additional geological and geographical data is available. Based on this set of well-recorded slide events we propose a processing routine for event detection and location as well as discrimination from earthquakes, which can lay ground for a routine detection of rapid mass movements through remote seismic monitoring.