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Interactive comment on "Halocarbon emissions and sources in the equatorial Atlantic Cold Tongue" *by* H. Hepach et al.

Anonymous Referee #2

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This manuscript details the correlations between selected halocarbon concentrations (bromoform, dibromomethane, methyl iodide and diiodomethane) and the prevalence of certain plankton species in the equatorial Atlantic Cold Tongue. The authors assess the rates of production of these halocarbons accounting for air-sea gas exchange and diapycnal mixing. Overall, it is a useful contribution to the science examining the oceanic sources of these compounds to the atmosphere, and it should be published with minor revisions.

I agree with the approaches taken however, I do think the authors are attributing too much causation to correlation. The correlations are clear, however the cause may not be direct production by the organisms. It maybe more related to the types of organic matter released. Recent results have shown that abiotic production of the brominated

VSLS may be significant (Liu et al, 2013 and Liu et al,2015). The authors need to address the impact that this source may play within in their data.

Specific Items:

Page 5570, first paragraph. There is additional Atlantic data not reported here. See Liu et al, 2013.

Page 5572, line 6 - what is meant by the parenthetical expression '(in both cases profile 4)?

Page 5582, line 8 - 'Only' should not be capitalized.

References: Liu, Y., S. A. Yvon-Lewis, D.C.O. Thornton, J.H. Butler, T.S. Bianchi, L. Campbell, L. Hu and R.W. Smith (2013), Spatial and temporal distributions of bromoform and dibromomethane in the Atlantic Ocean and their relationship with photosynthetic biomass, J. Geophys. Res. Oceans, 118, 3950–3965, doi:10.1002/jgrc.20299

Liu, Y., D.C.O. Thornton, T.S. Bianchi, W.A. Arnold, M.R. Shields, J. Chen, S.A. Yvon-Lewis (2015) Dissolved organic matter composition drives the marine production of brominated very short-lived substances, Environ. Sci. Technol., 49(6), pp 3366–3374 DOI:10.1021/es505464k

Interactive comment on Biogeosciences Discuss., 12, 5559, 2015.