

INDIAN INSTITUTE OF REMOTE SENSING (IIRS), ISRO

Schedule for Online Workshop on AEROSOLS: MEASUREMENT, RETRIEVAL AND IMPACTS (27-28th July 2026)

Session	Key Subtopics	Duration	Speakers
Briefing of the Course Contents to the participants		10:50 -11:00 am	
DAY 1: UNDERSTANDING AEROSOLS, INTERACTIONS AND IMPACTS			
Aerosols: Physics & Optics	Structure and Composition of the Atmosphere, Sizes, Formation pathways, Particle behaviour, Scattering/absorption, Refractive index, Optical traits like Optical Depth, SSA, Phase function	11:00-11:55 am 40 min Lecture 15 min interaction	Dr. Yogesh Kant (IIRS)
Aerosol Forcing & Boundary Layer Dynamics	Aerosol-Planetary Boundary Layer feedback, Vertical distribution, Direct/Indirect Forcing, and Boundary Layer Height interactions, Case Studies	12:00-12:55 pm 40 min Lecture 15 min interaction	Dr. Narenda Singh (ARIES)
Aerosol Chemistry	Core chemical composition of different aerosol types, Chemical transformation processes, measurement and challenges, Chemical Pathways Shaping Climate and Health Impacts, Case Studies	02:30-03:25 pm 40 min Lecture 15 min interaction	Prof. Neeraj Rastogi, (PRL/ DOS)
Health Impacts of Aerosols	PM2.5 / PM10 exposure studies, Aerosol–health linkages, Air quality monitoring for health, AOD-PM relationships, Health risk assessment using remote sensing, Long-term vs short-term exposure studies	03:30-04:25 pm 40 min Lecture 15 min interaction	Prof. Sagnik Dey (IIT, Delhi)

DAY 2: MEASUREMENT, RETRIEVAL AND MODELLING

Ground Based Aerosol Instrumentation	<i>Sun Photometers, Sky Radiometers, Aethelometer, Mie/ Raman/ MicroPulse Lidars, Nephelometer, Aerosol Spectrometers (OPC), Balloon/Radiosonde etc.</i>	09:30- 10:30 am 40 min Lecture 15 min interaction	Dr. Aditya Vaish (Ahmedabad University)
Remote Sensing of Aerosols : Physics and Retrieval	<i>Remote Sensing Techniques, Role of wavelength, viewing geometry and polarisation, Surface, Columnar and Vertical Distribution, Physics-based and Machine-Learning based retrieval approaches</i>	10:30-11:25 am 40 min Lecture 15 min interaction	Dr. Manu Mehta (IIRS)
Modelling of Aerosols	<i>WRF-Chem, CMAQ, GEOS-Chem frameworks, Emission inventories, Coupled chemistry–meteorology feedbacks, AI/ML based approaches, Case studies</i>	11:30-12:25 pm 40 min Lecture 15 min interaction	Dr. Narendra Ojha, (PRL/ DOS)
Hands-on Training	<i>Downloading, Familiarisation and Visualisation of satellite/AERONET/ Reanalysis data, iAOD software</i>	02:30-03:25 pm 40 min Lecture 15 min interaction	Mr. Akhilesh Kumar (Univ of South Wales Sydney)
Wrap Up and Closing		03:30-3:45 pm	