



Long period simulations of the Baltic Sea. Sea level and ventilation rate of the

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The Baltic Sea baroclinic model with horizontal resolution of two nautical miles and 40 vertical levels was used to simulate the Baltic Sea hydrography. Open boundary of the model is placed across the Northern Kattegat where sea level observed in Goteborg and Fredrikshamn is given. The comparison of simulation results and observations at stations BY-5, BY-15, BY-31 and NB1 are made and discussed. A parametrization of salt water spreading in the bottom layer is suggested and tested. Special attention is given to comparison of calculated and observed sea level. The observations at 9 stations along Swedish coast are and 12 stations along Finnish coast chosen for this purpose. The model reproduce the sea level fluctuation quite well. Nevertheless periods of disagreement between the. calculated and observed sea level occur sometimes. Statistical analysis of the data available used to explain the discrepancy. An auxiliary variable - water age (Bolin and Rodhe, 1973) as well as calculated mean circulation and persistency of currents has been used for a comprehensive analysis of the ventilation rate of the Gulf of Bothnia.