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Discussions

Interactive comment on "Fluxes of sedimenting material from sediment traps in the Atlantic Ocean" *by* S. Torres-Valdés et al.

Anonymous Referee #1

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Major comments:

This study complied most of the datasets of particle fluxes derived from sediment trap, which I think will be valuable for better estimation of the magnitude of particle export and the interpretation for the function of the basin-scale biological pump in the entire Atlantic ocean. The complied dataset will also be useful for the future studies. My major concern about this study is on the mergence of those datasets which is definitely not enough judging from the main text of the MS, although this reviewer agree with the authors' statement of "A major challenge involved in the compilation of this dataset was the inconsistency with which authors refer to the same variable". There are several aspects that I suggest the authors to dig deeper. First, the names of the sediment trap were just simply listed within the text. As the trap design is an important

factor that might be related with hydrodynamics bias, the authors should at least list the specification of all the mentioned traps and classified into different groups. Second, I am not convinced on the definition of some parameters, e.g. CaCO3, biogenic silica and lithogenic flux. Although these parameters was expressed in different ways in the literature, I strongly ask the authors to standardized them using converting factors, and that will be easier for the following researchers to use this dataset. Third, although this study is mainly on data compilation, the discussion on the science part is still too weak, for example, All the descriptions of main findings is hand waving and not based on the numbers. In addition, several correlation plots between different paraments could be shown, like POC vs CaCO3, POC vs biogenic silica and POC vs Lith. The improvement on those aspects needed to be done before this MS will be published.

Minor comments:

P1: The title should be changed into " Compilation of sedimenting material fluxes from sediment traps in the Atlantic Ocean"

P5, Line 8-28: List the specifications for all the traps, and classified into different group. I don't like negative sentence like " some of these may be identical. However, there is insufficient information to ascertain this from the source. . . . . .", the authors can at least communicate with those scientists through email to ask.

P6, Line 25: PN should be better than PON, please replace it within the main text.

P7, Line 4-5: Please give out the duration of the rinse.

P7, Line 8: Give out the drying time, 80oC is way too high for POC.

P7, Line 24-25: The factor of 2.5 is derived from the ratio of molecular of calcium and calcium carbonate (100/4).

P7, Line 26: Explain the factor for lithogenic-Ca (0.5).

P8, Line 13-17: Would you please at least do some comparison between the two meth-

ods?

P8, Line 18-22: Show this in the table.

P9, Line 10-11: The authors need to make it clear, and derive the conversion factors.

P9, Line 27-28: Make it certain on how the factor of 12.15 comes from.

P12, Line 10-12: Show the ranges here in the text.

P12, Line 19-20: Show the numbers so that the readers can well understand.

P12, Line 23-29: Please describe the findings with numbers, ranges, means, etc.

P45, Figure 1: It is hard to see the blue dots in the Arctic ocean on the blue background, please change.

P47, Figure 3: It is too blur to see.

P50, Figure 6: I would like to see the mean and standard deviation of those profiles.

P51, Figure 7: Show the mean and standard deviation as recommended for Figure 6.

P55, Table 2: Show the mean and standard deviation here.