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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Tropospheric bromine chemistry: implications for present and pre-industrial ozone and mercury" *by* J. P. Parrella et al.

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The authors would like to thank P. Pongprueksa for bringing the updated rate constants to our attention. Here we will report the impact of the new Goodsite et al. (2012) rates on our results. The final version of our paper will include these updated results.

1. The present-day Hg(0) lifetime $= 0.58$ years
2. The pre-industrial Hg(0) lifetime $= 0.35$ years

Updating the kinetics does not affect our conclusions. Our estimated increase in the Hg(0) lifetime from pre-industrial to present is now 66%. And as a minor point, changes in the global Hg(0) lifetime with respect to bromine are now linear (instead of slightly

supralinear as we reported before the update), and this is due to the slower rate of HgBr thermal dissociation when using the Goodsite et al. (2012) kinetics.

Reference:

Goodsite M. E., Plane J. M. C., and Skov H., 2012, Correction to A Theoretical Study of the Oxidation of Hg0 to HgBr2 in the Troposphere, Environ. Sci. Technol., DOI:10.1021/es301201c.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 9665, 2012.