



Developing advanced tools for modelling extreme sea level climate change in European Seas

Jun She, Jens Murawski, and Kasper S. Hintz

Danish Meteorological Institute, Copenhagen Ø, Denmark (js@dmi.dk)

With increasing speed of global warming, sea level rise in the European coasts has become increasing threats to our social-economy and safety. “Hundred-year storm surge events” have been reported in different locations in recent years. Ocean hydrodynamic modelling is one of the major tools for reconstructing and predicting sea level changes in climate scales. Although storm surge modelling is one of the most classic applications of ocean models, there still exist changes in producing accurate sea level variability in all European Sea coasts, especially for the extreme events. This presentation addresses major challenges in pan-European storm surge modelling, presenting sea level simulation results from a two-way nested pan-European Sea (with 10 sub-domains) three-dimensional hydrodynamic model HIROMB-BOOS (HBM). The difference of using two-dimensional and three-dimensional models for storm surge prediction is also analyzed based on past years’ operational experiences.