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Earth System Science Data Discussions

Interactive comment on "CARINA TCO_2 data in the Atlantic Ocean" *by* D. Pierrot et al.

Anonymous Referee #1

Received and published: 2 March 2010

General Comments:

The authors deserved praise for a very valuable and important contribution that addresses a nontrivial question in a reasonable way. There are, however, also some questions that are unclear in the current version.

The ms should be a neat contribution to the field and ready for publication once the open questions, loose ends, and minor editorial issues (enumerated below) have been addressed.

Specific Comments:

1. P2, l 6, etc: The tone and word choices need to be tuned to what is actually being delivered. Does the ms really "assure the highest possible quality"? I could, for example, think of several ways to improve on the current analysis. Have errors been

"corrected" or would an approximate correction not be a better word choice?

2. P4, l. 9: It would help the readers to explain what the conditions for interpolations were.

3. P. 7. L. 28: Is it correct to assume that all cruises have an offset constant in space and time?

4. P. 8, 11: The citation for the least squares method of Wunsch (1996) is a book with more than 400 pages. Please provide a peer reviewed explanation of the method and pointers to the specific equations that have been used.

5. P. 8, l. 14: How have the limits for WDLSQ been determined? In general, there are a number of subjective choices in the ms. This is, of course, perfectly fine, they could, for example, be interpreted as Bayesian priors on model parameters. What is needed, however, is a tractable account of theses assumptions and parameter choices (e.g., in form of tables).

6. P. 9, l. 1-2: What would be minimized? The offsets or a weighted sum of squares of offsets?

7. P. 9, l. 10: Please be explicit what "these" refers to.

8. P. 9. L. 10: When the ms analyze "significance" is this statistical significance? If so, how is this evaluated? If not, how is the significance evaluated?

9. P. 9. L. 15: Why was the adjustment applied repeatedly? What is the theoretical or empirical foundation for this?

10. General Method: Has this method been tested? (I assume so; in this case, what is the reference?)

11. P. 10, l. 8: What are the "some reasons"?

12. P. 10, l. 19: How was the choice done "based on all information available"?

13. P. 13, l. 16: The statement is a bit unclear. Can you please rewrite?

14. P. 14, l. 12: Please spell out adj

15. P. 15, l. 13: How low?

16. Figure 4: Can you please provide a vector graphics?

17. Figure 5: Can you please provide a histogram as well as an x-y scatter plot with a 1:1 line of the data?

Interactive comment on Earth Syst. Sci. Data Discuss., 3, 1, 2010.