



A 3D Model for the Kiel Fjord on the German Baltic Sea Coast

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In this paper results of the set-up and simulations of the flow and waves in the Kiel Fjord on the German Baltic Sea are presented. A three-dimensional baroclinic model with 30m grid resolution in the horizontal and 4 and 8 layers over the vertical was used. Boundary conditions along the open sea boundaries were obtained from a large scale model covering the entire Baltic Sea. Results of simulations covering moderate conditions and the extreme storm (Daisy) in January 2010 which caused main damage along the western promenade are presented. The ability of the model in predicting water levels and waves in good agreement with observations resulted quite high. A clear effect of the storms on the circulation patterns was found. The results obtained showed the capability of the model in supporting the design of coastal protection measures and for assessing the effects of harbour expansions and thermal plants.