Physical Research Laboratory

GSDN Seminar

Hydroxyl Radical Generation from Atmospheric Aerosols over a High Altitude Site in the Indo-Gangetic Plain

Abstract

Atmospheric aerosols have been profoundly associated with several cardiovascular and pulmonary diseases. However, the precise mechanism in terms of which species exacerbate toxicity remains unclear. Recent studies have investigated that redox-active organic species and metals present in atmospheric aerosols can initiate the endogenous formation of reactive oxygen species (ROS). Hydroxyl radical (•OH) is the most reactive form of ROS and its high levels may cause lipid peroxidation in the human body. The picture is further complicated by the fact that the atmospheric air is a pool of variety of chemical species emitted from very diverse sources. Further, the atmospheric aging of particular species may enhance/reduce the potential of endogenous ROS generation. In view of this, a study was carried out over Shillong, a high altitude site in the downwind Indo-Gangetic Plain (IGP). We found that organic aerosols over this site composed up to 78% of the mass in total, the highest among the IGP regions. In this discussion, I shall share my preliminary results of how the composition of the aerosols relates to endogenous •OH generation over the Shillong.

Speaker: Dr. Anil Patel
PDF, GSDN

Date	Time	Venue
31-August-2020	14:00 hrs	Online Platform

All are invited to attend and participate in discussion

A .K. Sudheer, Geosciences Division