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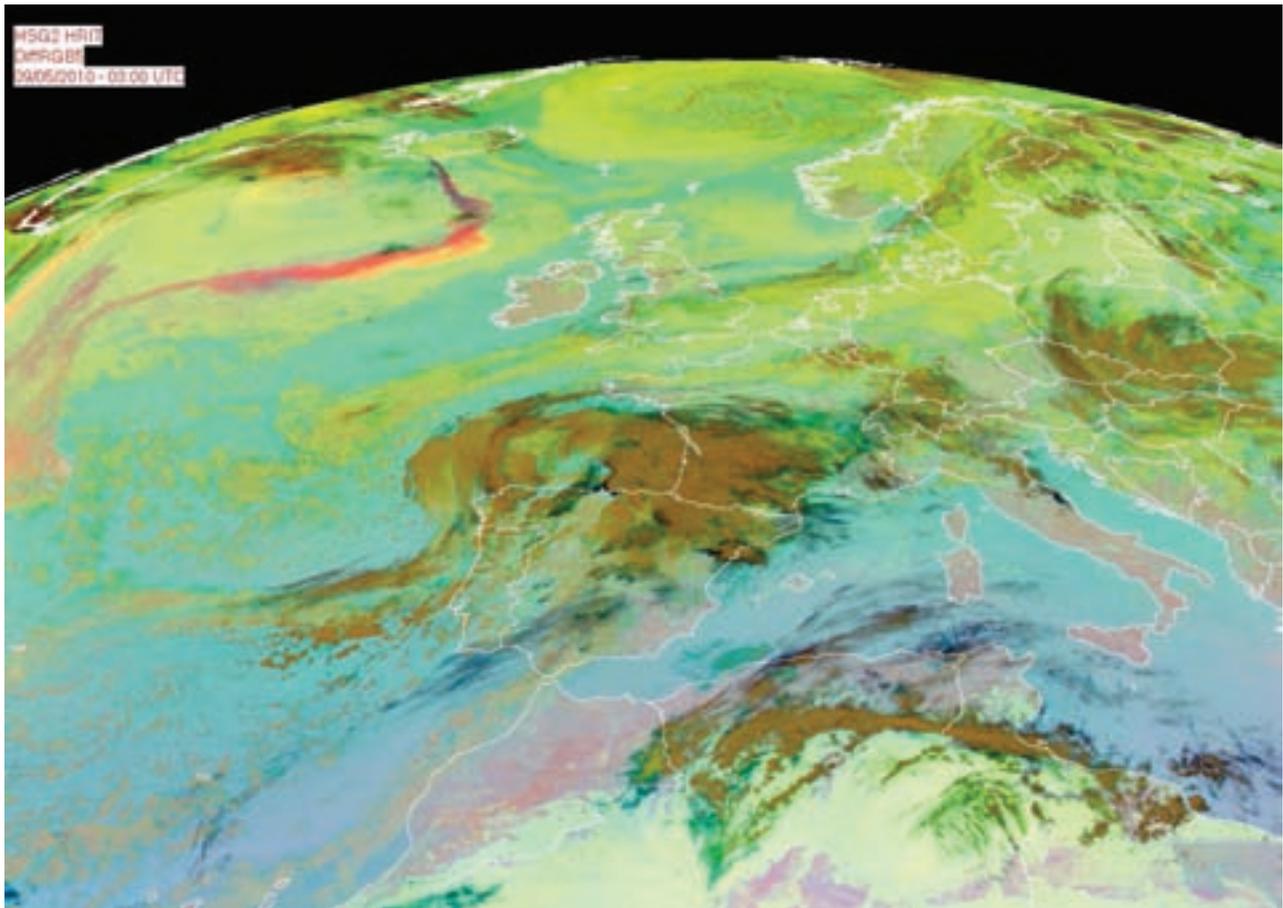
# GEOSCIENCE *and* REMOTE SENSING

*Newsletter*



<http://www.grss-ieee.org/menu.taf?menu=Publications&detail=newsletter>

Editor: Lorenzo Bruzzone



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Month	June	Sept	Dec	March
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Welcome to the June issue of the IEEE Geoscience and Remote Sensing Newsletter. Starting from this issue I have the pleasure and the honor to be the new Editor of this journal. As incoming Editor I would like to thank Dr. David Kunkee (outgoing Editor of the Newsletter) for the time and the effort devoted to the editorial activity and for the excellent work carried out in the past three years. I also express my gratitude to the Administrative Committee (AdCom) of the IEEE Geoscience and Remote Sensing Society (GRS-S) for assigning me such an important role.

I think that the Newsletter is becoming more and more important for the GRS Society, due to both the published technical contributions and the information provided to the GRS-S members. This role should be strengthened in the future

in order to timely address the major topics and challenges associated with the remote sensing technologies and applications. A very important step in this direction is related to the recent availability of the GRS-S on-line Newsletter (<http://www.grss-ieee.org/category/newsletter/>), which makes it possible the on-line access to the contents of the Newsletter as soon as a new issue is published.

In the past months Europe (and indirectly also other parts of the world) were affected by the important problems caused by the eruption of the Eyjafjallajökull volcano in Iceland. This relatively small volcano generated ash clouds that grounded hundreds of flights across Europe causing travel chaos and costing the European airline industry billions of Euros. This completely unexpected situation pointed out once again the importance of remote sensing and of the related technologies, which can play a very important role for supporting the management of this kind of crisis. This also highlighted the limitations of the current satellite missions for a proper monitoring of ash clouds. The main feature article of this issue addresses such a problem reporting the main discussion and conclusion emerging from a workshop specifically devoted to this topic organized by European Space Agency (ESA) and EUMETSAT in May 2010.

*(continued on page 4)*

## President's Message



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On behalf of the IEEE Geoscience and Remote Sensing Society (GRS-S), I would like to invite you to participate in our annual International Geoscience and Remote Sensing Symposium (IGARSS 2010). IGARSS is being held this year in Honolulu, Hawaii from July 25–30 (please refer to [www.igarss10.org](http://www.igarss10.org) for more information). Since this is the 30th anniversary of IGARSS, we are anticipating a particularly

large attendance and a very interesting conference. As a result of a very careful review process, an outstanding technical program has been organized with several highlights. The theme for the plenary session will be “Community Remote Sensing”. Our society has fostered and promoted Community Remote Sensing over the last year to illustrate how the Internet, social networks, and other technologies will change the field of remote sensing by augmenting our traditional centralized satellite and aircraft data sources with citizen-supplied information and analysis. The keynote address during the plenary session will be given by two prominent officials from the U.S. Office of Science and Technology Policy (OSTP): Mr. Aneesh Chopra, President Obama's Chief Technology Officer, and Ms. Shere Abbott, Associate Director for Energy & Environment. Their presentation will focus on the “Community Remote Sensing” theme as well, a concept that has been embraced by OSTP as a key future capability to provide the information needed to

*(continued on page 7)*

**Cover Information:** Specially modified MSG Ash product image showing the volcanic ash plume from the recent Eyjafjallajökull eruption circulating in the Atlantic Ocean.



*(Editor's Comments continued from page 3)*

This Newsletter issue also reports on the RISAT (Radar Imaging Satellite), which is a series of Indian radar imaging reconnaissance satellites built by ISRO that mount on board Synthetic Aperture Radars (SAR). Furthermore, we have a brief article on "Community Remote Sensing" that points out the initiatives related to this topic planned at IGARSS 2010.

