

EXPERIMENTAL MARINE DATA SIMULATION OF ACOUSTIC CHARACTERISTICS OF SHALLOW SEA AREAS

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ABSTRACT

Special sonar aids are used to obtain hydrophysical, meteorological and physiographical characteristics of sea areas. The experiments conducted by the scientists of the Far Eastern Federal University in Peter the Great Bay shallow waters are aimed at developing acoustic field models and estimating their efficiency in marine environment monitoring. The main purpose of the investigation is to establish a multidimensional information network based on space-distributed equipment that would enable us to study tides, wave process parameters, sea area bathymetric characteristics and spatiotemporal variability of sound velocity vertical distribution. To describe the dynamics of the test site hydrophysical characteristics we used the model reflecting the diurnal variation of sound velocity and spatial frequency range of fluctuations of the acoustic signal. The simulation results conform to experimental data. Developing the model will in prospect allow to work out technical requirements to autonomous systems for geocologic monitoring.

Key words: sea area, acoustic characteristics, bathymetric data, tides, sound velocity profile, acoustic signal fluctuations, spatial frequency range.

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