



Experimental study of periodic linear internal waves transform at the shelf edge

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The report contains results of the experimental study of the fine structure of hydrophysical processes of internal waves transform in the shelf zone observed within a thin thermocline. A series of experiments was performed in the stratified tank with its overall dimensions $L*B*H = 2.15*0.15*0.35$ m where the model of the shelf has been installed. The shadowgraph IAB-455 as well as the multidot spatial system of 40 thermocouples were used for distance and contact measurements. Methods of a digital video fixation of shadow pictures of currents in the thermally stratified liquid, as well as methods of the statistical analysis of non-stationary hydrodynamic processes were applied. As a result of the series of experiments it was revealed that interaction of internal waves in the pycnocline with the shelf model leads to transformation of the internal waves, formation of currents of vortical and turbulent character and water mass mixture. The observations concern a case of creation of a package of five periodic internal waves made in the pycnocline by a submerged wave-maker.

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