Retrieval of Aerosol Optical Thickness from Ocean Colour Monitor Onboard IRS – P4 and Its Dynamics along the Eastern Arabian Sea

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Data from Ocean Colour Monitor (OCM), onboard the Indian Remote Sensing Satellite (IRS) – P4, have been used to retrieve spatial and temporal distributions of aerosol optical thickness (AOT) over the eastern Arabian Sea. On the basis of a relation developed from two near infrared bands of OCM, aerosol size distribution parameter (α) has been derived. To derive angstrom turbidity parameter (β), an algorithm has been developed by relating β , generated in-situ from hand-held sun photometer measurements, and aerosol radiance (L_a) at 490 nm from OCM. The relation between β and L_a (490) was found out through sensitivity analysis using a radiative transfer model. AOTs were retrieved for each pixel of 500 nm of OCM sensor. To estimate the performance of the algorithm, OCM derived AOT values were compared with in-situ AOT and MODIS Aqua derived values. Since the spatial resolution of MODIS Aqua is 1000 m and that of OCM is 360 m (across the track) x 250 m (along the track), average of AOT from three pixels of OCM is compared with the AOT derived from the corresponding single pixel of MODIS Aqua. Aerosol maps thus generated from January to December 2005 demonstrated the potential of this new retrieval method to produce climatology of aerosol optical thickness from OCM data over coastal waters.