



Evolution of Urban Air Outflow from Mexico City: Gases and Particles

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The Mexico City Metropolitan Area (MCMA) is a mega-city environment with complex air quality issues. The MILAGRO campaign (March 2007) brought together many scientists at multiple sites (both surface and aircraft based) in an attempt to map out the emission and transformation of gas and aerosol species in and around MCMA. Here we report results from two sites sampled with the Aerodyne Mobile Lab (AML): T0, at IMP in (north) central Mexico City; and Pico de Tres Padres (PTP), a mountain rising 1000m above the basin floor in northern MCMA. The AML had an extended set of instrumentation including laser based monitoring of CO, CH₂O and NO_x gases, a PTRMS for continuous VOC analysis and aerosol mass spectrometry for continuous aerosol chemistry measurement. Air masses sampled at PTP appeared to be mixed urban emissions missing, for example, spikes in CO, NO or CO₂ observed within the city at T0. Depending on the meteorology and time of day, analysis of air at PTP exhibited a complex combination of dilution and processing of urban emissions. Detailed relationships of tracers of VOC and aerosol species will be examined in order to evaluate rates of photochemical processing and secondary aerosol formation, including some comparison of T0 and PTP with aircraft observations.