Supplement of Atmos. Chem. Phys. Discuss., 14, 22507–22545, 2014
http://www.atmos-chem-phys-discuss.net/14/22507/2014/
doi:10.5194/acpd-14-22507-2014-supplement


Atmospheric Chemistry and Physics Discussions

*Supplement of*

# Gaseous products and Secondary Organic Aerosol formation during long term oxidation of isoprene and methacrolein

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*Supplementary Material for*

# Gaseous products and Secondary Organic Aerosol formation during long term oxidation of isoprene and methacrolein

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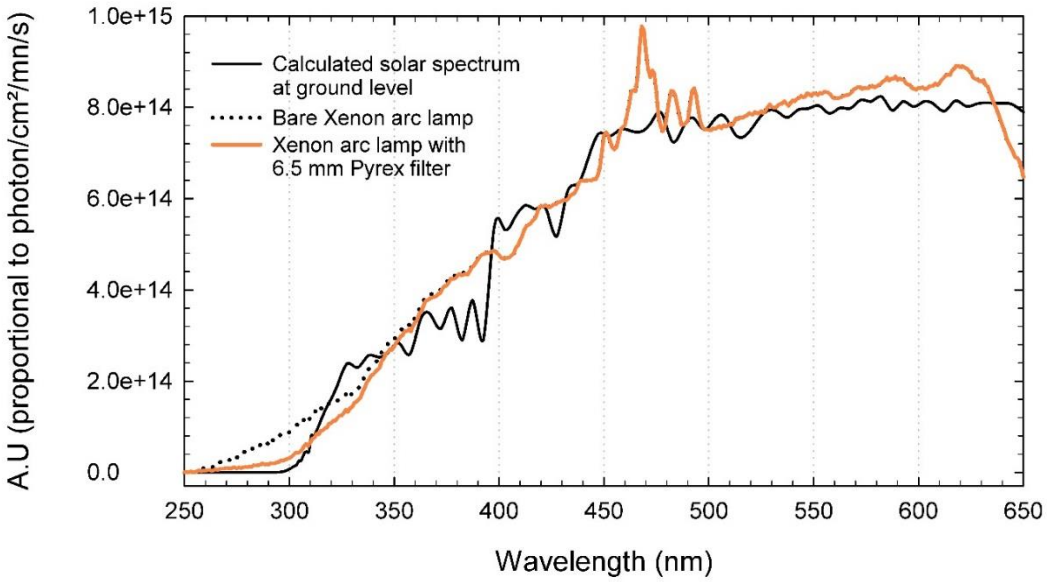


Figure S1 Solar irradiation spectrum (solid black curve) calculated from TUV NCAR, 12 h, Equator, 21 June compared to irradiation spectra of xenon arc lamp without filter (doted black curve) and with a 6.5 mm thicknesses Pyrex® filter (orange curve). The lamps spectra are scaled to the solar spectrum to facilitate comparison of their shapes.

