Constructing change fields [Retired]

IPCC Data Distribution Centre: Retired Pages

When pages on the DDC become obsolete or misleading, the content is moved into archived documents in order to preserve a record of past content while maintaining current information on the DDC pages.

The “Constructing change fields” page describes, in general terms, the issues to be considered when constructing change fields (or anomalies). It refers to work done for the IPCC Third Assessment Report.

Date of publication of this document: XX Jan, 2020

Citing this document: Constructing change fields [Retired], 2020: *IPCC Data Distribution Centre: Retired Pages. DOI: [To be completed]*

-------------------------------------------------------------------------------------

STEPS NEEDED TO COMPLETE THIS DOCUMENT:

* Review by sub-group; revise as needed;
* Discuss whether alternative advise or information should be offered (e.g. information on baseline periods being used in AR6 – if available).
* Reserve DOI;
* Add DOI in recommended citation and publication date, remove “Steps needed ….”; convert to PDF and upload to DOI.

Constructing change fields

Constructing Change Fields

GCM outputs are not generally of a sufficient resolution or reliability to be applied directly to represent the present-day climate. Instead, it is usual for baseline observational data to be used, which are commonly in the form of time series of daily or monthly data for several variables over a period such as 1961-1990.

A scenario of future climate is obtained by adjusting the baseline observations by the difference (or ratio) between period-averaged results for the GCM experiment (usually 10 or 30 year periods are used) and the corresponding averages for the GCM control simulation. In recent transient experiments, the simulated baseline period (e.g. 1961-1990) is used in place of the control-run results. Differences are usually applied for temperature changes (e.g. 2040-2069 minus 1961-1990) while ratios are commonly used for precipitation change (e.g. 2040-2069 divided by 1961-1990), though differences may be preferred in some cases. When this procedure is completed across some or all of the model grid boxes, a pattern of differences or ratios known as a "change field" is produced. Change fields of 30-year averages for eight variables have been computed from the monthly outputs of all experiments held in the Data Distribution Centre. In this case, changes for all variables are expressed as differences relative to the present, where the present refers to model simulated 1961-1990 climate.