



## **Evaluation of representativeness of near-surface winds in station measurements, global and regional reanalysis for Germany**

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Within the preparation activities for a European COPERNICUS Climate Change Service (C3S) several ongoing research projects analyse the potential of global and regional model-based climate reanalyses for applications. A user survey in the FP7-project CORE-CLIMAX revealed that surface wind (10 m) is among the most frequently used parameters of global reanalysis products. The FP7 project UERRA (Uncertainties in Ensembles of Regional Re-Analysis) has the focus on regional European reanalysis and the associated uncertainties, also from a user perspective.

Especially in the field of renewable energy planning and production there is a need for climatological information across all spatial scales, i.e. from climatology at a certain site to the spatial scale of national or continental renewable energy production. Here, we focus on a comparison of wind measurements of the Germany's meteorological service (Deutscher Wetterdienst, DWD) with global reanalyses of ECWMF and a regional reanalysis for Europe based on DWD's NWP-model COSMO (performed by the Hans-Ertel-Center for Weather Research, University of Bonn).

Reanalyses can provide valuable additional information on larger scale variability, e.g. multi-annual variation over Germany. However, changes in the observing system, model errors and biases have to be carefully considered. On the other hand, the ground-based observation networks partly suffer from change of the station distribution, changes in instrumentation, measurements procedures and quality control as well as local changes which might modify their spatial representativeness. All these effects might often been unknown or hard to characterize, although plenty of the meta-data information has been recorded for the German stations.