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Seismic signal of avalanches

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The characterization of avalanches with seismic signals is an important task. For risk mitigation, estimating remotely avalanche activity by means of seismic signals is a good alternative to direct observations that are often limited by visual conditions and observer's availability. In seismology, the main challenge is to discriminate avalanche signals within the natural earth seismic activity and background noise. Some anthropogenic low frequency (infra-sound) sources like helicopters also generate seismic signals. In order to characterize an avalanche seismic signal, a 3-axis broad band seismometer (Guralp 3T) has been set-up on a real scale avalanche test site in Lautaret (France). The sensor is located in proximity of 2 avalanche paths where avalanches can be artificially released. Preliminary results of seismic records are presented, correlated with avalanche physical parameters (volume released, velocity, energy).