

Interactive
Comment

Interactive comment on “An eddy-stimulated hotspot for fixed nitrogen-loss from the Peru oxygen minimum zone” by M. A. Altabet et al.

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Received and published: 28 September 2012

First we thank the anonymous referee for his/her thoughtful comments.

Regarding the referee’s questions about the ‘two phenomena’ producing peaks in biogenic N₂ in the hotspot, we are positing that the biogenic N₂ peak sitting just above the OMZ to have developed on the shelf and transported offshore in the eddy streamer. Evidence for this is 1) its co-occurring [O₂] above suboxic conditions, 2) its high $\delta^{15}\text{N}_2$ anomaly and 3) its unusual stoichiometry with the NO₃⁻ deficit. In contrast, we posit that the biogenic N₂ deeper within the OMZ was produced locally by a local downward injection of organic matter from the overlying eddy streamer. Evidence is the lack of co-occurring O₂ and the presence of expected $\delta^{15}\text{N}_2$ anomalies and stoichiometry with the NO₃⁻ deficit. In our revision, we will make this distinction clearer.

C4379

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The referee's 'minor editorial suggestions' are all reasonable and will be incorporated in the revision. We do take $[O_2] < 5 \mu M$ as defining the OMZ and this will be noted in the figure legend.

Interactive comment on Biogeosciences Discuss., 9, 8013, 2012.

BGD

9, C4379–C4380, 2012

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