The Analysis of Synoptic Variability of Sea Level and Currents of the Barents Sea on Base of Satellite Altimeter Data

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The method of assimilation of ERS-2 along-track altimeter data in the hydrodynamic model POM (Princeton Ocean Model) was worked out due to receiving the synoptic fields of the sea level and the currents of the Barents Sea. Comparison of the model sea levels and currents with the direct observation of these characteristics in the Barents Sea at the moorings and coastal observations of the sea level was made.Good accordance between the calculated and observing synoptic sea level and current oscillations was received.With the help of the statistical methods of the analysis of scalar and vector processes, probability characteristics of the sea level and current fields of the Barents Sea were estimated.It was identified that the synoptic disturbances of the sea level and the currents have pronounced wave character.Comparison of the received characteristics of the synoptic disturbances of the sea level and currents by the model calculations with the theoretical dispersion relations of different types of low-frequency waves demonstrated that the educed disturbances are closed to the characteristics of the topographic Rossby waves.