



Is there an added value for marine wind fields derived from regional atmospheric models?

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The hindcast surface marine wind speed fields from the regional atmospheric model REMO in two configurations and the regional atmospheric model CLM are investigated with regard to their added value in comparison to the driving wind field from the NCEP/NCAR reanalysis (NRA). To do so wind speed measurements from buoys, light ships and platforms in the eastern North Atlantic are considered as truth. Added value from the regional models is obtained when correspondence with both the measured statistical distribution and instantaneous wind speeds is higher than that of the reanalysis. Wind speed fields from NRA, REMO and CLM are bilinearly interpolated to measurement locations and statistically compared.

The results show that for instantaneous wind speeds the regional models do not have an added value both in "open ocean" areas and the German Bight. However, in the English Channel, where local topography and associated local wind regimes become important, the regional model shows an added value for instantaneous wind speeds. Concerning the wind speed distribution there's a clear indication for an added value of the regional models in coastal regions, especially for higher wind speed percentiles, while in "open ocean" areas NRA is better reflecting observed distributions. These findings hold independently of the measurements' assimilation status, meaning whether the measurements are assimilated into the reanalyses or not.

Strictly the findings of this study only hold for hindcast studies, the meaning of them for forecast studies or climate change simulations can not be judged. As the main investigations were done with wind speed observations in the eastern North Atlantic and North Sea in 1998, results may differ for different areas and years. Additionally

used observed or extrapolated wind speeds may differ from actual wind speeds.