



Comparison of the application of the Hough Transform method (characterization of the SON section in seismic spectrograms) at two different sites (VdIS and Ryggfonn) to study the evolution of avalanches.

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Recently, a method applying the Hough Transform was used to obtain the numerical parameters of the shape of the SON section of the spectrograms of the seismic signals generated by snow avalanches at the experimental site of Vallée de la Sion (VdIS, Valais, Switzerland) (SFL, Davos). The avalanches were of different size and type (powder-snow, transitional and wet-snow) descending along the same path and recorded at two different locations 690 m of distance between them on the path. This helped us to estimate the evolution of the avalanche speed along the path from the starting zone to the run-out zone. We obtained different spectrogram definition parameters according to the type of avalanche.

We apply the same methodology to the seismic signals generated by avalanches at the Ryggfonn experimental site (NGI, Oslo). The avalanches were dry/mixed and dry/dense and occurred in the period (2004-2008). They were recorded in a site along the path. The instrumental conditions, characteristics of the raw data, and the data processing were like those of VdIS. However, the topographic characteristics of the site were different. At the Ryggfonn site, the distance between the starting zone and the sensor was 1640 m (985 in VdIS) and the vertical drop was 800 m (700 m in VdIS).

We present and compare the results obtained to validate a possible application of the method used to VdIS to other places and topographic conditions.

This research was funded by the CHARMA (CGL2013-40828-R) and the PROMONTEC projects (CGL2017-84720-R) of the Spanish Ministry of Economy, Industry and Competitiveness (MINEICO-FEDER) and RISKINAT group (2014GR/1243).