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The logo for the journal Atmospheric Chemistry and Physics, featuring the letters 'EG' inside a stylized globe.

*Supplement of*

**Eddy covariance fluxes and vertical concentration gradient measurements of NO and NO<sub>2</sub> over a ponderosa pine ecosystem: observational evidence for within-canopy chemical removal of NO<sub>x</sub>**

**K.-E. Min et al.**

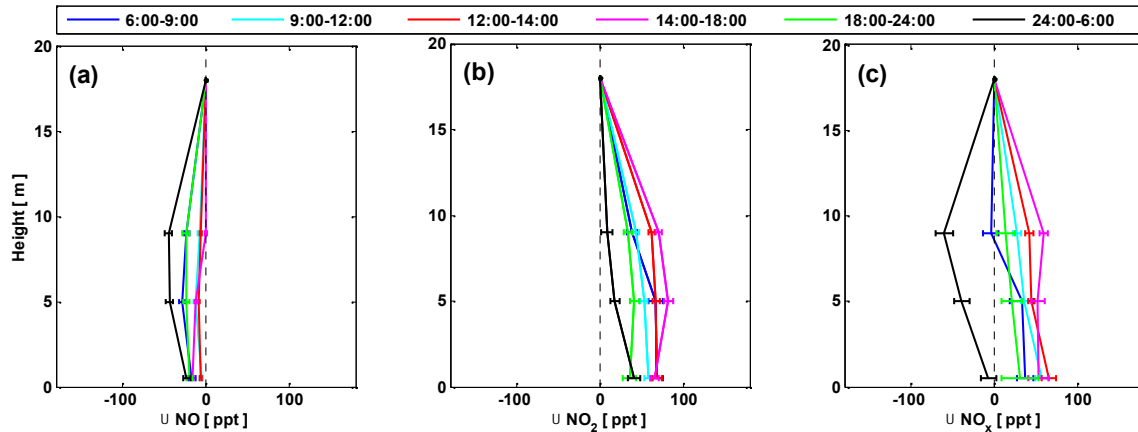
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## Supplement

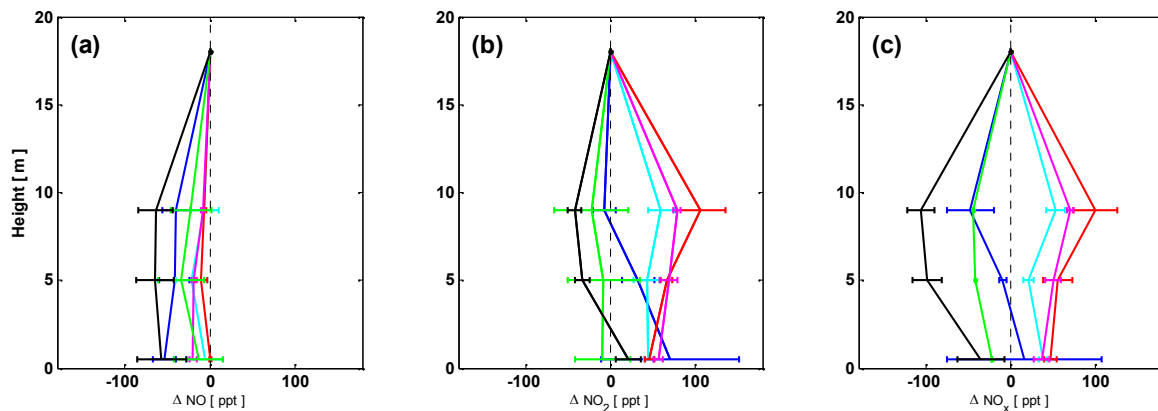
### S1. Vertical profiles.

The figures below show the average (top) and four examples of daily vertical profiles of NO, NO<sub>2</sub> and NO<sub>x</sub>. The mean and standard error of the enrichment in concentration at each height are shown with dots and whiskers at various times of day: early morning (6:00-9:00, blue), late morning (9:00-12:00, cyan), midday (12:00-14:00, red), afternoon (14:00-18:00, magenta), evening (18:00-24:00, green) and night (24:00-6:00, black).

