

Refinement of the velocity section sedimentary stratum by the Nakamura method at new seismic stations of the IDG RAS

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Abstract In 2017, as part of a project to study the deep structure of the central part of the East European platform, IDG RAS staff installed a sub latitudinal seismic profile of about 500 km in length, consisting of six stations. To successfully solve the problem of restoring a deep velocity section, the fullest possible information is needed on the velocity characteristics of the sedimentary sequence and, in particular, the first 0.5-1 km. Despite the considerable knowledge of the geological structure of the Moscow syncline, information about its speed structure is based on interpolation and is fragmentary in nature. The paper presents the results of studies of the upper part of the sedimentary cover of the central part of the East European Platform (EEP) according to the data of the new network of broadband seismic stations IDG RAS. Using seismic noise records for each station, the dominant frequency peaks were obtained by the Nakamura method. For the Mikhnevo and Shatura stations, based on the data of deep drilling, it was established that the dominant peak corresponds to the boundary of the Upper Devonian - Lower Carbonian sediments. The obtained results make it possible to trace the occurrence of the indicated boundary along with all stations of the network along with the sublatitudinal profile through the collision zone of the EEP.

Keywords Spectral ratio H/V, East European platform, receiver function method, Nakamura method.

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