

Interactive comment on “OH clock determination by proton transfer reaction mass spectrometry at an environmental chamber” by P. Barmet et al.

Anonymous Referee #1

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Barmet et al. report the results of a study of four tracers to measure exposure to OH radicals in environmental chambers. Proton transfer reaction mass spectrometry (PTR-MS) was used to monitor the loss of n-butanol-d9, 3-pentanol, 3-pentanone and pinonaldehyde in complex mixtures and assess their utility as tracers for OH exposure. The results are reported in a clear and concise fashion. The results show that of the tracers investigated, n-butanol-d9 was the most promising for use with PTR-MS. Barmet et al. present a convincing argument that it would be useful to include in the descriptions of future chamber studies a chemical (time) dimension: the OH clock, which corresponds to the integrated OH concentration over time.

I recommend publication essentially as is. The authors may wish to note the fact that

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the choice of tracer is dependent on the chemical analysis techniques used. For example, FTIR is a widely used analytical technique in chamber studies. It is difficult to resolve IR features attributable to relatively large molecules such as n-butanol-d9 in complex mixtures. Compounds other than n-butanol-d9 would be preferable tracers when analytical techniques other than PTR-MS are used.

Interactive comment on Atmos. Meas. Tech. Discuss., 4, 7471, 2011.

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