



On the effect of the ground seismic characteristics in the estimation of mass movements based on seismic observation.

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Nowadays, seismic measurements are used to quantitatively characterize mass movements (rockfalls, debris flows, snow avalanches, etc.). The parameters involved in this characterization are the equivalent local magnitude, the energy transferred to the ground and the energy efficiency (potential energy to seismic energy ratio) among others. All these parameters help us to characterize the size of the events and compare them with others for their classification.

Although seismic observation is the primary information for the characterization of mass movement, we must bear in mind that this is not a direct measurement. Seismic observations are the result of the convolution product of the energy released at the source by the properties of the transmitting media. In addition, the local site effects should also be considered.

Focusing on examples of theoretical and experimental measures, we illustrate the different effects of the propagation media in the wave field and their repercussion in the calculation of magnitudes and energies. Some recommendations to minimize these effects are also suggested.

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