

Interactive comment on “Global database of oceanic particulate organic carbon to ²³⁴Th ratios: Improving estimates of the biological carbon pump” by Viena Puigcorbé et al.

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Introduction and Methods: Good introduction and justification for this study. The data will be very useful for future modeling. Sufficient detail given in the methods and database setup section.

Line 70+: ‘While uranium is conservative and proportional to salinity in well oxygenated seawater (Chen et al., 1986; Ku et al., 1977; Owens et al., 2011), thorium is not soluble in seawater it is scavenged by particles as they form and/or sink along the water column.’ Should there be a comma after ‘in seawater, it is scavenged’?

C1

Lines 89-95: ‘The determination...oligotrophic regions’. This sentence is rather long and might be easier to read if broken up.

Lines 194-197: ‘These high ratios...’. Should there be a comma before the ‘but’ in this sentence?

Lines 200-204: Another rather long sentence. I would suggest breaking it up for clarity, but this is only personal preference and the authors should do what they think is best.

Lines 206-207, Lines 216-217: Suggested comma before ‘but’.

Lines 214-215: This sentence needs an ending. ‘compared it to three different satellite-derived export’...export what? Models? Estimates?

Lines 220-221: Is the citation format ok here? I would think it should be ‘as done by Henson et al (2011)’.

Section 3.4: Remove period from after recommendations since there isn’t a period after other section titles.

Line 231: Either use ‘we recommend that’ or say something like ‘it would be beneficial for future efforts to obtain data...’. Saying ‘it would be recommended’ is a bit awkwardly phrased.

Figure 1: where you say ‘see main text for details’ please put the Section number where you mention these definitions.

Figure 2: It’s a bit hard to see the variability in A-C. Since this is a database presentation, the readers can plot the data themselves and don’t need additional figures in the manuscript. However, I wish some of these figures were log scale and/or bigger.

Figure 5: Does log-scale look any different or provide more information to the reader? Only a thought, not a suggestion.

Database use comments: Locating the files was easy. Generally, the data is presented

C2

in a usable format. I would recommend that the authors note when actual dates and lat/long were not available for each location (and midpoints were used as noted in the text). It would be helpful for the data users to know which dates and locations are exact and which are not. If this was already done and indicated, I didn't see it and the authors should point clearly to this identifier in the text.

The data may not be intended for use in Microsoft excel, however, I opened the file in a tab-delimited format and some odd symbols showed up. For instance, 'POC/234Th [\hat{A} μ mol/dpm] (C/Th ST)' has an odd A in the heading. The actual data (numbers) are not impacted, so this issue is extremely minor. I can clearly understand and use the data as is. It may only be possible to post the data in a few formats and it seems like the website indicates which formats these are.

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