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HONO chemistry at a suburban site during the EXPLORE-YRD campaign in 2018: formation mechanisms and impacts on O_3 production

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Table S1: Measured parameters and corresponding measurement techniques

Parameters	Limit of detection	Methods	Accuracy
HONO	5 ppt	LOPAP	±10%
OH	6×10^{5} cm^{-3}	LIF	±10%
NO	60 ppt	Chemiluminescence	±20%
NO_2	0.3 ppb	Chemiluminescence+ Photolytic converter	±20%
O_3	0.5 ppb	UV photometry	±5%
CO	1 ppb	Infrared absorption	±1 ppb
SO_2	0.1 ppb	Pulsed UV fluorescence	±5%
S_a	14-700 nm	SMPS	±20%
HCHO	25 ppt	Hantzsch fluorimetry	±5%
VOCs	20-300 ppt	GC-FID/MS	±15%
$PM_{2.5}$	0.1 μg m^{-3}	TEOM	±5%
NH_4^{+}, SO_4^{2-}, NO_3^{-}, Cl^{-}	0.05 μg m^{-3}	GAC-IC	±20%

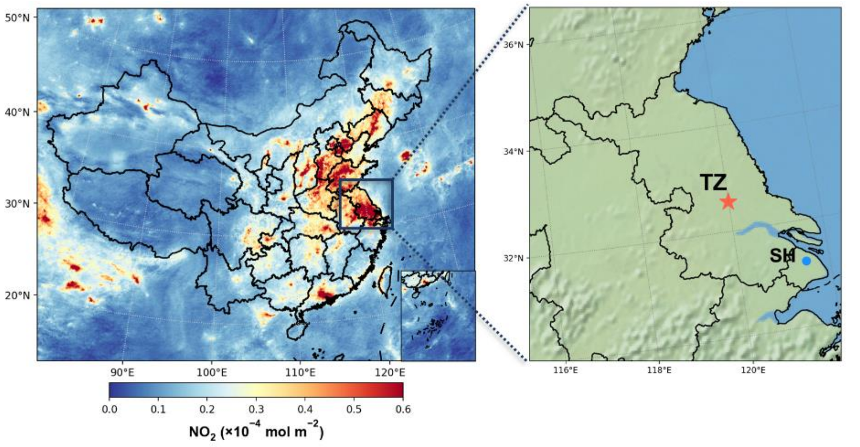

Figure S1: Location of the field measurement site (red star) in Taizhou (TZ), Jiangsu Province. This site is situated approximately 200 km northwest of Shanghai (SH), one megacity in YRD. The left map is colored by monthly average NO_2 column density (July, 2018) retrieved from TROPOMI (https://s5phub.copernicus.eu/dhus).

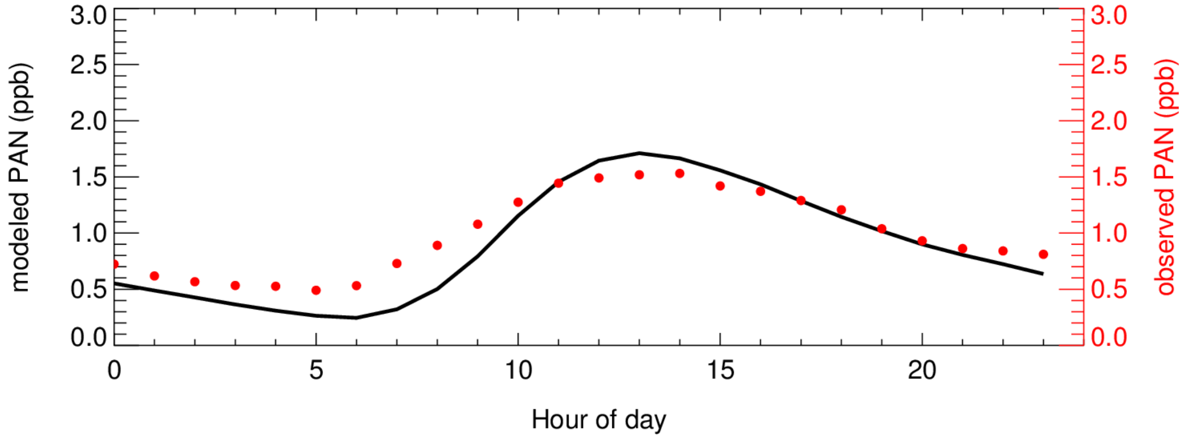

Figure S2: Averaged diurnal pattern of observed and modeled PAN if A first-order dilution loss term with a lifetime of 8 hours was incorporated.

