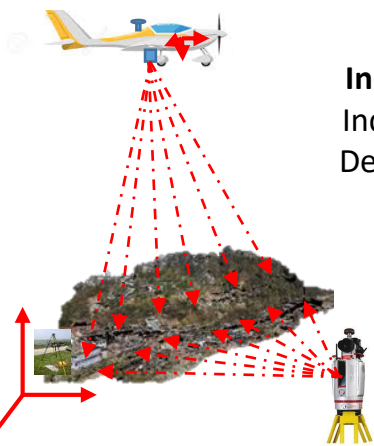
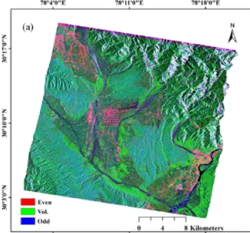
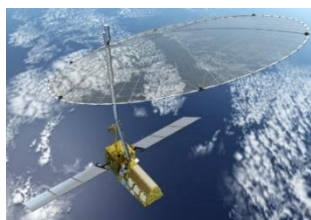
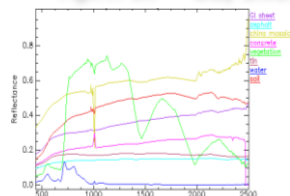
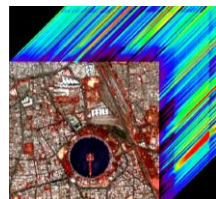


# Emerging Trends in Remote Sensing and its Applications

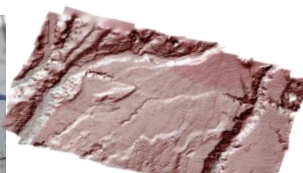
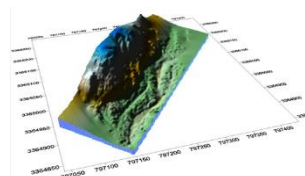
April 17 – 28, 2023



Organised by

**Indian Institute of Remote Sensing**  
Indian Space Research Organisation  
Department of Space, Govt. of India  
Dehradun

[www.iirs.gov.in](http://www.iirs.gov.in)



## INTRODUCTION

Remote sensing has emerged as a standard tool in the Earth resource management. This has opened new horizons towards generating reliable information about the natural resources, which are vital for decision making for more effective governance and societal development. Over the last few decades, various advance technologies in remote sensing have been evolved, such as hyperspectral, SAR and LiDAR which are useful for exploring earth as well as moon and mars surface. Today, hyperspectral remote sensing is used as one of the promising tool which enables detection and identification of material. Hyperspectral datasets contain very narrow and contiguous bands with bandwidth of 5-10 nm in the visible to reflected IR region. These datasets are most suitable for mineralogical studies, species level vegetation mapping, water quality analysis and urban material identification etc. However the use of microwave remote sensing is preferred as it is not affected much by atmosphere, cloud and rain. Microwave remote sensing Imaging technology Synthetic Aperture Radar (SAR) has revolutionized and expanded especially in thematic applications using different techniques like SAR Polarimetry (PolSAR), SAR Interferometry (InSAR), Persistent Scatterer Interferometric Synthetic Aperture Radar (PSInSAR) and Polarimetric SAR Interferometry (PolInSAR). Another advance technology LiDAR has emerged as one of the potential tool in the field of 3D data acquisition and mapping. It provides accurate 3D information and can be effectively used for mapping urban areas, building 3D city models, monitoring infrastructure projects, mining sector, base earth model generation etc. Recently Unmanned Aerial Vehicle (UAV) platforms has brought new dimension to the field of remote sensing. The UAVs enable accurate, flexible and low-cost measurements of 3D, radiometric and temporal properties of land cover features with high quality cameras, GPS and precise processing. UAVs have a great potential in applications like natural resource and disaster management, 3D terrain-

-mapping, precision agriculture, wildlife observation, vegetation measurements, etc. In view of the present and future potential of these emerging remote sensing technology, Indian Institute of Remote Sensing (IIRS) offers two week course on emerging trends in remote sensing and its applications.

## OBJECTIVE

The overall objective of this two week training course is to make the awareness among users/researchers/professionals/decision-makers/ academicians about the emerging technologies of Remote Sensing such as hyperspectral, SAR, LiDAR and UAV and disseminate knowledge and practical applications on use of these data.

