

DESCRIPTION OF PHYSICAL EFFECTS OF ACOUSTIC FIELD IN A SHALLOW SEA WAVEGUIDE

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The field of the complex vector of acoustic intensity of a moving tonal low-frequency source in a regular waveguide of a shallow sea is investigated. The following phenomena are considered: phase front dislocations, singular points, an acoustic intensity vortex and the mechanism of its stability, angular momentum of the vortex, vortex rotor. The value of the signal-to-noise ratio has been established at which the appearance of a phase front dislocation and a vortex in the far field of the signal source is possible in a coherent field.

Keywords: acoustic intensity vector, acoustic intensity vector vortex, vortex stability mechanism, vortex intrinsic angular momentum, normalized coherence functions.

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