



## **Impact of clouds on aerosol scattering as observed by lidar**

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An optimal estimation scheme has been developed to retrieve profiles of aerosol extinction and backscatter from observations of the elastic and inelastic (nitrogen Raman) backscatter signals of a lidar system. This has been used to analyse several weeks of data collected since 2002 with a 355 nm lidar at the STFC Chilbolton Observatory in southern England (51.1445°N, 1.4370°W). In some satellite studies, it is assumed that the aerosol properties beneath an optically thick cloud are identical to those observed adjacent to the cloud. Complimented by radar data also collected at the site, we have measured the variations in retrieved aerosol scattering properties as a function of distance from the cloud, comparing the air masses beneath and beside it, to investigate the validity of this assumption.