



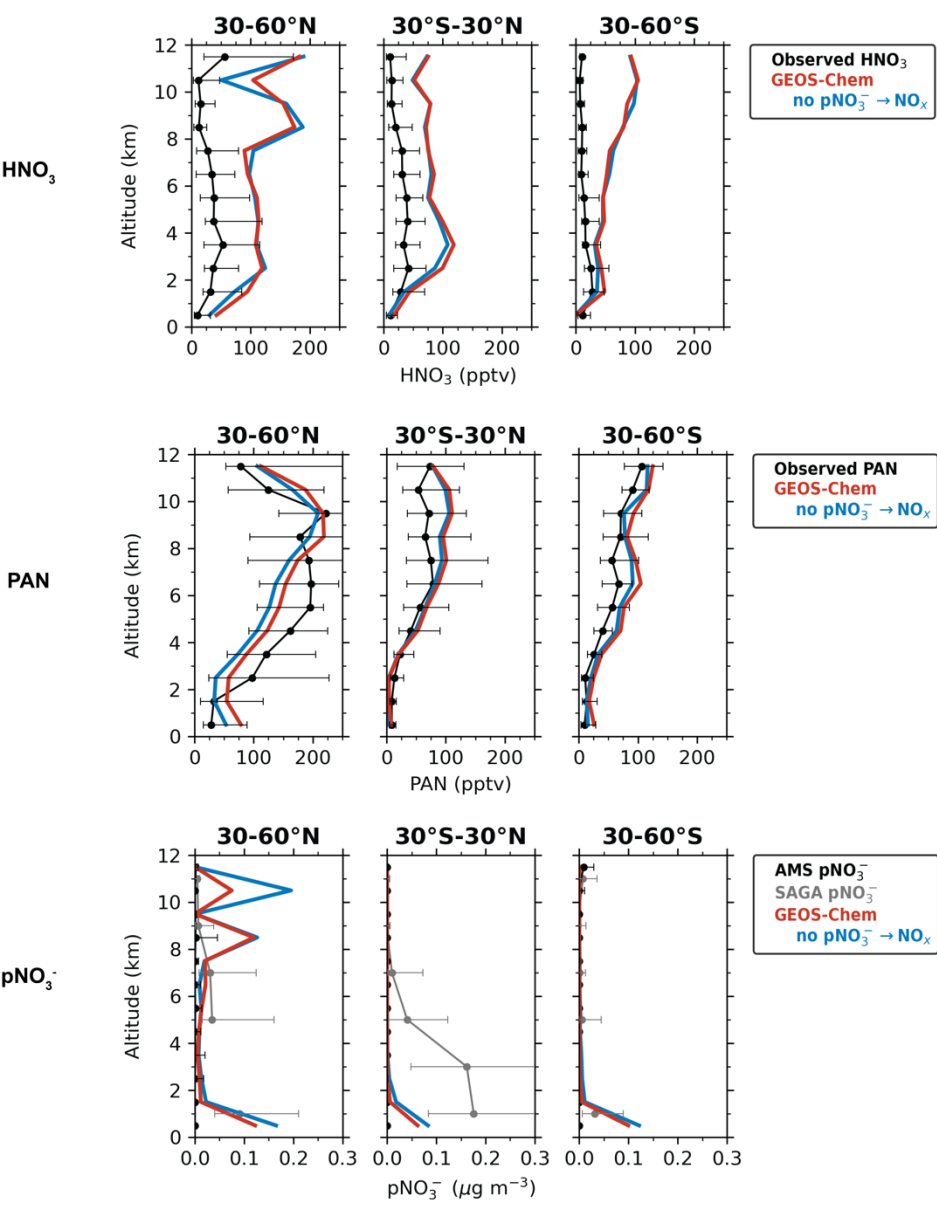
Supplement of

Nitrogen oxides in the free troposphere: implications for tropospheric oxidants and the interpretation of satellite NO₂ measurements

Viral Shah et al.

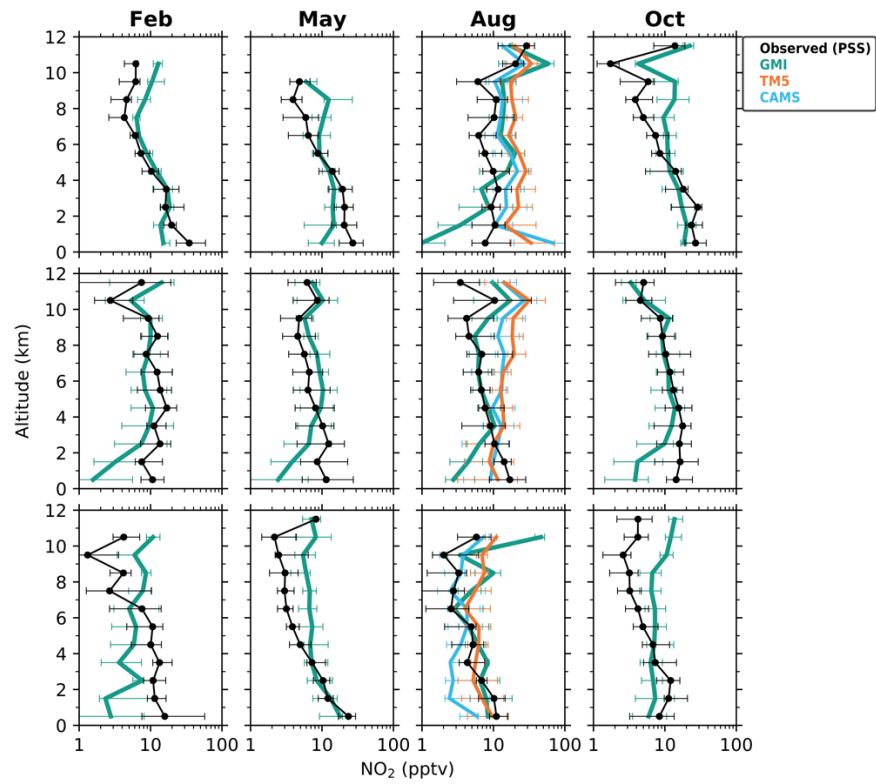
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Figure S1. Median vertical profiles of HNO_3 , PAN, and pNO_3^- concentrations over the Pacific and Atlantic Oceans during the ATom flight campaigns (2016–18), separated by latitude bands. Observations of HNO_3 are from the Caltech CIMS instrument, PAN from the NOAA PANTHER instrument, and pNO_3^- from the CU Boulder AMS and the UNH SAGA instruments. The AMS pNO_3^- is the inorganic component of the AMS nitrate measurements, calculated using the AMS reported organic nitrate fraction. The data selection criteria are as described in the caption of Sect. 2.1. Horizontal bars show the interquartile ranges in 1-km altitude bins. Model results are from our baseline GEOS-Chem simulation and a sensitivity simulation without pNO_3^- photolysis.



20 **Figure S2.** Same as Fig. 4 but showing the interquartile range for each altitude bin for the GMI, TM5, and CAMS NO₂ concentrations.