

Seasonal variations of microseisms in the Baikal rift

The report presents the results of a study of seasonal variations in the spectral characteristics of seismic waves in the Baikal rift from earthquake and microseism records based on the H/V-ratios. We used records of seismic waves from regional earthquakes (P and S-waves), as well as records of microseismic vibrations. To account for seasonal variations, data were considered in different seasons (warm season: July, August, September and cold season: December, January, February, March). By the type of H/V-curves, seismic stations in a region can be divided into three groups: (1) with a stable characteristic, regardless of the season; (2) with seasonal variations of H/V; (3) with an unstable H/V curve. For most stations of group 2, seasonal variations in the frequency response may be due to tidal effects on the lake Baikal – stations are located on the coastline. A comparison of the obtained H/V-curves for earthquakes and microseisms shows their good agreement in the low-frequency region (up to 3.5 Hz) for all stations. For some stations, an increase in the level of the H/V-curve is observed in the region of medium and high frequencies, which may be due to the influence of the earthquake source.

Primary author: BLINOVA, Svetlana (Institute of the Earth's Crust, Siberian Branch, Russian Academy of Sciences)

Presenter: BLINOVA, Svetlana (Institute of the Earth's Crust, Siberian Branch, Russian Academy of Sciences)

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