Polarimetric SAR data Processing and Analysis
(with special emphasis on RISAT-1)

Radar Polarimetry

Radar polarimetry (Polar means Polarisation and Metry means Measurement) is the science of acquiring, processing and analysing the polarisation state of an electromagnetic field. It deals with the full vector nature of polarised EM waves. Polarimetric Synthetic Aperture Radar (SAR) is an advanced imaging radar system that provides much more information about the target than the conventional SAR systems (i.e., single or dual polarised SAR systems). This is because the backscattered waves at different polarizations relate to different structural characteristics and properties of the targets. Polarimetric SAR data has many applications in many field, including agriculture (crop classification, soil moisture extraction and crop assessment), oceanography (surface currents and wind field retrieval), forestry (forest monitoring, classification and tree height/biomass estimation), disaster monitoring (oil-spill detection, disaster assessment), and surveillance (ship detection, target recognition/ classification).

Globally, so far, various airborne and space borne polarimetric SAR systems have been developed and operated, such as AirSAR, PI-SAR-1/2, E/F SAR, CV-580 SAR, SIR C/X-SAR, ALOS PALSAR-1/2, Radarsat-2, TerraSAR-X and Tandem-X. They have collected a huge volume of polarimetric data. Indian Space Research Organisation (ISRO) launched its first Radar Imaging Satellite, RISAT-1 in 2012 with a SAR system having unique hybrid (circular) polarimetric mode among many other modes. Mini-SAR from NASA on Chandrayaan-1 also had operated in hybrid polarization using its S band SAR system. RISAT-1 data is being widely used for a host of applications in the fields of agriculture, forestry, snow & glacier, polar science, geology, oceanography, and disaster management. In order to enhance the potential applications of polarimetric SAR, ISRO has developed L & S band airborne polarimetric SAR system which will be flown in the near future, and is currently developing space-borne L & S band polarimetric SAR system as a joint NASA-ISRO collaborative venture under the NISAR project.

Training on SAR Polarimetry

Space Applications Centre, Ahmedabad, is organising a training programme on 'Polarimetric SAR data Processing and Analysis with special emphasis on RISAT-1' for Indian Participants. This programme aims to provide hands-on experience to the researchers, faculty members and scientists from across the country on processing of polarimetric SAR data for various applications.

The programme will help in capacity building for the utilisation of polarimetric SAR data from the upcoming airborne and space-borne missions of ISRO.

Details Of The Training Program

The tutorial programme consists of forenoon lectures by eminent scientists working in related fields in ISRO, followed by hands-on with RISAT-1 and other polarimetric SAR data in the afternoon. Participants will be provided subsidized paid accommodation at SAC guest house on twin sharing basis. No fees will be charged for the training. However, TA/DA will not be provided. Participation certificates will be provided after completion of the training.

Venue: Date:	SAC BOPAL CAMPUS 15-16 November 2016
No. of participants:	25 (maximum)
Target Group:	State/Central Government officials, Scientists, Research Scholars, Teachers and Faculties affiliated to recognized Universities and Research Institutions working in SAR data processing and SAR applications in various fields.
Prerequisite:	Basic knowledge of SAR data processing and working knowledge of image processing software and SAR data handling.

Only 25 participants can be accommodated for the training programme. If more number of applications are received, the selection will be made on the basis of applicant's background experiences and qualifications.

Interested persons may send the filled-in application form on or before October 25, 2016 to:

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http://sac.gov.in/

Space Applications Centre, Ahmedabad
Application for training on
Polarimetric SAR data Processing and Analysis
(with special emphasis on RISAT-1)
(15th -16th November 2016)

(Please type or write in CAPITAL Letters)

Name : _____

Date of Birth (DD/MM/YYYY) : _____

Gender (Male/Female) : _____

Affix Recent Passport Size Photograph

Contact Information
(include Email, Phone, Fax details)
: _____
_____
_____

Designation : _____

Educational Qualification
(Graduation onwards; *include percentage of marks and specialization*)
: _____
_____
_____
_____

Research Interest *(Mention your publications on SAR data processing / applications)*
: _____
_____

Justify your Selection for the Training Programme *(specify your experience in SAR data handling, software used and intended future applications)**
(* Attach separate sheet if required)
: _____
_____
_____
_____

Whether Guest House accommodation required at SAC during training :   (Yes / No)

Signature of the Applicant with date : _____

Recommendation from Head of the Department / Institution with seal
: _____
_____