

Interactive comment on “A Limited Effect of Sub-Tropical Typhoons on Phytoplankton Dynamics” by Fei Chai et al.

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Interactive comment:

The general effect of tropical cyclones (TCs) on primary production/chlorophyll has also been studied at the global scale in Menkes et al. (2016). Looking at the effect of more than 1000 TCs, they reached the conclusion that the overall TC contribution to annual primary production was weak and amounted to 1%, except in a few limited areas (east Eurasian coast, South tropical Indian Ocean, Northern Australian coast, and Eastern Pacific Ocean in the TC-prone region) where it could locally reach up to 20–30% (Figure 1). These patterns were associated with the structure of the nutricline depth. While TCs could locally induce strong chlorophyll/primary production effects,

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the overall seasonally weak effect of TCs on primary production was explained by the limited regions of shallow nutricline. That contrasted with wider regions of shallow thermoclines where TCs could induce an overall cooling on larger spatial scales on seasonal timescale.

Reference: Menkes, C.E., Lengaigne, M., LeBlond, M., Ethelberg, C., Bopp, L., Aumont, O., Vincent, E., Vialard, J., Jullien, S., 2016. Global impact of tropical cyclones on primary production. *Global Biogeochemical Cycles* 30, 767–786. <https://doi.org/10.1002/2015GB005214>

Response: Thank you very much for providing the important reference. It is nice that our conclusion is consistent with the model result from Menkes et al. (2016), showing the limited contribution of typhoons on promoting net primary production in the Northwest Pacific Ocean. We have added the reference and discussion of underlying dynamics in the revised manuscript.

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