

## ***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

Received and published: 20 February 2014

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

**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 VSLB-derived bromine or VSLB**

We agree that this is potentially confusing and have changed VSLB-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-

C12417

graph where we explain the drying of samples.

“CARIBIC measurements of VSLB are reported as dry-air mole fractions,  $\text{pmol mol}^{-1}$  (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,  $\text{nmol mol}^{-1}$  (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  $\text{CHBr}_3$  on P 29964, L 28 has been corrected to 24 days and the OH lifetime for  $\text{CHBr}_3$  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.

C12418

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

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

C12419