ESTIMATING VERTICAL DIFFUSION COEFFICIENTS BY LIDAR

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ABSTRACT

The Atmospheric Turbulence and Diffusion Laboratory at Oak Ridge, Tennessee has been conducting routine probing of the lower troposphere and comparing the results with those obtained with turbidity photometers and a distant suspended particulate station. The change in scale height, K_z/v_s, with time permits the vertical turbulence coefficient K_z to be estimated if V_s is known or assumed. Extremely high monthly correlations of turbidity vs. the log of backscatter at 100 meters have been obtained. In addition, high correlations of suspended particulate matter at Chattanooga and Oak Ridge suggest that the bulk of particulate matter is of natural, rather than industrial, origin.