

Interactive comment on “Different methanotrophic potentials in stratified polar fjord waters (Storfjorden, Spitsbergen) identified by using a combination of methane oxidation techniques” by S. Mau et al.

Anonymous Referee #3

Received and published: 14 June 2013

This manuscript presents a very nice data set of methane oxidation rates using the 2 most commonly used techniques involving radio-tracers. The authors provide a clear interpretation of the data especially with respect to the different methods. In addition, simply publishing methane oxidation rates from this particular region made by scientists with extensive experience making such measurements is highly valuable to other ongoing and future studies. Because these measurements are so fundamental for further studies and because they appear to be made and interpreted in a manner of high quality, it would be a nice service to the community to have this formally published as

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soon as possible.

That said I have a few small, cosmetic suggestions for improvements to the manuscript.

Page 6462: Line 19: “increasing 14C-values” This should be “increasing 13C-values”. I don’t see natural levels of radiocarbon measured. This error (writing 14C when it should be 13C) appears at several places throughout the manuscript and a careful edit is necessary to correct these mistakes.

Page 6463: Line 23: The authors reference Reeburgh, 2007. This is a review paper and I would suggest referencing the original work of Barnes & Goldberg (1976), Reeburgh (1976), Martens & Berner (1977). While these papers are in the Reeburgh, 2007 review, referencing the original work directly makes is abundantly clear that anaerobic methane oxidation is an old and controversial subject.

Page 6463: Line 23: “oxidising” should be replaced with “oxidizing.” This spelling mistake (s for z) appears at several places throughout the manuscript and a careful edit is necessary to correct these mistakes.

Comment: I prefer the revised title following the request of Anonymous Referee #1.

Interactive comment on Biogeosciences Discuss., 10, 6461, 2013.

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