Space - Time Variability and Identification of Low-Frequency Disturbances at the Sea Level Fields of the Baltic Sea, Received on the Base of the Satellite Altimeter Data

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Low-frequency variability of the sea level of the Baltic Sea is investigated from TOPEX/POSEIDON, ERS-1 and ERS-2 combined altimeter data (AVISO/CNES, CLS; project: EVK2-CT2001-00117) on the period from 1992 to 2001 years. For every year mean values of the sea level and it variance were calculated. The same estimations were made for each season. Then under the received results the description of interannual and seasonal variability of the sea level of the Baltic Sea was made. The analysis of the frequency-directional spectrums demonstrated that the most contribution to the level variability make synoptic oscillations with the periods from 32 to 87 days and space scales from 500 to 1400 km. These disturbances are moving at 9-25 cm/s in different directions. For identification of the educed synoptic sea level oscillations the comparison of its characteristics with the theoretical dispersion relations of different types of gradient-vortisity waves was made. This comparison demonstrated those space-time scales of the synoptic disturbances of the sea level of the Baltic Sea accord well with the characteristics of the baroclinic Rossby waves and topographic waves.