

Interactive comment on “Gas exchange estimates in the Peruvian upwelling regime biased by multi-day near-surface stratification” by Tim Fischer et al.

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The manuscript discusses the N₂O gas exchange off the Peru Upwelling region. Overall the manuscript presents an important topic and I feel should be published after some revision. The primary conclusion is that the N₂O gas-exchange is dependent on the stratification and the gradients of N₂O which are increasing downward (concentration less at the surface). The authors use data from gliders and shipboard CTD.

Major comments: perhaps I missed it but I did not see and connection the authors made with the seasonal upwelling cycle off Peru. Do they believe there are possible connections to trends in the upwelling cycle? Although the data limits the conclusions

C1

on these time scales, can the authors, based on the results, speculate on the possible N₂O relationship to longer trends, ENSO for example.

Minor comments: I believe the paper needs a thorough proofread before acceptance for publication. The overall quality of the figures I feel can also be improved. For example some of the figure had labeled “Day”, but this is confusing. Day of what?

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C2