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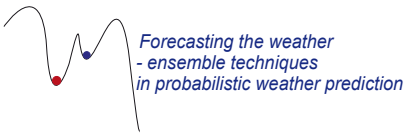

Cross-validation statistics in EUMETGRID: A comparative analysis of gridding methods from European NMHSs.

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The EUMETGRID programme aims to establish a dataset of gridded climate variables covering all of Europe. Access to this dataset and to related products and services will improve continent-wide monitoring of weather and climate, foster the understanding and prediction of climate variations and advance impact modeling of extremes and weather related hazards.

The EUMETGRID dataset is being assembled and tiled together onto a common grid from existing national grid datasets provided and hosted by the national meteorological and hydrological services (NMHSs). On the one hand, this enables to take advantage of the vast knowledge on regional climate conditions built into the national gridding procedures and to utilize the full coverage and up-to-date quality of nationally available observations. On the other hand, the differences in data treatment, observation density and gridding procedures result in heterogeneities of the dataset. In order to assess these and to quantify gridding accuracy, project partners also assemble and jointly evaluate cross-validation experiments conducted at the individual NMHSs.

In this study we consistently analyze and discuss cross-validation statistics from gridding methods of NMHSs across Europe. The analysis is for km-scale gridding of daily temperature and precipitation, based on a dataset for one year (2010). Several measures of accuracy are evaluated, quantifying systematic and random errors as well as the ability of the methods to reproduce extreme events. The results will be interpreted in relation to the underlying interpolation concepts, density of station network, topographic complexity and climatic conditions. Even though results are preliminary (one year of data only), this is the first systematic comparison of operational gridding procedures at European NMHSs.