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# *Interactive comment on* "An internally consistent data product for the world ocean: the Global Ocean Data Analysis Project, version 2 (GLODAPv2)" *by* A. Olsen et al.

**Anonymous Referee #2**

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First of all the authors are commended for this outstanding effort of synthesizing the global dataset of physical and biogeochemical data from the global hydrography cruises. The carefully adjusted and well-documented data will serve this and the next generation of oceanographers, including modelers, to great effect. This article serves as a paper of reference and as such it is fine. It documents procedures and adjustments in painstaking detail. From a stylistic perspective there are issues with greatly varying writing styles and little consideration of being concise. Some information in tables could be combined for easier use and key results could be better articulated. The authors should consider the main use which will be for the reader to have a quick reference on the GLODAP-2 dataset and adjustment that were applied. Rationale and



history are secondary considerations

The following are suggestion and should not be viewed as requirements. If the authors want to submit as is there is no harm done.

The writing is too colloquial with to many sentences including "we". Scientific writing should be in passive voice. 1. The text is very long and the authors should consider putting some info in appendices. In particular: section 2. History and most of Section 3 "Glodap 3 production" could go into an appendix. That is, the information that most are after starts in section 4. 2. The examples and anecdotes are too numerous and too detailed 3. In several cases the description of tables and figures in text are too detailed and duplicative of the information provided in figures and tables. 4. I am not providing specific comments on text as many readers will focus on tables and figures so the emphasis should be on improving these.

Abstract: include a statement such as. "This compiled and adjusted dataset is believed to be consistent to 0.005 in Salinity, 1% in oxygen, 4 umol/kg in DIC, 6 umol/kg TAlk etc etc for each parameter. It would become a long sentence but this is absolutely the key information that the reader wants to know up front. (It's the information in Table 6, but I believe you cannot refer to tables and figures in an abstract)

Section 5.1: This is where text becomes more scientific writing

Table 1. Instead of placing "X" list the minimum differences that are adjusted Table 2. This is also largely discussed in the text. Perhaps decrease the discussion in the text and just refer to Table 2 Table 3. Just list the flags used 0,1,2,6,9 (?) not the ones that are not in the files. Note 0 is not an original WOCE flag and is often used for "not QCd" or preliminary in cruise data files. Table 4. Delete Table 6. This is the key information, it can be placed in Table1 Table 7. While QCing a entire cruise has been well justified it is unclear why they should be entered in the product files as a single entry rather than the legs. This will cause massive confusion later on. Case in point oxygen adjustments on 316N19950930 Table 13. It is unclear why some calculated values e.g. AOU have

a flag while others (e.g. density) do not. Also, explain in footnote what a secondary QC flag is Most figures need to be improved for legibility. Cruise numbers in figures need to be corrected to the GLODAPV2 numbers, axes need to be explained, and units need to be included. The figures look like they are crude products from a matlab script. Figure 2. Header says DIC, I assume it should be TCO2. Correct all cruise number to what is in file. Not sure what 3 X axis legends are in figure 2. Figure 3. Specify in legend what adjustment were made Figure 5. Change mzan, nzam etc. in caption Figure 6. If panel "a" lists US mean bias of +2 and Japan mean bias of -0.3, why would you do a correction of +1 and -1, as opposed to -2 and +0.3? Also, it is not quite clear why examples of adjustments are done by country rather than group/institution. As mentioned in text there can be differences between groups in countries. (e.g. how to analyze samples with high silicate)

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