



Wave current interaction in the German Bight and Wadden Sea

K. Wahle, A. Behrens, and H. Guenther

Helmholtz-Zentrum Geesthacht, Centre for Materials and Coastal Research, Institute of Coastal Research, Geesthacht, Germany (kathrin.wahle@hzg.de)

Reducing prediction errors at coastal scales is becoming more important for operational oceanography. As a result, effects such as nonlinear feedback between strong tidal currents and wind-waves can no longer be ignored in the modelling approach. Therefore, it has become necessary to develop methodologies to couple wave- and hydrodynamic models.

At the Helmholtz-Zentrum Geesthacht a nested modelling system is used for estimating reliable now- and short-term forecasts of ocean state variables concerning ocean waves, and hydrodynamics in the German Bight. A coupled system, combining the wave model WAM and the 3-D hydrodynamic model GETM will improve the modelling results in coastal areas like the Wadden Sea and estuaries – areas highly influenced by the tide. First results, obtained with the coupled system, in the German Bight are presented and validated against available observations.