

ATMOSPHERIC EFFECTS ON COHERENT LIDAR SYSTEMS

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Significant Accomplishments to Date in FY-84

Atmospheric effects on lidar systems at 10.6 μm wavelength comprise of molecular absorption, aerosol scattering and refractive turbulence effects. We have completed the work on the combined effects of beam truncation and atmospheric refractive turbulence on the system performance. This work was presented at the 2nd Topical Meeting on Coherent Lidar Technology at Aspen, Colorado and has been accepted for publication in Applied Optics.

Focus on Current Research

We have developed modeling of backscattering characteristics of atmospheric aerosols. The present effort is to complete this modeling and publish in open literature.

Plans for FY-85

Our aim for FY-85 is to make the AFGL computer program on atmospheric transmission operational on NASA-MSFC computer system and integrate it with simulation of satellite-borne lidar systems.

List of Publications

"Refractive Turbulence Effects on Truncated Gaussian Lidar Systems", to appear in Applied Optics, 1984.