Serão os resultados iguais?
Comparação E-OBS vs SPAIN02

Are results the same? Comparing E-OBS vs SPAIN02

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SUMMARY

The validation and performance evaluation of numerical simulations relies on the use of gridded observations. The ECA&D E-OBS dataset covers the entire European continental region and has therefore been widely used in regional studies. However, new local datasets, such as SPAIN02 have been developed and started to be used as well. Therefore, the question of the differences that might arise from using one or the other dataset must be addressed. The main difference in the development of the aforementioned datasets is the number of observational stations used. In order to assess the differences in precipitation representation between datasets, the yearly values of key quantiles was used and their statistical significance tested, for a domain containing only mainland Spain.

Resumo

Meteorological and climatological studies rely evermore on numerical model simulations. However, in order to rely on these simulations, there is the need to evaluate their performance and by comparing them against observations. Therefore, the need to use gridded observation "ready-to-use" datasets is growing.

In 2007, the European Climate Assessment & Dataset (ECA&D) started providing the public with a gridded observation dataset for overland Europe (E-OBSv1.0). Since then, there have been several improvements, namely an increase in station density. The E-OBSv10.0 dataset (latest version released) is on a 0.22º x 0.22º rotated grid and has been regularly used in the evaluation of historical simulations of climate simulations such as those from the PRUDENCE, ENSEMBLES and, most recently, CORDEX.

The SPAIN02 is also a gridded observation dataset for mainland Spain and the Balearic islands, obtained from a set of high-density quality-controlled station datas. In order to provide a dataset comparable to climate simulations such as that of ENSEMBLES, the data is available not only at a 0.2º x 0.2º rotated grid.

Due to the existence of these datasets, both created using similar interpolation techniques but considering different stations, the question of which dataset to use for mainland Spain arises.

In order to assess the differences in precipitation between the two datasets, the v4 version of the SPAIN02 and the v10.0 of the E-OBS were used, for the 1970 to 2010 period.

The yearly values of the wet-days (precipitation over 1 mm) of key quantiles (50, 75, 90, 95 and 99) was used for the comparison and their differences tested for each grid point using the Rank-Sum statistical test. These quantiles were chosen in order to, not only analyse the median and more common events, but also the extreme values of precipitation which might not be well represented and are of great importance for climate simulations.