

AEROSOLS CONFIRMED RISING OVER INDIA

While satellite data has shown aerosols tiny polluting particles in the air to be rising over India, a new study based on primary data gathered from measuring instruments installed in a network of stations confirms the trend.

Geophysical Research Letters last month (14 March), is based on the principle that aerosols absorb the sun's rays as they reach the earth's surface.

The amount of aerosols in the air can be measured as aerosol optical density (AOD). A 2011 study, reported in *Atmospheric Environment*, also found a rising trend in AOD based on data gathered from two US satellites.

But, satellite data often do not give reliable estimates due to cloud formation, different degrees of reflection off different types of surfaces

and erroneous interpretation of noises and biases in aerosols as legitimate signals, scientists observed.

The new Indian study offers primary data gathered from instruments measuring solar radiation at 3801025 nanometres in wavelength at 35 locations across the country.

It found that AOD had risen each year at a rate of 2.3 per cent of its value in 1985, with the most rapid rise occurring over the last decade at a rate of almost four per cent per year. The maximum rise was over central India.

If the trend continues, the AOD would double in the next few decades, the research shows.

The next step is to study trends in various aerosol species, S. K.

Satheesh, professor at IISc Centre for Atmospheric and Oceanic Sciences, told *SciDev.Net*.

The scientists found that at some locations the trend had levelled off, possibly due to peaking of urbanisation. The rising trend was mostly in less urbanised areas where initial base levels were low.

Their analysis showed that much of the increase in aerosols was due to human activity. The data also showed that different types of aerosols co-exist in a region due to distributed sources and long-range transport.

Rising levels of air pollutants across South Asia, especially very fine particles from industrial soot and the burning of biomass, have been cause for concern because of their potential to raise temperatures and hasten the melting of Himalayan snow.

Air pollutants are generated by rapid urbanisation and industrialisation as well as practices such as biomass burning in poor rural households that have no access to clean cooking fuel.

Source: <http://www.scidev.net/global/pollution/news/aerosols-confirmed-rising-over-india-1.html>