

## Author Response to the comments by Topical Editor

We thank the Editor for considering our manuscript (ms) for possible publication in GMD. Our reply to the Editor's comments is provided below in bold font:

The authors have sufficiently addressed reviewer comments. The authors need to ensure that further checks are done when uploading a final copy. This includes proper documentation of open source code and data.

We have carefully read the ms. and corrected typos and formatted the ms. (figures, references, etc.) according to GMD requirements. We have modified the 'model code and data availability' section to address the Editor's comments. The revised section includes the discussion on how to obtain the model source codes and data, and the technical details of the open source NEMO model. The revised section from the ms. is pasted below.

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Due to intellectual property right restrictions, the coupled model system, MetUM or JULES source codes and documentations cannot be provided directly. However, full source codes and scripts used in the study can be made available to the Editor for review.

***Obtaining the MetUM.*** The Met Office Unified Model is available for use under license from UK Met Office via a shared MetUM code repository, which can be accessed via <https://code.metoffice.gov.uk/trac/um/wiki>. A number of research organizations and national meteorological services use the UM in collaboration with the Met Office to undertake basic atmospheric process research, produce forecasts, develop the UM code, and build and evaluate Earth system models. For further information on how to apply for a license, see <http://www.metoffice.gov.uk/research/modelling-systems/unified-model>.

***Obtaining JULES.*** JULES is available under license free of charge. For further information on how to gain permission to use JULES for research purposes, see [http://jules-lsm.github.io/access\\_req/JULES\\_access.html](http://jules-lsm.github.io/access_req/JULES_access.html).

***Obtaining NEMO.*** The NEMO vn3.6 model code and documentation is freely available from the NEMO website (<https://www.nemo-ocean.eu>). The details of NEMO branches, compilation keys and namelist parameters used in our modeling systems are described in the supplement.

***Obtaining OASIS-MCT.*** The OASIS3-MCT coupler is disseminated to registered users as free software from <https://verc.enes.org/oasis>.

***Data.*** The data size of coupled forecast model output in our simulations are of several terabytes and requires large storage facility. However, all model outputs analyzed in the manuscript can be made available upon contacting the authors. The observational datasets used for the model evaluation are freely available and data sources are described in the data discussion section of the manuscript.

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