Geophysical Research Abstracts
Vol. 13, EGU2011-9457, 2011
EGU General Assembly 2011

On the relationship between nitryl chloride and molecular chlorine and their relative importance as Cl-atom sources from simultaneous ship-borne observations in coastal California

Joel Thornton (1) and Theran Riedel (1,2)

(1) University of Washington, Atmospheric Sciences, Seattle, Washington, United States (thornton@atmos.washington.edu),
(2) University of Washington, Department of Chemistry, Seattle, Washington, United States

Chlorine atoms are highly reactive oxidants, and can influence the oxidation rates of trace gases such as elemental mercury and volatile organic compounds (VOC). Faster conversion of VOC into organic peroxy radicals under high NO_x $regimes influences ozone production. Cl-atom sources remain uncertain while having consequences for understanding air quality and climate. Modeling studies and p$ $atom source and nitryl chloride as either not quantified or unimportant in polluted coastal regions. We made simultaneous ins$ $-June 2010, that appear counter to these previous findings. Our observations show that in the outflow of the LA Basin, nitryl$ $atom source. The instantaneous Cl-atom production rate from nitryl chloride was more than a factor of four greater than tha$ $11AM); ranging from a factor less than one to greater than 10. On a few specific nights, nitryl chloride and molecular chlorine$ $atom sources in polluted regions.$