

Reply on RC1

Alexandre Castagna et al.

Author comment on "Optical and biogeochemical properties of diverse Belgian inland and coastal waters" by Alexandre Castagna et al., Earth Syst. Sci. Data Discuss.,
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This paper provides a database of coincident optical and biogeochemical parameters, which should be useful in a variety of applications, e.g., detection of algal blooms, ocean color algorithm development and validation. It should be especially helpful in coastal and inland waters.

This paper gives detail description of methodology and technique of acquiring and processing in-situ measurements which are state-of-art. Moreover, a certain uncertainty information are also appended. Thus it should be of good quality and well referenced.
We appreciate the reviewer for the comments, suggestions, and perspective of the impact of our work.

Yet some improvement could be made regarding to:

1) Figure index and reference should be in the order following its appearance.

We appreciate the observation. The figures now are called in correct order.

2) The sentence in line 27 begining with 'The PONDER project' is not correct in writing.

The phrase was changed to: "The PONDER project (BELSPO SR/00/325) focused on developing tools for spaceborne remote sensing of inland water systems using high spatial resolution (≤ 30 m) sensors. During the course of the project, global coverage and open access data for high spatial resolution sensors was only available for multispectral missions."

3) In line 286, 'due' should be 'due to'.

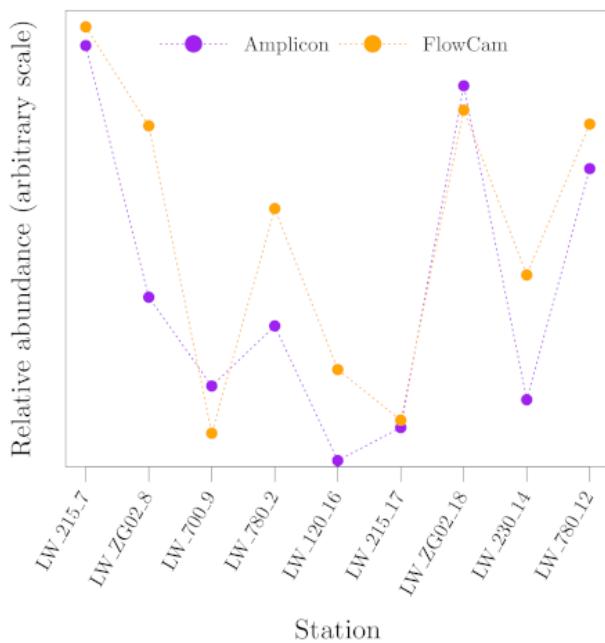
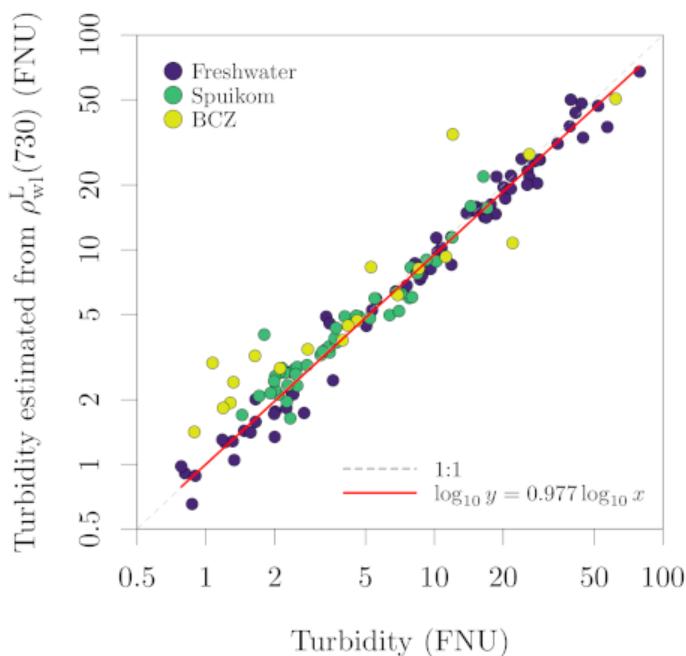
Changed accordingly.

4) Method of interpolation mentioned in line 374 should be indicated explicitly.

A qualification was added to inform that it was a linear interpolation.

5) Labels of axes in Figure 9 and Figure 14 are not correctly spelled.

The labels are correct in the original figures, though the preprint pdf has blanks covering part of the text. This likely happened during pdf generation by the production team. We will be vigilant that the proofs are corrected for such errors. The original plots are reproduced below.



6) 'Constants' does not appear to be necessary because they are widely accepted notations. Also, generally accepted notations are highly recommended, e.g., $Edn(0+)$ could be replaced by $Ed(0+)$ or Es .

Though those constants are widely known and accepted, we consider good practice to indicate all symbols used in the manuscript. $Edn(0+)$ was changed to $Ed(0+)$.

7) .kml file is not contained in the data directory as described in 'README.txt'.
The kml file is now added.

8) Station names in various data files (.csv or .xlsx) are not exactly same. For example,

this in flow_cam data file is slightly different.

We appreciate noting the detail. Two differences were found:

- (A) For the LifeWatch campaigns stations between the .csv and .xlsx files. The naming of the stations in the .xlsx files was updated to follow the same names as in the .csv files.
- (B) The station on the Leuven-Dijle canal were reported with the informal name "Zenne" in the csv file bgc_bottom.csv. The names were updated to "LeuvenDijle" in order to conform to the other files.

9) Number of measurements should be mentioned where SD (standard deviation, I think) appears.

The description of the "SD" acronym was added to the README.txt file. An additional column with the number of data points was added to the files.

10) Number of stations in iop_ad_meas is much more than in other data files. Please double check.

Indeed, additional data was appended to the file. The extra rows were removed.

11) substrate data should include sampling location, date and time if possible.

The sediment data names include the stations where they were sampled (e.g., "sediment_SP_39") and location and time for the stations are available from the ancillary files. The floating biofilm were samples of opportunity and do not correspond to any station. The manuscript describes that those were acquired in the Spuikom in July 2018. The data for macroalgae represent averages of several samples. The manuscript describes that the samples were acquired in the Spuikom lagoon between 2017 and 2018. No change was made.

12) If possible, relationships/inter-comparison among various parameters could be provided, though figures 9, 11 and 14 already illustrated some.

In addition to those commented by the reviewer, figure 5 presents the comparison between in vivo pigment absorption and chlorophyll a concentration, and figure 6 presents the comparison between LISST VSF and spectrophotometer measurements of beam attenuation. The objective of Figs. 5, 6, 9, 11 and 14 is to show consistency of the different data types. We have limited that to the most clear/objective and relevant comparisons. We note that the manuscript already contains 15 figures and the supplementary material contains another 10 figures (one new figure was added to the supplementary materials showing the relation between turbidity and Secchi disc depth, in response to Reviewer 3 comments). Since all data is made available, the user of the dataset can plot other relations of interest.