

***Interactive comment on* “Contribution of very short-lived substances to stratospheric bromine loading: uncertainties and constraints” by J. Aschmann and B.-M. Sinnhuber**

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We thank the referee for her/his positive comments and the suggested improvements. In the following, the original remarks of the referee are in *italics*.

Page 30300, lines 1–4.5, then “Actually” 4.5-8: Forgive my initial ignorance/confusion, but I was not 100% sure on reading the start of this discussion whether the second point “Actually...” is supposed to argue against the likelihood of the first or argue for it. The first point is talking about the efficiency of washout while the second talks about large hydrometeors. A little more connective discussion would help. Bigger particles

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fall out faster, but presumably have less total surface area to adsorb, so was not sure what net impact is supposed to ensue.

Thank you for pointing out this possible source of confusion. We actually intended to say that the assumption made by Marecal et al. (2012) for ice particles in the free troposphere (instantaneous removal due to quick growth) might be useful to consider also for the TTL region, as there is observational evidence of the formation of large hydrometeors even at this comparably high altitudes. We will make this point more clear in the revised version.

Figure 7: If this is intended to be a single column figure, I worry that some of the text might be a little small. While the black labels are clear enough (at least on my printer), I fear that the color ones, even though they are the same size, will be unclear.

Unfortunately Figure 7 is shrunk in the ACPD version which makes it difficult to read. However, it is originally designed as two-column figure and will appear as such in the final ACP paper.

Page 30286, line 22: “One” → “Everyone”?

Page 30287, lines 16–18: This is a little awkwardly worded. I presume the Salawitch reference is another part of the example that includes von Glasow, yes? If so, I'd say you should put a comma after it (and perhaps change the semicolon before to a comma if the copy editor lets you). Alternatively, you could place everything from “as suggested by...” to “Salawitch (2006)” in parentheses.

Page 30292, line 27: “rely” → “assume”?

Page 30297, line 4-5: “similar as in” → “similarly to”

Page 30300, line 18: “is” → “are” (two occurrences)

Page 30302, line 16: “highbiased” → “high biased”

Page 30304, line 25: “The most crucial factor for...”?

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We have fixed all of the editorial comments above and thank again the referee for the careful reading.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 30283, 2012.

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