

## **ATS/CIRA Colloquium**

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# **Atmospheric Chemistry In and Near a Megacity: The 2006 Mexico City MILAGRO Field Campaigns**

**April 10, 2008**

**ATS room 101; Discussion will begin at 3:30pm**

**Refreshments will be served at 3:00pm in the coffee lounge**

The atmosphere near North America's largest megacity, Mexico City, was studied intensively in March 2006 under project MILAGRO and its components MCMA-2006, MIRAGE-Mex, MAX-Mex, and INTEX-B/1. Instruments to measure chemical composition of gases and particles, optical and microphysical properties, spectral radiation, and meteorological variables were deployed at numerous surface locations in and near the city, and onboard 6 airplanes to provide regional coverage. A major objective was to gain better understanding of the chemical evolution of pollutants during the transition from the urban to the regional scale. Analyses of the results are still in early stages, but already suggest that photochemical formation of oxidants (e.g. ozone) and secondary aerosols (esp. organics) continues vigorously in the urban outflow for several days. This is due at least in part to the fact that urban reactivity is inhibited by high emissions of nitrogen oxides and by aerosol-induced reductions in photolytic ultraviolet radiation, so that a substantial fraction of yet-to-be reacted pollutants is exported to the regional atmosphere. Such results suggest that, contrary to an old adage, the solution to pollution is not dilution, and the effects of urbanization may be felt quite far downwind of their sources.