



ID: P1.2-368

Type: e-Poster

Upper crustal structure at the KTB drilling site from ambient noise tomography

Tuesday 29 June 2021 11:45 (15 minutes)

In this study, we show results from ambient noise tomography at the KTB drilling site, Germany. The Continental Deep Drilling Project, or 'Kontinentales Tiefbohrprogramm der Bundesrepublik Deutschland' (KTB) is at the northwestern edge of the Bohemian Massif and is located on the Variscan belt of Europe. During the KTB project crustal rocks have been drilled down to 9 km depth and several active seismic studies have been performed in the surrounding. The KTB area therefore presents an ideal test area for testing and verifying the potential resolution of passive seismic techniques. The aim of this study is to present a new shear-wave velocity model of the area while comparing the results to the previous velocity models. We use a unique data set composed of two years of continuous data recorded at nine 3-component temporary stations installed from July 2012 to July 2014 located on top and vicinity of the drilling site. Moreover, we included a number of permanent stations in the region in order to improve the path coverage and density. We present here a new velocity model of the upper crust of the area, which shows velocity variations at short scales that correlate well with geology in the region.

Promotional text

We use seismic ambient noise data recorded at seismic stations to image the upper crustal structure around the KTB drilling site in Germany. The results are well matched with the surface geology and improve our understanding of the complex structure of the shallow crust.

Primary author: Mr QORBANI, Ehsan (CTBTO Preparatory Commission, Vienna, Austria)

Co-authors: Ms BIANCHI, Irene (National Institute of Geophysics and Volcanology (INGV), Rome, Italy); Mr KOLÍNSKY, Petr (University of Vienna, Vienna, Austria); Mr ZIGONE, Dimitri (Institut de Physique du Globe de Strasbourg, Université de Strasbourg, France); Mr BOKELMANN, Götz (University of Vienna, Vienna, Austria)

Presenter: Mr QORBANI, Ehsan (CTBTO Preparatory Commission, Vienna, Austria)

Session Classification: T1.2 e-poster session

Track Classification: Theme 1. The Earth as a Complex System: T1.2 - The Solid Earth and its Structure