

Operational wave modelling in the Adriatic Sea with the Wind Wave Model

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The accurate modelling of sea surface gravity waves is essential for accurate oceanic forecasting with high sea waves being a major concern for navigation and coastal activities. It is also very important for oceanic modelling, with the wave input being key to the accurate modelling of oceanic surface stress, sediment resuspension, and also to oceanic current modelling.

In the Croatian Meteorological Institute, we have implemented the Wind Wave Model III (WWM-III) as an operational model. The wind forcing used is based on the numerical weather prediction model ALADIN/HR. The model is using near-surface winds dynamically adapted to 2 km grid spacing over the 3-day forecast range. The boundary condition at the Otranto strait is obtained from the WWM model forecasts computed at ECMWF. The model setup uses an unstructured grid to make the forecasts. The numerical modelization uses an implicit scheme that we describe.

We found an underestimate of significant wave height by 8 cm an absolute error of 21 cm and a correlation of 91 % when comparing with the altimeter of the SARAL satellite. Comparison with wave radar and buoys show no underestimate and smaller absolute errors.

We will also present results related to the coupling of the ALADIN model with the WWM-III model.

Key words: altimeter, wave model, model coupling