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

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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 and hints for anisotropy depicted by former passive and active seismological studies. 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.