

HO_x chemistry and ozone production during MILAGRO/INTEX-B

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Oxidation chemistry cleanses the atmosphere of chemical emissions from Earth's surface, establishes the global ozone balance, and influences climate change. It is dominated by the hydroxyl radical, OH, but involves the hydroperoxyl radical, HO₂, together called HO_x. Measurements of OH and HO₂ were made with our Airborne Tropospheric Hydrogen Oxides Sensor (ATHOS) as part of a much larger measurement suit from the NASA DC-8 aircraft during MILAGRO/INTEX-B in spring 2006. This mission, which was conducted mainly over South United State and Mexico, was an excellent test of oxidation chemistry in pollution plumes throughout the troposphere. Vertical profiles of observed OH, HO₂ levels, and HO₂/OH and their dependence on NO_x levels and HO_x production will be presented. Vertical profile of ozone production from HO₂+NO reaction will be calculated and its dependence on HO_x production and NO_x levels will be discussed.