



The dynamics of surface wave anomalies connected with features of bottom topography

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Dependence on time of day of characteristics of surface wave and atmospheric surface layer anomalies, caused by features of bottom topography in a shelf, has been investigated in field experiments. The measuring was conducted in the Black sea on polygon near to town Gelendzhik, which are characterized by abrupt depths dumping (fall 50 - 1250 m), and irregularity of a bank vault (numerous canyons). The measuring was conducted at wind velocities up to 10 m/s and surface wave height up to 0.4 m.

The measurements were carried out simultaneously from high coast by means X-band radar, worked in a circular scan mode, and from the vessel "«Aquanaut" (Institute of Oceanology RAS). The surface wave characteristics in length range 4 mm - 5 m were measured by X and Ka Doppler radar, two-dimensional optical spectrum analyzer and linear array of CCD sensors. The acoustic anemometer-thermometer for recording pulsations horizontal and vertical components of the wind and temperature in atmospheric surface layer was used.

It was explored, how the features of bottom topography cause variability of surface waves, the dependence of surface wave variation on their length and propagation direction. The location of surface wave anomalies depending on time of day has been investigated. Surface wave transformation, in turn, gives in variability of mesoscale component of meteorological fields in atmospheric near-surface layer. The streams of heat and impulse above surface wave were determined from direct measurements of temperature, horizontal and vertical wind velocities pulsations.

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