

Interactive comment on “Importance of vertical mixing and barrier layer variation on seasonal mixed layer heat balance in the Bay of Bengal” by Ullala Pathiranage Gayan Pathirana et al.

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This study examined the seasonal variations of the mixed layer heat balance in the Bay of Bengal, which are mainly associated with the processes of the surface heat flux into the MLD and the vertical mixing at the base of the MLD. The importance of the vertical mixing and the influence of the barrier layer thickness on the mixed-layer heat balance are emphasized in the analysis and the results are generally interesting. Here are some suggestions for the authors to consider in the further revision.

1)The abstract should be shorten and clearly state what’s new in this study associated with the previous ones. 2)The "Results" section includes many discussions which often

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distract the readers from the results. I would suggest organize those discussions into a "Discussion" section and also revise the "Summary" section to separate the previous results from other research and the new findings in the current study. 3)Line 135, why choosing a constant folding depth of 25m? 4)Lines 145-150, " Q_{net} is the surface heat flux adjusted for the penetrative shortwave radiation through the base of the mixed layer...". Should Q_{net} be the Q_{net} defined in equation (2)? 5)The text should be go through to avoid some obvious typos and mistakes. For example, Line64, "thesurface" should be "the surface"

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