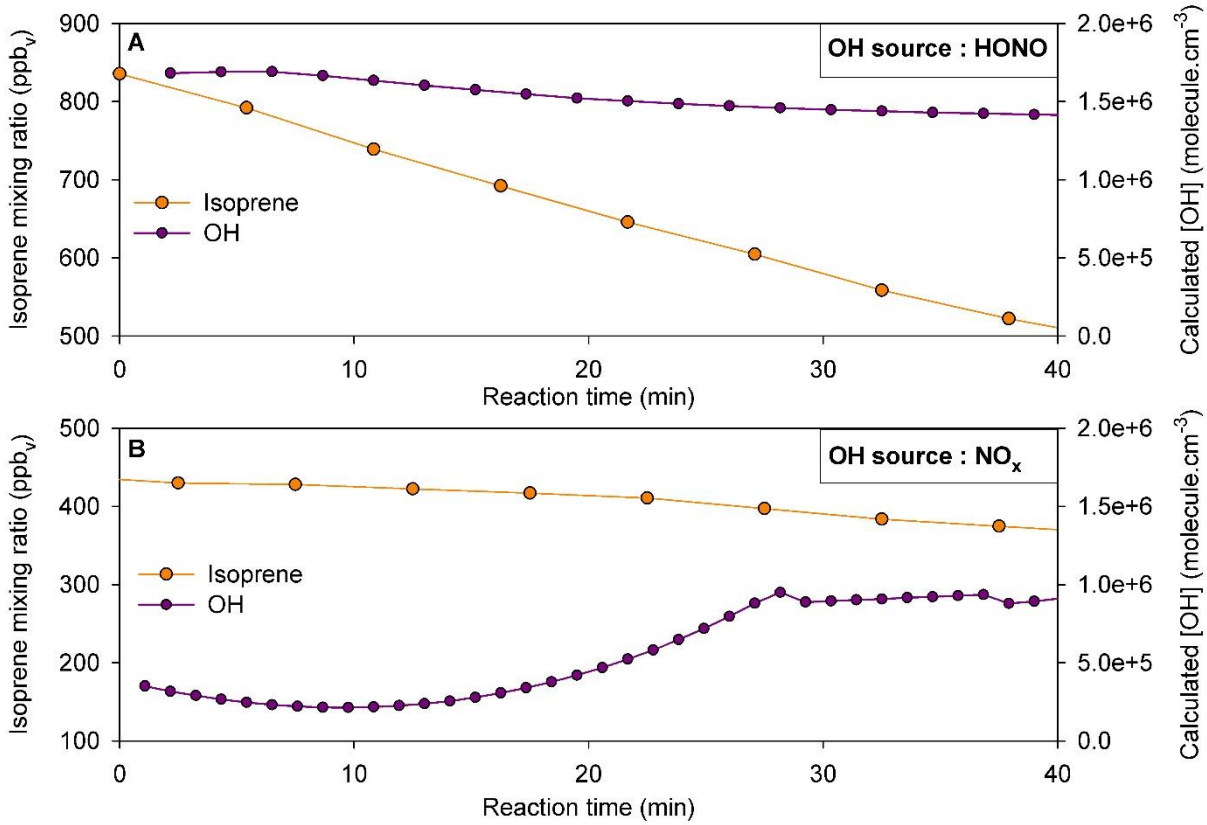


Figure S2 Time profiles of isoprene mixing ratios and calculated OH concentrations during isoprene photooxidation experiments performed after manual cleaning with (A) HONO (I280113) and (B) $NO_x$ (I210512) as OH source.

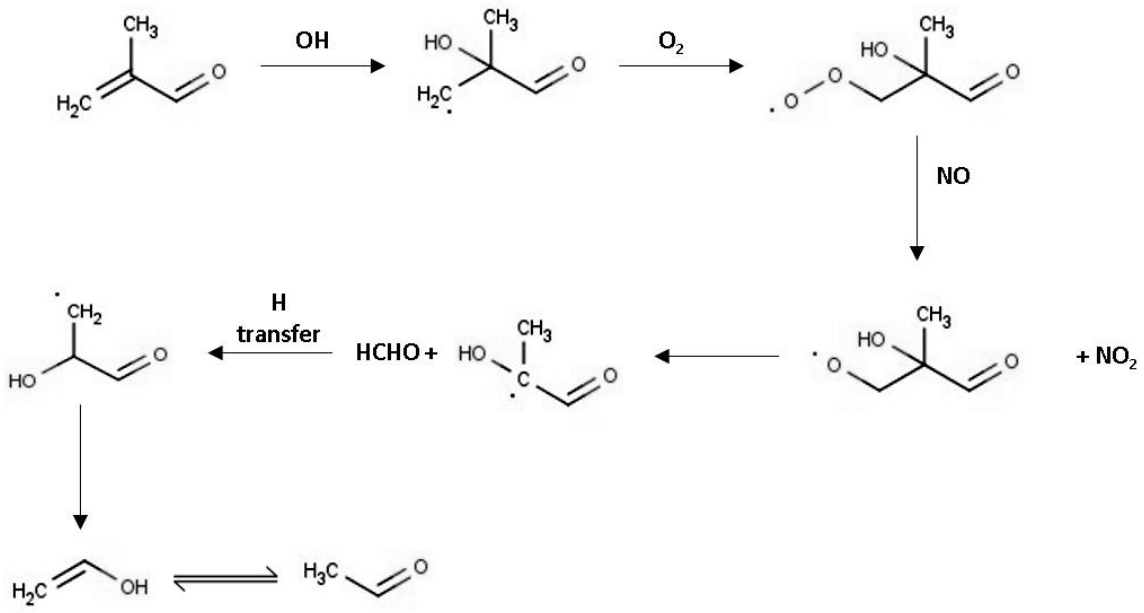


Figure S3 Suggested primary acetaldehyde formation from MACR which implies an H transfer in gaseous phase.

