

Earth Syst. Sci. Data Discuss., author comment AC2
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Reply on RC2

Héloïse Lavigne et al.

Author comment on "The HYPERMAQ dataset: bio-optical properties of moderately to extremely turbid waters" by Héloïse Lavigne et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2022-189-AC2>, 2022

Responses to Reviewer #2

We thank you for all the time you spent reviewing our manuscript and your constructive comments. In the following your comments are copied in italic.

Review of "The HYPERMAQ dataset" by Lavigne et al

by Giorgio Dall'Olmo (gdallolmo@ogs.it)

General comments

This manuscript describes a dataset of optical properties (both apparent and inherent) and co-located measurements of turbidity, phytoplankton pigment and suspended matter concentrations. The dataset focuses on turbid productive waters.

Overall the manuscript nicely supports the dataset by describing its main features. The dataset is unique as it has been collected in strongly turbid and productive water bodies in different continents. The dataset appears to be of high quality and so is the manuscript describing it.

Reply: Thank you for these positive comments.

Specific comments

I have very few and minor specific comments in the attached pdf.

Reply: here are main comments of the attached pdf and our replies:

Have you thought about merging / submitting the HYPERMAQ dataset to the LIMNADES database? This would help minimising the fragmentation of datasets that forces users to retrieve data from different sources.

Reply: We agree that for certain types of application, users need data from one or two parameters and prefer databases that gather different sources. This is why we propose to submit our data to the copernicus ocean colour in situ database (OCDB) as it should become one of the major databases for bio-optics in the coming years. This integration should be performed within the next months

Chascomus lake: please, could you make sure you are reporting the correct number of significant figures?

Reply: All reported values are exactly as they have been published in the cited references (Diovisalvi et al. 2014, Pérez et al. 2011).

Diovisalvi, N., Salcedo Echeverry, G.E., Lagomarsino, L.&Zagarese, M.E., Seasonal patterns and responses to an extreme climate event of rotifers community in a shallow eutrophic Pampean lake. *Hydrobiologia* 1 (1), 13, 2014.

Pérez, G.L., Llames, M.E., Lagomarsino, L., Zagarese, H., Seasonal variability of optical properties in a highly turbid lake (Laguna Chascomús, Argentina). *Photochemistry and Photobiology*, 87: 659–670, 2011.

Line 222 [Chl-a]

Reply: "[Chl-a] and phytoplankton pigments" have been replaced by "Phytoplankton pigments including [Chl-a]"

Line 224: not clear how exactly the pigment concentrations were obtained: HPLC again?

Reply: As stated lines 222 to 224: "phytoplankton pigments were determined using High Performance Liquid Chromatography (HPLC) [...] in campaigns in the Belgian coastal waters, the Spuikom and the Gironde." Hence, in Belgian waters, measurements provided by the LifeWatchBE come from HPLC analysis. As it was mentioned just above, we do not think this is necessary to mention it again. To be more consistent between sentences lines 222-224 and line 224, "Belgian waters" in line 224 has been changed to "Belgian coastal waters".

Figure 3: labels are very small: consider increasing their sizes

Reply: Thank you for this suggestion, size of labels has been increased in Figures 3, 4 and 9.

Figure 6: could it be better to use a log10 scale for the y axes?

Reply: We agree that log10 scale allows to better emphasis small values which are more numerous in our dataset of a_nw. However, for consistency and comparison with Figure 6B (c_nw) where log-scale is not necessary we prefer to keep a linear scale in Figure 6A.

Figure 8: use a same y range?

Reply: given the high diversity of water reflectance spectra shown on Figure 8, we have chosen to keep the same range (0-0.12) for all the sampling sites except the most turbid ones (Rio de la Plata and Gironde, Pauillac) where the y-range had to be slightly extended.

Lines 292: add reference

Reply: the reference Luo et al., (2018) has been added.

Luo, Y., Doxaran, D., Ruddick, K., Shen, F., Gentili, B., Yan, L., & Huang, H. (2018). Saturation of water reflectance in extremely turbid media based on field measurements, satellite data and bio-optical modelling. *Optics express*, 26(8), 10435-10451.