

Second review of “A comparison of the atmospheric response to the Weddell Sea Polynya in AGCMs of varying resolutions.”

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I would like to thank the authors for their thorough response to my first review, and I am glad to see that they have incorporated all my previous suggestions. The authors have reworded and clarified statements regarding the impact of the study, applied a method to control the False Detection Rate, and utilised all ten members of ERA5 reanalysis. I would also like to thank the authors' for their further explanation of the significance of their study in the context of other recent research.

I now just have a couple of minor suggestions for the authors in light of their revisions:

- It would be good to include the reference for the Benjamini-Hochberg method in your bibliography.
- The author has written "...by t-test and False Discovery Rate" in a number of places, it would be more accurate to replace "False Discovery Rate" in this context by "The Benjamini-Hochberg procedure". Technically, the False Discovery Rate is the rate at which statistical tests falsely appear significant, and the Benjamini-Hochberg procedure is a method to control the FDR (i.e. it is a "False Discovery Rate controlling procedure").
- Is there a version number that accompanies HadGEM3? I thought that HadGEM3 was the name of the whole model family - perhaps you could check this, I could be wrong here. For example, perhaps it is called HadGEM3-AO. The reference given (Williams et al. 2017) doesn't seem to be in your bibliography.
- In my opinion, the point in line 94 "The interpretation of coupled models and of the direct response to the WSP is made difficult..." should be reworded to "Interpreting the direct response of the WSP in coupled models is made difficult..." or similar - at the moment it does not quite work grammatically.
- Could you double-check the bibliography, I have noticed a couple of missing entries (above) but also some of the entries are incomplete, e.g. "Timmermann, R., P. Lemke, and C. Kottmeier, 1999: Formation and Maintenance of a Polynya in the Weddell Sea." has no journal name.
- Typo in Figure 6 caption; "solid".

Kind regards,
Tarkan A Bilge