

Interactive comment on “Sensors and instruments for oceanic dissolved carbon measurements” by U. Schuster et al.

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This is a readable and authoritative review paper on the techniques available to make measurements on dissolved inorganic and organic carbon in the ocean. It was the authors' intention to write a paper accessible to those developing new instruments and sensors. I consider that they have managed to do so. The paper is well referenced and full acknowledgment is made of the work of others on preparation of standard operating procedures etc.

Questions / comments on the science and technology

p2 line 7 and elsewhere - 'autonomous' is used when describing systems on board ships as well as when submerged. Are shipboard systems truly autonomous or merely

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automatic?

p2 line 15 and elsewhere - 'detection' is used frequently. I associate detection with determining the presence or absence of a substance. Surely here it is (accurate) quantitative measurement that is the goal?

p4 line 17 what is meant by 'at depth'? A reference might be useful?

p10 line 23 no accuracy for the pressure measurement is given.

p12 no reference at all is given for section 2.1.2 it would be helpful for the reader to know of such systems used at sea.

p17 line 5 reference needed as to who has achieved such an accuracy.

p20 line 8 this sentence is difficult to understand

p20 line 14,15 units are per litre, although the authors have suggested earlier in the text that per kg is preferable.

p21 line 12/13 I'm not convinced the term "hydrocarbons" can be interchangeable with PAH, a very particular subset?

p22 The summary is weak, it is repetitive and does not really pull out the well-argued messages in the main text, for example, no sensor for DOC, good calibration standards for many procedures, written standard operating procedures etc.

Comments of a technical or editorial nature

p2 line 20 insert 'of' after decision?

p3 line 27 an outcome rather than the outcome?

p3 line 32 'This paper' rather than 'The paper presented here'?

p5 line 6 change 'form' to 'from'

p5 line 20 is it reagent consumption that is meant? Or is it energy?

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p6 line 5 same question over what is consumed

p7 line 17 number problem - either question singular or have for plural

p7 line 22 sensors plural needed

p7 footnote subscript for 2 in CO₂

p8 line 16 reference for the extremes of fCO₂?

p10 line 13 substitute 'known' for 'know'

p13 line 3 change Institute to Institution

p14 line 3 insert 'by' after gas

p14 line 10 remove first 'r' in coulormetrically

p14 line 19 'hourly-long' is clumsy, consider either hour-long or down-times of hours

p15 line 3 'electromotive potential' is followed by e.m.f, suggesting it should be 'force' not 'potential'

p21 lines 6/7 and 22/23 update the status of the Moore et al. paper into OS.

Interactive comment on Ocean Sci. Discuss., 6, 491, 2009.

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