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Calibration of a wind wave hindcast (1958-2008) in the Western Mediterranean using buoy data.

A. Martínez-Asensio (1), M. Marcos (1), G. Jordà (1), D. Gomis (1), and M. Gómez (2)

(1) IMEDEA (Universitat de les Illes Balears-CSIC), Mallorca, Spain (adrian.martinez@uib.es), (2) Puertos del Estado, Madrid, Spain

The calibration of an updated wind wave hindcast spanning the period 1958-2008 and covering the western basin of the Mediterranean Sea is presented. The hindcast is obtained with the WAM model with a spatial resolution of 1/6º and forced by the ARPERA winds (Météo-France). Significant wave heights (SWH) provided by the hindcast were calibrated using buoy observations with the aim of improving the characterization of the wave climate over the region. The methodology based on a spatial calibration of the statistical distribution of SWH performed through a non-linear transformation of the Empirical Orthogonal Functions of the modelled data that minimize the differences with observations. The resulting fields were validated against independent buoy observations. The calibrated fields of SWH show an average reduction of 10% in the RMS differences with respect to observations. The benefits and shortcomings of the calibration method are shown and discussed.