Geophysical Research Abstracts, Vol. 9, 05628, 2007
SRef-ID:

Complex researches of a coastal waters condition of the Kaliningrad area in the summer - autumn 2006 near the cape Taran and the Vistula spit.

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It is known, that the cape Taran is special point of coastal circulation of Baltic near Sambian peninsula. In the summer and autumn of 2006 5 scientific expeditions have been lead in area of cape Taran and Vistula spit. The primary goals were hydrological shooting, measurements of currents and sampling of water for studying the contents of biogenic elements suspension and heavy metals. All sea works have been lead on yachts "Aquarius" and "Swallow". There was a short trip (for 3-4 days) with use of hydrophysical probes (ÑTD90M, Idronaut 316), measuring instrument of currents ADCP, floats of neutral buoyancy.

Experimental researches have allowed to receive a lot of interesting results. In particular, at studying features of coastal circulation in October 2006 the new data on structure and scales of water exchange of a coastal and sea part of water area above a coastal slope are received. It has shown that there is a stream of the cooled waters from coast in a deep part of the sea along a coastal slope. Advanced speed can make up to 5-8 sm./sec. Refresh rate of water was done in a coastal zone which has been estimated in 1.5 day at this conjuncture. The initial analysis of the received data has shown, that structure of the water exchange has alternating character. On September, 12-13 2006 ã in Svetlogorskaya bay have been fixed unexpectedly strong the coastal currents possessing except for those two-layer structure, and also formation a whirlwind at cape Taran. During the unique calming weather (drift of a yacht did not override 5-7 sm./sec.) frontal break of two various subtypes of water mass has been freezed on

both sides of the cape Taran.

The research of concentration's level of a suspension and biogenic elements has allowed to obtain the new quantitative data on these important parameters for coastal water areas. It has shown that distributions of biogenic elements and a water suspension were characterized by significant seasonal and spatial variability. It was reflected in the maximal concentration of a suspension in these waters during the summer period, and all other parameters - during the autumn period. The analysis of sample water on the contents of heavy metals has shown that heavy metals are in order the following sequence: Fe> Ni> Cu> Zn> Bi> Cr> Pb. Concentration V, Mn, Zn and Co in the examined water were lower than limits of detection.

Aknowledgements:

The investigations have been supported by RFBR under grant ź 06-05-64138, 06-05-79097