Università Tor Vergata, Roma

Dipartimento di Informatica, Sistemi e Produzione

GeoInformation Doctorate

Yearly presentations by PhD candidates

DISP meeting room, Ingegneria dell'Informazione ground floor, Via del Politecnico, 1
11 January 2011, starting at 15:30

Chiara Pratola

Features extraction from VHR images acquired by COSMO-Skymed satellite

ABSTRACT

The VHR products provided by the COSMO-SkyMed mission open new challenges in SAR image processing for remote sensing applications.

The seminar discusses the potential of this type of imagery in the characterization of sub-urban areas by exploiting both amplitude and phase information contained in the radar return.

Supervised and unsupervised algorithms, mostly based on neural networks, have been implemented to provide land cover maps, roads and buildings recognition from images acquired in spotlight and stripmap modes, respectively.

Chiara Pratola received the Laurea Specialistica (summa cum laude) in Environmental Engineering from Tor Vergata University, Rome, in May 2008, with a thesis on fully-automatic classification of VHR optical imagery. Since October 2008 till October 2010 she has been consultant for the Italian Ministry of Environment. She is actually pursuing her Ph.D. in GeoInformation. Her research mainly focuses on feature extraction from Cosmo-SkyMed VHR SAR imagery.

Fabiano Costantini

Interferometric applications of future SAR Sentinel–1 Mission

ABSTRACT

An overview is given on the Permanent Scatterers (PS) technique and the external and internal calibration of SAR data, and applications to volcano monitoring, subsidence and urban change detection are outlined.

The report regards the generation of over 50 differential interferogram over Etna, Italy, and of 30 interferograms over Cerro-Blanco, Argentina, as well as the generation of interferometric coherence map for urban expansion studies over Brasilia (Brazil).

The application of permanent scatterers to PS cal product of Sentinel–1 based on periodic monitoring of high density concentration of Pss for external calibration is considered in view of Sentinel–1 TOPSAR acquisition mode.

Fabiano Costantini graduated in 2009 in Telecomunications Engineering from Tor Vergata University with a thesis on "Critical comparison of SAR interferometric processors" carried out in collaboration with ESA/Esrin.

In November 2009 he started the Geoinformation Doctoral program at Tor Vergata University in partnership with ESA/ESRIN focused on SAR interferometry (Persistent Scatterers and Small Baseline techniques) over volcanic and urban areas in preparation of the launch of the next ESA radar observatory Sentinel-1.

He is also contributing to the ESA Earth Observation educational activities, by supporting the organisation (both technical and logistical) of ESA remote sensing courses around the world.

You are cordially invited to attend.

http://www.disp.uniroma2.it/geoinformation/