

# Advanced SAR Technologies and Applications

Organized by  
Indian Space Research Organization  
in Association with  
European Space Agency



02<sup>nd</sup> - 13<sup>th</sup>  
December, 2024



Hosted by  
National Remote Sensing Centre  
Indian Space Research Organisation  
Department of Space  
Government of India  
Hyderabad

## Introduction

Synthetic Aperture Radar (SAR) has revolutionized the field of Remote Sensing, offering unparalleled insights into Earth's surface, regardless of weather or lighting conditions. Whether monitoring land-use changes, assessing vegetation health, or studying infrastructure, SAR data provides valuable information for a wide range of applications. This training course is specially designed to address advanced topics in Microwave Remote Sensing, viz., PolSAR, InSAR, PolInSAR, and TomoSAR with cutting-edge skills in SAR analysis. From the basics of SAR imaging to advanced techniques in tomography, this course offers a deep dive into the powerful capabilities of SAR. Through hands-on sessions with ISRO's and international contemporary SAR datasets and expert guidance, it's a good opportunity to learn how to harness the full potential of SAR technology, making you proficient in analyzing complex terrain and extracting critical insights.

## Course Overview

The course spans two intensive weeks and offers a comprehensive expertise of contemporary ESA and ISRO's SAR sensors, data analytics, and their multifaceted applications. This customized training is designed for scientists, researchers, and students to equip with the theoretical and practical knowledge needed to process and analyze SAR data. With a focus on SAR data processing, polarimetry and interferometry, this course covers a range of applications, from terrain mapping to vegetation analysis and ocean/coastal monitoring. Participants will engage in an in-depth, hands-on experience, gaining practical expertise in processing and analyzing sensor-derived data for theme-specific Time series applications. Special emphasis is placed on leveraging data from the cutting-edge SAR sensors to enhance image analytics, addressing both current trends and future capabilities.

## Key Highlights

- ❖ **Expert Instructors** with profound knowledge in SAR processing & applications from ESA and ISRO
- ❖ **Hands-on Training** with SAR data and real-world case studies
- ❖ **Exploiting SAR Applications** in diverse themes like solid earth, Cryosphere, Agriculture, Forestry and Oceanography.
- ❖ **State-of-the-Art Techniques** namely PolSAR, InSAR, PolInSAR and Tomography
- ❖ **Networking Opportunities:** Connect with professionals and peers in the field.

## Eligibility & Selection Criteria

A total of 30 seats are available for Indian nationals only on first come first served basis provided duly fulfilled eligibility criteria and submission of required forms. Scientists, Engineers, officials from Government sectors (Central & State), Academia and Researchers involved in the field of Microwave Remote Sensing (SAR), its applications and related scientific research.

Selection of candidates is subject to fulfillment of eligibility criteria, current utilization/scope of work in the domain and prior exposure to Remote Sensing tools will be considered.

## Application Procedure

Prospective candidates must complete the online application form available at NRSC website ([www.nrsc.gov.in](http://www.nrsc.gov.in)). Submissions via offline methods will not be accepted.



## About NRSC

The National Remote Sensing Centre (NRSC), one of the primary centres of the Indian Space Research Organisation (ISRO) under the Department of Space (DOS), is entrusted with establishing Satellite Data Reception Ground stations, generating Data Products, and Dissemination to user community. NRSC also focuses on developing advanced Remote Sensing Techniques for diverse applications such as Disaster Management, Geospatial services for Governance, and Capacity building for professionals, educators, and students. NRSC operates through multiple campuses to meet national and regional Remote Sensing data and applications needs of the country. The Integrated Multi-Mission Ground Segment for Earth Observation Satellites (IMGEOS), located at the Shadnagar campus, is a cutting-edge facility equipped with advanced Data Acquisition systems capable of receiving satellite data with data processing associated with automatic workflows and disseminating to user community after due product quality check. Global data coverage is facilitated via onboard recordings and playback services at polar ground stations. Users can search and order/download satellite data via ISRO's data dissemination portal, 'Bhoonidhi'.

Training, Education & Outreach facility of NRSC at Jeedimetla in Hyderabad offers various training programs for professionals, faculty and students and also takes care of general outreach.



## Location & Accessibility

The National Remote Sensing Centre (NRSC) is located in Hyderabad, the capital of Telangana, known as the "City of Pearls". With its blend of tradition and modernity, Hyderabad is a vibrant destination that offers both historical significance and contemporary appeal.



## Venue & Course Admission

This is a two weeks free training course conducted in physical class room mode for the benefit of the Indian SAR community. The venue of the course is at NRSC Shadnagar Campus, which is located 40km from Rajiv Gandhi International Airport, Shamshabad and 75km from Secunderabad Railway Station. Shuttles will be provided at prescribed time slots for pick-up/drop based on the participant's arrival/departure schedules which will be announced later. Candidates will be provided accommodation in the Guest House at NRSC Shadnagar campus and food is served by NRSC Shadnagar canteen.

Lodging and boarding expenses have to borne by candidates (Rs. 300/- per day). All the selected candidates should be required to submit a sponsorship form duly signed by employer (if employed) or HOD / Principal / Registrar (if participant is faculty / research scholar from academic institute). The sponsorship form will be made available to all selected candidates. NRSC reserves the right of admission.

## Important Dates At a Glance

**Start Date to Apply:** November 8, 2024

**Last Date to Apply:** November 15, 2024




**Announcement of Selection List:** November 22 , 2024

**Course Start Date:** December 02, 2024

**Course Completion Date:** December 13, 2024

## Contact Us :

For more information, please write to:

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