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In Situ and Remotely Sensed Aerosol Extinction Using Optical Light Scattering JONATHAN CHARETTE, MICHAEL NARIJAUSKAS, NIMMI C. P. SHARMA, Central Connecticut State University — A CLidar (CCD Camera Lidar) system, was employed to remotely sense aerosols in the lower atmosphere. Due to non-uniform distribution, most aerosols are found within the first few kilometers of the atmosphere in an aerosol rich boundary layer. The CLidar is used to determine aerosol extinction coefficients, which is the sum of total aerosol scattering and the (typically small) total aerosol absorption. A lower extinction coefficient means that air being measured is relatively clear of aerosols. A second instrument, a nephelometer, was also used to for in situ measurements of suspended particles in the atmosphere. The nephelometer draws a sample of air into the instrument and uses a light source and a detector for scattering measurements. The total scatter from aerosols is a function of the light reflected back to the detector. Experiments were conducted to study how well remote sensing measurements could track the in situ measurements of aerosols in the boundary layer. Results provide insight on variability of aerosols over small altitude scales.

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