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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Estimates of tropical bromoform emissions using an inversion method" *by* M. J. Ashfold et al.

Anonymous Referee #3

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1 General Remarks

The manuscript presents an interesting approach to determine $CHBr_3$ emissions by using an inversion method. This novel approach helps to improve the emission estimates of $CHBr_3$ which are still poorly constrained. The paper is well written and the authors did an excellent job in discussing the strengths and limitations of their approach. I can clearly recommend the manuscript for publication with only minor changes.

2 Specific Remarks

- Section 3.1: I can't really understand how the dilution matrix is calculated since important details are missing. As this matrix represents an integral component of your approach please describe its generation in more detail.
- Table 3: I find Table 3 rather confusing and I am not sure what it tries to convey. Perhaps the corresponding paragraph (p. 20480, l. 16f) can be expanded or rephrased to make its purpose more clear.
- Figure 7: It is not clear for me where the modeled timeseries does come from. On page 20478 line 16 you state that it was derived from experiment A emissions but how do you calculate the mixing ratios? Forward trajectories? By using the p-TOMCAT model?

3 Minor Remarks

- I think it would be a nice feature to mark the observation sites (or rather, a single marker at the averaged position) in the dilution matrix map in Figure 2.
- p. 20474, l. 22: typo "a prior"

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 20463, 2013.