In the report section, we have an article related to the 11th Specialist Meeting on Microwave Radiometry and Remote Sensing Applications (Microrad 2010), which was held in Washington D.C. on March 2010. Moreover, we have a report on the IEEE GOLD Remote Sensing Conference held in Livorno (Italy) at the end of April 2010 and a brief contribution on the experience of webcasting this conference.

The chapter corner briefly reports on the status of the GRS-S chapters and on the formation of some new chapters. These are a good news because new chapters are the evidence of the increasing impact that our society has in the remote sensing community. Inside this section, we also have a brief article that introduces the new GRS-S chapter of the Los Angeles Metropolitan Section.

Finally, recently the GRS Society AdCom approved several changes to the GRS-S Bylaws and constitution. According to the formal procedure, these changes are required to appear in the GRS-S Newsletter and are thus reported in this issue starting from page 17. The changes will go into effect unless ten percent of the Society members object within 30 days of publication. Please take this opportunity to analyze the changes in your Society's governance procedures.

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## GRS-S MEMBER HIGHLIGHTS

# GRS-S MEMBERS ELEVATED TO THE GRADE OF SENIOR MEMBER IN APRIL 2010

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Marc  
Jilu  
Dalton

Bazi  
Imhoff  
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Rosario

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Washington Section  
San Diego Section  
Washington Section

Senior membership has the following distinct benefits:

- The professional recognition of your peers for technical and professional excellence.
- An attractive fine wood and bronze engraved Senior Member plaque to proudly display.
- Up to \$25.00 gift certificate toward one new Society membership.
- A letter of commendation to your employer on the achievement of Senior Member grade (upon the request of the newly elected Senior Member).
- Announcement of elevation in Section/Society and/or local newsletters, newspapers and notices.

- Eligibility to hold executive IEEE volunteer positions.
- Can serve as Reference for Senior Member applicants.
- Invited to be on the panel to review Senior Member applications.
- Eligible for election to be an IEEE Fellow

Applications for senior membership can be obtained from IEEE website: <http://www.ieee.org/web/membership/senior-members/index.html>

You can also visit the GRS-S website: <http://www.grss-ieee.org>

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*(President's Message continued from page 3)*

address national and global issues. With excellent planning underway by a highly dedicated organizing committee, we expect this symposium to become the best IGARSS that we have ever had!

Last February we held a meeting of the GRS-S Administrative Committee (AdCom) in Washington, DC. GRS-S is governed by the AdCom, consisting of 18 members elected by the society and 4 ex-officio members with vote (Editors-in-Chief of our journals as well as the Chief Financial Officer). We have 3 meetings every year, with the February meeting held just after IGARSS Technical Program Committee (TPC) meeting. This year we had more than 50 scientists and engineers from different countries who worked very hard during the TPC meeting in Washington in order to finalize the IGARSS technical program. My congratulations and sincere thanks to all of our colleagues involved in the review process and session organization for their excellent work performed during about two months of review and abstract selection process. A special thanks goes to David Kunkee and Paolo Gamba who are doing an outstanding job as co-chairs of the IGARSS technical program. We had a record number of submissions with more than 2600 submitted abstracts (384 of them being invited). After a careful review process approximately 900 papers were selected for oral presentation and

1250 for poster presentation. This year has been also the first year with a call for papers requiring an extended abstract with 2 to 4 pages for the review process. Our goal is to have the IGARSS proceedings as an ISI-cited publication in the next few years. To accomplish this, we will have to implement a full review process of the submitted papers. The IGARSS technical program is available on-line at [www.igarss10.org/RegularProgram.asp](http://www.igarss10.org/RegularProgram.asp).

In the following I would like to report about 10 main findings or decisions from our February AdCom meeting that arise from new initiatives or on-going projects:

- 1) A task force for updating the strategy of our globalization initiatives has been established in order to better prioritize the focus of our membership activities in the future. Remote sensing is an emerging technology in several countries not yet well represented by the GRS-S membership. One example of an activity in the scope of our globalization initiatives was IGARSS'09 in South Africa. We now want to increase our activities and representation in South America and the Asian/Pacific region. As a matter of fact, a few years ago our AdCom decided to change the IGARSS location cycle to a

*(continued on page 22)*



## FEATURE

# KEEPING AN EYE ON VOLCANIC ASH

*Claus Zehner, European Space Agency, ESRIN, Italy.  
Neil Fletcher, EUMETSAT, Spain.*

The recent ash clouds from Iceland's Eyjafjalla volcano grounded hundreds of flights across Europe causing travel chaos and costing the European airline industry billions of Euros. The volcanic ash, which caused such turmoil in European airspace, was monitored using both satellite and ground based technologies. To take stock of what has been learned about ash cloud detection, monitoring and prediction, and identify future opportunities, ESA and EUMETSAT recently organised a workshop in Frascati, Italy (May 2010) for more than 50 experts from around the world.

"I think the workshop assembled the best expertise there is on ash-cloud monitoring and modelling. It was a very impressive meeting because it really gave all of us the latest knowledge and capabilities that exist around the world," said Jean-Paul Malingreau, Head of Unit Work Programme and Strategy of the Joint Research Centre of the European Commission.

The participants of the workshop comprised a wide range of experts including ground-based and remote sensing

specialists and modellers as well as representatives from the Volcanic Ash Advisory Centres.

### Key Role of Satellite Observations

Fred Prata, Senior Scientist for Atmosphere and Climate Change at the Norwegian Institute for Air Research, said: "Satellite data are extremely important for volcanic eruptions because these events can occur anywhere at any time, so you need a measurement system that can see the entire globe, all of the time."

"We currently have geostationary and polar-orbiting satellites in orbit that provide information every 15 minutes and almost every hour, respectively. One of the missing parts of the story, however, is the vertical resolution. Lidars – like radar except it uses light instead of microwaves – in space can provide this, and ESA will launch two Lidar missions in the future, including ADM-Aeolus.

The crucial role of infrared instruments was emphasised in several talks for future volcanic-ash monitoring.

"Infrared instruments are absolutely vital for a couple of reasons. Firstly, infrared does not require sunlight so we can see volcanic emissions equally well day or night. Secondly, and perhaps most importantly, the infrared radiation that we use is in a band between eight and twelve micrometers, and it turns out that the particles that cause problems for aviation are micron size so they look in just the right wavelength region," Prata said.

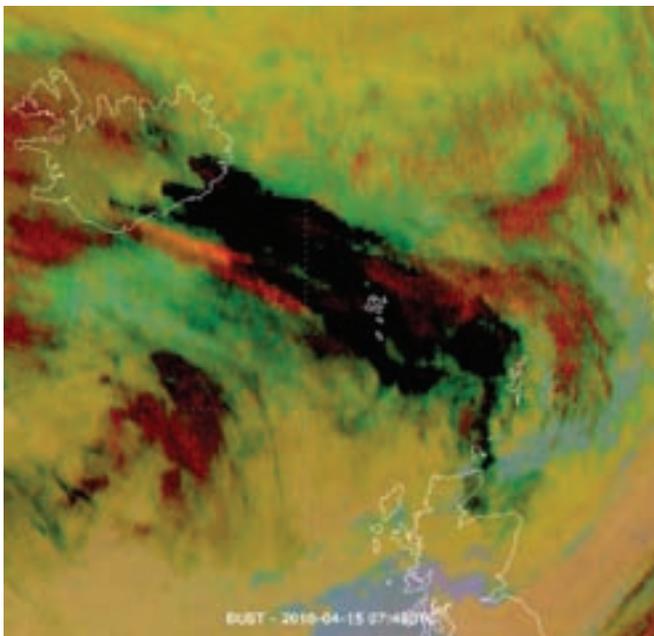
### Meteosat Third Generation

The importance of continued observations from geostationary orbit, as well as the use of observations from infrared and ultraviolet/visible sounding instruments, was emphasised in several presentations. EUMETSAT's Meteosat Third Generation (MTG) satellites, to be developed by ESA, will carry infrared sensors.

