

ON THE INVERSION OF LIGHT SCATTERING DATA
INTO INFORMATION ON AEROSOL PROPERTIES

by

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ABSTRACT

The Backus-Gilbert inversion technique was applied to scattering data and calculated examples were given to ascertain its ability to recover the aerosol properties with no a-priori assumptions.¹

In order to cheque this inversion procedure as well as other techniques (such as Daves' and Herman's et al.), a controlled experiment was performed.

The experiment dealt with spherical particles the Mie scattering curves of which was measured by use of a dye-laser. These curves were used to accurately determine the refractive index of the particles.²

Mixtures of three different known sizes were then prepared and the scattering intensity vs. wavelength was measured at 90° scattering angle. The mixtures contained also various known relative concentrations of the three sizes.

The analysis of the measured results will be shown and discussed.

1. E. Westwater and A. Cohen.....Appl. Opt. June 1973.
2. A. Cohen, V. E. Derr, R. E. Cupp and T. McNice.....Appl. Opt. May 1973.

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