



Analysis of near surface wind speed results from a multi model ensemble

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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 analyse the performance of near surface wind of all participating models we compared daily mean of simulated 10m- wind speed to observation data. Here we used station data from a measurement network initialized by the Royal Netherlands Meteorological Institute (KNMI). This network contains about 70 stations measuring wind speed and direction every hour and covering the area of the Netherlands. Observation data of 11 of these stations is available for the time period of 1961-2000 and about 19 stations for the time period 1981-2000.

For each KNMI station the covering gridcell of each model (with at least 50% of land fraction) 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. Best results in both standard deviation and correlation we can detect with the ERA40 reanalysis data. In contrast for all models and also for ERA40 at all stations we find an underestimation of higher wind speeds (values above the 99% quantile). Few models show an added value in performance of daily mean surface wind speed compared to the driving field.