Observations of hydrogen peroxide, methylhydroperoxide and formaldehyde vapors from the DC-8 during MILAGRO

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Hydrogen peroxide (H2O2), formaldehyde (CH2O) and methylhydroperoxide (CH3OOH) were measured on board the NASA DC-8 aircraft during the MILAGRO/INTEX-B mission in March 2006 using wet chemical collection and analysis methods. These observations provide constraints upon photochemical theory under a variety of air composition conditions and in the case of CH2O provide direct satellite sensor validation data for AURA-OMI. Six sorties sampled air over the Gulf of Mexico, Mexico and Texas from near the surface to 12 km with 3 flights having low-altitude legs over Mexico City and its environs. CH2O was also measured on the DC-8 using an optical spectroscopic method. One flight was flown, in part, in close proximity to the NCAR C-130 aircraft for comparison with its H2O2 and CH2O measurements using mass spectrometric and optical spectroscopic methods, respectively. The spatial and temporal distributions of the wet-chemical observations are presented, along with some preliminary analyses and interpretation of results.