

Editor decision: Publish subject to minor revisions (review by editor)

by Sebastian Gerland, 13 Feb 2024

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

Dear Ana Lúcia Lindroth Dauner,

thank you for the newly revised version of your manuscript, along with explanations and version with tracked changes. This is very much appreciated.

I found only a few remaining points I would like you to consider following up, see list below. The line numbers used refer to line numbers in the ATC3 file.

Thank you very much for your work with this.

Best regards

Sebastian Gerland

Reply: We appreciate the additional comments and made the needed alterations in this latest version. The lines refer to the marked-up version.

Your response to the comments of reviewer #1:

- Lines 553-555: I suggest to support the statement on the role of snow with a reference (and consider refining the statement according to which reference is used). See for example in Leu et al. 2015 (Progress in Oceanography 139 (2015) 151–170).

Reply: We improved this sentence and added suitable references (line 546-550 in the marked-up version).

Your response to the comments of reviewer #2:

- Line 295: I suggest to add “the” ahead of “LIA”.

Reply: Done as suggested (line 295 in the marked-up version).

- Line 475: Assuming this was a typo: Remove “e” in “estructure”.

Reply: Indeed, it was a typo. Done as requested (line 469 in the marked-up version).

- Line 540: remove double space (between “EOF” and “will”) and change “.” to “;” after “pattern”, or rephrase last sentence (“In this case ...”) so it would become a complete sentence.

Reply: Done as requested (line 533 in the marked-up version).

Other comments:

- Lines 420-424: When using 10exp6 instead of «million», please add a dot ahead of 10exp6. However, I suggest to use instead “million”, as for example also done in lines 427 and 442.

Reply: We replaced the expression “10exp6” for “million” (lines 414-418 in the marked-up version).

- Lines 440-443, and figure caption of Figs. S8-S14: There should be no space between number and “%”.

Reply: Done as requested throughout the entire manuscript.

- The sector shown as modelled area (red lines) in the map in graphical abstract reappears in Figures 3b, 6cdgh, S6 and S7. However, I could not find an explanation of this in any of the figure captions. I suggest to add an explanation where it first appears (Fig. 3b), beyond the graphical abstract. Else, I see that the modelled area is drawn in the south slightly beyond the 90 west and 30 east meridians, I wonder if that is done on purpose (if the modelled area is really like this), or if this is a drawing inaccuracy. If the latter is the case I suggest to redraw the area in the actual figures.

Reply: We added the explanation of the thick black line in the caption of Figure 3 as requested. We also fixed the drawing of the line to coincide with the 90 west and 30 east meridians in all figures.