They will therefore be essential for monitoring volcanic ash in the future. In addition to improved imagery at 10-minute repeat cycles, the provision of data from the MTG infrared and ultraviolet/visible sounding missions will be crucial for the derivation of quantitative products for volcanic ash modelling.

### Combining Satellite with Ground-Based Data

The presentations on ground-based observations and modelling showed very good consistency, also with satellite



*Meteosat-9 observes the ash cloud from the volcanic eruption under Eyjafjallajökull Glacier in Iceland. Initially the cloud shows a distinctive black colour, due to ice particles which mask the ash signature. As the cloud progresses eastwards the cloud takes a reddish hue, clearly indicating the presence of volcanic ash.*



observations, and it was well recognised that for the best results all data and information needs to be combined.

“There has been an unprecedented amount of ground-truth data collected by the European community on this ash cloud, and this is a great opportunity to learn more about the processes,” said David Schneider, Research Geophysicist at the US Geological Survey, Alaska Volcano Observatory. “Ground and aircraft measurements can also be used to compare to satellite data to help you understand whether what you are gathering is accurate.”

### **Evolving Requirements for Ash Monitoring**

Philippe Husson, Aviation Weather Forecast Deputy and the Toulouse VAAC Manager for Meteo France, explained that requirements on observations of the volcanic ash evolved during the eruption to include numbers and expressed how this will impact his job and his needs from satellite missions.

“In the past, we used qualitative results to depict hazards, but now that we have been provided with figures on the threshold we will probably be required to provide concentration maps with absolute numbers to aviation users. As we must go from qualitative to quantitative information about ash concentrations and the distribution and size of particles, we need satellites to provide numbers,” he said.

### **Testing Ash in Engines?**

Husson explained that the threshold figures are not definitive and are now being reassessed by aviation authorities as the decision was made very quickly during the crisis. Several factors will have to be taken into consideration, such as the results of trials with real ash in real engines, the types of engine used and the rate of ingestion, as flying 10 minutes in high concentration could be equivalent to flying six hours in weak concentrations.

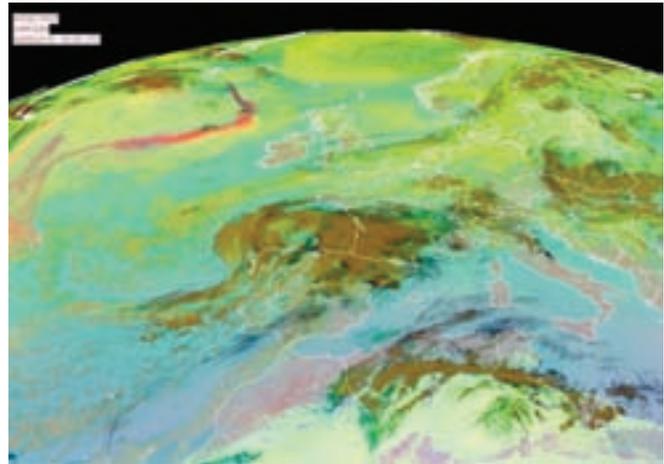
“As the decision was taken quickly, there was not a lot of input from scientists, but now there is time to go to scientists and ask them what confidence we can have in these numbers,” he added.

Schneider, who works during eruption crisis episodes in Alaska to provide information about the location of ash clouds and to help set up warnings for the North Pacific, emphasised the fact that the satellite sensors monitoring ash clouds were not designed for this purpose but rather for meteorological, climate or pollution studies.

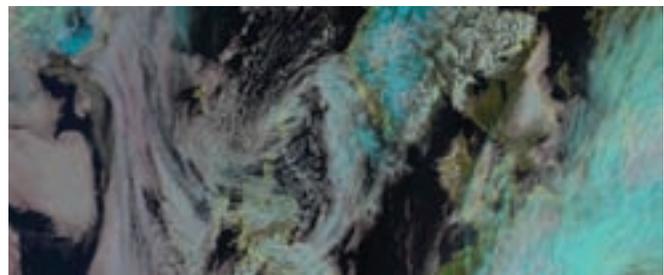
“These sensors work great, but maybe this eruption will help push the notion that there are no remote volcanoes. Just because you can’t see it, doesn’t mean the effects are out of reach,” Schneider said.

### **Future Satellite Missions Monitor Ash in Combination**

The capabilities of future satellite missions already planned now, like the Global Monitoring for Environment and



*Specially modified MSG Ash product image showing the volcanic ash plume from the recent Eyjafjallajökull eruption circulating in the Atlantic Ocean.*



*Image captured by AVHRR instrument on EUMETSAT's Metop-A polar-orbiting satellite shows the extent of the volcanic ash cloud coming from the volcano. Image was captured at 10:13 UTC 6 May 2010.*

Security (GMES) Sentinel-3, -4 and -5 and ESA Earth Explorer Lidar missions, like ADM-Aeolus and Earthcare, were highlighted.

The crucial role of MTG as a provider of space-based observations in the future for volcanic ash monitoring was emphasised in several talks. The improved capabilities of the imagery mission will provide further details on the extent of the ash plume, whereas the capabilities of the MTG sounding mission will be essential for the derivation of quantitative products with additional information on the composition and density of the ash cloud.

The EC's Malingreau said: “We need to assess whether the instruments available now and in the near future are sufficient, so there will be some recommendations maybe for adjusting some of the future instruments to be sure they are ready to do the job. These can be made available to policymakers to decide what to finance.”

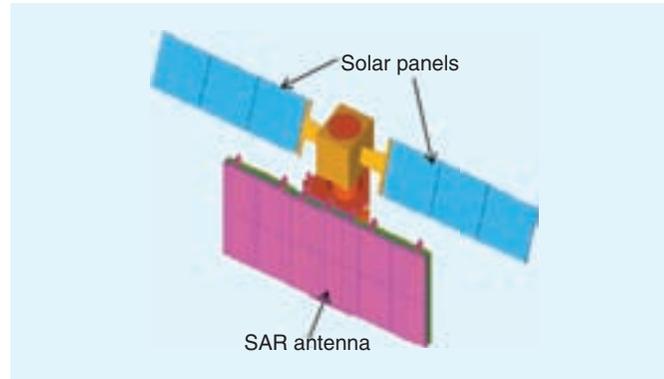
A set of recommendations outlined at the workshop will be documented in a joint ESA-EUMETSAT publication and will be made available online.



## RISAT-1: A FULLY POLARIMETRIC C-BAND SAR MISSION OF ISRO

*R.R. Navalgund, Space Applications Centre,  
Jodhpur Tekra, Ahmedabad 380 015, India*

RISAT (Radar Imaging Satellite)-1 is a series of Indian radar imaging reconnaissance satellites being built by ISRO to provide all-weather surveillance using Synthetic Aperture Radars (SAR). Radar imaging satellite (RISAT-1) is scheduled to be launched in mid-2011 for enhancing the scope of remote sensing applications and services using microwave data. The synthetic aperture radar onboard RISAT will have ability to acquire data at C-band in different mode of polarization, incidence angle and resolution. The RISAT SAR will operate at C-band (5.35 GHz) at various beam modes having a number of combinations of linear polarization modes as well as circular polarization modes, incidence angle, swath of 200-600 km and resolution varying between 3 to 50 m from a nominal altitude of 536 km. The System will have capability of left as well as right looking. It will operate in four basic modes, (i) Fine Resolution Strip map Mode (FRS) will provide nominal single look 3 m - 8 m resolution image over 30 km swath in either single, dual or quad polarization, (ii) Medium Resolution ScanSAR Mode (MRS) will provide nominal single look 25 m resolution image over swath of 120 km, (iii) Coarse Resolution ScanSAR Mode (CRS) will provide nominal two look 50 m resolution image over swath of



*RISAT-1 in fully deployed mode*

240 km and (iv) High Resolution Spotlight Mode (HRS) will have a spot of 10 km (Azimuth) and 10 km (ground range swath) for either single or dual polarization.

