

Response

Dear editor

Thank you for your final decision, and your conditional on some the small technical corrections.

We have made all of your requested changes, and go through these point-by-point.

Public justification (visible to the public if the article is accepted and published):

Thank you for responding to the referee's suggestions. I am happy to accept your paper subject to some small technical corrections listed below. Congratulations!

Throughout text and also Table 8: Salinity has no units (since the 1980 equation of state) so please remove all mention of psu. Instead, on first mention of salinity (and in the caption of Table 8), state that all salinities will be given on the practical salinity scale and therefore have no units. (Of course, it would be better to use absolute salinity as defined in TEOS-10, introduced in 2010, which would have units of g/kg, but I imagine your model produces salinity on the practical salinity scale).

Our models use EOS80, although we are currently implementing TEOS-10.

We have added a note in the abstract saying the units are unitless:

“We project a Sea-Surface Temperature (SST) rise of 3.11 °C ($\pm 2\sigma = 0.98$ °C), and a Sea-Surface Salinity (SSS) freshening of -1.01 ($\pm 2\sigma = 0.93$; on the (unitless) practical salinity scale).”

We have made this clear in a small new section of the methods section before any salinity values are reported (apart from in the abstract):

2.11.1 Salinity units

Both NEMO AMM7 and HadGEM3-GC3.05 use the 1980 equation of state (EOS-80; UNESCO, 1983), which works with the practical salinity scale (which has no units). In this study we report salinities on the practical salinity scale.

With the reference

UNESCO, 1983: Algorithms for computation of fundamental property of sea water. Techn. Paper in Mar. Sci, 44, UNESCO.

We have removed the psu from the paper, tables, figures, and supplementary material.

We have removed psu from table 8 (supplementary tables and 7 and 8), and added “Salinities are given on the (unitless) practical salinity scale.”

We have also updated all the figures with the psu unit – where a x label was “SSS (psu)” we have changed it to “SSS”.

There are 29 occurrences of “compared to” which should all be changed to “compared with” (or where appropriate, the more succinct “than”).

We have also changed *compared to*, and changed the hyperlink text colour to black.

Hopefully we have made all your suggested changes, if there are any other points, please contact us again,

Thank you again for all you work on this, and you help to improve our paper,

Kind Regards

Jonathan, Matthew, and co-authors.