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Earth System Science Data Discussions

Interactive comment on "CARINA data synthesis project: pH data scale unification and cruise adjustments" *by* A. Velo et al.

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I like this contribution very much. In part it is far more technical report than scholarly paper. But it illustrates very well the difficult and usually unseen work that goes into producing the credible data sets we all so much rely on. In this case the report serves as a superb tutorial on how to put important cruise data together into a coherent whole. It is often overlooked as to how costly these large scale cruise efforts are, both in monetary and in human terms of many weeks of dedicated work at sea. It is a pleasure to see how well the results gel into a splendid picture of an ocean rapidly evolving in its CO2 system status in time.

I only have a very few technical comments:

The review section describing the history of pH and the various definitions should cite the primary IUPAC reference on the subject by Buck et al. (2002) Pure Applied Chem,

74, pp. 2169-2200.

On page 425 it is stated that the surface ocean today has a pH of about 8.2 - this will of course depend on the scale used and that is not stated here! But the usual comment is that it was 8.2 pre-industrially and 8.1 today. It would be good to have the scale and the number cited clarified.

The referencing throughout is minimal and many more citations to the problems discussed here could be used. Since this document attempts, and largely succeeds, in being a full account of how this work was done it would be useful to have listed here a broader set of the fundamental papers in the field referred to. For example the work done to resolve decade long discrepancies in the venerable Geosecs CO2 data set was the precursor to the class of detective work covered here.

Interactive comment on Earth Syst. Sci. Data Discuss., 2, 421, 2009.