



Supplement of

Organic nitrate aerosol formation via NO_3 + BVOC in the Southeastern US

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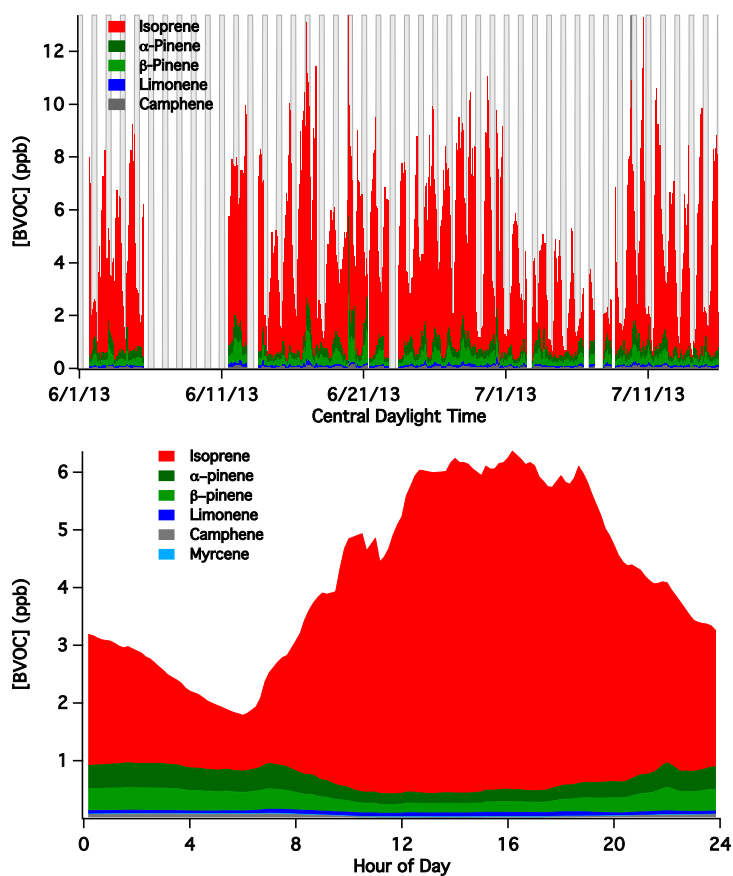


Figure S1. Biogenic alkene concentrations measured using GC (Goldan et al., 10.1029/2003JD004455, 2004). The instrument shows isoprene is the dominant BVOC with α & β - pinene showing the next highest concentrations. Shading delineates day (white) and night (gray). Both the full spectra and diurnally averaged spectra are shown for clarity.

References

Goldan, P. D., Kuster, W. C., Williams, E., Murphy, P. C., Fehsenfeld, F. C., and Meagher, J.: Nonmethane hydrocarbon and oxy hydrocarbon measurements during the 2002 New England Air Quality Study, *Journal of Geophysical Research: Atmospheres*, 109, 10.1029/2003JD004455, 2004.

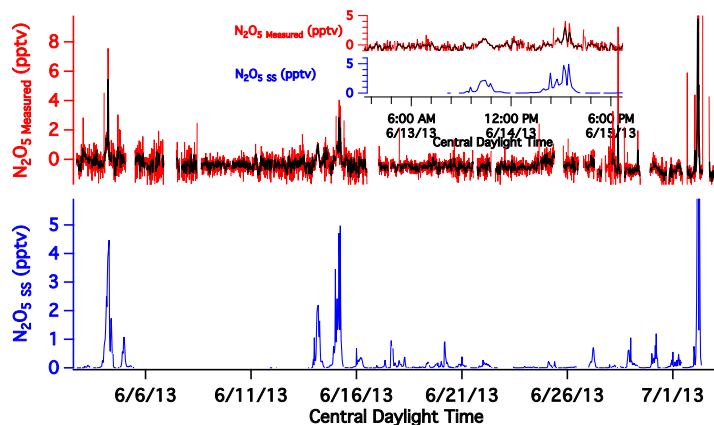


Figure S2. Steady state predicted (blue) and measured (red, binomial smoothed version in black) N_2O_5 mixing ratio during the campaign. Shown are the possible reaction paths investigated in this study. The inset provides a closer look at the N_2O_5 peaks that occur 13-June to 14-June, demonstrating the congruence of the timing and magnitude of predicted mixing ratios.

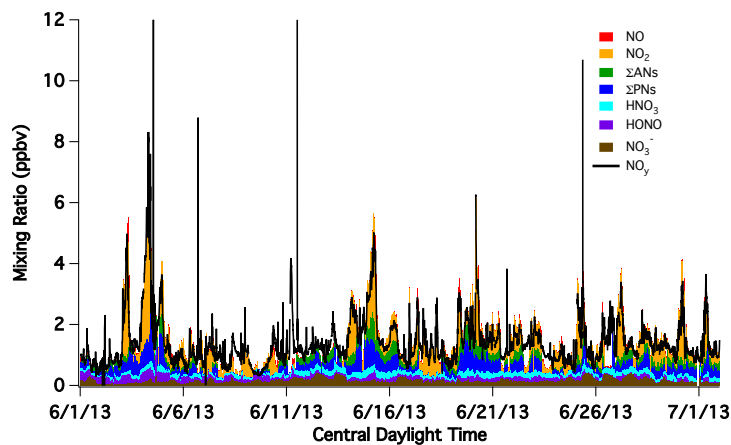


Figure S3. Measured NO_y comparison to individual oxidized nitrogen compounds ($NO_x + NO_z$). The calculated sums of $NO_x + NO_z$ overestimates NO_y measurements by 10%, but correlates to the measured NO_y with a R^2 of 0.87. Organic nitrates ($\Sigma ANs + \Sigma PNs$) comprise on average 30% of nighttime and 45% of daytime NO_y , while NO_2 comprises 30% of daytime and 50% of nighttime NO_y .

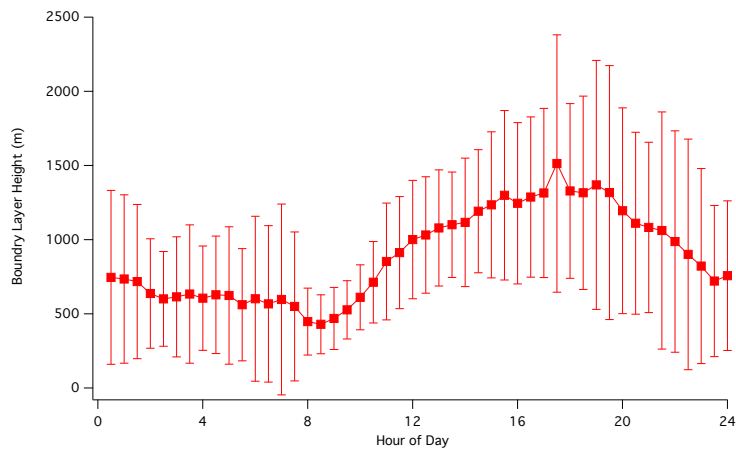


Figure S4. Diurnally averaged Planetary Boundary Layer height shows stability of the boundary layer at night. PBL was taken with a CHM 15k-Nimbus using LIDAR principle.