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Abstract

Small energy seismic signals can be used to constrain the fine structure of earth. Two different approaches of ambient noise interferometry are applied: inversion of ellipticity, and Rayleigh waves dispersion curves, used to obtain vertical layered information of Swave velocity as a function of depth, and obtain an average of S-wave velocity depth profile between each station pair, respectively. These techniques will be used in this project to define the internal structure of the shallow subsurface beneath a mine site. The study area is characterised by a stack of thrust units, involving mostly metamorphic rocks.These thrust units are cut by late intrusions, which are thought to be responsible for the mineralizations of the study area, where an intruded body enhances fluid circulation alongthe fractures with associated tungsten and tin mineralizations. The application of these passive seismic techniques derive in S-wave velocity models of the shallow subsurface, which is mainly dominated by schists and outcropping granites (Confurco Granite). Based on the velocity values of the shallow geological units we try to define the internal structure of the test site, trying to identify granitic bodies in depth, source of the mineralizations of our mine site