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Validation of numerical model of waters dynamics of the Black Sea (Russian zone)

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Numerical modeling of the Black Sea dynamics was fulfilled in the State Oceanographic Institute of Russian Federation (SOI) within the framework of European project (European COastal-shelf sea OPerational observing and forecasting system, 2007-2010 years)
and National project JISWO (Joint Information System on World Ocean). A well-known numerical Princeton Ocean Model (POM, /1, 4,5/), adapted for the regional conditions was used.
The purpose of the paper is a description of automated system of nowcasting and forecasting of hydrophysical parameters which was built during ECOOP and estimation of quality of modeled fields. First of all, the system output in the Russian part of the Black Sea is described. These results were obtained in the close co-operation with other participants of the project, particularly with the Marine Hydrophysical Institute of National Academy of Sciences of Ukraine, Sevastopol (MHI). The comparison of observations and modeled fields is also presented below. At the task of boundary conditions, nested grid technology (one-way nested grid model /3/ without a feedback) was used. Thus, necessary data on the open liquid borders of area were delivered by a basin-scale model of circulation of MHI /2/.
Horizontal resolution of regional model is $\sim$1 km at 18 vertical sigma-layers /1/), for MHI model $\sim$ 5 km. MHI model uses satellite data assimilation of altimetry and sea surface temperatures and also meteorological data (wind stress, flows of heat and mass) received from
National Meteorological Administration of Romania within the framework of the European cooperation (Fig. 1). The SOI receives the necessary border conditions for the regional Russian model in a daily mode from the MHI server and makes nowcasting and forecasting (for 3 days)
calculations of thermohaline structures and water dynamics of the region. The initial data for the forecast is generated daily as a result of MHI Black Sea Forecasting Operational System work (BSFOS).