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Ocean Science
Discussions

Interactive comment on "Mixed layer depth variability in the Red Sea" *by* Cheriyeri P. Abdulla et al.

C. P. Abdulla

acp@stu.kau.edu.sa

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Response to the interactive comment on "Mixed layer depth variability in the Red Sea" by Cheriyeri P. Abdulla et al. (SC1).

The manuscript "Mixed layer depth variability in the Red Sea" discussed the variability by deriving the MLD monthly climatology from temperature profiles. This is probably the first time such a study has been conducted in the Red Sea. The paper is organised well and the discussions are relevant. It forms an important piece of information, especially on the MLD structure and the eddies in the Red Sea. This paper may be accepted in present form for publication in Ocean Science.

A minor comment:

The region around 18 °N experiences the wind convergence during winter. Does it affect the MLD structure in the central Red Sea?

Answer:

Thank you very much for your interest in the manuscript, and for your effort and time in reviewing. The convergence of wind is observed in the central Red Sea during winter, where NNE winds converge with SSW winds. This resulted in a relatively weak wind speed in the central Red Sea. The climatology of mixed layer in the central Red Sea during this period has shown relatively deeper mixed layer. It has been observed that the wind convergence during winter result pile up of sea level in the central Red Sea with maximum sea level around 19 °N. This is consistence with results from Sofianos et al., 2001. The pile-up of sea level and possible enhancement in vertical convection could be the reason for relatively deeper mixed layer in the central Red Sea.

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