Earth System
Science Data
Discussions

Interactive comment on "Nordic Seas total alkalinity data in CARINA" by A. Olsen

Anonymous Referee #1

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Are Olson performed a rigorous quality control of total alkalinity data from 35 cruises to the Nordic Seas. He has done a great job especially in testing the consistency of and between various data sets. The CARINA data are of high quality and will be very useful for future research. The paper is well written. I have a few minor comments and suggestions only and recommend publication after minor revisions.

General comments/questions:

Please add definition of total alkalinity or at least cite Dickson (1981).

ALK is derived from titration data by various methods. Can I find the details of the applied methods in the metadata?

First reference to Fig.4 before first reference to Fig.2 and Fig.3.

Specific comments:

C26

p.312, lines 18/19: 'No adjustments have been applied to any of these values with the exception that all pH measurements were converted to the seawater pH scale at 25oC.'' Could you please explain how this was done (which other carbonate system parameter and which constants were used?).

p.314, line 19 "... Norway, the Barents Sea Opening, and Spitsbergen to the east.'' Here you may refer to Fig.1.

p.314, lines 13/14 "raw data'' are uncorrected TA values or titration data?

p.315, lines 7/8: 'They must be interpreted with two effects in mind (1) natural spatial variability and (2) precision of measurements.' This important information should be added to the legend of Fig. 2.

p.315, line 19 (typo): replace 'that' by 'than' after 'deeper'

p.316, lines 10-13: " The approach compares the good (i.e. WOCE flag=2) deep data (>1900m for the Nordic Seas (Olsen et al., 2009)), from two cruises that have stations in vicinity and determines the offset between the data within the crossover of the two cruises, and its standard deviation.'' Rewrite sentence. How do you define 'close-by stations'?.

p.316, line 14: "The set of offsets are then inverted ...'' ???

p.316, line 19 The term "cnaX scripts'' might need some short explanation.

p.316, line 25: "weighted least squares'' How to set weights?

p.321, line 4: citation of Tanhua et al., 2009: 2009a or 2009b or both?

p.321 lines 14-15: exchange file ??? available on the web?

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