Dear Editor,

Thank you so much for your helpful comments. They have helped us pay attention to every detail and improve the manuscript. We spotted and corrected several areas of unclear or missing details and some errors. These revisions have strengthened the overall quality of the manuscript.

- Figures 2, 4, 6, 8 and 13 are composed of raster graphics, please use vector graphics as in all other plots.
[Response] We have changed all these plots to vector graphics.

- Avoid using italics for subscripts and superscripts which do not denote variables: "C", "N", Chl", "div", "opt", "phy", "dn", "ref", "max", "min", "m" (?), "PSII", etc.
[Response] Done.

- Avoid using italics for units (and use LaTeX \upmu instead of μ).
[Response] Done, thank you.

- The Github and Zenodo links lead to code version labelled "second release", while the title mentions PIBM 1.0 (which is an older release not accessible via Zenodo) - please update the paper title to match the relevant code release
[Response] We have made a new release which is now published on Zenodo and matched with the paper title (10.5281/zenodo.15296286).

- It is somewhat misleading that the software name PIBM is almost nowhere to be found in the code archive (where IBM is used) - please update the code archive with a project name and version matching the paper.
[Response] We have updated the Readme file of the code archive to match the paper description.

- Spell openMPI as "Open MPI" (2 instances: p34 & p15).
[Response] Changed!

- Note: OpenMPI is just a particular implementation of the MPI standard, statements such as "use OpenMPI parallel computing" sound misleading - it is MPI API that the code relies on, and it can be compiled against different MPI implementations, Open MPI being just one example.
[Response] Thank you for your comment. You are absolutely right, and we have updated the text for clarity. The revised lines in the manuscript are as follows:

- Line 381: "Due to the computational intensity of the particle random walk, we implemented parallel computing using the MPI standard,
- which can be compiled with different implementations such as Open MPI (Message Passing Interface Forum, 2023)."
- Line 658: "We also implemented parallel computing using MPI to simulate the random walk of both passive and phytoplankton particles, with Open MPI as one implementation option."

- I see that the Gabriel et al. 2004 citation is suggested on the Open MPI website as a general-purpose citation for Open MPI, but it is a 20-year old conference paper about a draft of one particular MPI-2 implementation, while we are now at MPI-4.1!
[Response] As shown above, we now refer to the technical report by the Message Passing Interface Forum (2023) for the MPI standard.

- Spell openMP as OpenMP (p34/l660).
[Response] Done.

- Since you mention considering integration with PlanktonIndividuals.jl and point to the Julia language, please clarify in the paper that the IBM codebase is FORTAN/Matlab/shell/R.
[Response] Detail added to the Model description: Overview section (Line 82).

- Fix URL in Ledbetter 1979 reference (htps://doi.org/https://doi.org/...)
[Response] Corrected.

Best regards,
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Bingzhang Chen