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The microseism spectral analysis at the range from 1 to 20 Hz for the geology prospecting

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The recording and defining of microseism characteristics (1-20Hz) is usually used to estimate the location, depth intensity of active acoustic sources. Besides, it is known, that the geological medium has an acoustic amplitude-frequency characteristic which depends on its structure and composition, modifying the microseism spectrum during their propagation. The attenuation of high frequencies of microseism components as a result of dynamic viscosity of the geological medium is a simple example of that modification. Stratified medium has an even more complex affect on the microseism, because the amplification of eigenmode waves, which meets the frequency structure modes oscillation of the stratified medium, has to occur in it. Thus, microseism spectrum also bears information about stratified geological structure at the registration point. The results of the microseism researching, which takes place in East-European platform are demonstrated in the report. The microseism spectral characteristics and their match with geological structure are stated. The correlation of the microseism spectral morphology with the presence and the parameters of the various geological elements, including tectonic faults, hydrocarbon reservoirs, and karstic zones are also stated in the report. The methodology of the microseism registration and analysis is revealed briefly. The authors' experimental results with the well-known results of S. Dangel (University of Zurich), S.Arutunov (ANCHAR NTK) et al. are compared. The characteristics of the microseism spectrum analysis for the instrument of geology structure research at the point of observation are discussed. Particularly, the conditions of displaying the geology elements in the microseism spectrum and the factors which influence the reliability of the conclusions about the geology structure are defined. The conclusion contains description of the possibility and the limits in the usage of

microseism analysis in order to decide certain geological prospecting problems.