

EFFECT OF WAVE DATA ASSIMILATION ON THE NEAR SHORE WAVE PREDICTIONS

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Accurate near shore wave estimates are essential for many coastal related activities like engineering design criteria, maintenance and management of coastal facilities, infrastructure planning, navigation, etc.

Through the monitoring network operated by the Ministry of the Flemish Community a good number of oceanographic and meteorological parameters are available in real-time along the Belgian coast and on the continental shelf. Directional and non-directional buoy data provide essential information both for practical operational use and for model calibration and validation.

In addition, numerical models remain needed for wave forecasts or hindcasts. Wave conditions near-shore are obtained by transforming the conditions offshore by means of wave modelling. The offshore conditions can be obtained either from a coarser (and larger) model implementation or from data of an offshore buoy.

This study focuses on the effect of using buoy information from the local measurement network to update the hindcasted wave spectra from the coarser model run. Hindcasts are done using a series of nested implementations of the WAM-PRO (WAMDI, 1988; Monbaliu *et al.*, 2000). For the near-shore computations the SWAN model (Booij *et al.*, 1999), is used. The assimilation of buoy data is achieved following the spectral partitioning scheme of Hasselmann *et al.* (1996).

References

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