

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

Anonymous Referee #1

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General comments:

This manuscript presents the results of halocarbon measurement during a cruise campaign during the equatorial Atlantic Cold Tongue season. The importance of biological production in the surface water was confirmed and the production in the surface mixed layer was also suggested. In this study, the dispynal fluxes and sea-air-exchange fluxes were investigated for the four halocarbons. Generally, the results and discussion are based on a well organized field campaign with quite high quality data and the manuscript is thoroughly prepared. I would like to recommend it to be published in Biogeosciences.

Specific comments:

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1. Page 5571, L14-26: In this part, the authors showed the correlations between halocarbons and other environmental/meteorological parameters and to give their suggestions. However, I found some of the correlations are too weak to support their points. e.g. the correlation coefficient between CH₂I₂ and global radiation was only -0.25 and it seemed not solid enough.

2. Page 5576, L2-7: I do not understand why the strong negative correlations of Prochlorococcus HL with CHBr₃ and CH₂Br₂ pointed to the association with warmer oligotrophic water.

3. In the section 5.2, The distribution of halocarbon in the water column was not always similar in the different locations. e.g. highest CH₂I₂ concentrations were measured in the sea water layer of 0-30 m in CTD stations #4 and #6. As suggested by the authors, it could be affected not only by the production but also but the sink process. I am curious on how important the photolysis may be, especially for the shorter-lived CH₂I₂. The different local time for collection may lead to the different temperature, radiation etc., which seems not mentioned in the manuscript. More CH₂I₂ during night time should be expected.

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