An initial look at particulate organic matter characteristics at the surface sites during the 2006 MILAGRO Campaign

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A ground deployment was conducted at the T1 (Tecamac University) and T2 (Rancho la Bisnaga, Pachuca) surface sites by the PNNL (Pacific Northwest National Laboratory) team during the 2006 Megacity Initiative: Local and Global Research Observations (MILAGRO) field campaign in March 2006. The T1 site is located north of the main metropolitan area of Mexico City, and we anticipated that it would be affected by an urban plume and particulate matter transported over the region. The T2 site is located 35 km to the northeast of T1. It was designed to capture an aged plume and aerosols from T1. One of the main objectives was to investigate the evolution of aerosols and their associated properties in the first few hours after their formation as well as particle concentrations, sources, and processes. A suite of real-time and near real-time instruments were deployed in the PNNL trailer including an Aerodyne Aerosol Mass Spectrometer (C-ToF-AMS), a Scanning Mobility Particle Sizer (SMPS), a sunset organic and elemental carbon analyzer (OCEC), particle soot absorption photometers (PSAPs), and nephelometers as well as a suite of meteorology measurements at the T1 site. A similar, yet simpler, suite of instruments was deployed at the T2 site. The C-ToF-AMS provided in-situ single particle chemical composition and size distribution of the non-refractory species in particulate matter less than 1 μm. Organics were the main constituents of particulate mass in Mexico City. Some preliminary analysis of AMS data and other simultaneous measurements will be presented here aiming to understand sources and processes of particulate organic matter.