



Satellite Meteorology and Oceanography Research and Training

An initiative by Indian Space Research Organisation (ISRO) to support students, academics and researchers from across the country to pursue research in Meteorology, Oceanography and other related fields using ISRO's satellite data.



Conducted by

MOSDAC Research and Training Division
Space Applications Centre
Indian Space Research Organisation
Ahmedabad



Introduction

ISRO has launched dedicated meteorological and oceanographic satellites viz., INSAT series, Kalpana-1, Megha-Tropiques, Oceansat-1 & 2, RISAT-1, SARAL and ScatSat-1. In future, ISRO has planned to launch GISAT and a few more satellites for meteorological and oceanographic studies. Data collected by these satellites are archived and disseminated through a data portal 'Meteorological and Oceanographic Satellite Data Archival Centre' (MOSDAC) designed and developed by Space Applications Centre (SAC), Ahmedabad. MOSDAC data is free for the scientific community.

Objective

SMART is ISRO's initiative to support students, academics and researchers across the country to pursue research in the field of Meteorology and Oceanography using satellite data archived at MOSDAC and other related datasets. *SMART* is managed by MOSDAC Research and Training Division, MOSDAC Research Group, SAC

SMART provides following support for students, academics and researchers:

- i. Familiarization with MOSDAC data
- ii. Data analytics and advanced visualization
- iii. State-of-the-art computer facilities and
- iv. Research guidance

Two outreach initiatives namely (i) Research Initiative and (ii) Training Initiative are being conducted as part of *SMART*.

I. Research Initiative

Research initiative of *SMART* offers three programmes to cater the needs of students, academics and researchers across the country namely:

(i) *Research Initiation Programme (IP)*

This programme is designed to initiate research aptitude among students, academics and researchers in the field of Satellite Meteorology and Oceanography. Post-graduate students of Meteorology, Oceanography and related fields, intending to do their final year/semester project, young researchers and academics may apply for this programme. They will be introduced to Satellite Meteorology and Oceanography, provided research guidance and support to carry out research for three to nine months.

(ii) Advance Research Programme (ARP)

In this programme, researchers and academics attached with institutes and universities across the country will be supported to carry out advance research in their research topic using MOSDAC data for about three to nine months. They will be introduced to advanced satellite data retrieval techniques, calibration/validation methods and latest results on satellite data applications

(iii) Data Exploration Programme (DEP)

It is an inter-disciplinary data exploratory programme on Satellite Meteorology and Oceanography. It is open to final year undergraduate students, post-graduate students, academics and researchers of recognized universities and research institutions with innovative ideas for the use of satellite data in Meteorology, Oceanography, Data mining and Image processing. They will be provided research guidance, computational and data support to carry out research for three to nine months.

II. Training Initiative

Under *SMART*, satellite data training programmes will be organized periodically to popularize MOSDAC data among students,

academics and researchers. It is generally a short duration (three to five days) programme, planned about 2-3 times a year. About 20 participants will be admitted to these training programmes. Familiarization of MOSDAC data, hands-on sessions on data handling and pre- and post-satellite launch trainings will be part of this training initiative. Calendar of *SMART* training initiative will be announced well in advance.

Facilities offered for Research and Training Initiatives

A dedicated research and training lab equipped with state-of-the-art workstations, display systems, MOSDAC data and storage facility are established in SAC as part of *SMART*. Selected participants attending the research and training programmes will be allowed to use these facilities. Also they will be permitted to use the SAC canteen facility during their stay at SAC. If available, hostel accommodation may be provided on sharing basis at nominal rates.

Call for Participation

Applications are invited from students, academics and researchers for *SMART* research initiative. Interested candidates may fill-in the application form available at *SMART* website (<http://mosdac.gov.in/smart>) and forward it to the following address through their respective Head of the Department/ Institution. Applications are accepted throughout the year. Patent, copyright, IPR arising from the work done at SAC should be made jointly with SAC.

Applications should be mailed to:

Dr. V. Sathiyamoorthy
Head
MRTD/MRG/EP
Space Applications Centre
Indian Space Research Organisation
Bopal, Ahmedabad -380058, India
Email: sathya@sac.isro.gov.in
Phone: 079-26916112
Fax : 079-26916127

For further details and application form, please refer to <http://mosdac.gov.in/smart>

Scanned copy of the application may also be accepted.