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## Aerosol Properties over Ranchi Measured from Aethalometer

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### ABSTRACT

Continuous and near-real-time measurements of the mass concentration of Aerosol Black Carbon (BC) were carried out 1<sup>st</sup> to 31<sup>st</sup> July 2010 of rainy season and compare with data of July-2010 to March-2011 using an Aethalometer (model AE-31 of Magee Scientific, USA). The principle of the Aethalometer is to measure the attenuation of a beam of light transmitted through a filter, while the filter is continuously collecting an aerosol sample. This measurement is made at successive regular intervals of a time base period has been. the BC mass concentration is estimated by measuring the change in the transmittance of a quartz filter tape, on to which the particles impinge. The instrument was operated at a time base of 5 min, round the clock with a flow rate of 4-liter min<sup>-1</sup>, to study the impact of rainy season on black carbon concentrations over a typical urban environment namely Ranchi, India. BC concentrations were high during morning (0600 to 0900 h) and evening hours (1900 to 2300 h) compared to afternoon hours. During early morning hours, high values of BC are attributed to the turbulence set-in by the solar heating which breaks the night-time stable layer and aerosols in the nocturnal residual layer are mixed up with those near the surface.

### KEYWORDS

Black Carbon (BC), Aethalometer, Aerosol

### Cite this paper

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