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EXPERIMENTAL STUDIES OF INTERNAL WAVES IN THE SEA OF JAPAN COASTAL ZONE

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ABSTRACT

Active internal waving occurs in broad frequency band in sea coastal zone. This is primarily connected with semidiurnal barotropic tides. The internal waves energy spectrum level exceeds the one determined by Garrett and Munk's model for a deep ocean. According to empirical data, trains of short-period internal waves come in cycles after semidiurnal tide peak and move in the direction perpendicular to a shelf break isobathic line. The internal waves are nonlinear in full frequency band. Offshore bars are formed in a long-wave range and solitons in a short-wave range. The dynamic characteristics of internal waves of both nonlinear and quasilinear type can be obtained experimentally by means of wavetrains and wave spectrum investigation. At the same time, there occurs the temporal alternation of internal waving when intensive high-frequency waves appear during low-frequency fluctuations. This study summarizes the experimental data obtained by the authors for a multi-year period including three last years.

Key words: internal waves, bar, soliton, barotropic tide.

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