

Joint EUSTACE and GlobTemperature User Workshop

Lisbon, Portugal, 27 – 29 November 2017

RESULTS AND CONCLUSIONS

The workshop confirmed several of the user wishes from earlier workshops and inventories for EUSTACE and GlobTemperature and gave some new or more detailed information on other aspects. Below the most important aspects related to user requirements are described.

- Quality of the data

Information on the quality of the data is important for users. Therefore it is was discussed in several of the sessions.

Validation of the datasets with independent data is important, but when is a dataset really independent (independent stations or independent period)?

Comparison of datasets gives important information on the quality to users.

Far back in time there are hardly any station data (for the air temperatures for EUSTACE back to 1850). How can we give users an idea of the quality of these estimates?

Information on uncertainties can help giving an idea of the quality of the data, but then this information should be easily accessible (e.g. easy to visualize). Flagging can also help (but when flag for what?)

In the case of EUSTACE for the infilling information on climatology, large scale variability and local differences is used. Easy access to information on the climatology fraction in the air temperature estimates is requested by several users.

There are still a lot of challenge for the datasets, and therefore for the users. One of the main challenges is the presence of clouds, and consequently that relationships between in-situ station data and satellite data can only be determined for clear sky conditions. Users like to have information on how this affects the infilled data in the datasets.

The discussion on the quality of the representation of extremes is described below.

- Representation of extremes

There were also interesting discussions related to the representation of extremes? For many users the correct representation of extremes is important for their applications. Coarser resolutions of course suppress the more local extremes. Therefore for several applications higher spatial resolutions are requested. Higher spatial resolutions than 0.25 are possible, but require a large effort and also higher resolution auxiliary data. However, the further processing methods may potentially also suppress extremes (coarse information on land cover, infilling methods, limited number of in-situ station data, etc). Users would like to get some idea of this potential suppression of extremes.

There isn't a very clear answer yet on the question how to describe the quality of extremes in a dataset or what metrics to use for this. However, comparison of indices of extremes (e.g. number of tropical days, see also indices in ECA&D and in HadEX) based on e.g. EUSTACE and on station data would be a good idea. Also checking how well extreme events such as the summer heat in 2003 in Europe or

the 210 heat in Russia are represented in the EUSTACE dataset (intensity, spatial extension, length) would be useful for users and give them an idea of the quality of the EUSTACE dataset. In the case of a global data set, this also requires examples from various continents.

- User guidance

It is important to describe clearly and consistently the methods and definitions used, e.g. the definition of average temperature, what do the uncertainties mean and how we selected an independent dataset for validation.

Describe what can and cannot be done or concluded from the data. Users cannot always do that themselves. E.g. describe when the EUSTACE dataset is (probably) better than re-analysis, and how to interpret the air temperature estimates and uncertainties in locations where no stations for comparison/validation are available.

Guidance on the use of the dataset is considered important, also in the form of examples that are described in detail. Also describe in detail how the data can be accessed and obtained in detail. New users of these types of data sets are often not familiar with the portals, tools, format and need help to be able to use the datasets.

User friendly guidance is also needed. Depending on the type of users it may differ what is considered user friendly. Experienced users want a concise description of methods and definitions, but they do not need much guidance in how to access the data or how to process the data. For less experienced users more elaborate descriptions (without too much abbreviations, etc.) are needed and clear and detailed examples of use cases. Help to find existing portals, tools to process and/or visualize the data is also very useful for this group of less experienced users. With good and user friendly guidance the user community of the datasets can be extended beyond the climate science community.

- How to keep the products alive?

Both GlobTemperature and EUSTACE are going to the end of their projects. However, for the users it would make the datasets more interesting if they are updated regularly in the future. For some users an almost daily update would be most ideal (e.g. for attribution of extreme events, monitoring of volcanos), but for others less frequent is also OK. There was a discussion on several aspects important for keeping the products alive. First of all, it is important to show the added value of the datasets over others (e.g. EUSTACE appears to do better for the polar regions than re-analysis). Besides this it is also important to get the datasets used and know to potential users. This means that the datasets are included in several portals (or can be accessed through portals) or mentioned at portals (e.g. in the Climate Data Guide?). Besides, it would also be good to make more publicity for the various datasets, e.g. by publishing use cases. This also could increase the user community.