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Geoscientific Model Development Discussions

Interactive comment on "The SSP greenhouse gas concentrations and their extensions to 2500" *by* Malte Meinshausen et al.

Malte Meinshausen et al.

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REPLY TO

Interactive comment on "The SSP greenhouse gas concentrations and their extensions to 2500" by Malte Meinshausen et al. Astrid Kerkweg a.k erkweg@fz-juelich.de Received and published: 15 November 2019

Dear authors, in my role as Executive editor of GMD, I would like to bring to your attention our Editorial version 1.2: https://www.geosci-model-dev.net/12/2215/2019/ This highlights some requirements of papers published in GMD, which is also available on the GMD website in the 'Manuscript Types' section: http://www.geoscientific-model-development.net/submission/manuscript_types.html REPLY: Thank you for your com-

ments and our apologies for the lateness in getting these replies back into the open review. We appreciate the reference to the GMD manuscript types and realise that our paper is currently not appropriately categorized. It should be categorized as MODEL EXPERIMENT DESCRIPTION PAPER (and not as "development and technical paper" as it is at the moment).

In particular, please note that for your paper, the following requirements have not been met in the Discussions paper: The main paper must give the model name and version number (or other unique identifier) in the title.

REPLY: In this multi-community exercise of creating GHG concentrations for the SSP scenarios as community resources for the CMIP6 and other intercomparison exercises, it feels odd to single out one or a few models over others. Even though MAGICC7.0 was used for the step from emissions to concentrations, the SSP emission pathways were created by different Integrated Assessment Models, namely IMAGE (SSP1-1.9 and SSP1-2.6), MESSAGE-GLOBIOM (SSP2-45) REMIND-MAGPIE (SSP5-3.4-over and SSP5-8.5) etc. Thus, given the community nature of these SSP concentration datasets, we would prefer keeping the title as is and free of a long list of model names. END REPLY.

"Code must be published on a persistent public archive with a unique identifier for the exact model version described in the paper or uploaded to the supplement, unless this is impossible for reasons beyond the control of authors. All papers must include a section, at the end of the paper, entitled "Code availability". Here, either instructions for obtaining the code, or the reasons why the code is not available should be clearly stated. It is preferred for the code to be uploaded as a supplement or to be made available at a data repository with an associated DOI (digital object identifier) for the exact model version described in the paper. Alternatively, for established models, there may be an existing means of access- ing the code through a particular system. In this case, there must exist a means of permanently accessing the precise model version described in the paper. In some cases, authors may prefer to put models on their own

website, or to act as a point of contact for obtaining the code. Given the impermanence of websites and email addresses, this is not encouraged, and authors should consider improv- ing the availability with a more permanent arrangement. Making code available through personal websites or via email contact to the authors is not sufficient. After the paper is accepted the model archive should be updated to include a link to the GMD paper."

Papers describing data sets designed for the support and evaluation of model simulations are within scope. These data sets may be syntheses of data which have been published elsewhere. The data sets must also be made available, and any code used to create the syntheses should also be made available. The cited text is mainly focused on Code, however, the editorial states that the same criteria adhere to newly developed data sets. Therefore, a version number for the data set should be provided in the title of the manuscript, to enable a distinction of data sets, if in a later stages updates of the same data set are required. Regarding the data availability, permanent access to the data set as published in this article mus be ensured. Therefore, please consider to aquire a DOI for the full data set (e.g. via zenodo).

REPLY: Thank you. In line with the specifications for the MODEL EXPERIMENT DESCRIPTION PAPER, we provide a data availability section. We spend a fair amount of time to provide a user interface that is as easy as possible for all the data to be downloaded, specifically or in bulk, at greenhousegases.science.unimelb.edu.au. All our data is associated to DOI numbers and we provide those now in the revised data availability section. We hope that this is appropriate and sufficient for a MODEL EXPERIMENT DESCRIPTION PAPER where the purpose is to provide the community with a unified dataset that is used by a broad range of GCM and ESM models.

The revised data availability section now reads: “A supplementary data table is available with global and annual mean mole fractions. The complete dataset with latitudinally and monthly resolved data in netcdf format is available via the Earth System Grid Federation (ESGF) servers at https://esgf-

node.llnl.gov/search/input4mips/ with a total of 1656 files for source version 1.2.1. The license for all data is Creative Commons Attribution-ShareAlike 4.0 International License (CC BY-SA 4.0). The digital identifiers of the produced datasets, as provided by the ESGF servers are specific to the 9 SSP scenarios: (SSP5-3.4-over: 10.22033/ESGF/input4MIPs.9867; SSP5-8.5: 10.22033/ESGF/input4MIPs.9868; SSP2-4.5: 10.22033/ESGF/input4MIPs.9866; SSP4-3.4: 10.22033/ESGF/input4MIPs.9862; SSP3-7.0: 10.22033/ESGF/input4MIPs.9861; SSP3-7.0-lowNTCF: 10.22033/ESGF/input4MIPs.9824; SSP1-1.9: doi.org/10.22033/ESGF/input4MIPs.9864; SSP1-2.6: 10.22033/ESGF/input4MIPs.9865; SSP4-6.0: 10.22033/ESGF/input4MIPs.9863) Additional data formats, i.e. CSV, XLS, MATLAB .mat files of the same data are also available via http://greenhousegases.science.unimelb.edu.au. “ END REPLY.

Please consider to move your paper to the manuscript type "Model experiment description papers", as it might be better placed there (see third point in the above list, which comes from this manuscript type)

REPLY: Yes, we agree that “model experiment description paper” is a better category. END REPLY.

Yours, Astrid Kerkweg

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