

Interactive comment on “A compilation of global bio-optical in situ data for ocean-colour satellite applications” by A. Valente et al.

Anonymous Referee #2

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This paper presents a newly compiled database of relevant bio-optical parameters for validation of products derived from ocean colour satellites. Specifically, the authors have combined data from existing datasets and provided the new larger database in a convenient format, with the principal motivation to aid validation of satellite products within the OC-CCI program. However, the database will prove useful to the much wider remote-sensing and bio-optical oceanography community as well. The manuscript provides a clear description of the data along with an overview of data distribution and variability. The necessary quality control, removal of duplicates, re-organising of data etc. is well informed and well articulated. The database is easy to download and contains relevant meta-data. Overall, I support publication of the manuscript and database following minor changes. I have provided general and technical comments below, which I believe would help improve the manuscript prior to publication.

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General Comments

- It seems an odd choice to include chl_a concentrations derived from an in situ fluorometer from the NOMAD database but not for the other datasets. Though I can see that the choice is justified for consistency with previous satellite validations, including these data is unappealing for other potential users. It would be highly desirable to identify these data so that a user can easily choose to omit them. For example, add “chl_a_insitu” parameter in addition to “chl_a_hplc” and “chl_a_fluor”, or assign some kind of quality flag. If this is not possible then please include some indication of which data these are (i.e. are they from particular regions, date ranges?) and what (if any) calibrations, quenching corrections, etc. were done to create these data values.
- It would add significant value to the manuscript to plot (and quote the coefficients for) the new relationships for the dataset presented in Fig 10 and 15, with a brief summary of how the new data compilation compliments or improves on the existing relationships shown in the figures.
- The paper provides a good overview of spatial coverage of data. Please add brief information on the temporal coverage (i.e. note any seasonal biases in certain areas or data types).
- It would be preferable, if possible, to include all available wavelengths of observational data (e.g. phytoplankton light absorption, backscatter), rather than providing a subset of waveband averages. Doing so would add value for wider user community, while not diminishing from using the data for satellite validation (details on averaging into satellite wavebands could be provided in the manuscript).

Technical Comments

- Check all acronyms are defined on first use and that the acronyms are used thereafter. Especially check Es (Page 8, Line 19), HPLC, and CDOM are defined on first use.
- Page 3 Line 26. Change “results” to “data”.

- Page 4 Line 28: “. . .biomass and is the most widely-used satellite ocean-colour product.” Please back up with a reference.
- Page 4 Line 30 Change “. . .methods, but for abbreviation it is referred from hereafter as “chl_fluor” to “. . .methods, referred to hereafter as “chl_fluor”.
- Page 13 Line 3: Please provide a reference for the expected relationship between chl_a_hplc and chl_fluor (e.g. Trees et al. 1985 Marine Chemistry 17:1-12).
- Page 15 Line 8-18. Details of the wavelengths for spectral data could be better placed in separate section or moved to where this issue is first discussed (following Page 12 Line 12).
- All figures and tables. It makes more sense to use the same text format for datasets as in main text and tables (i.e. not all lower case capital letters), since they are mainly acronyms.
- Fig 3. Please choose more distinguishable colours for Aeronet_oc and Moby data, they’re currently very hard to tell apart.
- Fig 10 caption. Change “. . .maximum band ratio. . .” to “. . .maximum band ratio (as defined in text). . .”

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