

We would like to thank the reviewer for the constructive comments and suggestions and respond to them below in blue type.

The authors have well addressed my concerns in the first round by clarifying the effect of Coriolis force and seasonal stratification, and explaining the meteorological inputs used in the model. I only have a few comments below.

(1) L132: Corresponding to my previous comment (6), you can specify the time of weakly stratified and strongly stratified seasons here.

The corresponding months were added (L132-133).

(2) L247: “The remaining modes contain less than 5% of the total variance.” Over all the layers?

The remaining modes contain less than 5% for layers 0-30 m. The depth range is now specified in L248.

(3) Figure 13 and section 5.4 well clarified the effect of thermocline depth.

We are glad you agree.

(4) In terms of the length of the article, 5.5 should be made more concise, and 5.6 can be left out or moved to the supporting information since it is separated from the main messages.

Section 5.6 was removed. Certain pertinent points, however, were put into section 4.3 (L444-448). Since L549-551 is already mentioned in L102-104, we removed it from Section 5.5 and made further modifications.

(5) L579-584 can be left out or combined into Introduction.

We removed L579-584. We modified the Introduction (Lines 84-86) and Conclusion (Lines 569-570).