Changes in E-OBS wind grid

20 December 2021

Starting from the monthly update for the period January-November 2021, we have made two improvements in the grid for daily mean windspeed.

Firstly, for countries that did not provide daily mean windspeed data, we have added the daily mean windspeed based on the NOAA/NCEI repository Global Summary Of the Day (GSOD). The effect of this change is clearly illustrated when we move from the left to the middle column in Figure 1. The addition of GSOD clearly increases the spatial coverage by observation stations.

Secondly, we have made a technical improvement in the R code by using sparse matrix algebra for the kriging regression of the daily anomalies. This decreases both memory requirements and compute time, thus allowing us to increase the search range. The effect of an increased search range is illustrated when moving from the middle to the right column in Figure 1, where the search range is increased from 30 km in the middle column (resulting in a patchy coverage) to 150 km in the right column (resulting in a more continuous coverage).

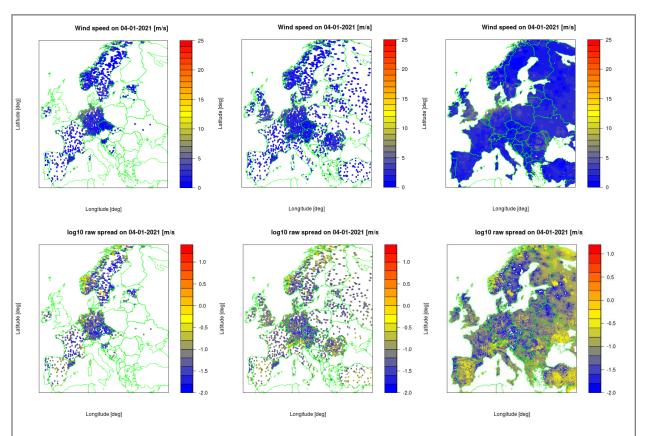


Figure 1. Improvements in the E-OBS grid for daily mean windspeed. Top row shows ensemble mean, bottom row shows ensemble spread. Moving from the left to the middle column illustrates the effect of adding stations from the GSOD, while moving from the middle to the right column illustrates the effect of increasing the search range from 30 km to 150 km.