

ON DEEP-SEA ACOUSTIC INHOMOGENEITIES IN THE BOTTOM LAYERS IN THE SEA OF OKHOTSK AND IN THE SEA OF JAPAN

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The paper presents the data on anomalous sound scattering at a frequency of 25 kHz on unusual deep-water objects (depth 800–1000 m) located near the bottom and measuring no more than 40–60 meters in height and up to 500 m horizontally. Bottom acoustic anomalies were found in the Sea of Okhotsk near the Atlasov Island and in the Tatar Strait. By their structure and sound scattering coefficient, they differ from typical deep-sea gas flares (GF). As an example, the paper shows the structure of the well-known "Paramushirsky" GF, detailed acoustic sounding of which is also presented for comparison with the identified bottom objects. It is suggested that the detected underwater inhomogeneities are a type of GF, but with a lower productivity of gas output sources from bottom sediments. It is shown that sufficiently large concentrations of bubbles in the detected inhomogeneities can lead to significant changes in the effective speed of sound and lead to an increase in losses during sound propagation and to a change in the structure of the low-frequency acoustic field. The research was carried out in November 2020 in the voyage No. 61 of the RV "Academician Oparin" in the Tatar Strait and in May 2021 in the voyage No. 92 of the RV "Academician M.A. Lavrentiev" in the northeastern part of the Sea of Okhotsk.

Keywords: seawater, bubbles, gas flares, scattering, sound absorption.

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