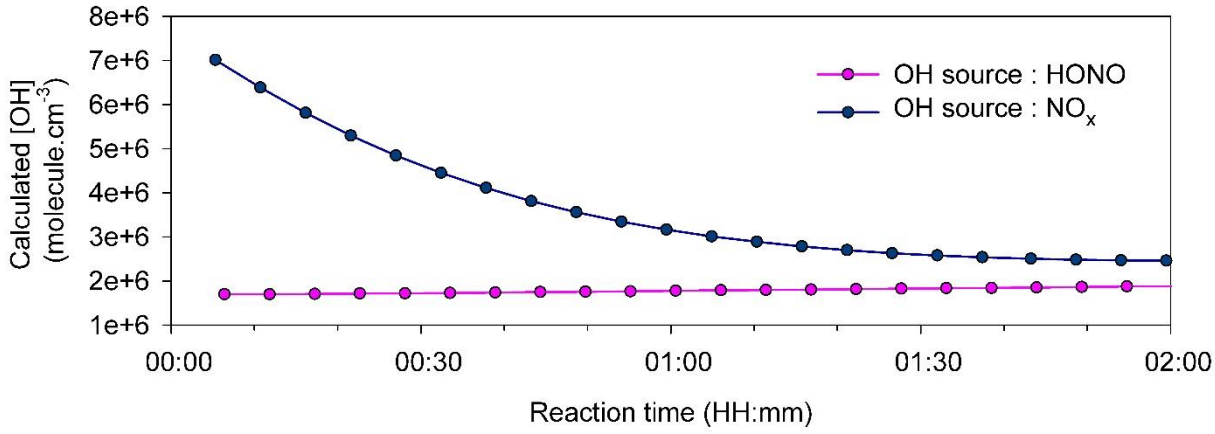


Figure S4 Time profiles of calculated OH concentrations during MACR photooxidation experiments performed with HONO (pink curve; M230113) and $NO_x$ (blue curve; M240512) as OH source.

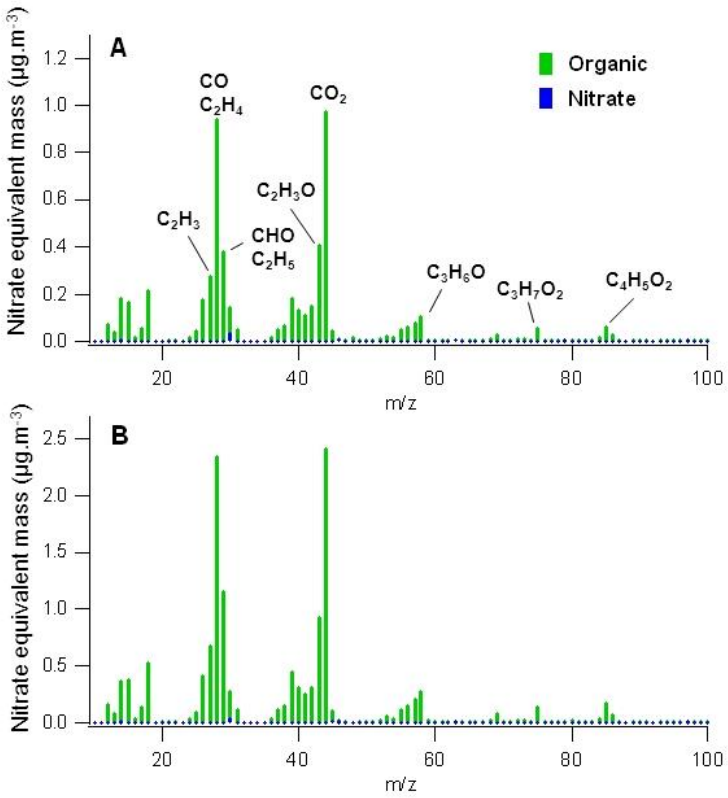


Figure S5 High-resolution mass spectra of SOA from (A) isoprene (I110411) and (B) MACR (M120411) photooxidation in the presence of $NO_x$. Spectra were taken at the maximum of SOA growth. The contribution of $CO^+$ to the total signal was estimated from the $CO_2^+$ organic signal ($CO_2^+ = CO^+$) like it was proposed by Chhabra et al. (2010) for isoprene experiments.