

Reply to Editor

Response to the editor comments

The Authors thank the editor for their comments that have helped to improve our manuscript. We hope that the editor finds our manuscript now suitable for publication in Ocean Science. Hereinafter, the reviewer's comments are in black and the authors' answers in blue.

Very minor textual changes

- Suggestions and typos were accepted and corrected.
- Units were changed to Roman font.
- The Equations were manually centered. We are using the Copernicus Publications Manuscript Preparation Template for LaTeX Submissions and the "amsthm" package, but they do not automatically center the Equations.
- The N^2 equation we are using to describe N_T^2 is the one found in the TEOS-10 manuals (https://www.teos-10.org/pubs/TEOS-10_Manual.pdf and <https://www.teos-10.org/pubs/gsw/pdf/Nsquared.pdf>). We understand that there might be confusion, so we have added the citation and changed the description to $\Delta\theta$ and ΔP , hoping to be more clear.