

Interactive comment on “Halogenated organic species over the tropical rainforest” by S. Gebhardt et al.

S. Gebhardt et al.

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We thank the reviewer for the very helpful comments on our paper. The comments and our replies are listed below.

General Comments "The design of the experiment is really quite bold; in that so many flight hours are dedicated to it and I commend the researchers for pursuing it. I am curious about what other trace gases were measured at the same time. Further reference to an overview of the GABRIEL project (and/or website) would be appropriate; perhaps on p1162, lines 15-20?" Reply: Background information on the project, including the main objectives and additionally measured parameters can be found on the projects website at (<http://gemini.mpch-mainz.mpg.de/~scheeren/gabriel/>) and in the supplementary material of Lelieveld et al. (2008). These two references were added to the manuscript.

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Specific Comments "As pointed out by other reviewers, the authors need to be more careful to be consistent in their use of the term "net flux" rather than "emission fluxes" (which pre-supposes that the forest will be a net source; when plants and/or soil have sometimes shown to be sinks of such molecules). Similarly, their use of the term "missing source is not always the best choice of term. It also pre-supposes that the experiment will find net emission. In addition the term "long" dry season is not always appropriately employed (as explained by reviewer 1)." Reply. As mentioned in the reply to reviewer 1, the terms "missing source" and "emission flux" are now avoided. These have been replaced by "additional source" and "net flux". As also explained in the reply to reviewer 1 we use the term "long dry season" in its tropical meteorological context to indicate the time of year the measurements took place. However, for clarity and to avoid misunderstanding on the duration of the campaign we have changed that phrase in the text to "for one week within the long dry season".

"Like Reviewer 1, I would be very interested to see the results from the "upwind" or $T < 0$ samples added to Figure 5." Reply: The upwind samples are at $TOL = 0h$, there is no negative TOL (see reply to reviewer 1). Data points at $TOL = 0h$ were encircled in black in Fig. 4. The following paragraph was added to the text: "Samples taken above the ocean and coastline ($TOL = 0 h$) consisted of marine air and are used to define the boundary conditions, e.g. start mixing ratio prior to accumulation of compounds emitted from the forest. Mixed layer samples at $TOL = 0h$ are encircled in black in Fig. 4. In general there is no significant difference between ocean and coastline mixing ratios."

P 1164, line 11. "Please forgive me if I am wrong, but I was not aware that NCAR was in possession of a NIST standard for halocarbons. Are the authors perhaps referring to the NIST propane standard that is employed as a reference by many analytical groups? Please clarify." Reply: The NIST connection of the halocarbons calibrated by the NCAR is established through calibrations with GC/AED for some of the halocarbons. The NIST scale provides the carbon response for halocarbons. The calibration

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was provided by Elliot Atlas formerly at NCAR.

P 1171 lines 21-27. "This discussion of the short-comings of GC-ECD and the fact that the samples were stored before analysis feels rather awkward to me and is probably irrelevant, given that the authors go on to state that there is good agreement with the current work and that the canisters have proven to be stable containers for the molecules in question." Reply: We agree that this paragraph is not helpful for the argumentation. The discussion regarding the differences between the two kinds of detection is inconclusive. We therefore removed it from the manuscript. Nevertheless we don't want to keep this information back from the reader, therefore we decided to give it in the sub-clause: "although these results were obtained using a different measurement technique (GC-ECD)."

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 1159, 2008.

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