

Interactive comment on “Origin and fate of particulate and dissolved organic matter in a naturally iron-fertilized region of the Southern Ocean” by L. Tremblay et al.

Anonymous Referee #2

Received and published: 13 November 2014

Tremblay et al, present an interesting and timely discussion on dissolved and particulate amino acids in the Southern Ocean. The area sampled is naturally fertilized by iron and the amino acid data presented fills in a gap in the understanding of organic nitrogen dynamics in this area. One interesting observation is the DOM in the HNLC was less altered than DOM from the bloom waters and showed no signs of alteration. The authors then point to unfavorable conditions for bacterial degradation of DOM in HNLC waters. I was curious though if the authors have any supporting measurements (optics, radiocarbon age or other molecular markers such as lipids) to justify their hypothesis of contrasting DOM sources (section 4.3). Lastly, section 4.2 describes D-AA yields estimating total bacterial biomass. The author's make some assumption based

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upon literature but did they do any actually sampling to validate their model? If not, how valid are bacterial biomass estimates?

A minor note, but please make sure all paragraphs are either indented or not. Also, please do not start off a paragraph with an abbreviation.

Interactive comment on Biogeosciences Discuss., 11, 14097, 2014.

BGD

11, C6682–C6683, 2014

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