

Interactive comment on “A uniform, quality controlled Surface Ocean CO₂ Atlas (SOCAT)” by B. Pfeil et al.

B. Pfeil et al.

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We would like to thank the reviewers for the careful reading of our manuscript and comments provided. In addition we very well appreciate the positive feedback we received for our work.

Final response:

Reviewer 1 (L.-Q. Jiang):

‘This is an very well-written paper about a global data set of ocean carbon dioxide. It covers basic information about Surface Ocean CO₂ Atlas (SOCAT), how the data set was assembled and processed, and how the data set is accessible to the public. I strongly recommend to publish the paper with only some minor technical corrections.’

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- We would like to thank for the complement!

'Page 740, Line 15, 16: Most of the repeat hydrography studies are also surface observations. Clearly, here the authors were referring to time-series studies like those conducted on a mooring. I recommend to replace "surface ocean CO2 observations" with "time-series CO2 observations".'

- We were referring to the globally coordinated efforts that seek to resolve the dynamics of ocean CO2 uptake through observations. By repeat hydrography we were referring to discrete sampling of the water column carried out by research vessels on repeat hydrography sections.

'Page 748, Eq (3): please also explain the term X2 wet Teq.'

- The term was explained.

Reviewer 2:

'The paper by Pfeil and (many) co-authors is an excellent article that very well (as far as I can judge) describe the SOCAT project, the history of SOCAT and (more importantly) the data that constitutes SOCAT. Apart from the fact that SOCAT is a product that has been long sought after by the (ocean) carbon community, this paper is an excellent introduction to SOCAT.'

- We would like to thank for the complement

'The only thing I miss in the paper is some more in depth description of the secondary quality control procedures. Reading the manuscript I learn that "cross-over" analysis is not possible (but possibly a little bit, this is a somewhat unclear), and that procedures are described in a document published on the SOCAT home-page (Olsen and Metzl, 2009).'

- The term secondary QC was used in different context in the paper which led to confusion. Major parts of chapter 4 were revised paying respect to this important comment.

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'The data coverage is stated to reach from 90S to 90N. Is this really true? Are there data in SOCAT from south of, say, 80°S?'

- The data coverage was changed to 80N to 79S based on observation.

Interactive comment on Earth Syst. Sci. Data Discuss., 5, 735, 2012.

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