Geoscientific

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Discussions

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comment

Interactive comment on "Development and testing of scenarios for implementing Holocene LULC in Earth System Model Experiments" *by* Sandy P. Harrison et al.

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We apologise if we have caused confusion through our inclusion of a data availability section in the manuscript. This manuscript describes the protocol for a set of envisaged simulations. As such, there are no data accompanying the paper.

The climate model forcings that say should be used for the planned LULC simulations are standard PMIP data sets. They have been referenced in other PMIP protocol papers (e.g. Otto-Bleisner et al., GMD 10 (2017); Kageyama et al. GMD 10 (2017) as follows:

All the forcing data sets, their references, and their code can be found on the PMIP4 website (https: //pmip4.lsce.ipsl.fr/doku.php/exp_design:lgm, PMIP4 repository, 2017). The forcings will also be added to the ESGF Input4MIPS repository (https://esgf-node.llnl.gov/projects/input4mips/, with details provided in the "input4MIPs summary" link).

We followed this format in our Code section.

Model outputs that will be generated by groups following the protocol would normally be archived in the ESFG archive, following international standards and practice for CMIP6

The reference to PANGAEA was designed to indicate where validation data sets would be archived once they have been produced. Again, this paper indicates the type of validation that is envisaged as part of the protocol but does not present these data sets per se.

We will remove the Data Availability section from the manuscript, since this paper only describes the protocol for running experiments. In this case, we would modify the final paragraph of the paper to indicate that groups wishing to run these simulations should follow standard CMIP practice for archiving as follows:

In addition to providing a protocol for the PMIP 6ka sensitivity experiments, we have devised a protocol for implementing the optimal LULC reconstructions for the Holocene in transient experiments. The goal here is to provide one of the necessary forcings that could be used for transient simulations in future phases of PMIP. This will allow an assessment of LULC in these simulations, and therefore help address issues that are a focus for other MIPs e.g. LUMIP or LS3MIP. When these new forcings are created, they will be made available through the PMIP4 website (https: //pmip4.lsce.ipsl.fr/doku.php/exp_design:lgm, PMIP4 repository, 2017) and the ESGF Input4MIPS repository (https://esgf-node.llnl.gov/projects/input4mips/, with details provided in the "input4MIPs summary" link). Modelling groups who run either equilibrium or transient experiments following this protocol are encouraged to follow the standard

CMIP of archiving their simulations through the ESFG.