

Interactive comment on “Technical Note: Algal Pigment Index 2 in the Atlantic off the Southwest Iberian Peninsula: standard and regional algorithms” by Priscila Costa Goela et al.

Anonymous Referee #2

Received and published: 29 August 2016

As a technical note, this manuscript provides details the match up analysis between satellite retrieved estimates of chl-a and in situ measurements from different sources for a small region off the Iberian Peninsula. The results would be interesting to a limited readership who are interested in the same region. However I do think the paper has a major flaw; the authors find that the comparison of in situ chl-a parameters from different sources (absorption vs HPLC) yields better results than the comparison of retrieved parameters with either absorption or HPLC in situ results. These results are affected by the comparison of only 54 pairs of data for the retrieved vs in situ compared to 297 for the in situ abs vs HPLC. The potentially better metrics for the comparison of in situ parameters could be totally or in part due to the sample size being approximately

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6x that of the retrieved vs in situ comparisons. I presume that the smaller data set is due to cloud cover etc so that you could only retrieve 54 data points that matched to an in situ measurement. If this is the case then the comparison between in situ abs vs HPLC should also only be for these same 54 data sets, so that all comparisons are being made on the same data sets.

Overall I think the idea of the paper is suitable as a technical note in OSD, but I would like to see the data and conclusions drawn after the authors re-analysed the data using the same 54 data sets for all comparisons, before I commented on the worth of the final paper.

Specific comments

A general comment is that there was a lot of acronyms and I think it would be useful to have a table which defined all the acronyms.

Pg 2, line 21: “of the Southwestern Iberian...” should be “off the Southwestern Iberian...”

Pg 3, line 8: delete neural nets and bottom-of-the-atmosphere as they have both already been defined

Pg 3, line 16: could not access web address provided – “page not found” message Pg 3, line 21: applicability should be application

Pg 3, line 23: applicability should be application

Pg 3, line 25: PCA should be in brackets – (PCA)

Pg 3, line 29: remove “novelty index” or “ ΔN ” as this term has already been defined

Pg 3, line 30: replace “when η is below the threshold $\eta=1$.” With “when $\eta < 1$.”

Pg 4, line 3: replace “an hyperspectral” with “a hyperspectral”

Pg 4, line 3: delete “located below the surface” as it is implied by the preceding “sub-

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surface”.

Pg 4, line 10: replace “in GF/F” with “on GF/F”

Pg 4, line 14: the sodium hypochlorite bleaching does not remove the detrital contribution; it removes the pigment contribution. The phytoplankton contribution is determined as the difference between the total particulate and detrital absorption which are recorded before and after the hypochlorite bleaching, respectively.

Pg 7, line 4: “An additional explanation could be that TChIABSREF was determined using aph(442), which is likely better related to Rrs than TChIHPLCREF (both aph(442) and Rrs directly represent optical properties).” aph(442), might be better related to Rrs, but TChIHPLC is a direct measurement of the chl-a concentration whereas the aph(442) is an indirect measurement of the absorption due to phytoplankton. It is estimated as the difference between the total particulate and detrital absorption, both of which are measured, but would carry errors associated with the technique (extraction efficiency of the pigments, the dominance of a detrital signal etc) which would affect the accuracy of the estimation of aph(442).

Figures and captions

A general comment is that if the reader prints this publication, the font size used on the figures is quite small and can make reading difficult, especially both parts of Figure 2.

Figure 3: should have a description of each panel in the legend rather than referring to a section in the text. It is difficult to read both the section and the plot at the same time on a computer.

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