

32nd International Symposium on Remote Sensing of Environment

June 25 - 29, 2007 • San José, Costa Rica

"Sustainable Development Through Global Earth Observations"

Student Consortium Workshop

Processing of Radar Data - June 21-22, 2007

Objective: This two-day workshop is an initiative of the ISPRS [Working Group VI/5 - Promotion of the Profession to Students](http://www.commission6.isprs.org/wg5/) (<http://www.commission6.isprs.org/wg5/>) and ISPRS Student Consortium (<http://www.studentconsortium.isprs.org/>) which was warmly supported by the Technical and Organizing Committees of the 32nd ISRSSE.

It will introduce basic concepts of synthetic aperture radar (SAR) data processing, as well as more advanced topics like radar interferometry, differential radar interferometry and polarimetric radar processing, providing also information on existing and planned sensors and applications. The focus will be on spaceborne sensors.

Contents: The increasing availability of SAR data in an increasing number of bands and polarizations with continuously higher spatial resolution as well as the general advantages of SAR like weather and illumination independence, large area coverage, automated processing and low costs, make radar data processing a very useful tool for mapping and extraction of geospatial information, especially in tropical areas which are often covered by clouds.

The workshop will cover the following topics: SAR System/Parameters, Acquisition Modes, Image Formation, Speckle, Data Statistics, SAR Geometry/Radiometry, SAR processing (including geocoding and classification), SAR Interferometry (with focus on generation of digital terrain and surface models), Differential SAR Interferometry and Permanent Scatters (with focus on detection of small deformations), SAR Polarimetry (with focus on extraction of thematic information about the objects), Existing SAR systems and Land Applications, with emphasis on applications relevant for the region.

For better and easier understanding of the theory by the students, the lectures will be developed around two practical exercises on PCs running ENVI 4.1 and the dedicated software for radar processing SarScape. The exercises will deal with digital elevation model generation and land cover mapping, using test images from Malawi with similar terrain and land cover to many L. American countries. SarScape as well as test data were kindly provided by the company Sarmap, Switzerland (www.sarmap.ch).

Intended audience: This workshop is intended for advanced students and young researchers with an engineering or natural sciences background. It will be assumed that participants have little knowledge on radar data and its processing.

Location: Laboratorio de Manipulaci3n de Imagenes, Centro Nacional de Alta Tecnologia (CeNAT)
1.3 Km al Norte de la Embajada Americana
Pavas, San Joce

Lecturer: Alessio Cantone
Earth Observation Engineer, M.Sc. in Telecommunication and Remote Sensing Engineering, University of Trento, Italy. Particular expertise in Synthetic Aperture Radar (SAR), signal and image processing.
URL: www.sarmap.ch

SOURCE: <http://www.cenat.ac.cr/simposio/workshops07.htm> (24/5/2007)