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Geoscientific Model Development Discussions
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# *Interactive comment on* "Sea Ice Model Intercomparison Project (SIMIP): Understanding sea ice through climate-model simulations" *by* Dirk Notz et al.

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## Comments from CMIP Panel

The CMIP Panel is undertaking a review of the CMIP6 GMD special issue papers to ensure a level of consistency among the invited contributions, also in answering the key questions that were outlined in our request to submit a paper to all co-chairs of CMIP6-Endorsed MIPs. We very much welcome the important contribution from SIMIP to the CMIP6 special issue, below are a few comments:

Please ensure that the title of your paper includes both the acronym of the MIP, and CMIP6, so that it is clear this is a CMIP6-Endorsed MIP.



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Discussion paper

Please consistently use the term *'CMIP6-Endorsed MIPs'* when you refer to other MIPs that are endorsed by CMIP6 (e.g. p2, l21; p10, l25)

Please ensure consistency of the experiment names and abbreviations with the CMIP6 overview paper (Eyring et al., 2016): for example p5, l10: replace 'control simulation' with 'pre-industrial control simulation'.

p5, l10: while the *piControl* and the CMIP6 historical simulations are specified as experiments from which the model output defined in SIMIP is requested, there is no mentioning of the Diagnostic, Evaluation and Characterization of Klima (DECK) experiments. Please specify whether the output should be collected also from the other CMIP DECK experiments (i.e. *amip, abrupt-4xCO2* and *1pctCO2*) and if so, why.

p5, l 10: is it necessary to collect all output from all CMIP6-Endorsed MIP experiments or can this be partly reduced to priority 1 output for example? Please could you be specific in the paper?

p2, l28: please replace *'CMIP6 data call'* with *'CMIP6 data request'* and you could refer to the invited contribution to this special issue or the website of the CMIP6 data request.

p10, l15ff: any plans to contribute or encourage the contribution of observations that could be used to evaluate the proposed experiments to obs4MIPs?

Appendix A: Model documentation request (p.12): detailed model documentation including information on tuning is clearly important. However, this information should be collected as part of the Earth System Documentation (ES-DOC) activity (see http://es-doc.org) rather than in a separate effort. Please ensure the information that SIMIP requires is communicated to the ES-DOC group.

Appendix B (p 13, l8ff). We agree it is best to collect all variables on the native model grids. However, some additional information from the models is required to allow re-gridding of the data to a common grid. OMIP is proposing a weights file that model

groups should provide to enable regridding from the native grid to one or two CMIP6 standard grids. Please refer to Griffies et al. (2016) and follow the same proceduce for sea ice requests.

Appendices C-G: This is a very helpful overview of the variables requested by SIMIP. It would be nice to identify for each variable whether this is a variable that can (at least in principle) be evaluated with observations. Are simulators such as the COSP simulator required for any model-observation comparisons?

References:

Eyring, V., Bony, S., Meehl, G. A., Senior, C. A., Stevens, B., Stouffer, R. J., and Taylor, K. E.: Overview of the Coupled Model Intercomparison Project Phase 6 (CMIP6) experimental design and organization, Geosci. Model Dev., 9, 1937-1958, doi:10.5194/gmd-9-1937-2016, 2016.

Griffies, S. M., Danabasoglu, G., Durack, P. J., Adcroft, A. J., Balaji, V., Böning, C. W., Chassignet, E. P., Curchitser, E., Deshayes, J., Drange, H., Fox-Kemper, B., Gleckler, P. J., Gregory, J. M., Haak, H., Hallberg, R. W., Hewitt, H. T., Holland, D. M., Ilyina, T., Jungclaus, J. H., Komuro, Y., Krasting, J. P., Large, W. G., Marsland, S. J., Masina, S., McDougall, T. J., Nurser, A. J. G., Orr, J. C., Pirani, A., Qiao, F., Stouffer, R. J., Taylor, K. E., Treguier, A. M., Tsujino, H., Uotila, P., Valdivieso, M., Winton, M., and Yeager, S. G.: Experimental and diagnostic protocol for the physical component of the CMIP6 Ocean Model Intercomparison Project (OMIP), Geosci. Model Dev. Discuss., doi:10.5194/gmd-2016-77, in review, 2016.

With many thanks for your ongoing efforts in the CMIP6 process.

The CMIP Panel

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