



Recent Trends of the North Atlantic Wave Heights from the ERA-Interim Reanalysis

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Ocean surface gravity waves (henceforth simply called waves) have a considerable impact on coastal and offshore infrastructures and offshore operations, and are determinant on ship design and routing, but waves also play an important role on the coastal dynamics and beach erosion, and modulate the exchanges of momentum, and mass and other scalars between the atmosphere and the ocean. The constant knowledge of the evolution of the wave climate is therefore needed.

In the present study the evolution of the recent past (2000-2013) wave climate in the North Atlantic sub-basin is presented. The study is based on the ERA-Interim wave reanalysis from the European Centre for Medium-Range Weather Forecasts (ECMWF). The relation between the changes in the large scale atmospheric circulation in the North Atlantic is also investigated, as are the trends in the close to surface (10 m) wind speeds. The ERA-Interim wave reanalysis is compared to the previous ECMWF reanalysis ERA-40, assessing the improvements introduced in the EC-WAM wave model.