

15-Mar-19

Dear Dr. Xie,

Thanks for providing responses to 3 reviewers and to a member of the biogeoscience community who commented on your article bg-2018-403. Most of your responses are appropriate and their suggestions will result in a better piece of scientific work if they are considered in a new version. Based on those comments and responses and my own reading, I consider that your data and results merit publication in Biogeosciences, but the article cannot be considered in the journal as it is and needs to undergo a major revision that would involve sending it out for review. Please consider the following in particular:

1. Main conclusions of the article are difficult to follow since there is repetition of results throughout the text, and there are results that are not considered in the discussion, deviating attention to main points of the article. Examples: a) Water temperature is shown but there is no discussion of it, b) idem with results on water column mixing, c) in page 263, "Bottom water salinity at most stations was nearly identical to SWS in January, slightly greater in May, moderately elevated in November, and much higher in August (Fig. S2)". There is no discussion of it in the text. If there is a meaning for this, then it needs to be quantitatively explained, not as currently written (slightly, much, etc.).
2. There is an excessive use of Supplementary tables and figures **around relevant** discussion and conclusions. Supplementary figures and tables are meant to back up tables and figures of the main text. A new version will require rethinking and reorganizing tables and figures accordingly.
3. Qualitative assessments should be avoided. such as saltier, less salty (Reviewer 3 suggests using well-known and accepted terminology by the estuarine community).
4. Hypothesis. "... hypothesize that DOM in the PRE presents substantial seasonal variability in terms of both abundance and **chemical composition** and that the PRE is an important source of DOM to global oceans."

Chemical composition you are referring to is targeting a quantitatively minor fraction of DOC pool (in the order of 2%), therefore you cannot test that hypothesis for the entire pool using this approach.

5. What are units of DOC and CDOM fluxes in Table 6. Nowhere is mentioned how you estimated fluxes from absorbance data.
6. Keep in mind Short Comment:
"Although the manuscript is well written and reads easily, the way that sections are structure makes the manuscript repetitive when presenting and discussing results. I think it would become more concise and interesting if the authors focus on

making a rearrangement of sections (by merging/condensing some of them) and on making a review through the text to avoid such repetitions. Additionally, the introduction is a bit too long and could be shortened by providing only information needed for interpretation of results from this study....”

7. Section on Pearl River estuary is definitely too long, so it is background on DOM. Please choose the most relevant aspects.
8. “... [DOM], [CDOM], and [FDOM] stand for the abundances of...”. Square brackets are used in chemistry to denote concentration and [CDOM] and [FDOM] are not; they could be considered proxies of concentration. Different things.
9. Use of non-standard acronym such as SWS only makes reading more difficult (It is used only 7 times in the text, all in one page).
10. P, 286, P 409, etc.. Correlation and regression are not the same. In correlation there is no independent variable and coefficient of correlation (r) ranges from -1 to +1. In regression, there is X and Y, and coefficient of determination (R^2) ranges from 0 to 1 (0 to 100%). Please check and revise accordingly
11. Method. “Hansell’s low carbon ([DOC]: 1–2 $\mu\text{mol L}^{-1}$) and deep Florida Strait ([DOC]: 41–44 $\mu\text{mol L}^{-1}$) reference waters “

What was the quantitatively results of this calibration?

12. About the analytical uncertainty mentioned by Reviewer 2. #8. “ ... a_{CDOM} at 330 nm (a_{330}) was 2.19 m^{-1} (range: 1.19–4.37 m^{-1})...” corresponds to the range of values of a_{330} measured in the river during the August cruise. Analytical uncertainty on the other hand, deals with dispersion of values associated to a measurand, therefore samples has to be as similar as possible.
13. Lines 375-376. Please explain what you want to say here
14. Lines 235-236 should be in methods

Sincerely yours

Silvio Pantoja
Associate Editor