
WG I/2 - LIDAR, SAR AND OPTICAL SENSORS FOR AIRBORNE AND SPACEBORNE PLATFORMS

Web page: <http://www.commission1.isprs.org/wg2/>

Working Group Officers

- Chair: Dr. Boris JUTZI, Institute of Photogrammetry and Remote Sensing, Universität Karlsruhe (Germany)
 - Co-Chair: Dr. Charles TOTH, Center for Mapping, The Ohio State University (USA)
 - Co-Chair: Dr. Franz MEYER, Geophysical Institute, University of Alaska Fairbanks (USA)
 - Secretary: Dr. Naci YASTIKLI, Department of Geodetic and Photogrammetric, Yildiz Technical University (Turkey)
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Terms of Reference

- Evaluation and assessment of systems for processing and integrating SAR, LIDAR and optical data
 - Address challenges in low-frequency spaceborne SAR system design and data processing
 - Address challenges and applications of high-resolution spaceborne SAR systems (e.g. TerraSAR-X, Cosmo Skymed)
 - Evaluation of Systems for generation DEMs (Resolution I.3)
 - Evaluation of Multi-frequency SAR, polarimetric InSAR systems
 - Evaluation of Multi-pulse and full-waveform LiDAR
 - Evaluation of Range imaging with array sensor systems
 - Data quality and performance validation of SAR, LIDAR and optical systems
 - Liaison with external groups such as CEOS, IGARSS and EuroSDR
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Mission

Active sensor-based SAR and LiDAR technology, introduced in the late 90s, has received wide acceptance in airborne surveying as a leading tool for obtaining high-quality surface data in an unprecedentedly short turnaround time. The adoption of the new technology was fairly smooth and quick, primarily due to the high-level of automation of the data processing. LiDAR systems nowadays do range measurement with an increasing number of points per surface, count multiple returns per single shot, deliver reflectance values of the illuminated surface and capture the full waveform of the backscattered laser light. The role and capabilities of Interferometric SAR (InSAR or IFSAR) continue to expand, particularly with respect to wide area DEM creation. Areas of significant technical interest and application include Polarimetric InSAR and Differential InSAR with respect to quite different but important applications. Fusion of high resolution SAR images with optical is again of interest as new techniques are applied.

Working Group Workshops 2009

- WG I/2 is Co-Organizing Working Group of the ISPRS Workshop High-Resolution Earth Imaging for Geospatial Information 2009 which took place from Juni 2-5, 2009 in Hanover, Germany. It was a Joint Workshop of the ISPRS WG I/4, I/2, IV/2, IV/3, and VII/2. A detailed report about the Workshop from Matthias BUTENUTH and Boris JUTZI was published in the ISPRS Highlights: (http://www.isprshighlights.org/nieuws/item.php?nieuws_id=126)
- 6th International Symposium on Mobile Mapping Technology 2009. 21-24 July 2009 - Presidente Prudente, São Paulo, Brazil

- WG I/2 is Co-Organizing Working Group of the ISPRS Workshop Laserscanning 2009 which will take place from September 1-2, 2009 in Paris, France. It is a Joint Workshop of the ISPRS WG V/3, I/2, VII/7, and VIII/11. 96 papers were submitted by authors from 25 countries. The papers have undergone a rigorous double blind review process performed by the members of the scientific committee. Each paper has been reviewed at least by two members of the scientific committee. 62 papers have been accepted. There were 6 oral sessions (Urban, Classification, Pattern Recognition, Forestry, Physical Modelling and Full-Waveform, Geometrical Modelling) with altogether 31 papers and two interactive sessions where 27 papers were presented. The double blind review process is supported by the WG I/2 officers Boris JUTZI and Charles TOTH.

Other Working Group Activities 2009

- Regular exchange of information with the WG members through letters.
 - A dedicated website has been established and linked to the TC I website to support the work of the WG. See <http://www.commission1.isprs.org/wg2/>.
 - Circular call for participation: An active approach to encouraging participation in WG activity was adopted, with a circular invitation to a wide audience at the end of 2008. There are currently 22 members of the WG, representing 9 different countries.
 - Planning and progress meetings: The working group Chair and Co-Chairs met during the ISPRS High-Resolution Earth Imaging for Geospatial Information Meeting in Hanover, Germany to discuss and establish future developments and goals.
 - Representation of the Working Group at international meetings and workshops, where the chairmen of the working group assumed active roles in the organization and scientific program, included the following meetings:
 1. International Lidar Mapping Forum 2009 in USA (scientific committee)
 2. DGPf 2009 in Germany (presentation)
 3. ASPRS Annual Conference 2009 in USA (board member, invited speaker)
 4. IGARSS2009 in South Africa (presentation, chairman, reviewer board)
 5. Intergeo 2009 in Germany (chairman)
 6. PhoWo 2009 in Germany (invited presentation)
 7. Seminário Internacional Tecnologias Digitais Aplicadas à Documentação Arquitetônica 2009 in Brazil (invited presentation)
 8. ALOS PI Symposium 2009 in USA (presentation, chairman, reviewer board)
 9. TIGIR workshop in USA (keynote talk)
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Planned Working Group Activities

- 2010
Reviews and co-organizing of Commission I Symposium in Calgary, Canada.
- 2011
WG I/2 is Co-Organizing Working Group of the ISPRS Workshop Photogrammetric Image Analysis PIA11 in conjunction with the other working groups of Commission III, follow up of the PIA07 conference in September, 2007 to be held in Munich, Germany.
- 2012
Organize sessions at the ISPRS congress in Melbourne, Australia.

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