

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

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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.

As this paper is one of a series of papers that will appear in a special issue, the readers interested to know all the steps involved in the primary QC are kindly invited to read the method paper from Tanhua et al. (2009b). However we added now a sentence in the first paragraph of the Method section that specifies that the database was first subject to a primary quality control and we give a brief description of this method: "All CARINA data were fist subjected to a primary QC, i.e. the detection and flagging of outliers and other irregular data points (Tanhua et al. 2009b). Our subgroup was responsible for the secondary QC of the oxygen data."

Specific comments: Page 107, line 2, “CARINA consists of a collection of 185 cruises..” In the CARINA Data web-page, the sequential number of the cruise summary table runs from 1 to 188!

Done. Indeed CARINA consists of a collection of 188 cruises.

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

Done

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

Done

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”

Done

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.

Yes indeed we now slightly modified the sentence to clarify that this sentence was meant to explain the differences between these two weighted inversions: "For the WLSQ schemes, the inverse of the standard deviation of the offsets were used as weights. In addition, for the WDSLQ schemes, 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."

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”

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Yes indeed the correct sentence is: The offset analysis computed by the automated cluster routine reveals a large range of multiplicative offsets for oxygen, from more than 0.9 to less than 1.1 (Fig.6a).

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

Done

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."

Done

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

Done

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

Thank you for this suggestion but we decided to keep the figure as it is.

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

Done

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

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Atlantic Ocean as a region. [http://cdiac.ornl.gov/oceans/CARINA/Carina\\_inv.html](http://cdiac.ornl.gov/oceans/CARINA/Carina_inv.html)

Yes, this is correct. I will point out this comment to CDIAC. You can have a view of the whole Atlantic Ocean in Figure 1 in this paper.

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