

# **Analysis of synoptic variation of the Caspian Sea dynamic from satellite altimetry data and Hydrodynamic Simulation**

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Dynamic topography maps were used to analysis the spatial and temporal variability of the main dynamic in the Caspian Sea. They were constructed on the basis of the superposition of the sea level anomalies distribution over the climatic dynamic topography. The sea level anomalies were calculated about equilibrium surface, because the Caspian Sea level has strong interannual variability. She is calculated by TOPEX/Poseidon and Jason-1 (1992-2004) satellite altimetry data with exclude from seasonal and synoptic variability and represents a function of three variables: longitude, latitude and time. The climatic dynamic topography calculated from three dimensional baroclinic model with free surface, which was developed in Laboratory of Sea Applied Researches of Hydrometeorological Research Center of Russian Federation. Using the mean temperature and salinity data and on basis of atmospheric fields of the Project Reanalysis hydrodynamic of level and currents calculations for the Caspian Sea were carried out over the period from 1948 to 2003. Researches of seasonal variability of a level of the Caspian Sea has shown, that the obtained results will well be coordinated the hydrodynamic simulation and the hydrological level gauge data. The part of research was undertaken with support from the Russian Basic Research Foundation (Project 03-07-90174 and 05-05-64570).