# ONLINE SHORT COURSE ON "Techniques and Applications of Synthetic Aperture Radar (SAR) Remote Sensing"



Through: Virtual Platform October 10-21, 2022



Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) (Affiliated to the United Nations) IIRS Campus, 4, Kalidas Road, Dehradun, India www.cssteap.org

Indian Institute of Remote Sensing (IIRS) Indian Space Research Organisation (ISRO) Department of Space, Government of India 4, Kalidas Road, Dehradun, India www.iirs.gov.in



#### INTRODUCTION

The advancement of earth observation has opened new avenues of research in the field of earth sciences. With the technological advancements in geo-information sciences, remote sensing has become an effective method for detection and investigation of various factors. Systems operating in optical region are being used for several decades and therefore, are more advanced and widely employed. However, their use is limited by availability of sunlight and interference of the atmospheric conditions such as haze and cloud cover especially in the tropical regions. Therefore, the use of microwave or radar remote sensing is preferred in such areas. Radar imaging through Synthetic Aperture Radar (SAR) systems has revolutionized and expanded the technology of Microwave remote sensing 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). As new advanced sensors are being developed that can meet the demands of thematic applications along with many other types of information, new algorithms are also being developed by the scientific community to meet this need. Because of the increasing demand for SAR data, many space agencies have developed and launched advanced SAR sensors and provide tools and software for data processing for the convenience of students and researchers. Several state-of-the-art SAR sensors are planned for future missions, taking into account user and scientific objectives as well as the data requirements of a variety of thematic applications. The proposed international training programme on "Techniques and Applications of Synthetic Aperture Radar (SAR) Remote Sensing" is scheduled on October 10-21, 2022 at Indian Institute of Remote Sensing, Dehradun, India.

#### **OBJECTIVES**

The overall objective of this two weeks training course is to make the awareness among users/researchers/ professionals/decision-makers/ academicians about the concept of SAR Remote Sensing and disseminate knowledge and practical applications on use of SAR data.

#### **COURSE CONTENT**

This training offers a blend of both theory, hands-on exercise and exercises. The following content will be covered: Introduction to SAR remote sensing, Emerging Techniques and Applications of Synthetic Aperture Radar (SAR), PolSAR and InSAR Remote Sensing, Applications of SAR Remote Sensing in thematic applications.

### ELIGIBILITY

Participants should be a post graduate in science or graduate in engineering or equivalent qualification in relevant field of study with 2-3 years of experience in teaching/research on professional experience in the field of Remote sensing technology or environment. The course will be conducted in English, the candidate should have proficiency in English language.

#### **COURSE FEE AND HOW TO APPLY**

There is no course fee for applicants applying through proper channel. Applicants are requested to send the scan copy of their application forwarded by the Head of their respective organization / institution for consideration through e-mail at cssteap-admissions@iirs.gov.in. Link of lectures will be shared with selected candidates only. It is mandatory for selected participants to attend all lecture/practical sessions for successful completion of this course.

# Announcement of course: September 1, 2022 Last date for application (via e-mail): September 20, 2022

#### **ABOUT CSSTEAP AND IIRS**

CSSTEAP was established in India in November 1995 with its headquarters in Dehradun and over the past 26 years, the center has emerged as a Centre of Excellence in capacity building in the field of space science and technology application. The CSSTEAP programmes are executed by the faculty of Department of Space at campuses namely, Indian Institute of Remote Sensing (IIRS), Dehradun, Space Applications Centre and Physical Research Laboratory, Ahmedabad and UR Rao Satellite Centre, Bengaluru. The training programmes includes M.Tech. PG Diploma and Short Courses on RS & GIS, Satellite Communications, Satellite Meteorology and Global Climate, Space & Atmospheric Science, Global Navigation Satellite Systems, Small Satellite Missions and DRR regularly. Besides this many short courses, webinars, MOOC and workshops on various themes are also organized.

IIRS (established in 1966), a constituent unit of ISRO, is a key player for training and capacity building in geospatial technology and its applications through training, education and research in Southeast Asia. The training, education and capacity building programmes of the Institute are designed to meet the requirements of professionals at working levels, fresh graduates, researchers, academia, and decision makers.

## **CONTACT DETAILS**

For any course related query, kindly contact to Ms. Shefali Agrawal, Group Head GT&OP (Email: shefali\_a@iirs.gov.in; Ph: +91-135-2524110)

# Dr. Shashi Kumar, Course Coordinator (Email: shashi@iirs.gov.in; Ph: +91-135-2524119)

Indian Institute of Remote Sensing (IIRS), ISRO Department of Space, Govt. of India 4, Kalidas Road, Dehradun—248001, India