

A FIRST COMPARISON BETWEEN ALMUCANTAR AND PRINCIPAL PLANE RETRIEVAL PRODUCTS WITHIN AERONET NETWORK

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Aerosol Robotic Network (AERONET) data are widely used for characterizing the aerosol optical and microphysical properties, which are retrieved from direct Sun and almucantar radiance measurements by inversion procedure. The network also measures radiances 5 in the principal plane geometry which are susceptible to be inverted. In this study, the aerosol products from both retrievals are compared. In particular, the differences in the AERONET retrievals from near simultaneous principal plane and almucantar measurements have been analyzed at three different key sites: Mongu (biomass burning), Beijing (urban) and Solar Village (desert dust). The analyzed parameters have been the size distribution, the single scattering albedo and the refractive index. Differences in the size distribution are generally under 10% for radii between 0.1 μ m and 5 μ m. Outside this size range, the differences are can be as large as 50%. With respect to the optical parameters, the observed differences are within AERONET estimated uncertainties. The largest differences have been found for the retrievals of desert dust, especially at short solar zenith angles.