For details, contact: R.R. Navalgund, Director, Space Applications Centre (ISRO), Ahmedabad 380015, India. [director@sac.isro.gov.in](mailto:director@sac.isro.gov.in)

## SPOTLIGHT ON COMMUNITY REMOTE SENSING

IGARSS 2010 (<http://www.igarss2010.org/>), to be held July 26-30 in Honolulu, will spotlight the emerging field of Community Remote Sensing (CRS) with a plenary session entirely dedicated to the topic (supporting the conference theme "Remote Sensing: Global Vision for Local Action"). During the year leading up to the plenary, IGARSS has also dedicated a portion of the conference website to spotlighting existing projects that embody the plenary theme. Participating projects are selected for their promise to create either new knowledge or new technologies associated with community remote sensing. Also included in the website are a 'perspectives' section, providing insights on everything from legal issues to data architectures associated with CRS, and a links page to related topics such as citizen science. IEEE has recently announced an essay and blogging contest focused on the CRS theme ([www.Earthzine.org](http://www.Earthzine.org)).

Why CRS? Society's Earth information needs are vast. Until now, we have relied on government-sponsored satellites and observing systems as the foundation for this information. The rapid emergence of citizen science and social networks

### **What is Community Remote Sensing?**

Community remote sensing is a new field that combines remote sensing with citizen science, social networks, and crowd-sourcing to enhance the data obtained from traditional sources and to augment our centralized (satellite, aircraft) observing systems. It includes the collection, calibration, analysis, communication, or application of remotely sensed information by these community means.



introduces an exciting new means for augmenting this knowledge. In part, what GRSS is hoping to do is help build a coherent picture of who is involved in CRS, what they are doing, and where there are areas for cross-pollination. It is a very exciting field right now, and one that will grow as our ability to extract information from centralized remote sensing systems (satellites and aircraft) becomes limited by the cost and complexity of those systems. Centralized systems will remain critical to our knowledge base, but CRS can extend their capabilities at relatively low cost. Applied in conjunction with centralized systems, CRS can be a powerful tool for addressing environmental issues and responding to events such as natural disasters.



GRSS has been showcasing CRS projects on the website (<http://www.igarss2010.org/CommunityRemoteSensing.asp>) and will add more as they are available. Current postings address a wide and novel range of community tools for everything from rapid-response analysis of remotely sensed data during natural disasters to correcting global wildlife habitat datasets with local ground-truth. One interesting example is a project led by University of New Hampshire known as Digital Earth Watch (DEW) that employs a technology referred to as the Picture Post network. As shown in the figure, Picture Post provides simple instructions that allow anyone with a digital camera to build a stable camera platform that enables science-quality monitoring of the environment. Their web-based social network promotes widespread sharing of the data.

The IGARSS 2010 plenary session will reflect on these projects and the general theme of CRS. The plenary will be moderated by Dr. Shelby Tilford and highlighted by a keynote given jointly by Aneesh Chopra (Chief Technology Officer and Assistant to the President) and Shere Abbott (Associate Director for Environment) from the US Office of Science and Technology Policy. This will be followed by an Agency Panel, consisting of executives from several major space agencies, which will reflect on the past and future of remote sensing and the role of community in their plans.

If you are working in this area, your participation in the CRS Collaboration will benefit both your project and the

### The Vision for Community Remote Sensing

Information technologies will provide the foundation for society's rapid progress in the 21st century. Information about the environment (both natural and human-built) is central to this progress. The enormity of the required undertaking – observing and understanding our world at all space and time scales – takes your breath away.

Accomplishing it will be enabled in part by citizens who contribute to 'remotely sensed' versions of the world around them. Governments will depend on such information to understand local details of climate change and respond to natural disasters. The private sector will use it to build online maps and virtual worlds that make commerce more efficient and accessible. Within just a decade or so, the influence of community remote sensing will be as profound for understanding our Earth as the satellite revolution has been over the last five decades.

greater community. Further information, including a detailed description of the Collaboration, can be obtained from the Conference Plenary Chair Bill Gail ([bgail@microsoft.com](mailto:bgail@microsoft.com) or [wb.gail@comcast.net](mailto:wb.gail@comcast.net), 1.303.513.5474).



## REPORTS

# MICRORAD2010

*David M. Le Vine*

*NASA Goddard Space Flight Center Greenbelt, USA.*

MicroRad2010, the 11th Specialist Meeting on Microwave Radiometry and Remote Sensing Applications, was held in Washington, D.C. on March 1–4 at the Hilton Washington Embassy Row hotel. The meeting attracted 205 registrants.

The purpose of MicroRad is to provide an international forum to report and discuss recent achievements in the field of microwave radiometry for remote sensing applications, especially remote sensing of the environment. MicroRad2010 was the 11th meeting in this biannual series which began in Rome in 1983 and has alternated location between Italy and United States. The next meeting will be in Frascati, Italy in the Spring, 2012.

The meeting has become a venue for the microwave radiometry community to present new research results, instrument designs and applications to an audience that is conversant in these issues. This was particularly evident at MicroRad2010 which began with the first public report by the SMOS project of the images from the first synthetic aperture (interferometer) L-band radiometer in space. The meeting was divided into 16 sessions:

- Soil Moisture Ocean Salinity (SMOS) Mission
- Future Passive Microwave Remote Sensing Missions
- Theory and Physical Principles of EM Models
- Field Experiment Results
- Soil Moisture and Vegetation
- Snow and Cryosphere
- Passive/Active Microwave Remote Sensing Synergy
- Oceans
- Atmospheric Sounding and Assimilation
- Clouds and Precipitation
- Instruments and Advanced Techniques I

- Instruments and Advanced Techniques II
- Cross Calibration of Satellite Radiometers
- Calibration Theory and Methodology
- New Technologies for Microwave Radiometry
- Radio Frequency Interference

The meeting consisted of one serial sequence of oral presentations divided into the sessions listed above and two evening sessions at which posters related to these topics were presented. The poster sessions were well attended and provided an opportunity to both socialize and to learn in more detail about the work being done in microwave radiometry. Awards were made to the outstanding posters in each session. The winners were:

### Poster Session I (Monday)

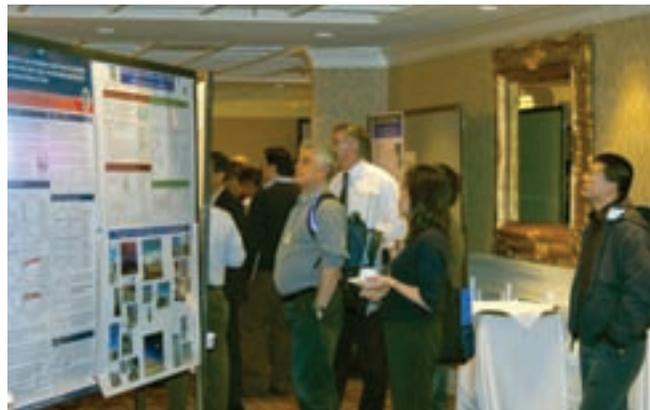
1st Place: IMPROVED HIGH WIND SPEED RETRIEVALS USING AMSR AND THE NEXT GENERATION NASA DUAL FREQUENCY SCATTEROMETER