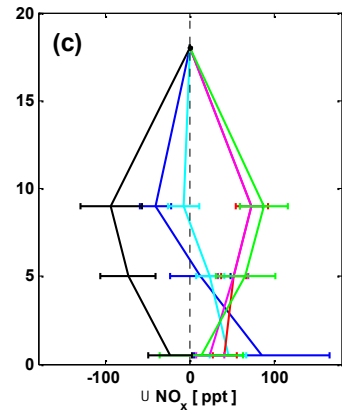
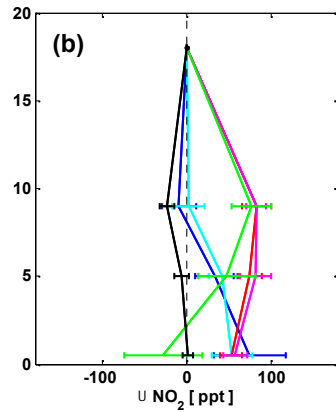
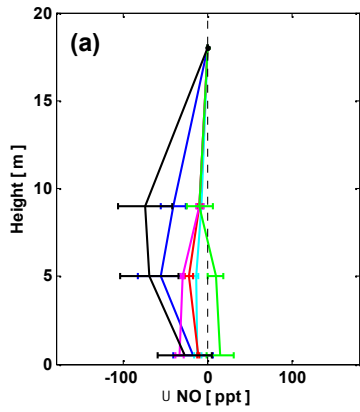
The daily profile patterns during the daytime (12:00-14:00, 14:00-18:00) show less variability than those of nighttime (18:00-24:00, 24:00-6:00).



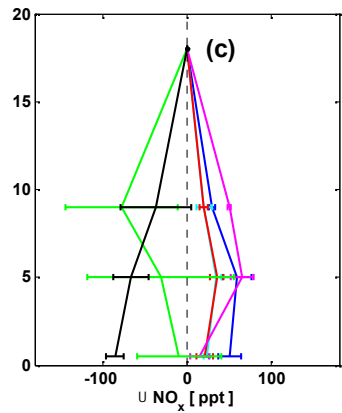
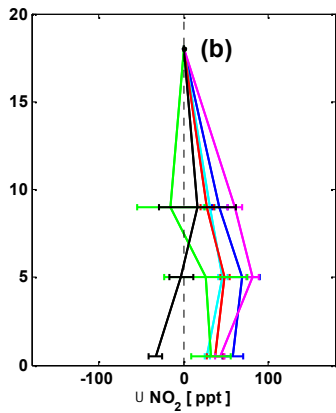
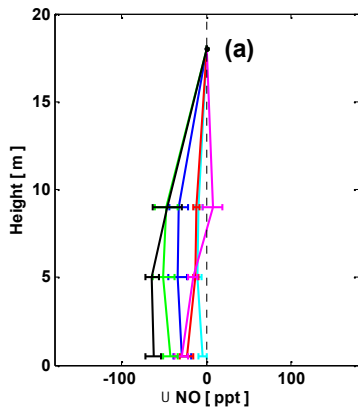
Averaged vertical profile over the whole field campaign.



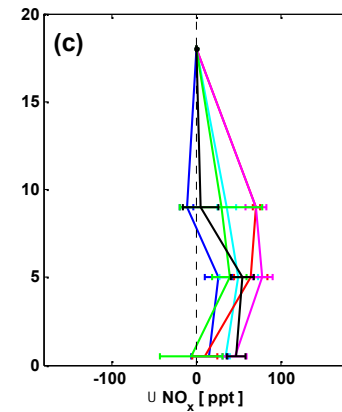
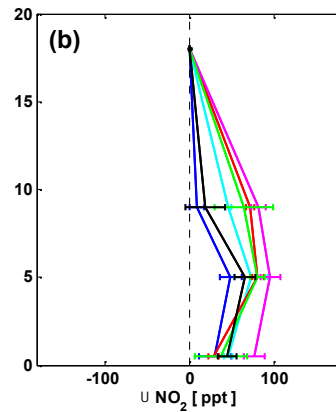
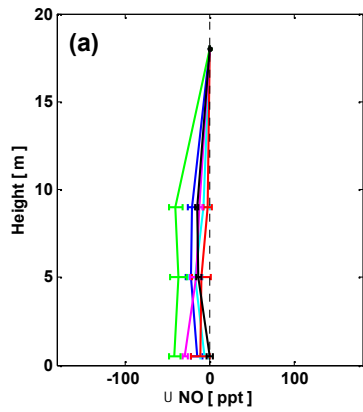
Day 169 (June 19<sup>th</sup>) vertical profile.



Day 170 (June 20th) vertical profile.



