



EGUsphere, referee comment RC1
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Comment on egusphere-2022-478

Yuntao Wang (Referee)

Referee comment on "Phytoplankton reaction to an intense storm in the northwestern Mediterranean Sea" by Stéphanie Barrillon et al., EGU sphere,
<https://doi.org/10.5194/egusphere-2022-478-RC1>, 2022

The study is well designed for capturing storm induced variation over the upper with in-situ observations from glider and cruise. Its impact is further quantified with atmospheric model and satellite observations. The center of storm is mostly captured along the glider track and the storm induced dynamics is clearly identified. Findings are generally persuading and interesting. A minor revision is suggested for addressing the following comments before the paper being accepted for publication.

Major comments:

- What is the spatial resolution and quality for the satellite observations? Though multiple algorithms are applied for the chlorophyll dataset and their results are highly consistent, the cloud coverage can be an issue for contaminating the observations. More details are needed to describe the measurements.
- The storm induced variations are largely varying depending on the feature of the storm. For example, prominent changes are identified with storms with large intensity and slow moving (Wang, 2020). The frequency of storm and their associated intensities in the Mediterranean Sea should be described; thus, the readers have a better understanding for the representative of investigated storm.
- The storm didn't necessary induce elevation in phytoplankton, especially in the stratified ocean with prominent subsurface chlorophyll maximum (Figure 13a). Similarly, there was no net increasing in chlorophyll resolved in the BGC-Argo observation in the northwest Pacific after a strong typhoon (Chai et al., 2021). The observed elevation in chlorophyll may be due to a redistribution, which should be further examined for different depth.

Minor comments:

- The color shading for the boxes in Figure 3(a) is misleading. Please adjust to the same kind of color with different intensity.
- Ticks on the yaxis are misleading in Figure 11(b) since three curves with two axes. What is the meaning of the background shading?
- There are some inconsistencies in the formatting, like Line 252 the paragraph didn't finish.
- Please modify the location where the figures to be embedded as many figures are inserted in the middle of a paragraph.

Chai, F., Wang, Y., Xing, X., Yan, Y., Xue, H., Wells, M., Boss, E. (2021), A limited effect of sub-tropical typhoons on phytoplankton dynamics. *Biogeosciences*, 18(3), 849-859.

Wang, Y. (2020), Composite of typhoon induced sea surface temperature and chlorophyll-a responses in the South China Sea, *Journal Geophysical Research: Oceans*, 125, e2020JC016243.