Peth Laupattarakasem, Suleiman Alswiss, Salem El-Nimri, W. Linwood Jones, Svetla Veleva, Bryan Stiles, Ernesto Rodriguez, and Robert Gaston (University of Central Florida and Jet Propulsion Laboratory)

2nd Place: AMSR-E OBSERVATIONS OF RAIN AND FLOOD EVENTS OVER VEGETATED AREAS OF LA PLATA BASIN

Paolo Ferrazzoli, Rachid Rahmoune, Francisco Grings; Vanesa Douna, Gabriela Parmuchi, Mercedes Salvia, Haydee Karszenbaum (Tor Vergata University and Institute of Astronomy and Space Physics, Buenos Aires, AR)





### Poster Session II (Wednesday)

1st Place: DEVELOPMENT AND VALIDATION OF A RAINFALL RATE ALGORITHM BASED ON HYDROMETEOR PRODUCTS DERIVED FROM PASSIVE MICROWAVE SATELLITE OBSERVATIONS

Flavio Iturbide-Sanchez, Sid-Ahmed Boukabara, Kevin Garrett, Christopher Grassotti, Wanchun Chen, Fuzhong Weng (NOAA/NESDIS).

2nd Place: PASSIVE RANGE MEASUREMENT AND DISCREPANCY EFFECTS OF DISTANCE FOR STEREO SCANNING W-BAND RADIOMETER

Nam-Won Moon and Yong-Hoon Kim (Gwangju Institute of Science and Technology, Republic of Korea)

A proceedings consisting of short papers submitted by the authors of both the oral and poster presentations is being prepared and will be available via IEEE Xplore.

Also, a special issue of the IEEE Transactions on Geoscience and Remote Sensing (TGARS) will be devoted to MicroRad2010. Contributions to the Special Issue will be limited to papers presented at MicroRad2010 but both oral and poster presentations are included. The special issue is a peer reviewed publication. It will appear in addition to the conference proceedings which will contain the “short papers” delivered at the time of the conference. Submission should follow the IEEE/TGARS guidelines. The guest editors are Roger Lang, Tom Jackson, Ed Kim and David LeVine and the deadline for submission is July 1, 2010 (right before IGARSS).

### Poster Award Winners



*Iturbide-sanchez, et al.*



*Moon and Kim.*



*Laupattarakasem, et al.*



*Ferrazzoli, et al.*



## IEEE GOLD REMOTE SENSING CONFERENCE

*Maurizio Migliaccio  
Università di Napoli "Parthenope", Italy.*

The IEEE South Italy GRS Chapter has organized at the Italian Naval Academy in Livorno the fourth edition of the biannual IEEE GOLD (Graduate Of Last Decade) Remote Sensing Conference. The conference has been held on April 29 and 30, 2010 and has gathered more than 150 participants. The standard two-day format, already experienced in former editions has demonstrated to be appropriately tailored to facilitate participation of young professionals and students. The first day was opened in the morning by a welcome ceremony in which the Italian Naval Academy Admiral Pierluigi Rosati, the Conference General Chairman Maurizio Migliaccio and Enzo Dalle Mese of the Università di Pisa addressed a large audience which included several Università di Pisa staff personnel, local and national Companies representatives, and civilian and defense authorities. During the opening ceremony the five best Italian thesis certificates were given. Then an almost two hour visit of the hosting Academy was organized to visit the most relevant technical, e.g. the navigation simulator, and historical places, e.g. the marine ancient book library. After the lunch the technical sessions were started and the IEEE GRSS webcast was started. The local organizing committee also video-recorded the event to make even available later. The local conference organizing committee was composed by Roberto Della Valle and Fulvio Arreghini officers at Italian Naval Academy, Nicola Acito scientific researcher at Telecommunication School of the Italian Naval Academy, Fabrizio Lombardini and Marco Martorella at Telecommunication School of the Università di Pisa and Ferdinando Nunziata at Telecommunication School of the Università di

Napoli Parthenope. Local organizers were backed by Proff. Enzo Dalle Mese, Giovanni Corsini and Giuliano Manara of Università di Pisa. The first day was closed with the interactive session at the saloon room with a wonderful sunset view. During the first day 38 papers were presented. In the second day only oral sessions were planned and a round table involving remote sensing experts was organized just after the lunch. The round table was chaired by Maurizio Migliaccio with contributions from Wolfgang Keydel (DLR), that also spoke in place of Alberto Moreira (IEEE GRS Society President), Jérôme Benveniste (ESA), Armando Buccheri (Selex Galileo)



*Italian Naval Academy where the IEEE GOLD Remote Sensing conference was held.*



*IEEE GOLD participant group photo.*



and Benito Palumbo (IEEE Region 8 Industry Relations S-C Coordinator). At the end 59 papers were all presented by first authors adhering to GOLD requisites. Special fares for lunches at Italian Naval Academy and Hotels and Bed and Breakfast in Livorno were agreed to make participation affordable even by students. The sponsorship/patronage of IEEE GRS Society, IEEE Central Italy Chapter, IEEE Italy GOLD Affinity group, DLR, Università di Pisa, Università di Napoli Parthenope, Flyby, Kayser Italia, Selex Galileo, Selex Sistemi Integrati, Telerilevamento Europa – TRE, Thales Alenia

Space was also very important for the success of the event that represented for many presenters the first chance to meet the IEEE GRSS Community. The chance to webcast the Conference opens new chances and opportunity to make the IEEE GOLD Remote Sensing Conference the debut event of talented young people to the world chances provided by Geoscience and Remote Sensing. Borrowing the Steve Jobs words at Stanford, I would like to close these lines with a warm appeal to all these young talented people: Be hungry! Be foolish! (we need you).

## GRSS WEB CORNER

# WEB REPORT ON THE WEBCAST OF THE GOLD CONFERENCE



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During April 29th and 30th the IEEE GOLD Remote Sensing Conference was held in the Italian Naval Academy in Livorno. A short report is provided by Prof. M. Migliaccio in this issue. This conference served as a test bed of a new initiative consisting of the conference webcast<sup>1</sup>, but soon selected IGARSS sessions will also be webcast, and in a near

<sup>1</sup><http://www.grss-ieee.org/live-broadcast-pilot-project-ieee-gold-remote-sensing-conference/>

future Distinguished Speakers lectures as well. This is one of the major initiatives that we are following to shorten the physical, time and economical distances between the potential audience and the sources of information. We do not pretend to eliminate the physical presence of the lectures, but we are aware that for many chapters it is simply out of budget and/or these expenses cannot be properly justified, specially in these times. With this initiative, we intend to reduce the gap between colleagues in different countries.

In the same direction, a mobile version of the web site is currently under development. In a couple of months a beta version for iPhone will be ready for testing, and before the end of the year, it will be ready for other mobile platforms as well. By allowing the mobile access to the web site tutorials, on-line lectures and other contents out-of-office, we believe the GRSS will be providing a better service to the members.

Finally, I would like to introduce you Dr. *William J. Blackwell* as new GRSS webmaster starting June 2010. If you have any comments or suggestions, please do not hesitate to contact any of us.



