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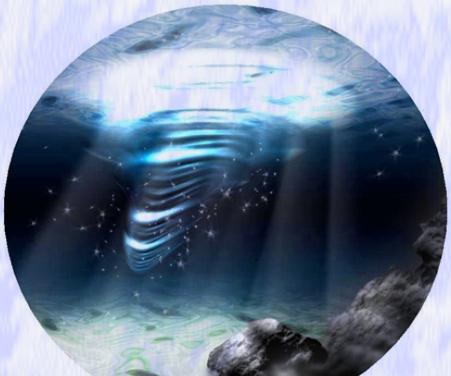

Drivers, pressures, state, impacts, response and recovery indications towards better governance of Black Sea environmental protection.

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ABSTRACTS

The Estimation of the Intensity and Direction the Transport of the Water Masses at the Boundary of the North-Western Black Sea Shelf

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It is known that the existing system of currents (speed and direction) have a huge impact on the natural ecosystems of the Black Sea. The circulation of sea waters in the north-western Black Sea (NWBS), which is under the direct influence of the rivers flow Danube, Dniester and Dnieper, so far little studied.

Our purpose was to evaluate the intensity and direction of the marine water transport at the boundary of the NWBS shelf on the sections between the stations Primorskoe – Island Zmeinyi – Chernomorskoe.

The initial data used the results of the daily sea level observations, which were conducted simultaneously at the hydrometeorological stations Primorskoe and Chernomorskoe of the Ukrainian Hydrometeorological Centre and at the Station "Island Zmeinyi" of the Odessa National University from April 2005 until December 2006 [1]. Briefly describes the methodology of the evaluation of the integral water transport through the sections Chernomorskoe – Island Zmeinyi and Island Zmeinyi – Primorskoe with the calculated average monthly sea levels at three stations of the observations and the dynamic method of calculating flow rates and directions.

The results of integrated assessments and distribution of monthly values of the water transport at the sections between the Island Zmeinyi – the Danube Delta and Island Zmeinyi – the east coast of the Crimea was described. It is shown that at the section Island Zmeinyi – Primorskoe was of the sea water masses transport from north to south in the periods April – July 2005 and May – December 2006 but there transported of the sea water masses in the period August 2005 – April 2006 from south to north. The possible consequences of an impact on the NWBS of the water masses, which in the spring and summer come from the Danube Region, are discussed.

The calculated values and the directions the flow characteristics of the water masses at the section Island Zmeinyi – the east coast of the Crimea were analysed and compared with the literature data. The conclusion about the periodic formation in 2005-2006 of the coastal anticyclonic eddy close to Island Zmeinyi was based. The formation of these eddies in the coastal zone of convergence between the flow of the Main Black Sea current and coast is often observed in other areas near the shelf of the Black Sea.

The proposals for the use of the regular sea level observations in the network stations of NWBS for operational monitoring of long-term fluctuation in the circulation of this part of the Black sea and the anomalies in the currents system as a result of global and regional climate change were discussed.