

Title: Tidal impacts on primary production in the North Sea

Comments:

The reviewed article has great revision updated. Here, only one point hopes the authors can explain it much clearly. As what addressed in the previous comments, I have asked that the authors should define/cite or should describe the definition of the depth of stratification (line 233-235). It is good that I received several references from authors to confirm the definition, saying that the temperature drops 0.5 deg-C from surface [Gong et al., 2014; Karl and Lukas, 1996; Richardson et al., 2002; Sharples et al., 2006].

Here, I summarized the use of those provided reference.

1. Gong et al. (2014), used this temperature difference to determine the depth of the mixed layer, but their paper focused on the south sea, which is around 8 deg-N ~ 25 deg-N

2. Karl and Lukas (1996), also use this criterion; however, they focused on the Hawaii island region, which is 25 deg-N around.

3. Richardson et al. (2002), used this method to calculate the MLD around Agulhas Bank [around 35 deg-S].

4. According to the Sharples et al., 2006, the difference of 0.5 deg-C temperature criterion is applied to determine the beginning period of onset stratification, on the difference of the temperature between surface and bottom water. Subsets is presented below.

"onset of the main period of stratification in Table 2. is defined as the first date after which the surface-bottom temperature differences exceeds 0.5 deg-C and is maintained for at least 3 days, preventing earlier short-term stratification events being identified as the beginning of the main summer stratification. ...."

In addition, in the response of the preview review, authors also provided a reference: Lefèvre, D., Bentley, T. L., Robinson, C., Blight, S. P. and Williams, P. J. I. B.: The temperature response of gross and net community production and respiration in time-varying assemblages of temperate marine micro-plankton, *J. Exp. Mar. Bio. Ecol.*, doi:10.1016/0022-0981(94)90005-1, 1994.

I search the keyword by "Lefèvre" and "1994" in the article, I cannot find where this is cited. In my opinion, I believed that authors want to cite a paper that use the definition of mixed layer depth. If that is the case, I will use: Levitus 1982, Climatological atlas of the world ocean. This book addressed the difference of the MLD definition between temperature criterion (0.5 deg-C) and density criterion (0.125 kgm<sup>-3</sup>).

Overall, I agreed with the most of the papers addressed above, using the 0.5 deg-C to determine the MLD in tropical/subtropical. The use of this criterion here is ok but acceptable. However, if like line 233-236 described, using this  $\Delta T$  + time window (3 days) to determine the onset time of stratification, we might need to address here clearly. Because reference 4 is define the  $\Delta T = 0.5$  deg-C differently. It should not make confuse for the future readers here by defining two different things with the same criterion with no clear explanation. Please classify this point clearly.