

## MORE ON SCATTERING BY POLYDISPERSE SYSTEMS OF NON-SPHERICAL PARTICLES

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## ABSTRACT

The scattering properties of a number of samples of polydisperse, non-spherical particles have been measured for several wavelengths in the visible spectrum. The particles included two samples of silicon dioxide particles, two samples of clay particles and 3 samples of sea salt particles.

The size distributions of all the sample particles were fitted to lognormal size distributions and all have sizes that are typical of atmospheric aerosols. The measured scattering matrix elements were compared with those calculated for spherical particles that fit the same size distributions and have the same refractive index. In all cases the measured scattering properties differed from those of the spherical analogs. In particular the off diagonal matrix element  $S_{12} = S_{21}$  showed a distinctively different behaviour than that predicted for spherical particles. The  $S_{12}$  element shows a negative value for most of the range of scattering angles and exhibits a monotonic increasing behavior with scattering angle. Comparisons between the scattering properties of the spherical and non-spherical particles will be discussed.