

## The MAX-MEX T1-T2 Component of the MILAGRO Campaign

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As part of the MAX-MEX contribution to the MILAGRO program, a major component known as the T1-T2 study was designed to investigate changes in the mass absorption efficiency  $\alpha_{\text{ABS}}$  (absorption per unit mass, with unit of  $\text{m}^2/\text{g}$ ) of black carbon (BC) downwind of Mexico City at two sites, T1 and T2. The T1 site was located at Tecamac University while the T2 site was situated approximately 35 km to the northeast at Rancho la Bisnaga. Organic and elemental carbon analyzers and photoacoustic absorption spectrometers were used to estimate  $\alpha_{\text{ABS}}$  at both sites. Radar wind profiler data were used to identify time periods when winds were expected to carry the Mexico City urban plume over both T1 and T2. The mass absorption efficiencies at both T1 and T2 were lower during these transport periods than at other times, consistent with the likelihood of fresher emissions being found when the winds blew from Mexico City. The mass absorption efficiency at T2 was larger than at T1 for both transport and non-transport periods, which is also consistent with the expectation of aerosols with greater ages being found at locations farther from the city. In contrast, changes in single scattering albedo measured on board the G-1 aircraft between T1 and T2 were typically small. There was general agreement among measurements of single scattering albedo by the G-1, at the surface, and averaged over a column as determined from rotating shadowband radiometer data, although some differences were found that may be related to boundary-layer evolution.