Black Carbon: Emission, Concentration, Deposition and Impacts Over Indo-Gangetic Basin

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Abstract

The Indo-Gangetic basin region is one of the world's seven black carbon hotspots. The majority of anthropogenic pollution emissions to the atmosphere originate from urban and industrial areas. Environmental processes involving modifications to the Earth's surface as well as human activity have a significant influence on the chemical composition of the atmosphere. Black carbon, which is well-known for trapping heat and producing radiative forcing, may be the subject of fresh studies on air pollution that address the causes of BC emissions, the physical and chemical properties of nearby particles, and the ensuing implications on the environment and public health. To solve the issues associated with black carbon, we might investigate efficient mitigation techniques, legislative frameworks, and technical advancements (AI & ML). We could figure out the deposition velocity, the dry deposition rate of black carbon on natural surfaces, etc. It will be beneficial for cross-cutting atmospheric chemistry challenges. It will make it easier for new observations and analysis to be incorporated into atmospheric chemistry research, which will advance scientific knowledge. To identify crucial challenges and enhance forecasting and decision-making for global sustainability, research and cooperation are needed. A computer program based model has been developed for the numerical analysis of data from observations and models, model evaluation against observations, data assimilation, and application for prediction. A soft computing method has been adopted to advance existing understanding and encourage additional research.

Early Career Scientist

NO, I am not an early career scientist.

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