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Verification of near surface wind speeds simulated by a multi model ensemble with focus on coastal regions

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Within the ENSEMBLES project several participating European institutions run their regional climate models (RCM) for the same European domain (including the Mediterranean and Island) with the same grid size of 0.44° and in a second simulation 0.22°. The simulations use ERA40 reanalysis as forcing data and cover at least the time period from 1961 to 2000.
To verify the near surface wind speed simulated by all participating models we compared daily mean of simulated 10m- wind speed to observation data. Here we used station data from measurement networks initialized by the Royal Netherlands Meteorological Institute (KNMI) and by the German Weather Service (DWD) with focus on stations covering the coastal regions. For the Netherlands we used observation data from 10 and 5 stations for the time periods 1971-1983 and 1971-2000, for the German coast it is 13 and 10 stations respectively.

For each station the covering gridcell of each model and also from driving ERA40 reanalysis data was used for bias, correlation, root mean squared error, and quantiles assessment.
All models perform standard deviation quite well and are well correlated with station data. Values for correlation are between 0.7 and 0.8. One model using the spectral nudging technique is higher correlated (0.85 to 0.9) with the station data. We applied several skill scores to analyse models performance compared to the driving field but also to detect possible added value of the simulations with higher resolution. Few models show an added value in performance of daily mean surface wind speed compared to the driving field.