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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Rate coefficients for the gas-phase reaction of OH with ($\vec{Z}$)-3-hexen-1-ol, 1-penten-3-ol, ($\vec{E}$)-2-penten-1-ol, and ($\vec{E}$)-2-hexen-1-ol between 243 and 404 K" *by* M. E. Davis and J. B. Burkholder

Anonymous Referee #1

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This manuscript reports the results of a kinetic study of the reactions of OH radicals with four unsaturated alcohols which are emitted from vegetation. Rate constants were measured over the temperature range 243-404 K using an absolute rate technique (pulsed laser photolysis with laser induced fluorescence detection of OH). This is a thorough and careful study, and I have no comments concerning the experimental approach or the results obtained.

Minor technical and editorial comments are:

Page 2379, lines 21 and 24. The parentheses around the OH in the chemical formula [CH3CH2CH2CH=CHCH2(OH) and CH3CH2CH2CH2CH=CHCH2(OH)] do not seem necessary, nor are they consistent with the style used for CH3CH2CH+CHCH2CH2OH on line 14.

Page 2380, line 6. Replace "several" by "four".

Page 2386, line 1. The total pressure was varied between 20 and 100 Torr, so replace "24" by "20".

Page 2387, line 22, and page 2388, line 4. Replace "2-hexena-1-ol" by "2-hexen-1-ol".

Page 2389, line 13, and Table 6, footnote "b". Since the authors go into some detail in footnote "b" to Table 6 about the relative rate measurement of Atkinson et al. (1995), they could further note that the errors cited are two standard deviations of the rate constant ratio (1.67 +/- 0.06) combined with a +/-20% estimated uncertainty in the rate constant for the reference compound (E-2-butene).

Figure 4. For (Z)-3-hexen-1-ol, one of the error bars on a room temperature rate constant appears unduly large on the negative side, extending down to ~5E-11 cm3 molecule-1 s-1. The rate constants listed in Table 6 indicate the errors on the rate constant of Jiménez et al. (2009) extending down to 7.17E-11 cm3 molecule-1 s-1.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 2377, 2011.