Geophysical Research Abstracts
Vol. 20, EGU2018-16176, 2018
EGU General Assembly 2018

Filipa Varino (1), Jonas Berndt (2), Maxime Taillardat (3,4), Michael Zamo (4), Olivier Mestre (4), Philippe Arbogast (1), and Hendrik Elbern (2)

(1) CNRM- UMR3589 Meteo-France/CNRS, Toulouse, France (filipa.varino@meteo.fr), (2) IEK 8 Julich Germany , (3) Le Laboratoire des Sciences du Climat et de l'Environnement (LSCE-UMR 8212), Paris France, (4) Meteo-France, Toulouse, France

Accurate and reliable probabilistic forecasts are important not only in Atmospheric sciences, but also in several meteorology-related industries as, for instance, renewable energy production using wind turbines or solar panels performance, strongly dependent on weather conditions. In order to produce probabilistic meteorological forecasts, a common approach is to generate ensemble forecasts. Nevertheless, ensemble model runs are often biased and usually affected by underdispersion regarding surface variables. In order to correct them, we apply post-processing statistical methods.

On the one hand the use of statistical post-processing methods has the potential to reduce systematic errors. On the other hand, one may claim that using a larger number of members in the ensemble may improve the estimation of errors / uncertainties. In the Framework of the EoCoE (Energy-Oriented Centre of Excellence for Computing Applications) project, the Jülich Research Center has developed a ultra-large one thousand-member ensemble system in order to evaluate the added-value of large ensembles in the characterization of uncertainty and unexpected extreme events.
In this study we apply post-processed statistical calibration to this ultra-large ensemble in a variety of case studies. Several calibration strategies are used to calibrate station-level wind data form Météo-France's 35-member probabilistic model PEARP. These results are, then, compared with the ones of the ultra-large ensemble system.