Closing session

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EO Science, Applications & New Technologies Department
Directorate Of Earth Observation Programmes
2 long “polarimetric” weeks

• The ESRIN establishment has become for two weeks a center of excellence in Radar Polarimetry

• Some 60 PhD students from 26 countries attended the ESA 2nd **Advanced Course on Radar Polarimetry** from 21 to 25 January.

  [http://earth.esa.int/polarimetrycourse2013](http://earth.esa.int/polarimetrycourse2013)

• ESA **POLinSAR 2013**, on 28 January – 1 February 2013, was attended by nearly 170 scientists from all over the world

  [https://earth.esa.int/polinsar2013](https://earth.esa.int/polinsar2013)
ESMRIN News

SEOM Radar Polarimetry course and workshop at ESRIN

28 January 2013

Since 21 January, for two weeks, the ESRIN establishment has become a centre of excellence in the scientific exploitation of Radar Polarimetry imagery from Operational Missions. Some 60 Ph.D. students from 26 countries are attending the ESA Advanced Course on Radar Polarimetry from 21 to 25 January 2013.

This course will be followed from 28 January to 1 February by the ESA POLinSAR 2013 Workshop on the Science and Applications of SAR Polarimetry and Polarimetric Interferometry. This year we will also celebrate the 10th anniversary of the POLINSAR workshop series initiated by the EO exploitation team at ESRIN.

Both events are organised within the framework of the new Scientific Exploitation of Operational Missions (SEOM) element of the Earth Observation Envelope Program 4.

What is polarimetry?

Radar Polarimetry (Polar: polarisation, Metry: measure) is the science of acquiring,
POLinSAR Workshop Objectives

- Provide a forum for scientific exchange
- Present exploitation results from fully polarimetric airborne and spaceborne systems
- Present latest studies in the field and ESA POLSARAP results
- Report on progress/status of POLinSAR 2011 recommendations
- Demonstrate benefits of fully polarimetric systems (vs. dual or single polarization)
- Present future missions in preparation
- Present final PI results from ESA/CSA SOAR EU initiative
Workshop themes

1. Theoretical Modelling
2. SAR Polarimetric Interferometry (Pol-InSAR)
3. Polarimetry and DInSAR, Persistent Scatterer Interferometry (PSI)
4. Polarimetry and Tomography
5. Applications of SAR Polarimetry
   • Land: Forest, Agriculture, Environment and Wetlands
   • Ocean: Pollution Monitoring, Ship detection, Ocean Parameters Retrieval, Sea Features
   • Cryosphere: Snow, Land Ice and Sea Ice Monitoring
   • Hazards: Fire Monitoring, Volcanoes, Flooding, Earthquake
   • Other applications
6. Past, Current and Future SAR Missions
7. Airborne and Spaceborne campaigns
10 Thematic Sessions with 72 oral presentations
- 20 minute oral presentation
- Round-table discussions with seed questions

Free Poster Session with 65 posters
- Wednesday afternoon

Summary Sessions (last day of the workshop)
- Session Chairpersons presenting Summary and Recommendations
• Strict deadline for full paper submission: **15 February 2013**

• Papers are to be delivered by mail to: esapub@gmail.com

• The Proceedings of the Workshop will be published by ESA as Special Publication SP-713 on CD-ROM

• Further info at: [https://earth.esa.int/web/guest/polinsar-2013/author-instructions](https://earth.esa.int/web/guest/polinsar-2013/author-instructions)

• Workshop presentations (pdf format) will be published by February

• Group (and other) pictures will be available from the website
What are the applications with a high maturity based on PoLSAR?

PoLSAR-Ap: Exploitation of Fully Polarimetric SAR Data for Application Demonstration

- On-line survey to get feedback available soon on the workshop website

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<tr>
<th>Domain</th>
<th>Application / Product</th>
<th>Application Maturity (Polarimetry)</th>
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<tr>
<td>Forestry</td>
<td>Above Ground Biomass</td>
<td>Medium</td>
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<td>Stand Height</td>
<td>High</td>
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<td>Vertical Structure</td>
<td>Medium</td>
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<td>Thematic Maps</td>
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<td>Change Detection</td>
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<td>Agriculture</td>
<td>Crop Type Mapping</td>
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<td>Soil Moisture</td>
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<td>Phenology Determination</td>
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<td>Wetland Delineation</td>
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<td>Flooding Mapping</td>
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<td>Cryosphere</td>
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<td>Land Ice Extinction</td>
<td>Low</td>
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<td>Sea Ice Surface Char.</td>
<td>Low</td>
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<td>Urban</td>
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<td>Ocean</td>
<td>Oil Slick Detection</td>
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<td>Metallic Targets</td>
<td>Medium</td>
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POLinSAR2013 Science users consultation

POLinSAR2013 WORKSHOP
https://earth.esa.int/polinsar2013

seom
scientific exploitation of operational missions
Workplan 2013-2014
http://seom.esa.int

RECOMMENDATIONS

ACTION
- Campaign
- Training
- Toolbox
- Algorithms
The SEOM element workplan is prepared annually for approval at ESA-PB-EO and includes:

• **RESEARCH and DEVELOPMENT**
  Stimulating the development and validation of advanced EO methods and observation strategies that will enable scientific exploitation of the continued observations and innovative features of operational EO missions

• **SCIENTIFIC TOOLBOXES**
  Developing, validating and maintaining open-source, multi-mission, scientific software toolboxes that will apply leading-edge, advanced EO retrieval techniques to new data coming from future operational EO systems, and make these tools freely available to scientists

• **USERS CONSULTATIONS and FEEDBACK**
  POLINSAR at ESA ESRIN 28 January 1st February 2013
  ESA Living Planet Symposium 2013, Edinburgh, United Kingdom 9 to 13 September 2013

• **TRAINING NEXT GENERATION SCIENTISTS**
  Advanced training on Land Remote Sensing at Harokopio University of Athens Greece 1-5 July 2013
  Advanced training on Ocean Remote Sensing at University of Cork, Ireland, July or September 2013

• **PROMOTING SCIENCE DATA USE AND RESULTS**
  Promoting widespread scientific use of data freely available from forthcoming European (ESA and non-ESA) operational EO missions, by the international science community.
  Ensuring a responsive ESA channel through which EO scientists can make regular, timely, high-quality scientific publications.
• **Strict** deadline for on-line abstract submission: **15 February 2013**

http://www.esa.int/LivingPlanet2013
Special thanks to:

• Carmen, Anne, Maura, Claudia (ESA Conference Bureau)

• EOGB Team

• Travel Office, Site Services, IT Support, Print Room, ESA Publications, Canteen, Guards
...Looking forward to seeing you in 2 years for

**POLinSAR 2015**
THANKS FOR YOUR ATTENTION

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European Space Agency ESRIN