## COURSE CONTENT

The special course offers a blend of both theory, hands-on exercise and field exercises. The following content will be covered:

- Hyperspectral remote sensing and data processing
- SAR, INSAR, POLSAR remote sensing and data processing
- LiDAR remote sensing and data processing
- UAV remote sensing and data processing

## DURATION AND MODE OF COURSE

The Course duration is of two week from April 17<sup>th</sup> to April 28<sup>th</sup> 2023. The course would delivered through lectures on above topics, by IIRS faculty, case studies, demonstrations and hands on exercises.

## ELIGIBILITY

The course is designed for professionals, faculty, scientists and researchers (JRF/SRF/RA) working in the field of remote sensing and satellite image processing and allied fields with working experience of minimum 2 years. In case large number of applications are received, selection will be done based on the criteria decided by IIRS.



## ABOUT IIRS

Indian Institute of Remote Sensing (IIRS), a constituent unit of Indian Space Research Organization (ISRO), Department of Space, Govt. of India is a Premier training and education institute setup to develop trained professionals in the field of Remote Sensing, Geoinformatics & GPS technology for natural resources, environmental and disaster management. While nurturing its primary endeavor to build capacity among the user community by training mid-career professionals, the institute has enhanced its capability and evolved many training & educational programmes that are tuned to meet the requirements of various target groups, ranging from fresh graduates to policy makers including academia. Its alumni include around 11,000 participants from India and about 1200 international participants from 96 countries.

The institute also conducts distance learning programmes which are first of its kind in the country in the field of 'Earth observation and Geo-information technologies'. To widen its outreach, IIRS has started live and interactive Distance Learning Programme (DLP) since 2007. Today around 950 institutions and organizations are networked with IIRS and about 1,12,000 participants have attended various DLP courses. IIRS has also launched e-learning courses on Remote Sensing and Geo-information Science since 2014. Its experienced faculty offer a multi-disciplinary dimension to the training programmes. IIRS is also one of the most sought after institute for conducting tailor made courses for professionals from Central and State Government Ministries and stakeholder departments for effective utilization of Earth Observation (EO) data.



The institute campus also hosts Centre for Space Science and Technology Education in Asia and Pacific (CSSTEAP), affiliated to UN and conducts international training programs in Remote Sensing and GIS. For more details please visit: [www.iirs.gov.in](http://www.iirs.gov.in).

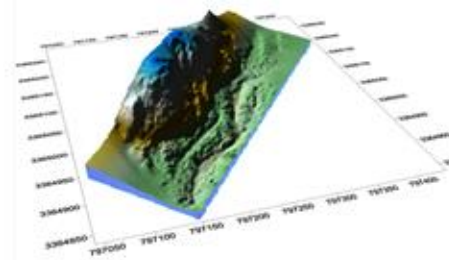


## LOCATION & ACCESSIBILITY

IIRS is located in Dehradun and well connected to major cities via, air/rail/road. City is famous for its picturesque landscape, pleasant climate, high quality school education and several scientific organizations of national & international reputation. Places of religious & tourist importance like Haridwar, Rishikesh and Mussoorie etc. are located in the vicinity of Dehradun.

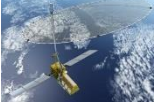
## IMPORTANT DATES

The training cum workshop will commence on April 17 and will end on April 28, 2023. Last date to apply for the course is March 03, 2023.



## COURSE FEE

The course has a nominal registration fee of ₹ 12,000/- per participant. (Rs. 4,000: Tuition Fee + Rs. 8000: Registration, field work & Other Charges). Boarding & lodging charges in IIRS Hostel are extra (Rs.5,000 approx.) and will have to be paid by the candidate as per the IIRS hostel rules & regulations. List of selected candidates will be uploaded on IIRS website [www.iirs.gov.in](http://www.iirs.gov.in) by March 17-21, 2023.



## HOW TO APPLY

The aspirant participants may fill the online form available in IIRS website (<https://admissions.iirs.gov.in/shortcourse/105>) on or before March 03 12, 2023. Applicants are advised to apply well before last date.

## CONTACT DETAILS

For any course related query, kindly contact to

**Dr. Anil Kumar**

**Head, PRSD & Course Director**

**(Email: [anil@iirs.gov.in](mailto:anil@iirs.gov.in); Ph: +91-135-2524114)**

**Vinay Kumar**

**Scientist/Engineer-SE & Course Coordinator**

**(Email: [vinaykumar@iirs.gov.in](mailto:vinaykumar@iirs.gov.in); Ph: +91-135-2524115)**

PRSD, GTOPG

Indian Institute of Remote Sensing (IIRS), ISRO

Department of Space, Govt. of India

4, Kalidas Road, Dehradun—248001, India

