

Responses to interactive comments on “Model Sensitivity Studies of the Decrease in Atmospheric Carbon Tetrachloride” by Chipperfield et al.

We thank the reviewer for his/her comments. These are reproduced below, followed by our responses in *red italics*.

Anonymous Referee #1

General remarks: I am in favor of publishing the paper after following points have been carefully considered.

1. L 48 ... and large uncertainty range (157 to ... Better mention that this is the lifetime as before you speak of losses... and large lifetime uncertainty range (157 to ...

OK. 'lifetime' has been added.

2. L 87 it was 2014.

OK. The year has been corrected.

3. L 115/223/441 numbers for Butler et al. are not identical. However, I just read that they have actually revised their number between the ACPD and the now accepted revision to ACP by 15%. See: response to referee 2: <http://www.atmos-chem-physdiscuss.net/acp-2016-311/> L 48/448 range... see just above I am also a little bit unsure what to propose here. Either authors stay with the old number from Butler et al (ACPD) which is also part of the SPARC report or they redo their analysis by asking Butler et al. what their “final-final” number and uncertainty will be in the ACP paper (which will be published soon).

We have revised the paper to include both sets of results. We have redone the model runs based on the actual published values of Butler et al., which should be considered the 'final-final' values. To maintain the link with the SPARC report we also include results from 3 tracers (CTC1s, CTC2s, CTC3s) which use the SPARC values for the ocean loss. This run is plotted in Figure 8a, which links to a figure in the SPARC report.

4. Line 403 ...show more variability than the AGAGE... should be... show more variability than the AGAGE...

OK, word corrected.

5. Line 664, Figure 6: x-axis should be ppt, not ppb.

OK, corrected.

6. Line 676, Figure 7, header: more accurate? CCl₄ partial photolysis lifetime

OK, we have added 'photolysis'.