

Abstract (word limit: 300)

Twenty-five MiniVol samplers were operated throughout the Mexico City metropolitan region from February 22 through March 22, 1997, to evaluate the variability of PM₁₀ concentrations and composition. The highest PM₁₀ concentrations were found in neighborhoods with unpaved or dirty roads, and elements related to crustal material were the main cause of differences from nearby (<200 m) monitors that were not adjacent to the roadbed. SO₄²⁻ concentrations were homogeneous across the city. SO₄²⁻ measured at the city boundaries was about two-thirds of the concentrations measured within the urbanized area, indicating that most SO₄²⁻ is of regional origin. Elemental carbon (EC) and organic carbon (OC) concentrations were highly variable, with higher concentrations in areas that had high diesel traffic and older vehicles. Spatial correlations among PM₁₀ concentrations were high, even though absolute concentrations were variable, indicating a common effect of meteorology on the concentration or dispersion of local emissions.