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Interpreting bias, correlation and other skill scores for UERRA regional reanalyses

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Large new regional reanalysis data sets, spanning several decades, are produced and made available by the FP7 Project UERRA (Uncertainties in Ensembles of Regional ReAnalyses. Here we investigate how their parameter fields - mainly concerning wind and temperature – compare. We use the German regional reanalysis COSMO-REA6, and the global reanalysis ERA-Interim as benchmarks. Starting with the mean square error, the bias and the correlations and extending to other commonly used skill scores, the spatial dependency and time scale dependency (from hourly to multi-annual) are analysed. The differences are interpreted consulting independent mast and both independent/dependent station measurements. Examples for extreme situations are discussed to give a hint on the value of the new data sets, and also on their limitations. The aim is to provide potential users with a first judgement concerning the uncertainties associated with UERRA regional reanalyses wind and temperature fields.