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EHT

Judging Dept.

**Honglian Gao**

Student

EHT

6

Xianliang Zhou

Dept or Program Years in program

Mentor

**Measurement of ambient HONO and HNO<sub>3</sub> dry deposition at  
PROPHET site during summer 2007**

Author (s)

**Honglian Gao, Xianliang Zhou, Ning Zhang**

HONO is believed to be an important OH radical source in the planetary boundary layer during early morning hours. Recent studies show that HONO is an important OH radical source throughout the day. Although unexpected high daytime HONO concentrations are frequently observed in rural and semirural sites, the daytime HONO source is still an unanswered question. Our previous laboratory study shows that HNO<sub>3</sub> deposited on surfaces is a significant daytime HONO source. To investigate the behavior of HNO<sub>3</sub> deposition on surfaces and the relationship between deposited HNO<sub>3</sub> and ambient HONO, intensive measurements were conducted at PHOPHET site, a rural forested area in Pellston Michigan, from July to August 2007. HONO was measured intensively at two heights: 25.60m and 32.30m above ground level (AGL). And HNO<sub>3</sub> dry deposition sample was collected with Nylon filter with custom designed filter holders at 33m AGL. The summer diurnal pattern of ambient HONO concentrations was obtained, with concentrations of 7pptv - 500pptv, a mean of 66pptv and a median of 50pptv. Significant gradient of HONO concentrations between the two heights observed in previous summer measurements was not observed in this study because of lack of dew events. The amount of HNO<sub>3</sub> deposited on surfaces was estimated. The correlation between the deposited HNO<sub>3</sub> and ambient HONO was complicated due to the Upper Michigan Peninsula wild fire event occurred during the observed time frame.