



Composition of seismic noise in several regions of the East European Platform

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Studies show that for high frequencies body waves play an important role in seismic noise. Therefore, it is necessary to study the composition of microseismic noise before performing a microseismic tomography. It is especially important for the high frequency range.

We investigated the composition of seismic noise in several regions of the East European Platform in high frequency range. Based on the results of cross-correlation analysis of the microseismic noise of the records of the small-seismic array "Mikhnevo" (Moscow region), body and surface waves with propagation velocities of 4.5-4.8 km/s and 2.7-3.3 km/s, respectively, were detected. The analysis of correlation functions for various profiles has made it possible to identify the sources of noise that lies between these profiles and, possibly, is associated with the karst areas of the stream. Analysis of the cross-correlation function for different profiles of the "Rostov" array (Rostov region) shows a pronounced presence of surface waves with velocities of 1.0-1.5 km/s from the Tsimlyansk reservoir located north of the place of measurement. Analysis of the correlation function of noise recorded by the "Kursk" array (Kursk region) showed surface waves with propagation velocities of 0.3-0.4 km/s and 1.0-1.2 km/s. Analysis of microseismic noise did not reveal the dominant direction of noise sources. The results of monitoring and analysis of seismic noise will plan to be used to develop methods for controlling the deformation characteristics of local parts of the rock massif. This work was supported by the Russian Federation Presidential Program for State Support of Young Scientists (project no. MK-2698.2017.5).