

The revised version of the manuscript has undergone significant improvements in response to previous rounds of review. The authors have diligently addressed major concerns raised by the reviewers, resulting in a substantially enhanced scientific contribution. The underestimation of Mixed Layer Depth (MLD) and its correlation with wind speed, introducing clarifications on the use of bulk formulae and incorporating additional information on wind speed underestimation. The inclusion of the SYM12 simulation and detailed comparisons with SYM4 have strengthened the study's assessment of the benefits of high-resolution modeling. The robustness of the lateral interocean exchanges ratio has been reasonably explained, and numerical estimates were added to address concerns about the lack of in-situ observations. Minor revisions, such as a concise title and corrected figure legend, further enhance the manuscript's overall quality.

In conclusion, I recommend the acceptance of this manuscript for final publication. The authors have successfully addressed all major and minor concerns, resulting in a well-polished, scientifically sound, and valuable contribution to our understanding of the South China Sea Throughflow and water budget seasonal cycle. The study's methodology, analyses, and conclusions are robust, and the manuscript is ready for dissemination to the scientific community.