

Aerosol Optical Depth

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Source: PIB

The Imager payload onboard **ISRO's INSAT-3D & 3DR satellites is used to monitor Aerosol Optical Depth (AOD)**, which is an **indicator of particles and smoke from biomass burning affecting visibility and increase of PM2.5 and PM10 concentration in the atmosphere.**

Findings

It is found that AOD, PM2.5 and PM10 concentrations are higher over Indo-Gangetic Plain covering parts of Delhi, Uttar Pradesh and Bihar during October and November. High concentration of these pollutants is seen originating from parts of Punjab and Haryana during stubble burning.

What is Aerosol?

- **Tiny solid and liquid particles suspended in the atmosphere** are called aerosols.
- **Examples of aerosols include** windblown dust, sea salts, volcanic ash, smoke from fires, and pollution from factories.
- These particles are important to scientists because they can affect climate, weather, and people's health.
- **Aerosols affect climate by scattering sunlight back into space** and cooling the surface.
- Aerosols also help cool Earth in another way – they act like **"seeds" to help form clouds.**

About Aerosol optical depth

- Aerosol optical depth is a **measure of the extinction of the solar beam by dust and haze.** In other words, particles in the atmosphere (dust, smoke, pollution) can block sunlight by absorbing or by scattering light.

- **AOD** tells us how much direct sunlight is prevented from reaching the ground by these **aerosol** particles.