

## 1.216 First observations of light non-methane hydrocarbons (NMHCs) over an high altitude site in Southern India.

Early Career Scientist

Presenting Author:

**Venkataramani Sethuraman**, Physical Research Laboratory(PRL), Navarangpura, Ahmedabad, Gujarat, India and Physics Department, S.P. University, Vallabh Vidyanagar, Gujarat, India, [venkat@prl.res.in](mailto:venkat@prl.res.in)

Co-Authors:

**Shyam Lal**, Physical Research Laboratory, Navarangpura, Ahmedabad, Gujarat, India

**Sunil H Chaki**, Physics Department, S.P. University, Vallabh Vidyanagar, Gujarat, India

**Udayasooriyan Chinnaiah**, Tamil Nadu Agricultural Univesity (TNAU), Coimbatore, Tamil Nadu, India

**Manish Naja**, Aryabhata Research Institute of Observational Sciences (ARIES), Nainital, Uttarakhand, India

**Naveen Chandra**, Japan Agency for Marine-Earth Science and Technology, Yokohama, Japan

**Murugaraghavan Ramasamy**, Tamil Nadu Agricultural Univesity, Coimbatore, Tamil Nadu, India

Abstract:

Rapidly developing Indian subcontinent leads to higher anthropogenic emissions of ozone precursors. Over a longer period of time, these emissions invariably alters the regional background concentrations of many trace gases. The anthropogenic sources are relatively less in the Southern part of India largely due to the flushing by the monsoon winds from the relatively cleaner oceanic regions of the Bay of Bengal and Indian Ocean during winter and summer respectively. The emissions from the Indo-Gangetic belt can still affect South India during winter as the north-east monsoon winds carry the pollutants to this region through the northern Bay of Bengal.

Realizing the absence of the regionally representative trace gases observations in Southern Indian region, an environmental laboratory was set-up at Ooty (11.4 N; 76.7 E; 2520 m amsl), a hill station in the state of Tamil Nadu, in collaboration with Tamil Nadu Agricultural University, Coimbatore under the Atmospheric Trace Gases and Modelling (ATCTM) project of Indian Space Research Organisation–Geosphere Biosphere (ISRO-GBP) programme. Long-term measurements from this site can provide an insight to the background values present in this region.

Ambient air samples were collected for every two hours for 2 to 3 days continuously (once in 2 to 4 months) in glass sampling tubes using an air compressor. The samples are analysed for light NMHCs at PRL, Ahmedabad using a gas chromatographic system

equipped with a flame ionisation detector. These NMHCs over Ooty exhibit large variabilities. Ethane concentration is the highest among C2-C5 hydrocarbons over this site. These measurements are also compared with those observed at Nainital, a high altitude site in the Central Himalayan region. Further details will be discussed during the presentation.