

Earth Syst. Sci. Data Discuss., referee comment RC2
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Comment on **essd-2021-230**

Anonymous Referee #2

Referee comment on "Collection and analysis of a global marine phytoplankton primary-production dataset" by Francesco Mattei and Michele Scardi, Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2021-230-RC2>, 2021

This manuscript is very valuable and key to the scientific community studying oceanic primary production (PP). It represents a considerable amount of work.

Authors performed a meta analysis of the collected data, showing its spatial and seasonal distribution, adding extra information such as the bathymetry and distance from the coast of the sampling area, contributing to an ecological characterization of the database.

Depth-integrated values of primary production were computed, which is a valuable output.

I agree with the comments of referee 1 regarding the lack of a clear information of the origin of some data; it is crucial for the reader to understand if the data is from in situ or obtained by modelling.

There is an interesting thorough graphical analysis of the dataset.

However, the text based on Figure 16 seems a bit poor. Also, graphs here are too small. The distinction of the different oceans could perhaps be more developed.

The paper could establish links with previous papers which gathered PP parameters such as Bouman et al, Earth Syst. Sci. Data, 10, 251–266, 2018 <https://doi.org/10.5194/essd-10-251-2018> and Kulk et al *Remote Sens.* **2020**, 12, 826; doi:10.3390/rs12050826, which as a similar scope, but with satellite data.

I think the manuscript achieves the quality criteria of ESSD.