## GRS-S CHAPTER'S CORNER

### CHAPTER ACTIVITY REPORT

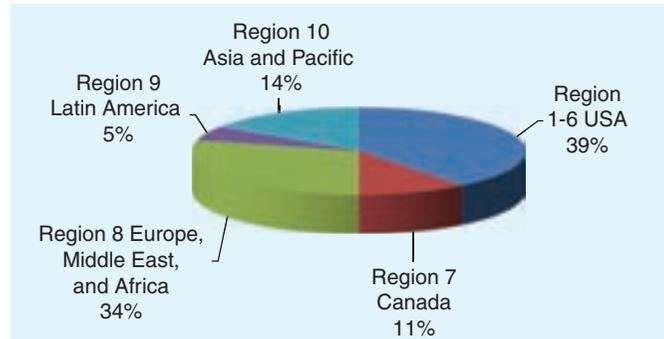


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One of the most important factor for increasing the impact of our society on the remote sensing community is related to the capability to provide support and efficient services to GRS-S members. Chapters are a valuable mean to achieve this goal and their activity should be properly recognized and supported.

Currently we have 34 GRS-S chapters (including joint chapters with other IEEE societies). Many of these chapters were very active in 2009 in terms of both organization of high quality meetings and support to the active participation of their members in GRS-S sponsored initiatives. Many chapters have also shown significant membership growth in the last year.

In this framework, the formation of new GRS-S chapters should be considered a priority for our Society for increasing the impact on under-represented geographical areas and thus consolidating GRS-S activities in new local communities. In this context, it is really a pleasure to welcome the formation of five new GRS-S chapters in the last months. These chapters are:



*Geographical distribution of the chapters in the different IEEE regions.*

- Australian Capital Territory and New South Wales Joint Sections, Australia (Chair: Xiuping Jia);
- South Africa (Chair: Meena Lysko);
- Metro Los Angeles Section, US (Chair: Erika Podest);
- Student Branch Brazil Section, Brazil (Chair: Sam Murphy);
- Nanjing Section, China (Chair: Feng Jiao).

Some of these chapters were established in regions which are of great interest for the GRS-S and that were under-represented at the chapter level. This is an important achievement. We expect further development of chapters in the next months (some initiatives for the formation of new chapters are now in progress) for obtaining a wider and more uniform geographical representation of the GRS-S activities.

## REPORT ON LA CHAPTER

*Erika Podest, Jet Propulsion Laboratory, Pasadena, USA.*

We are excited to announce the formation of a new GRSS chapter in the Los Angeles Metropolitan Section. We were formed in response to the broad range of remote sensing activities and large community at JPL and to serve the GRSS and the general public interested in geoscience and remote sensing in the Los Angeles area and beyond.

The goals of the chapter are to raise the visibility of GRSS within the community and to become a means of dissemination of knowledge through presentations at chapter meetings, educational activities, and networking opportunities.

The inaugural meeting of the LA Metro Section of IEEE-GRSS was held on June 15, 2010 at the California Institute of Technology in Pasadena, California with an excellent



*Dr. Erika Podest with Dr. Charles Miller at the inaugural meeting of the LA Metro Section of IEEE-GRSS.*



turnout of 36 attendees, filling the conference room to capacity. There was a pre-meeting reception with drinks and a 36 inch (.914 meter) sized pizza, the largest most had ever seen. The highlight of the meeting however, was an excellent technical presentation by Dr. Charles Miller titled “Space-based Observations of Atmospheric CO<sub>2</sub>: Watching the Earth Breathe”. Dr. Miller is a research scientist with the Earth

Atmospheric Group at JPL as well as deputy principal investigator of NASA’s Orbiting Carbon Observatory (OCO). In his presentation to the chapter, Dr. Miller talked about the global carbon cycle and current and future satellite missions to measure atmospheric greenhouse gasses. Following this successful inaugural meeting, the chapter is already enthusiastically planning the next event.

## AMENDMENTS TO THE GRS-S BYLAWS AND CONSTITUTION

The changes to the GRS-S Bylaws and Constitution detailed below were approved by the Administrative Committee (AdCom) on May 3, 2010 by electronic voting. Most of the changes are related to the implementation of a Vice-President of Publications as well as other changes in its organizational structure that were approved in the November 2009 meeting of the AdCom. The changes below will go into effect within 30 days of publication unless ten percent of Society members object. Copies of the GRS-S Constitution and Bylaws documents are available on the GRS-S website.

*Changes to the GRS-S Bylaws and Constitution for ensuring consistency with the organizational structure of the Administrative Committee (inclusions are in blue color, deletions are with the strikethrough in red, and comments are in brackets and italic style):*

### GRS-S BYLAWS

#### I. Nominations

##### 1. Nominations Committee (from page 4 of the GRS-S Bylaws)

On or before February 1 of each year, the President shall appoint a Nominations Committee which shall consist of a ~~P~~past Ppresident as Chair and two or more members of the Society elected by the AdCom. **The Chair reports to the President.** Chairs shall not be eligible to be elected to the governing body during their term of service. **If a past president who is an AdCom member-at-large is appointed Chair of the Nominations Committee, he/she will not have voting rights during the elections for AdCom members, the Executive Vice President and the President.** Members of the Nominations Committee are ineligible for nomination by the Nominations Committee for any position under the purview of the Committee

until their term of office on the Nominations Committee expires or the member resigns from the Nominations Committee. Resignation must occur before any nominations are made. After resignation a former member of the Nominations Committee may be nominated for any elected position from the floor but not by another member of the same Nominations Committee.

#### II. Elections and Officer Duties

Renumbering:

Number of item 4 (from page 6 of the GRS-S Bylaws) changed to 5

Number of item 5 (from page 6 of the GRS-S Bylaws) changed to 6

Number of item 6 (from page 6 of the GRS-S Bylaws) changed to 7

Number of item 7 (from page 7 of the GRS-S Bylaws) changed to 8

Number of item 9 (from page 7 of the GRS-S Bylaws) changed to 10

Number of item 11 (from page 8 of the GRS-S Bylaws) changed to 12

Number of item 17 (from page 10 of the GRS-S Bylaws) changed to 18

##### 3. Secretary (from page 5 of the GRS-S Bylaws)

**The Secretary, if not an elected Member of the AdCom, shall be an Ex-Officio Member of the AdCom with voting privileges. The Secretary must be a member of IEEE and of the Society.** The ~~Executive Vice~~ President upon receiving notice of his/her election as President shall submit to the members of the Administrative Committee the name of a proposed Secretary for appointment. If a majority of the members of said Administrative Committee do not object within 30 days from date of oral submission or mailing said submission, the appointment shall become final. If a majority of the members of said Administrative Committee object, a new name or



names must be submitted. The incumbent Secretary shall remain in office until a successor is appointed and arranges to take over the office. The Secretary will maintain all files and records for the AdCom and will prepare minutes for all AdCom meetings on a timely basis.

#### **4. Chief Financial Officer (a new item in the GRS-S Bylaws)**

The Chief Financial Officer, if not an elected Member of the AdCom, shall be an Ex-Officio Member of the AdCom with voting privileges. The Chief Financial Officer must be a member of IEEE and of the Society. The President upon receiving notice of his/her election as President shall submit to the members of the Administrative Committee the name of a proposed Chief Financial Officer for appointment. If a majority of the members of said Administrative Committee do not object within 30 days from date of oral submission or mailing said submission, the appointment shall become final. If a majority of the members of said Administrative Committee object, a new name or names must be submitted. The incumbent Chief Financial Officer shall remain in office until a successor is appointed and arranges to take over the office. The Chief Financial Officer is responsible for maintaining the society's finances, and for providing regular reports to the AdCom on the financial status of the society. The Chief Financial Officer will prepare draft budgets for review and approval by the President and the AdCom. These budgets will be submitted prior to TAB's approval. The Chief Financial Officer will also provide regular reports on the investments by the Society and its reserves.

