# *Physical Research Laboratory*

# Tuesday Seminar

## Evolution and characteristics of fine organic aerosol in the urban atmosphere through highly time resolved measurements


## Abstract

Sub-micron particles are an integral part of Earth's atmosphere with significant impacts (direct and indirect) on air quality and climate. An unprecedented increase in sub-micron particles concentrations over urban regions is a serious threat to both air quality and climate. Organic aerosol (OA), although reported to be a dominant fraction of submicron aerosol, are least understood the component of fine aerosol due to their numerous sources, complex composition, tedious formation mechanism, and complicated atmospheric evolution. The OA can either be primary or of secondary origin. The primary OA (POA) are emitted directly in particulate form from various sources, whereas, secondary OA (SOA) is produced from the oxidation of volatile organic compounds (VOCs) coming from different sources. Furthermore, the composition and properties of both POA and SOA may change dynamically throughout the aerosol lifetime, because of intertwined processes including emission, oxidation, fragmentation, and gas-to-particle partitioning. Until recent years, most of the studies have reported the properties of OA using filters based measurements (offline) which has limitations in capturing OA evolution in the atmosphere due to a low time resolution of measurements. Toward this, the present study investigates the evolution of OA in real-time using high-resolution time-of-flight aerosol mass spectrometer (HR-ToF-AMS) during the post-monsoon season over Ahmedabad.



**Speaker:** Dr. Atinderpal Singh
PDF, GSDN


| Date | Time | Venue |
|---|---|---|
| *18-September-2018* | *10:30 hrs* | *Nano Sims Hall* |

**All are invited to attend and participate in discussion**

***A .K. Sudheer, Geosciences Division***