Predictability assessment of climate predictions within the context of the New European Wind Atlas project (NEWA)

Verónica Torralba (1), Albert Soret (1), Sergio Lozano (2), and Nicola Cortesi (1)

(1) Barcelona Supercomputing Center (BSC), Barcelona, Spain (veronica.torralba@bsc.es), (2) Centro Nacional de Energías Renovables (CENER), Pamplona, Spain

Climate predictions, which cover the gap between weather forecasting and climate projections, have not been traditionally considered by wind energy end-users who currently use climatologies instead. In the regions where the climate prediction system is skillful, the hit rate of climate predictions can be greater than mere climatology. Climate community has the challenge of evaluating and communicating skill to increase the perception of value of climate predictions, promoting their inclusion in the decision making processes related to wind resource assessments.

The aim of this work is the identification of the main skill sources in the state-of-the-art climate prediction systems at different scales: sub-seasonal (medium-term predictability), seasonal and decadal (long-term predictability). The first step in the predictability assessment is the comparison of the forecasts with the reanalysis by means of different skill scores, each one developed to capture a particular aspect of the forecast system. The second step is related with the detection of the strength of the relationship between wind speed and its various sources of predictability. These predictability assessments of near surface wind speed will be used to complement the probabilistic model chain developed under the New European Wind Atlas project.