#### **9.8. Vice-President of Operations and Finance Publications (from page 7 of the GRS-S Bylaws)**

The Vice-President of ~~Operations and Finance Publications~~ is an elected member of AdCom appointed by the President. Reporting to the Vice-President of ~~Operations and Finance Publications~~ are: the Editor of the Transactions, the Geoscience and Remote Sensing Letters (GRSL), ~~and the Journal of Selected Topics in Applied Earth Observation and Remote Sensing (J-STARS), Chair of Symposium Publications, Chair of Future Publications, and the GRS-S representative at the IEEE TAB Periodicals Committee. The Vice-President of Publications will meet the Editors of GRS-S journals and make plans for total number of issues and pages for the Transaction TGRS, Letters GRSL and the Journal of Selected Topics in Applied Earth Observation and Remote Sensing J-STARS for each fiscal year. The Vice-President of Publications will communicate and make budget plans with the GRS-S Chief Financial Officer for sound operation and management of GRS-S Journals, the Chair of the Nominations Committee, and the Director of Finance. The Vice-President of Operations and Finance will prepare draft budgets for review and approval by the~~

~~President and the AdCom. These budgets will be submitted prior to TAB's approval of budgets and page rates. The Vice-President of Operations and Finance will also provide regular reports on the investments by the Society and its reserves.~~ The Vice-President of ~~Operations and Finance Publications~~ will provide regular reports to the AdCom on the Transactions, GRS Letters ~~and J-STARS, symposium publications and future publications.~~ The President may assign other duties.

#### **11.10. Vice-President of Technical Activities (from page 8 of the GRS-S Bylaws)**

The Vice-President of Technical Activities is an elected member of AdCom appointed by the President. Reporting to the Vice-President of Technical Activities are the Chairs and Co-Chairs of the Society's Technical Committees, the Society's liaisons to ~~the following~~ IEEE-USA Government Relations Policy Committees: (Committee on Communications Policy, Committee on Transportation and Aerospace Policy, Energy Policy Committee and Research and Development Policy Committee); the Society's representative to the IEEE Standards Committee, any applicable Standards Development Committee, and to the International Organization for Standardization, Technical Committee 211 (ISO TC-211). The Vice-President of Technical Activities will provide regular reports to the AdCom on these committees, including their accomplishments, their membership, and their recommendations to the AdCom. The President may assign other duties.

#### **12. Director of Finance (from pages 8-9 of the GRS-S Bylaws)**

~~The Director of Finance, if not an elected Member of the AdCom, shall be an Ex-Officio Member of the AdCom with voting privileges. The Director of Finance must be a member of IEEE and of the Society. He/She shall be nominated by the Vice-President of Operations and Finance, appointed by the President, and ratified by the Administrative Committee. He/She shall normally serve a three year term, which may be renewed at the discretion of the AdCom. In the event that the Director of Finance cannot fulfill his/her duties, the Vice-President of Operations and Finance shall appoint an Acting Finance Director until a GRS-S Bylaws 9 replacement is found. The Director of Finance will report to the Vice-President of Operations and Finance. The Director of Finance is responsible for maintaining the society's finances, and for providing regular reports to the AdCom on the financial status of the society.~~

#### **14. Education Director of Education (from page 9 of the GRS-S Bylaws)**

The ~~Education~~ Director of Education, if not an Elected Member of the AdCom, shall be an Ex-Officio member of



AdCom without vote, is a Society member appointed by the President and reporting to the Vice-President of Information Resources. He/She shall normally serve a three-year term, which may be renewed at the discretion of the President. The **Education** Director of **Education** is responsible for overseeing the creation of educational videos related to the Society's field of interest, the creation of a directory of remote sensing and geoscience education in all regions, the student paper contest, and the travel merit scholarships. The **Education** Director of **Education** will create such committees as are required to ensure progress in these areas. The **Education** Director of **Education** will provide regular reports to the AdCom on these activities.

### **15. Editor of Transactions (from pages 9–10 of the GRS-S Bylaws)**

The Editor of the Transactions if not an Elected Member of the AdCom, shall be an Ex-Officio Member of the AdCom with **voting privileges** **vote** and shall be nominated by the Vice-President of **Publications Operations and Finance** appointed by the President and ratified by the Administrative Committee. He/She shall normally serve a three year term, which may be renewed **once for a two year term** at the discretion of the AdCom. In the event that the Editor cannot fulfill his/her duties, the Vice-President of Publications shall appoint an Acting Editor until a replacement is found. The Editor shall appoint or remove technical area Associate Editors as required, subject to ratification by the Administrative Committee. The Transactions Editor must be a member of the Society. The Editor is expected to attend AdCom meetings. The Editor will provide regular reports to the Vice-President of **Publications Operations and Finance** on such issues as the pages published, delays incurred, page charges recovered, and letters of praise or complaints received.

### **16. GRS Letters Editor (from page 9 of the GRS-S Bylaws)**

The Editor of the Geoscience and Remote Sensing Letters, if not an Elected Member of the AdCom, shall be an Ex-Officio Member of the AdCom with **voting privileges** **vote** and shall be nominated by the Vice-President of **Publications Operations and Finance**, appointed by the President, and ratified by the Administrative Committee. He/She shall normally serve a three year term, which may be renewed once for a two year term at the discretion of the AdCom. In the event that the Editor cannot fulfill his/her duties, the Vice-President of **Publications Operations and Finance** shall appoint an Acting Editor until a replacement is found. The Editor shall appoint or remove technical area Associate Editors as required, subject to ratification by the Administrative Committee. The GRS Letters Editor must

be a member of the Society. The Editor is expected to attend AdCom meetings. The Editor will provide regular reports to the Vice-President of **Publications Operations and Finance** on such issues as the pages published, delays incurred, page charges recovered, and letters of praise or complaints received.

### **17.18. Editor, Journal of Selected Topics in Applied Earth Observation and Remote Sensing (J-STARS) (from page 11 of the GRS-S Bylaws)**

The Editor of J-STARS, if not an Elected Member of the GRS-S AdCom, shall be an Ex-Officio Member of the AdCom with **voting privileges** **vote**. He/she shall be nominated by the J-STARS Steering Committee (JSC), appointed by the President and ratified by the GRS-S AdCom. He/she shall normally serve a three-year term, which may be renewed **once for a two year term** at the discretion of the JSC and the GRS-S AdCom. In the event that the Editor cannot fulfill his/her duties, the JSC shall appoint an Acting Editor in consultation with the Vice-President of **Publications Operations and Finance** until a replacement is found. The Editor shall appoint or remove technical area Associate Editors as required, subject to approval by the JSC. The J-STARS Editor must be a member of the GRS Society. The Editor is expected to attend GRS-S AdCom meetings. The Editor will provide regular reports to the JSC and GRS-S Vice-President of **Publications Operations and Finance** on such issues as the pages published, delays incurred, page charges recovered, and letters of praise or complaints received.

## **III. Meetings**

### **1. AdCom Meetings (from page 13 of the GRS-S Bylaws)**

The Administrative Committee shall hold at least two face-to-face meetings a year, one an Annual Meeting, normally held in the Fall to conduct the Administrative Committee elections. Meetings of the Administrative Committee may be called by the President of the Society at his/her own discretion, or upon request by two other members of the Committee. Between these meetings, the President may call meetings of the Executive Committee, consisting of the President, the Executive Vice-President, Past Presidents **during their term as member-at-large**, the Secretary, **Chief Financial Officer**, the Vice-President of Professional Activities, **the Vice-President of Publications Operations and Finance**, the Vice-President of Meetings and Symposia, and the Vice-President of Technical Activities and the Vice-President of Information Resources. The Executive Committee may conduct business as if the full AdCom were meeting, with the exception of elections and approval of the Society's budget. Any AdCom member may attend a meeting of the Executive Committee.



