

Technical corrections made to the manuscript “Evaluation of NorESM-OC (versions 1 and 1.2), the ocean carbon-cycle stand-alone configuration of the Norwegian Earth System Model (NorESM1)” by Schwinger et al.

We thank the editor for evaluating the revised version of our manuscript. All technical corrections requested by the editor have been addressed as detailed below (editor’s comments in italic font, our response in normal font).

We also took the opportunity to correct a few additional minor errors in our manuscript as listed at the end of this response.

p. 8, ll. 172-173: “To prevent excitation of numerical noise”: I suggest to replace “excitation” by “amplification”

This has been done.

p. 10, ll. 236-237: “...the ratios of carbon to phosphorus and nitrogen to phosphorus in organic matter are $RC:P = 122$ and $RN:P = 16$, respectively, and $RO_2:P = 172$ moles of O_2 ...” [grammar and suppression of a few words]

Thank you, this has been adopted.

p. 10, ll. 239-240: “by Smith” should read “of Smith” or “from Smith”

This has been corrected.

p. 12, l. 281: “... export productions depend on ...” [grammar]

This has been corrected.

p. 13, l. 302: “... DIC biases ...”

This has been corrected.

p. 14, l. 311: a few words to explain why 115 moles?

We rephrased this sentence as follows. “. . . it is assumed that $2/3 \times R_{O_2:P} \approx 115$ moles of nitrate are consumed by denitrifying bacteria to remineralise an amount of detritus corresponding to one mole of phosphate (i.e., it is assumed that the oxygen from two moles of nitrate substitutes three moles of oxygen during denitrification).”

p. 20, ll. 511ff: as specified in the introduction to the standard definition of Fortran 90 (ISO/IEC 1539 : 1991 (E)), names are spelled “FORTRAN 77” and “Fortran 90” (yes, differently since the '90 standard)

All occurrences of “FORTAN77” and “FORTRAN90” have been replaced by

“FORTRAN 77” and “Fortran 90”, respectively.

p. 20, ll. 312-313: “... to conform to the Fortran 90 free source code format certain model options, such as, for example, ...

This has been adopted.

p. 21, l. 534: there is no such thing as “psu”. Salinity is a dimensionless quantity, and as such does not have any “unit” (see, e.g., UNESCO Technical Paper 45 on The International System of Units (SI) in Oceanography). Please discard and check throughout.

All occurrences of “psu” have been removed from the manuscript.

p. 23, ll. 571-572: “...but superimposed onto a negative trend of 8 Sv ...”

This has been adopted.

p. 23, l. 583: “... of the restoring salt flux ...”

p. 23, l. 588: “...that the AMOC strength ...”

p. 23, l. 591: “...overestimates the AMOC strength ...”

p. 23, l. 593: “...period from 2004 to 2012.”

These errors have been corrected.

p. 25, l. 640: “Sectroradiometer” should read “Spectroradiometer”

This has been corrected.

p. 25, l. 642: “Carbon based Production Model”

This has been corrected.

p. 26, l. 663: “At low latitudes ...”

This has been corrected.

p. 33, l. 862: “... alkalinity at low latitudes ...”

This has been corrected.

p. 40, l. 1070: “whether one ...provides a more reliable ...” should read “which one ...provides the most reliable ...”

p. 40, l. 1072 “... techniques such as that applied by ...” or “... techniques such as those applied by ...”

This has been adopted.

p. 42, l. 1117: “... which one of the new ...”

p. 42, l. 1121: “... that the sinking speed ...”

This has been corrected.

p. 43, l. 1143: "...will also offers ..." should read "...will also offer ..."

This has been corrected.

p. 44, l. 1170: "...shelf when the ..." should read "...shelf where the ..."

This has been corrected.

p. 63, 3rd line of the caption: "retrivals" should read "retrievals"

This has been corrected.

Figures in general: please enlarge the graphics as much as possible. Some of them are barely readable (e.g., Figs. 9, 10, 14, 15, 17 and others) in the current manuscript version. Please check throughout.

We increased the font size in Figs. 5,6,9,10,14,15,17,18,19,22,23,26. We also provide Fig. 26 in a better quality (higher resolution).

Further corrections(line and page numbers refer to the updated manuscript):

p. 6, l. 2: "provides a terrain following coordinate" corrected to "provides a smooth representation of bottom topography".

p. 10, l. 15: "HAMOCC5" replaced by "HAMOCC5.1"

p. 14, l. 13: "through" replaced by "by"

p. 16, l. 11: added "at layer *i*".

p. 22, l. 27-28: added "left panel" and "right panel"

p. 27, l. 14-15: moved "Fig. 8d" into the parentheses in the following sentence.

p. 34, l. 12: added "into the ocean"

Table 5, caption: replaced "last but one" by "second to last"

Fig. 7, caption: removed "different".

Fig. 8, caption: "(c) tropics" corrected to "(c) tropical Indian Ocean"

Figs. 12, 24, 25, caption: replaced "phosphorus to oxygen ratio" by "oxygen to phosphorus ratio"