Abstract Submitted
for the NES17 Meeting of
The American Physical Society

Seasonal Variation in Angular Irradiance from Atmospherically Scattered Sunlight JAMES KULOWIEC, JALAL BUTT, NIMMI SHARMA, Central Connecticut State University — The aerosol phase function is a measure of the efficiency with which aerosols scatter light into each angle. Different types of aerosol classes (dust, marine, etc.) display different phase functions. This study investigated aerosol phase functions derived from radiometer measurements taken by the Aerosol Robotic Network (AERONET) at Mauna Loa Observatory (MLO) in Hawaii. Data from different wavelengths were splined and converted to derive a phase function at the NdYAG laser wavelength of 532 nm. The investigation included statistical analyses, finding the average angular scattering at each angle over dates encompassing multiple years, the standard deviation, and average for each seasonal period. Phase functions are needed for conversion of bistatic laser radar measurements to total aerosol extinction, and results from this study will be used in laser radar atmospheric profiling. Also satellite measurements of aerosol phase functions for different aerosol classes were compared to the derived AERONET phase functions each season to investigate whether different types of aerosols were present over MLO at different times of year.

Nimmi Sharma
Central Connecticut State University

Date submitted: 20 Mar 2017 Electronic form version 1.4