Light scattering studies at the El Paso del Norte Region in Texas

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The light-scattering properties of mineral dust and soot particles in the El Paso-Juarez Airshed were analyzed using data from an acoustic extinctiometer and a laser particle counter in conjunction with a non-spherical scattering model for polydisperse and randomly oriented particles, the *T*-matrix model. The data selected correspond to days exhibiting a mean relative humidity less than 20% to avoid effects of possible aerosol hygroscopic growth. The inter-comparison for the selected days of the extinction and scattering coefficients results obtained using the *T*-matrix and the laser particle counter, with those obtained from an acoustic extinctiometer at a wavelength of 0.87 μm shows good agreement. In addition, the single-scattering albedo for this region is analyzed for the selected days. The methodology developed in this work can be used as a diagnostic tool to characterize mineral dust and soot particles, and the results of this study will provide a better understanding of the aerosol optical properties for the El Paso-Juarez Airshed.

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