



Observations of quasi-inertial and short-period internal waves from stationary platform in the Black Sea

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It is well known that the major factor of the generation of the intensive internal waves on the shelves of the oceans and open seas is barotropic tide. Despite of the Black sea is closed and free-tidal sea nevertheless there are exist quite intense internal wave field in here.

The results of long-term observations of long- and short-period internal waves measured in the Black Sea are analyzed. These studies were carried out from the stationary platform of the Marine Hydrophysical Institute of the National Academy of Sciences of Ukraine in the summer 2010 and 2011. The platform is situated on the Southern coast of Crimea in 600 m from the shore, where sea depth is about 30 m. The measurements were taken by acoustic Doppler current profilometer (ADCP) "Rio Grande 600 kHz", thermistor chain of ten sensors "Star-Oddi" and oceanographic mini profiler «MiniSVP» with measuring parameters of sound velocity and temperature.

We observed the well-defined temporal thermocline oscillations with period close to local inertial (17.2 hours) period. At the same time the clockwise rotation of the vector of currents with the inertial period was detected. During the expedition in 2011 the whole water column synchronous oscillations of the first-mode were observed for the first 5 days, which than changed into the second-mode oscillations. Observations of 2011 were for conditions when thermocline was in the middle of water column. Observed oscillations of inertial waves in 2010 were for conditions of bottom thermocline. The amplitudes of thermocline oscillations were up to 10 -12 m. Also intense short-period waves with period from 2 to 20 minutes and heights from 1 to 6 m were registered. Several cases of second mode short-period internal waves were observed. Also several passages of solitary internal waves were noticed. The peaks of inertial and high-frequency oscillations were revealed by the spectral analysis of current data and temperature records.

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