Reviewer anonymous:

It has been a matter of great pleasure for me that I reviewed the manuscript entitled “The contributions of various calcifying plankton to the South Atlantic calcium carbonate stock” by Anne L. Kruijt and others for possible publication in *Biogeosciences* (egusphere-2025-4234).

< General comments >

Kruijt et al. evaluated the production and export of calcifying plankton groups (coccolithophores, foraminifera and planktonic gastropods), then estimated their relative contribution to particulate inorganic carbon (PIC) stocks and export based upon the field studies in the South Atlantic. The paper has substantial information that should be shared with the geochemical research community. Quantifying the standing stocks and fluxes of calcifying marine organisms is essential information for establishing ocean carbon cycle models. The author’s paper is well written, and results are clearly presented. In my opinion, if the below minor points are adequately addressed and improved, this manuscript can make a fine contribution to *Biogeosciences*.

1) *We thank the reviewer for their appreciation of our work and constructive review.*

< Specific comments >

In the paper, authors focused on the “production” and “export” of calcifying plankton within the ocean reservoir. In the global carbon cycle, authors know, carbon fluxes between different reservoirs (sediments, oceans, atmosphere, rocks, etc.) are also critically important. I have a little concern that the role of foraminifera in the global carbon cycle might be undervalued. Therefore, would you also mention the importance of the carbon flux of foraminifera/coccolithophores (~0.2 Gt C per year) from the ocean reservoir to the sediment reservoir?

2) *Indeed, the relative contributions of coccolithophores/foraminifera/pteropods to carbon fluxes may differ for the different earth-system interfaces, with foraminifera gaining in relative importance in the sedimentary domain.*

L189: Please refer “Appendix A” here before citing Appendix B (L190).

3) *We will refer to Appendix A in the line above*.

L278: Please change “Supporting Information S2.7” to an appropriate quote or delete it.

4) *We will correct this to ‘Appendix F’*

L334: “Eq. 8” is OK? Maybe “Eq. 7”?

5) *Thank you for picking up this mistake. We will change this to: ‘Export of PIC calculated according to Eq. 6 should at steady state be balanced by PIC production calculated with Eq. 5. We have checked all references to equations again and will also correct the following incorrect references to equations:*

- *Line: 253: Eq. 4 and 5 should be Eq. 2 and 3*
- *Line 261: Eq. 4 should be 2*
- *Line 484 Eq. 9 should be 7*
- *Line 488: Eq. 9 should be 7*

L334-335: “Eq. 7” is OK? “Eq. 5”?

6) *See reply 5*

Figure 4: If possible, for the reader's easier understanding, please add the water depths for net1-5 in the graph or caption. For example, add 150 at the boundary between 4 and 5 on the Y-axis, 200 at the boundary between 3 and 4, and 300 at the boundary between 2 and 3, etc.

7) *Good suggestion, we will add this information to the graph.*

L484, 488: “Eq. 9” is OK? “Eq. 7”?

8) *See reply 5*

L577: “fig. 4b” is “Figure 6b”?

9) *Thank you, 4b should indeed be 6b*

L580-581: I think this part (“or dissolution due to microbial respiration induced undersaturation within sinking aggregates”) seems a bit abrupt. If possible, please provide a more detailed description or additional references.

10) *We will provide additional references to support this statement: Subhas et al., 2022; Dong et al., 2019, Alldredge and Cohen, 1987.*

L668: “a 75 μm mesh” is OK? If so, please add the reason for using “a 75 μm mesh”.

11) *Yes, this mesh size is correct. The reason for using a 200 and 75 μm mesh was to select individuals in the < 200 μm size fraction. We first sieved the sample over a 200 μm mesh. The residue on the filter was discarded, and the filtered sample was subsequently sieved over a 75 μm mesh. 75 individuals from that residue were picked and weighed.*
We could have used any mesh ≤125 μm for obtaining all individuals in the 200-125 μm size fraction. Since the plankton pump sample was collected with a 125 μm mesh, this sets lower limit for the sizes of the individuals in the sample.
We will add an additional line in the manuscript to clarify this:

- *‘To collect foraminifera in the 125-200 μm size fraction, the plankton pump sample was sieved over a 200 μm mesh and the filtrate was subsequently sieved over a mesh smaller than that of the plankton pump. We used a 75 μm mesh, but since the plankton pump sample was collected with a 125 μm mesh, the specimens on the filtered residue are ≥125 μm in size.’*

< Technical corrections >

12) *Thank you for all the below corrections. We will make sure to correct them all as suggested.*

L262: Please change from “…interval Export…” to “…interval. Export…”.

L380: Please change from “(Lauvset, et al., 2024)” to “(Lauvset et al., 2024)”.

L404: Please change from “*H. Inflatus*” to “*H. inflatus*”.

L425: Please change from “being being” to “being”.

L426: Please change the fonts for “Emiliania huxleyi” and “Gephyrocapsa huxleyi.” to italic.

L430: Please change from “(Appendix Figure G1)” to “(Appendix Figure G1)”.

L757, 759: Please change from “L. Beaufort” to “Beaufort”.

L791: Please change from “$group,,station$,1000m” to “g$roup,station$,1000m”.

If the above minor points are adequately addressed and improved, I think this manuscript can make a fine contribution to *Biogeosciences.* I hope my comments are helpful in improving their paper.