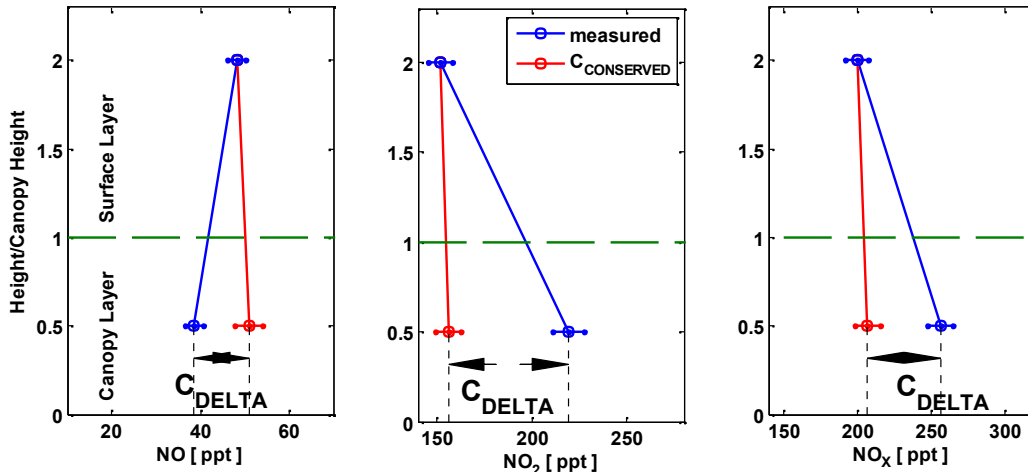
Day 181 (July 1st) vertical profile.



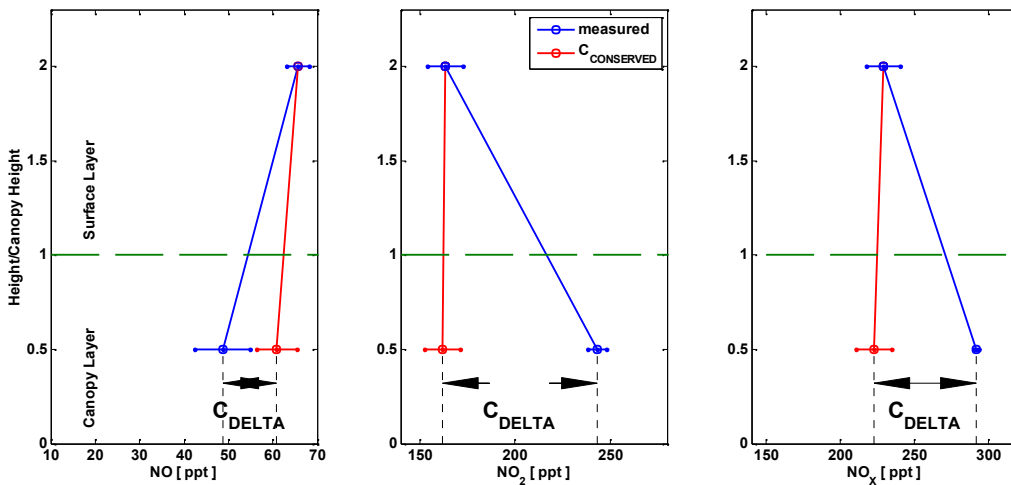
Day 191 (July 11th) vertical profile.

## S2. Results of $C_{DELTA}$ analysis

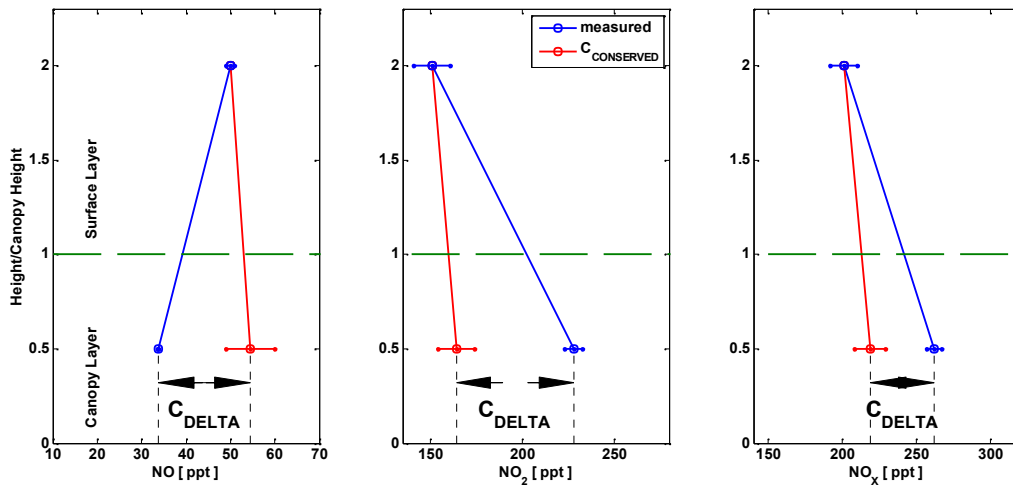
The figures below show average and four examples of individual days of  $C_{DELTA}$  of NO, NO<sub>2</sub> and NO<sub>x</sub>. We select the days that coincide with the daily vertical profiles show in supplement section 1. The data used in this analysis focus on the midday window (12:00-14:00). The estimated concentrations,  $C_{CONSERVED}$ , using standard flux-gradient similarities of tracers are shown in red and the measured vertical gradients of NO, NO<sub>2</sub> and NO<sub>x</sub> are in blue. Open circles and whiskers represent the means and standard errors.



