



A nested grid circulation model for the German Bight

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A nested grid General Estuarine Transport Model (GETM) is used to study the circulation of the German Bight. The model consists of two components: a coarse resolution North Sea-Baltic Sea (~ 3 min) outer model and a fine-resolution (~ 1 km) inner model covering the German Bight. In both domains the model is driven by atmospheric fluxes constructed from 6-hourly ECMWF reanalyses data for 1986-2005 and bulk aerodynamic formulae. The river runoff is also considered in both models. Among the important drivers are tides specified at the outer model open boundaries. The inner model produces a realistic meso-scale dynamics. The response of simulated circulation and vertical stratification to surface forcing is addressed in the paper, as well as the development of thermohaline stratification. The contribution of local and remote forcing to the formation of seasonal and interannual variations is also analysed. The simulations are compared against previous model results, in situ data, and satellite observations.