Response to Reviewers
Manuscript ID gmd-2024-187

Responses to the Comments of Reviewer

Reviewer #1:
Overall Evaluation
This article presents a novel Hybrid Coupled Model (HCMROMS) based on the Regional Ocean Modeling System (ROMS) for studying the El Niño-Southern Oscillation (ENSO). The authors provide a detailed description of the model's formulation and evaluate its performance in simulating ENSO-related phenomena. The research is well-conducted, with clear objectives, robust methodology, and comprehensive analysis. The results demonstrate the model's capability to simulate ENSO cycles and associated three-dimensional temperature anomalies, making it a valuable tool for future ENSO research.

Our response: We thank the reviewer for the suggestions (in italic black). We have revised the manuscript based on these suggestions and comments. Below are our point-by-point responses to the reviewer's comments (in blue).

1. P5, Line 108: "and Um and Vm are calculated time series of left field and left field in the statistical model", the second "left field" should be changed to "right filed"?
Our response: changed

2. P11, Line 228: We adopt ERSST in this subsection instead of using the NOAA OI SST, "OI SST" => "OISST"
Our response: changed

3. P18, Line 372, 374: "It shows that the leading EOF (Mode 1)", "The second EOF (Mode 2)". The first and second EOFs have been defined as Mode 1 and Mode 2, respectively, so, please ensure consistency in terminology throughout the subsequent text.
Our response: changed

4. P18, Line 397: "phase vectors are in the third quadrant" => " the fourth quadrant"
Our response: changed

5. P18, Line 399: "phase vectors are in the fourth quadrant" => "the third quadrant"
Our response: changed

6. P19, Line 406: "Vectors at the bottom right of (a-b, d-e) show", "d-e" should be changed to "d-g"?
Our response: changed

7. P22, Line 457: "where [$*$] denotes the interannual operator", the symbol $*$ is not found in Eq. 5
Our response: thanks for the comment, we have removed the $*$ in Eq.5

8. P23, Line 481: "both advection and vertical diffusion effects play constructive roles in shaping the dipole-type temperature changes (Figs. 14b).", Figs. 14b => Figs. 14b, f, and j
Our response: changed

9. P23: The streamlines in Fig 14 need some description.
Our response: thanks for the comment, we have added a description to it.

10. P24, Line 535: "The distinct functions of Mode2 explain the asymmetry between", Mode2 => Mode 2
Our response: changed