

Interactive
Comment

Interactive comment on “Very short-lived bromomethanes measured by the CARIBIC observatory over the North Atlantic, Africa and South-East Asia during 2009–2013” by A. Wisher et al.

A. Wisher et al.

a.wisher@uea.ac.uk

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We would like to thank the reviewer for his/her helpful comments. Reviewer comments are repeated below in bold along with our responses.

P 29949, L 2: Short-lived organic brominated compounds make up a significant part (~20 %) of the organic bromine budget in the atmosphere. This statement is not so clear. Where in the atmosphere? If I just produce a “count” in the MBL it would be around 16 pt from the long-lived ones (as Br) but about 7 ppt (as Br) for

C12416

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the short-lived ones. These are only rough guesses, but you should say where and on which basis you get to 20 % (or leave it without a number).

The percentage contribution given has been removed.

P 29949, L 5: Measurements of five short-lived... If you use VSLB it should be: Measurements of five very short-lived...

“Measurements of five short-lived. . .” has been changed to “Measurements of five very short-lived. . .”.

P 29949, L 15: Either VSLS-derived bromine or VSLB

We agree that this is potentially confusing and have changed VSLS-derived bromine to VSLB-derived bromine.

P 29950, L 19: an ~ 60 to a ~60...

We believe this is typographically correct and has been confirmed with the publishers.

P 29952, L 12: in situ should be *in-situ*

The publisher’s author guidelines suggest that *in situ* is correct for this publication. This has been confirmed with the publishers.

P 29952, L 15: Baker et al. (2011b) should be Baker et al. (2011a) and vice versa

The labelling of these references has been corrected.

P 29953, L 24:(105 m, 320 µm OD...: here the convention is to use: (105 m × 320 µm OD... : (this is a × (arithmetic multiplier, not a letter x).

This has been changed as suggested.

P 29956, L 12: You should not use the ppbv, ppb is enough

Agreed. Additionally, following a comment from the editor, the statement regarding units on P 29956 Lines 3-4 has now been updated and moved to the end of the para-

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Interactive Discussion

Discussion Paper



graph where we explain the drying of samples.

“CARIBIC measurements of VSLB are reported as dry-air mole fractions, pmol mol^{-1} (dry air), abbreviated here to ppt (parts per trillion).”

Additionally, the description of ozone measurements has been updated to include the following:

“Ozone mixing ratios are reported in this study as wet-air mole fractions, nmol mol^{-1} (air), abbreviated here to ppb (parts per billion).”

P 29964, L 28: The number of 26 days is not consistent with the 24 days lifetime mentioned at L 2, P 29957. Furthermore, the T(OH) should be 76 days and not 26 days

The local lifetime of CHBr_3 on P 29964, L 28 has been corrected to 24 days and the OH lifetime for CHBr_3 on P 29964, L 29 has been corrected to 76 days.

P 29973: The precision in % is misleading. You should also indicate the concentration where this has been measured (near the detection limit this must be higher)

The table of precisions (P 29973, Table 1) has been updated to include the mixing ratios at which the precision was calculated. The relevant text (P 29954, L 1-5) has been updated to refer to this.

P 29974: Although it is implicitly clear you should mention in which region of the atmosphere this has been measured (10-12 km?).

The table caption has been amended to: “Summary of tropospheric tropical and extra-tropical 10–12.3 km mid-upper tropospheric means and medians. . .”. This is reiterated in the table footnotes.

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P 29977: It should be mentioned that this was in the Northern hemisphere

The figure caption has been amended to “Northern-hemispheric latitudinal distributions...”.

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[Interactive
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C12419

