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EXPERIMENTAL STUDIES OF SEISMOACOUSTIC PROCESSES AT THE "HYDROSPHERE–LITHOSPHERE" BOUNDARY IN PETER THE GREAT BAY OF THE SEA OF JAPAN

A.N. Samchenko, A.A. Pivovarov, A.N. Shvyrev, I.O. Yaroshchuk

The article discusses the results of coastal seismoacoustic experiments, aimed at studying the processes of transformation of underwater acoustic signals into seismic signals when passing through the hydrosphere-lithosphere boundary. The experiments were conducted in August 2020 and again in August 2021 in the Peter the Great Bay of the Sea of Japan using a low-frequency sonar radiator with a central frequency of 33 Hz. Acoustic signals were received by three-component vibrometers and hydrophones installed on land. The propagation of various types of seismoacoustic signals (surface, longitudinal and transverse waves) from the radiation point to the reception points was modeled based on the data of the constructed geoacoustic model of Peter the Great Bay. The calculation was carried out using the method of refracted waves, widely used in seismic exploration. It should be noted that transverse waves allow us to obtain more reliable information about structural and tectonic features in relation to the data of traditional seismic surveys, and data on the propagation of surface waves allow us to supplement the overall picture of the geological structure of the acoustic route.

Keywords: seismoacoustics, the method of refracted waves, underwater acoustic radiator, the Peter the Great Bay.

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About the author

SAMCHENKO Alexander Nikolaevich – PhD, Senior Researcher
Federal State Budgetary Institution of Science V.I. Ilyichev Pacific Oceanological Institute of the Far Eastern Branch Russian Academy of Sciences
Address: 690041 Vladivostok, Baltiyskaya str., 43
Research interests: geology and geophysics of the shelf
Tel.: 8(423) 231-26-17
E-mail: samchenko@poi.dvo.ru
ORCID: 0000-0002-5184-0718

PIVOVAROV Alexander Anatolyevich – Researcher
Federal State Budgetary Institution of Science V.I. Ilyichev Pacific Oceanological Institute of the Far Eastern Branch Russian Academy of Sciences
Address: 690041 Vladivostok, Baltiyskaya str., 43
Research interests: ocean acoustics
Tel.: 8(423) 231-26-17
E-mail: pivovarov@poi.dvo.ru

SHVYREV Alexey Nikolaevich – Ph.D., Senior Researcher
Federal State Budgetary Institution of Science V.I. Ilyichev Pacific Oceanological Institute of the Far Eastern Branch Russian Academy of Sciences
Address: 690041 Vladivostok, Baltiyskaya str., 43
Research interests: ocean acoustics
Tel.: 8(423) 231-26-17
E-mail: shvyrev@poi.dvo.ru
ORCID: 0000-0003-1184-8683

YAROSHCHUK Igor Olegovich – Ph.D., Head of the laboratory
Federal State Budgetary Institution of Science V.I. Ilyichev Pacific Oceanological Institute of the Far Eastern Branch Russian Academy of Sciences
Address: 690041 Vladivostok, Baltiyskaya str., 43
Research interests: ocean acoustics
Tel.: 8(423) 231-26-17
E-mail: yaroshchuk@poi.dvo.ru
ORCID: 0000-0002-3212-9752