

Dr. Anne Perring  
Co-Editor, *Atmospheric Chemistry and Physics*

Dear Dr. Perring,

We are pleased to submit our revised manuscript entitled “Tropospheric HONO Distribution and Chemistry in the Southeast U.S.” for publication in *Atmospheric Chemistry and Physics*. We have made the following revisions to the manuscript as you suggested:

- (1) Two sentences have been added to address the baseline shifts caused by pressure changes (now lines 168-172): “In addition, large baseline shifts were observed sometimes when the flow state of the scrubbing solution was disturbed by rapid pressure changes during aircraft’s rapid ascending to or descending from high altitudes. The data were excluded from analysis if the baseline shifts caused by rapid pressure changes could not be reasonably corrected, regardless of the sign or magnitude of the data.”
- (2) The two sentences in the original manuscript “The accuracy of HONO measurements was confirmed by comparison with a limb-scanning Differential Optical Absorption Spectroscopy (DOAS) (Platt and Stutz, 2008). The agreement between these two instruments was very good in wide power plant plumes where HONO mixing ratios significantly exceeded the detection limits of both instruments (Ye et al., 2016b).” (lines 147-152) have been revised to “The accuracy of HONO measurements was confirmed by comparison with a limb-scanning differential optical absorption spectroscopy (DOAS) (Platt and Stutz, 2008) during the NOMADSS 2013 summer field study onboard the C-130 aircraft (Ye et al., 2016b). When measuring in wide power plant plumes where HONO mixing ratios exceeded the lower detection limits of both instruments, the agreement between these two instruments was very good, within the assessed uncertainties (Ye et al., 2016b).” (now lines 148-154).
- (3) The wording with regard to the Kaser study has been revised, from “the OH radical whose average concentration is estimated at  $3 \times 10^6$  mole  $\text{cm}^{-3}$  in the PBL (Kaser et al., 2015)” (lines 263-264) to “the OH radical whose average concentration was found to be  $\sim 3 \times 10^6$  mole  $\text{cm}^{-3}$  in the PBL in the Southeast U.S. during the NOMADSS study (Kaser et al., 2015)” (now lines 268-269).

Thank you for your consideration.

Sincerely,

Xianliang Zhou