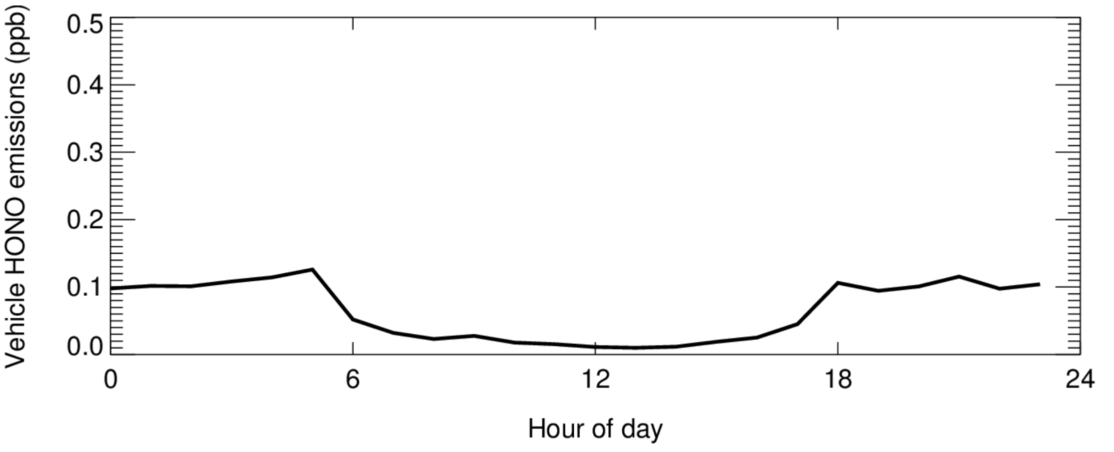

Figure S3: Calculated HONO diurnal profile contributed by vehicle emissions.

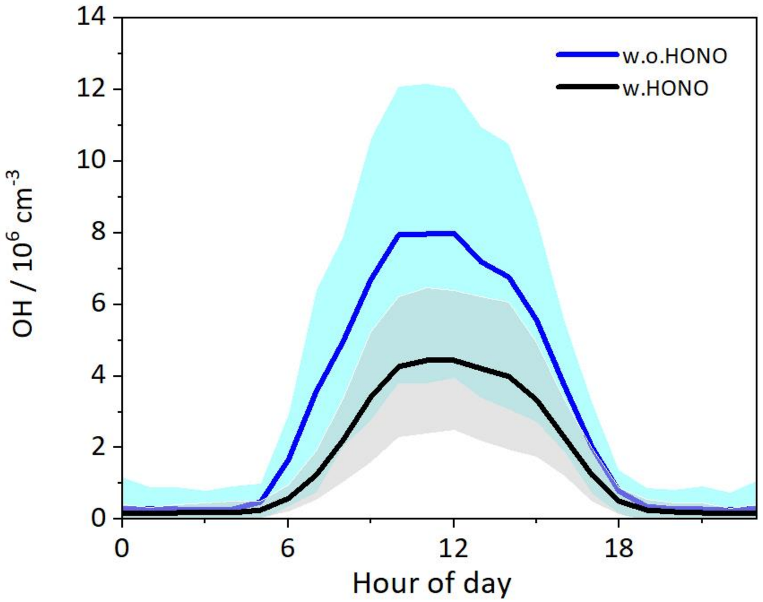

Figure S4: The comparison of modeled OH concentration with and without observed HONO as a model constraint.