

The Observation of Long-Range Transport of Two Large Forest Fire Plumes into the Northeastern U.S.

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We have observed the smoke plumes from two large forest fires during the summer of 2004. Both satellite and ground-based sensors were utilized. One of the key results is that without the altitude information afforded by lidar, the discrimination and detection in the presence of clouds is difficult. This is significant for passive satellite IR sensors such as MODIS.

One of our key interests is measurement of the impact of aerosols and smoke on ground level air quality and how this correlates with MODIS optical depth measurements. We find that in cases for which the aerosol plume is aloft that there is little correlation; however, the determination of the altitude requires active instruments such as lidar. This points to an important role in the remote sensing of air quality of both ground based lidar systems and the soon to be launched Calipso lidar.