

## **Eddy covariance measurements of trace gases and energy fluxes from an urban district of Mexico City**

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Direct measurements of emissions of trace gases that include all emissions sources are necessary to improve our understanding of the atmospheric chemistry in urban areas. As part of the MCMA-2003 study we measured for the first time fluxes of CO<sub>2</sub> and selected VOCs in a residential district of Mexico City using the eddy covariance technique. For the MILAGRO campaign we extended these flux measurements from a rooftop tower erected in a busy district surrounded by congested avenues close to the center of the city. Diverse instruments coupled with micrometeorological methods were used to measure fluxes of CO<sub>2</sub>, H<sub>2</sub>O, olefins, oxygenated and aromatic VOCs, energy and momentum. Preliminary results for the olefin and CO<sub>2</sub> fluxes show similar diurnal patterns to those observed in 2003, but with higher magnitudes. During the MILAGRO campaign the CO<sub>2</sub> fluxes ranged from -0.13 to 1.76 mg m<sup>-2</sup> s<sup>-1</sup>, with a diurnal average of 0.51 mg m<sup>-2</sup> s<sup>-1</sup>, 24% higher than the average measured in 2003. Olefin fluxes ranged from -0.13 to 1.54 μg m<sup>-2</sup> s<sup>-1</sup>, with a diurnal average of 0.51 μg m<sup>-2</sup> s<sup>-1</sup>, 42% higher than in 2003. The differences between the 2003 and 2006 diurnal averages are due to the different characteristics of the monitored footprints rather than an increment of the emissions in a period of 3 years. The flux analysis for the other species is under process. Preliminary fluxes of latent and sensible heat and momentum have shown similar patterns and magnitudes to those observed in 2003 and previous studies in Mexico City.