

Sunshine hour trend over India: Study of past two decades

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Changed interaction of environment with society is considered to cause the changing environment. Changed life-style, land-use pattern, and related changes in production of green house gases and aerosols have been identified as major causes of changing environment of the globe. Exceeding aerosol input due to human activities, such as deforestation, land-use pattern change, use of fossil fuel for vehicles/ industries, etc., are directly or indirectly affecting in the behavior and life time of clouds. In order to assess the contribution of increasing aerosol on solar radiation, changed behavior of spatial and temporal variations of sunshine hours for seven Indian regions, comprising 21 stations viz. West Coastal India, East Coastal India, North India, Central and South India, Northeast India, Mountainous location of India and Island locations around India is studied for a period of about 20 years.

Results indicate cleaner environment for western India and the polluted environment for central north India, specifically the Indo-Gangetic Plain, which is considered as one of the most polluted regions of the world. The study indicates a decreasing trend in sunshine hour values for the Indian subcontinent at the rate of ~1.10 hrs/ year. The values, however, differ for various regions, ranging between -2.82 hrs/year (Indo-Gangetic Plain of North India) to +0.50 hrs/year (West coast of India). The overall decreasing sunshine hour trends for India is of critical concern for the subcontinent, as the solar energy is of high potential for many activities in an agrarian country.

Biography

Manoj Kumar Srivastava is an Associate Professor at Department of Geophysics, Banaras Hindu University, Varanasi, INDIA since 2007. He is a post-graduate (1991) and Ph D (1997) in Meteorology and currently perusing Environmental Meteorology research over Indo-Gangetic Plain of North India, which is considered as one of the most polluted regions of the globe. He has more than 35 refereed publications and similar number of conference papers. Dr. Srivastava's research interest is Atmospheric Boundary Layer, Atmospheric Surface Layer, Aerosol Sciences and Radiation, Radiation modeling, and Instrumentation.

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