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Infrasound measurements of avalanche activity

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Processes such as avalanches, wind, mud flows and traffic are sources of sub-audible sounds in the low frequency infrasonic spectrum. Recent studies indicated that the avalanche-generated noise is of significant amplitude and occupies a relatively noise free band in the low infrasound spectrum (2-8Hz).

This study focuses on a single sensor monitoring system, an easily transportable device, whose design is characterized by independence from energy supply. The aim is to collect valuable data for post processing analysis to provide a basis for automated signal analysis. To characterise this signal, data will be analysed using the Fast Fourier Transformation which results in a time series and a 3D time frequency spectrum plot. The monitoring system will be placed in a ski resort (Lech am Arlberg, Austria), where multiple artificial release mechanisms should help to distinguish the avalanche signal from interfering noises such as the explosion or wind. Furthermore, attempts to capture natural avalanche activity are planned in several other Austrian locations. First results of this study will be presented.