



Comparison of CALIOP Level 2, Version 3 Backscatter and Extinction products with MPLNET data at Kanpur, India

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CALIOP Level 2 Version 3 backscatter and extinction product is compared with corresponding Level 2 data from MPLNET at Kanpur (26.52N, 80.23E), India for May 2009 to September 2010. Profiles selected for comparison are subject to the constraint that the difference between their measurement times should be less than 3 hours, and the distance between MPLNET location and CALIOP overpass location should be less than 130 km. HYSPLIT backtrajectory model is run to ensure that the two instruments are observing the same airmass. Out of 17 such cases, for 6 cases the backscatter profiles compare well within one standard deviation. Among the cases of poor comparison, cloud contamination is the most probable reason for disagreement between the two datasets. Extinction coefficient profiles comparison generally follows the same pattern as the backscatter coefficient comparison. However, in a few cases, there is a disagreement between the extinction coefficient profiles from MPLNET and CALIOP, though the backscatter coefficient profiles for these cases show good comparison. This is attributed to different extinction-to-backscatter ratios used by CALIOP and MPLNET algorithm. Examination of AERONET size distribution and Angstrom Exponent for the same days as CALIOP overpass shows that aerosol type is correctly identified by the CALIOP Vertical Feature Mask. HYSPLIT 5-day backtrajectories further corroborate the selection of aerosol type by CALIOP.