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Overview of MCMA-2006: Ground-based measurements during MILAGRO Campaign in the Mexico City Metropolitan Area

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A major international collaborative scientific project to examine the air quality in México City and the surrounding region took place during March 2006. This project, called MILAGRO (Megacity Initiative: Local and Global Research Observations), is the first international effort to study the impacts of a megacity on air quality. Previous research on air pollution associated with the Mexico City Metropolitan Area (MCMA), particularly the MCMA-2003 Campaign, provided a framework in planning the MILAGRO Campaign. The 2006 Campaign, in turn, provides the unique opportunity to expand the MCMA-2003 data set taken 3 years apart.

The scientific protocol for MILAGRO consists of a month-long series of carefully coordinated observations of the chemistry and physics of the atmosphere in and near México City, using state-of-the-art ground-based, aircraft-based, and satellite-based instrumentation, complemented by meteorological forecasting and numerical simulations.

One of the components of MILAGRO is the MCMA-2006 Campaign, which focuses on the emissions and boundary layer concentrations within the metropolitan area of México City, the exposure patterns and effects on human health and the evaluation and design of policies intended to reduce pollutant levels. The required data on aerosols, VOCs and other gases, meteorology, and solar radiation was gathered at a supersite, a flux tower, a refinery and industrial zones, in combination with a highly capable mobile laboratory, a microlight research aircraft and several fixed mobile units deployed throughout the MCMA. A detailed description of the measurements and some preliminary findings from the MCMA-2006 will be presented.