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Title: Spectral aerosol optical depths and their variations during the NorthEast monsoon over the Indian Ocean

Abstract:

From the cruise expeditions conducted onboard the Oceanographic Research Vessel Sagar Kanya during 1996-2000 over the Arabian Sea and the tropical Indian Ocean aerosol optical depths are measured in situ in the 400-800 nm wavelength region and analyzed. The yearly-, monthly-mean variability and trends in aerosol optical depths during the NorthEast winter monsoon (December-April) over these oceanic regions are studied. The aerosol optical depths are found to show a steep latitudinal gradient as the ship moves from the coast towards the pristine oceanic region. The mean aerosol optical depths over Coastal India are found to be about a factor higher than those measured over the Arabian Sea and are about 4 times higher than those measured over the tropical Indian Ocean. The aerosol optical depths in the smaller wavelength region are found to be higher by a factor of three with respect to the aerosol optical depths in the longer wavelengths indicating the dominance of smaller size aerosols over these oceanic regions. The aerosol optical depths obtained over two peninsular locations in India and two marine locations situated in the downwind direction of India for the 1996-2000 period are analyzed and compared with those measured over the oceanic regimes. Results on the yearly, monthly-mean variations in the aerosol optical depths over the oceanic regions and other locations will be presented and discussed.

Presentation Mode: Oral

Keywords: Aerosol optical depths, variations, Indian Ocean, transport of pollutants, impact on the radiation budget and climate

Status: Pending.

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