Aerosol Number Size Distribution in a Typical Rural Environment in Peninsular India

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The study of aerosol size distribution is very important for addressing various scientific issues such as aerosol-radiation interaction, impact on human health, aerosol dynamics, etc. Aerosol size distribution depends on the source, generation mechanism (gas-to-particle conversion vs. primary production), hygroscopic properties of particle and ageing of aerosol. At the National Atmospheric Research Laboratory, Gadanki, surface level aerosol size distribution is studied using aerodynamic particle sizer (Model 3321, TSI, USA) and columnar average size distribution is estimated by inversion of spectral aerosol optical depth observed using a sun-photometer (POM-01, Prede Scientific, Japan; cf [1],[2]). In Figure 1, monthly median number size distribution is shown. Two distinct modes can be seen in the size distribution, one around 0.06 µm and another around 0.8 µm. The seasonal variation of columnar size distribution is compared with surface measurements.

Keywords: Aerosols, size-distribution, sun-photometer

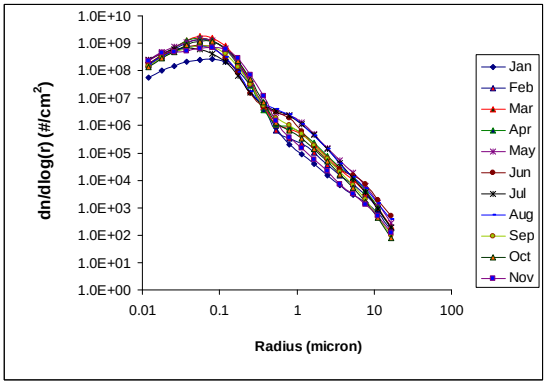

Figure 1. Columnar aerosol number size distribution derived from Prede Sun-photometer observations over Gadanki

References

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