RAMAN SPECTROSCOPIC MEASUREMENTS OF AEROSOL CLOUDS.
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Clouds of aerosol particles have been trapped electrodynamically and concentrated by means of the superposed ac and dc electrical fields of an electrodynamic balance. Illumination of the cloud with an argon-ion laser is used to obtain Raman spectra. This new technique can be used to explore the chemistry of monodisperse and polydisperse aerosol systems. By trapping an array of dozens of particles the size of particles that can be analyzed by Raman spectroscopy is substantially reduced compared with conventional single particle measurements (Rassat and Davis, 1994; Aardahl and Davis, 1996).

This paper explores the effects of the ac and dc electrical fields on the particle concentration in the aerosol cloud, the effects of the particle charge-to-mass ratio on the trapping characteristics, and the number density of particles of any particular size required to be analyzed by Raman methods (Vehring *et al.*, 1995).

It is demonstrated that inorganic particles such as marine aerosols and organic materials can be chemically characterized.

Rassat, S. D. and Davis, E. J. (1994). Appl. Spectrosc. 48:1498-1505.
Aardahl, C. J. and Davis, E. J. (1995). Appl. Spectrosc. 50: 71-77.
Vehring, R., Moritz, H., Niekamp, D. Heinrich, P. and Schweiger, G. (1995). Appl. Spectrosc. 49:1215-1224.

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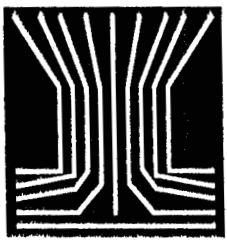

Abstracts

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