

EXPERIMENTAL AND THEORETICAL RESEARCHES OF SCALAR-VECTOR STRUCTURE OF SOUND FIELDS IN POS'ET BAY

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ABSTRACT

The experimental research of sound fields in the shallow water is executed in the work. Experiment was spent in Pos'et Bay with use of the combined receivers and towed deepened source of sound signals. The researched range of working frequencies made 83-243 Hz. Measurements were carried out for various depths of towage of sound source and various horizons of reception. The purpose of experiment was studying spatially-frequency structure of the sound field in the shallow water in the scalar-vector description of its basic characteristics, as well as comparison of experimental results with the theoretical estimations received within the limits of the generalized theory of wave processes in layered media. Comparison of experimental results with theoretical estimations has allowed to reveal significant irregularity of the sound field in the horizontal plane and the presence of a considerable level of reverberation noise associated with the presence of a coastal wedge near the receiving system and near the towing line of sound signal source. The analysis of noise field revealed anisotropic component connected, in opinion of authors, with presence of man-caused sources of noise interference, located in Trinity Bay.

Keywords: generalized model solution, the components of intensity vector, shelf zone, combined sonar receiver, transit characteristic, noise.

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