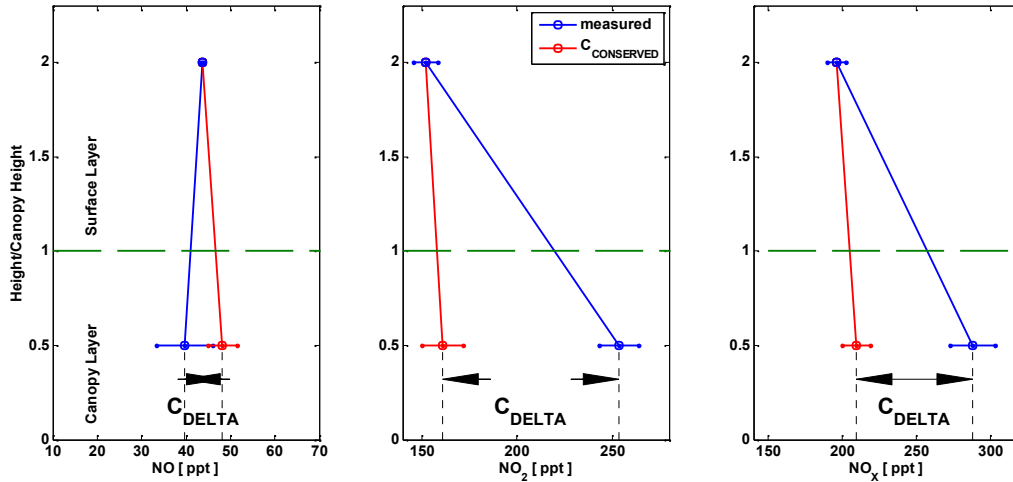
Averaged  $C_{DELTA}$  analysis for NO, NO<sub>2</sub> and NO<sub>x</sub>.



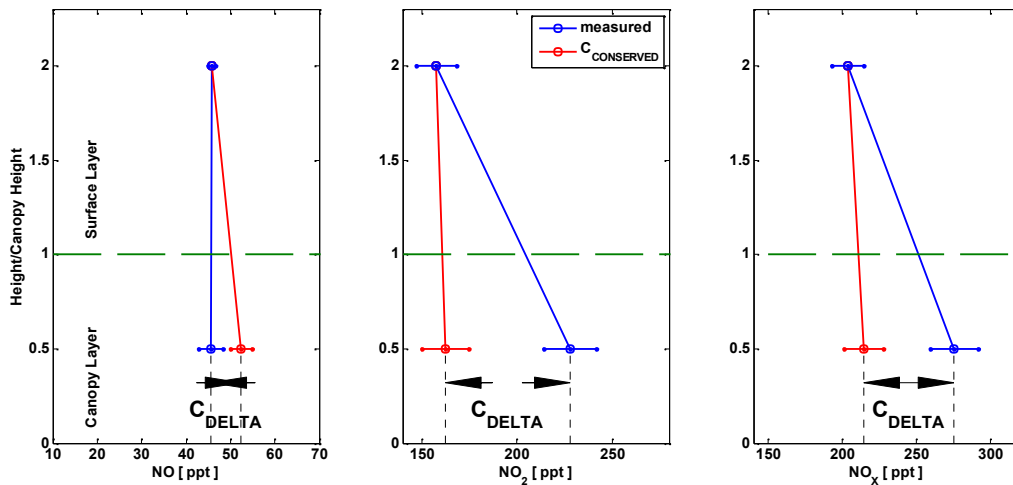
$C_{DELTA}$  analysis of day 169 (June 19<sup>th</sup>) for NO, NO<sub>2</sub> and NO<sub>x</sub>.



$C_{DELTA}$  analysis of day 170 (June 20<sup>th</sup>) for NO, NO<sub>2</sub> and NO<sub>x</sub>.



$C_{DELTA}$  analysis of day 181 (July 1<sup>st</sup>) for NO, NO<sub>2</sub> and NO<sub>x</sub>.



$C_{DELTA}$  analysis of day 191 (June 11<sup>th</sup>) for NO, NO<sub>2</sub> and NO<sub>x</sub>.