

## Response letter to the Editor

Although you have adequately addressed the concerns/comments from Referee 2 in your response, some points necessitate additional elaboration or clarification within the manuscript. Please consider fully incorporating your replies to the comments "Lines 89-91 and 391-400 [...]" and "Lines 104-105 [...]" in the Appendices and explaining them accordingly in the main text (e.g., update the text in Discussion from Lines 394-403).

**Response:** We would like to thank the editor for this careful valuable comment. In the revision, we have carefully considered it, and incorporated the discussion of quasi-steady state and horizontally inhomogeneous stratification into the manuscript. Please find Appendix B and Appendix C in the paper and relevant discussions in the main text.

Please ensure that the colour schemes used in your maps and charts allow readers with colour vision deficiencies to correctly interpret your findings. Please check your figures using the Coblis – Color Blindness Simulator (<https://www.color-blindness.com/coblis-color-blindness-simulator/>) and revise the colour schemes accordingly.

**Response:** We appreciate the editor pointing out that the colour schemes in the charts might be unfriendly to the readers with colour vision deficiencies. We now check all figures using the Coblis – Color Blindness Simulator and find that Figure 9 should be definitely modified. We have now revised the colour schemes.