Invitation to comment on the Global Climate Observing System ECV product requirements

Deadline: 31 December 2017.

The Global Climate Observing System (GCOS) is issuing an open invitation asking for comments on the existing GCOS Essential Climate Variable (ECV) product requirements. This will be the first step towards a future revision of the ECV product requirements expected in 2021-2022. The responses to this invitation will be considered by the GCOS science panels[1] and will be subject to a further public, open review.

https://www.research.net/r/ECVRequirements

Background

The Global Climate Observing System (GCOS) is asking the climate science and adaptation communities for comments on the existing list of Essential Climate Variables (ECV) and their requirements that was published in the recent GCOS Implementation Plan[2] and welcomed by the UNFCCC in 2016. In addition, GCOS is also asking for comments on the overall targets for the monitoring of the climate cycles (Water, Carbon and Energy as well as the biosphere). Changes and additions to the ECV list can be proposed, but support for the existing requirements is also encouraged.

More information about GCOS and ECV can be found at gcos.wmo.int.

GCOS is now looking beyond supporting climate science to supporting climate adaptation. Clearly many adaptation issues and observational needs are local but there are data and information that can be suppled from large-scale efforts (e.g. data to fill gaps and local high-resolution information can be suppled from satellites, downscaled models and reanalysis). The GCOS ECV requirements should cover these needs.

ECV need to be relevant, practical and cost-effective. They are required to understand the climate system, to monitor changes in it and as the basis of planning to mitigate or adapt to changes in the climate system. GCOS needs to ensure the list of ECV is stable with minimal changes as it is used as the basis of long-term planning by networks and satellite operators.

GCOS has specified requirements for ECV[2]. The current requirements can be downloaded from the survey page. For each ECV there may be several separate ECV products. The requirements reflect current needs and capabilities and are the basis for long-term,

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[1] AOPC: the Atmospheric Observations Panel for Climate
OOPC: the Ocean Observations Panel for Climate
TOPC: the Terrestrial Observations Panel for Climate

[2] *The Global Observing System for Climate: Implementation Needs*. GCOS-200. Pub WMO, Geneva, 2016. The requirements for the ECV are given in Annex A of this document.

systematic observations of the climate as discussed in the GCOS Implementation Plan. These were produced by the three GCOS science panels supported by a range of experts and subject to a public review as part of the development of the implementation plan. Now GCOS is looking forward to producing an update to the implementation plan in 2021-2022. As a first step, GCOS will review the requirements. Therefore, we would like to invite anyone interested who has relevant expertise to comment on the existing requirements. These will then be considered by the GCOS science panels whose first version of any revisions will be subject to an open, public review.

General Instructions

Comments can cover the existing ECV and ECV products or propose new ECV or ECV products and should be submitted using the on-line form at https://www.research.net/r/ECVRequirements. It is anticipated that most respondents will only comment on a few ECV products relevant to their expertise.

In providing comments you should indicate which ECV and ECV product you are referring to, what changes you would propose, what specific needs you have in mind, any technical limitations on the observations, any references and an outline of how any proposed numbers have been derived.

A web form is provided to collect the comments for each ECV product. The form asks for the following:

- Name and affiliation. The updated requirements will include acknowledgement for all who have contributed to the work. This information will be used to credit each reviewer. The comments will be considered anonymously by the GCOS science panels.
- The numerical requirements. In the past GCOS has asked for a single number. This time GCOS is considering a range:
    - A "threshold" - the minimum requirement to be met to ensure that data are useful
    - A "goal" - an ideal requirement above which further improvements are not necessary
    - The may also be a need for intermediate values which, if achieved, would result in a significant improvement for specific applications (e.g. climate models or emergency warning systems).
- The requirements are specified in terms of:
    - Frequency of observation
    - Resolution
    - Required measurement uncertainty (expressed as +/- 2 standard deviations)
    - Stability (i.e. the maximum long-term drift in the values, usually per decade)
    - Latency (this is a new addition to the requirements)
    - Any geographical considerations
    - Any applicable standards
- Additional information required includes:
    - A short justification for any proposed values

- Any technical considerations
- References supporting the proposal