

Interactive comment on “CARINA-Oxygen: a new high-quality oxygen database for the Atlantic Ocean” by I. Stendardo et al.

Anonymous Referee #2

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General Comments: The manuscript contains a detailed and valuable description of the final oxygen data product that is available for the Atlantic Ocean from the CARINA database. After an overview of the Atlantic Ocean oxygen database followed by a satisfactory description of the secondary quality control procedure applied to achieve internal consistency, authors present and discuss the recommended adjustments. After a tour in the CARINA Data web-page, I agree with the conclusion drawn by the authors; the final product is, with its internally consistent 98 cruises covering the whole Atlantic and over three decades, a significant and useful dataset.

The authors need to point out that data were first subjected to a primary quality control and give a brief description of the steps involved.

Specific comments: Page 107, line 2, “CARINA consists of a collection of 185 cruises..”

C58

In the CARINA Data web-page, the sequential number of the cruise summary table runs from 1 to 188!

Page 108, beginning of line 2, “transects.” Modify to “ transects (Fig. 3).”

Page 108, line 23, “that occupies the depth between 1000m..” modify to “ that occupies the depths between 1000m. . .”

Page 109, line 19, “ by computing the weighted mean and standard deviation.” modify to “ by computing the weighted mean and standard deviation of the differences”

Page 110, line 4-6, “In addition, the reference and core cruises were weighted higher than the other cruises in order to ensure a lower level of adjustments in these cruises compared to the others.” I believe this is specific to the WDSLQ. If so please clarify.

Page 111, line 3, “...oxygen, from less than 0.9 to more than 1.1 (Fig. 6a).” the scale of the second axis is between 0.9 and 1.1, thus it cannot show “less than 0.9” and “more than 1.1”

Page 117, line 13-17, there must be a word missing after “large scale”.

Page 117, last sentence should be modified to “ Furthermore, the possibility to combine the CARINA oxygen data with the quality controlled carbon data from the CARINA carbon database (Pierot et al., 2009) and with other tracers (Steinfeldt et al., 2009; Tanhua et al., 2009a,c; Velo et al., 2009), provides ample opportunity to make a substantial step forward in our ability to describe the recent changes in ocean biogeochemistry.”

Table 1, caption, “.. common with the two other group . . .” modify to “..in common with the two other groups.. ”

Although not necessary, figure 3 could be colour coded according to the number of cruises.

Figure 6, caption, last sentence “of each panel are the numbers of..” modify to “ of each panel are the percentage of..”

C59

Finally, I have a comment concerning the CARINA Data web-page. There is mismatch between the regions into which data is grouped [Arctic Mediterranean Seas (AMS), Atlantic Ocean (AO), and Southern Ocean (SO)] and those for which maps can be selected (Arctic, North Atlantic, and Southern Ocean). In other words, one cannot view the whole Atlantic Ocean as a region. http://cdiac.ornl.gov/oceans/CARINA/Carina_inv.html

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