

HYDROLOGICAL AND ACOUSTIC RESEARCH AT ULTRA-LONG DISTANCES IN THE SEA OF JAPAN

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The article discusses the results obtained when performing a pilot acoustic-hydrological experiment in August 2022 on the route from the coast of Sakhalin Island to the Kita-Yamato Bank in the Sea of Japan. The methodology of integrated studies designed to study the climatic variability of temperature regimes in the water area is presented. The basis of the methodology is a combination of acoustic thermometry methods, in situ CTD data, and data from NEMO ocean circulation models. Based on the results of 112 measurements, an estimate was made of the average temperature along the route at the depth of the underwater sound channel. This value can be used to assess the impact of global warming on temperature regimes in the study area. An assessment was made of the influence of two vortex formations crossing the acoustic path on the propagation of broadband phase-shift keyed signals.

Keywords: hydroacoustics, pseudo-random signals, ocean circulation models, impulse response, localization of eddy formations

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