## IV. Committees

### 3. Awards Committee

#### A. Distinguished Achievement Award (from page 16 of the GRS-S Bylaws)

A plaque and a certificate may be presented for significant technical contributions over a sustained period. The contributions shall fall within the technical scope of Geoscience and Remote Sensing Society. The award shall be considered annually and presented if a distinguished candidate is identified ~~the most distinguished contribution to the field of Geoscience and Remote Sensing.~~

#### B. Outstanding Service Award (from page 16 of the GRS-S Bylaws)

A certificate may be presented to an individual who has given outstanding service for the benefit and advancement of the Geoscience and Remote Sensing Society. The award shall be considered annually and presented if an outstanding candidate is identified ~~outstanding service to the Geoscience and Remote Sensing Society.~~ GRS-S membership is required.

#### ~~C.G.~~ Education Award (from page 17 of the GRS-S Bylaws)

A certificate may be presented to recognize significant educational contributions ~~to the field of geosciences and remote sensing~~ in terms of the innovation and extent of its overall impact. The contributions can be at any level, including K-12, undergraduate and graduate teaching, professional development and public outreach. It can also be in any form (e.g. textbooks, curriculum development, and educational program initiatives). ~~The recipient must be a member or affiliate of the society.~~ The award shall be considered annually, but will only be awarded when an outstanding recipient is identified. GRS-S membership is required.

#### D. GOLD Early Career Award

A certificate and honorarium may be presented to recognize an IEEE GRS-S Graduate of the Last Decade (GOLD) member (defined as any IEEE member within 10 years of their first professional degree) at the time of nomination and making contributions in a GRS-S field of interest. The recipient must be a member or affiliate of the Society. The award shall be considered annually, but will only be awarded when an outstanding recipient is identified.

#### ~~E.G.~~ Transactions Prize Paper (from page 16 of the GRS-S Bylaws)

A certificate and honorarium may be presented for a paper published in the Geoscience and Remote Sensing Transactions

for the prior calendar year which is judged to be ~~of exceptional in terms of content and impact on the GRS-Society~~ ~~exceptional merit~~. If the paper has more than one author, the honorarium shall be shared.

#### F. Letters Prize Paper Award

A certificate and honorarium may be presented for a paper published in the Geoscience and Remote Sensing Letters for the prior calendar year which is judged to be exceptional in terms of content and impact on the GRS-S. If the paper has more than one author, the honorarium shall be shared.

#### G. J-STARS Prize Paper Award

A certificate and honorarium may be presented for a paper published in the Journal of Special Topics in Applied Earth Observations and Remote Sensing for the prior calendar year which is judged to be exceptional in terms of content and impact on the GRS-S. If the paper has more than one author, the honorarium shall be shared.

#### ~~H.D.~~ Symposium Prize Paper Award (from page 17 of the GRS-S Bylaws)

A certificate and honorarium may be presented for an oral paper presented at the prior year's IGARSS Symposium which is judged to be ~~of exceptional merit in terms of content and impact on the GRS-S.~~ If the paper has more than one author, the honorarium shall be shared.

#### ~~I.E.~~ Symposium Interactive Prize Paper Award (from page 17 of the GRS-S Bylaws)

A certificate and honorarium may be presented for an interactive or a poster paper at the prior year's IGARSS Symposium which is judged to be ~~of exceptional merit in terms of content and impact on the GRS-S.~~ If the interactive paper has more than one author, the honorarium shall be shared.

#### ~~J.F.~~ Student Prize Paper Award (from page 17 of the GRS-S Bylaws)

A certificate and honorarium may be presented to a student who is the first author of an oral paper and who presents the said paper at the current year's IGARSS Symposium in the student paper competition, if the paper is judged to be among the best three of all student papers entering the competition. ~~The prizes that will be awarded are the First, Second, and Third Student Paper Prizes are awarded.~~ The First Student Prize Paper Award is the *Mikio Takagi Student Prize*.

#### K. Chapter Excellence Award

A certificate and a monetary award to be used only for chapter activities may be presented to recognize excellence in a GRS-S or a Joint Local Chapter, demonstrated by exemplary



local GRS-S activities during the previous year. The award shall be considered annually and presented only when a deserving Chapter is identified.

### **8. History Committee (from page 18 of the GRS-S Bylaws)**

This Committee reports to the Executive Vice-President of Information Resources and is responsible for collecting historical information and maintaining the records of Society activities. The updating should be undertaken annually.

## **V. Definitions**

### **2. The Executive Committee (from page 19 of the GRS-S Bylaws)**

The Executive Committee consists of 8 of the following AdCom members: ~~The Executive Committee includes:~~ the President, the Executive Vice-President, Past Presidents during their term as member-at-large, the Secretary, the Chief Financial Officer, the Vice-President of Professional Activities, the Vice-President of Publications Operations and Finance, the Vice-President of Meetings and Symposia, the Vice-President of Technical Activities and the Vice-President of Information Resources.

## **GRS-S CONSTITUTION**

### **VI. Management and Offices**

Renumbering:

Number of item 9 (from page 5 of the GRS-S Constitution) changed to 10

Number of item 10 (from page 6 of the GRS-S Constitution) changed to 11

Number of item 11 (from page 6 of the GRS-S Constitution) changed to 12

Number of item 12 (from page 6 of the GRS-S Constitution) changed to 13

Number of item 13 (from page 6 of the GRS-S Constitution) changed to 14

### **3. Election of AdCom Officers and Appointments (from page 5 of the GRS-S Constitution)**

Administrative Administrative Committee shall elect one of its members as President and another as Executive Vice-President, each for a term of one year. The President and/or Executive Vice-President may be re-elected to a second one-year term, but the President may not serve more than two years in succession. The newly elected President shall appoint

for a one-year term the following officers who must be members of the Administrative Committee: Secretary, Chief Financial Officer, Vice-President of Professional Activities, Vice-President of Publications Operations and Finance, Vice-President of Meetings and Symposia, Vice-President of Technical Activities and the Vice President Information Resources. The newly elected President shall also appoint for one-year terms Directors as provided in the Bylaws. The elective officers shall be of at least Member rank.

### **4. Executive Committee (from page 5 of the GRS-S Constitution)**

The Executive Committee consists of 8 of the following AdCom members: ~~The Executive Committee includes:~~ the President, the Executive Vice-President, Past Presidents during their term as member-at-large, the Secretary, the Chief Financial Officer, the Vice-President of Professional Activities, the Vice-President of Publications Operations and Finance, the Vice-President of Meetings and Symposia, the Vice-President of Technical Activities, and the Vice President of Information.

### **8. Chief Financial Officer's Duties**

The Chief Financial Officer shall be responsible for maintaining the society's finances, and for providing regular reports to the AdCom on the financial status of the society. He/she shall prepare draft budgets for review and approval by the President and the AdCom. These budgets shall be submitted prior to TAB's approval. The Chief Financial Officer shall also provide regular reports on the investments by the Society and its reserves.

## **VIII. Meetings**

### **2. Bylaws (from pages 7-8 of the GRS-S Constitution)**

~~Bylaws to this Constitution may be adopted or amended by two-thirds vote of the Administrative Committee in the meeting assembled, provided that notice of the GRS-S Constitution 8 proposed change has been sent to each member of the Administrative Committee at least a week prior to such meeting, or a Bylaw or amendment may be adopted by two-thirds vote of the members of the Administrative Committee by written communication from the Chairman to each member and vote received by such means. The proposed Bylaws or amendment shall be published in the Society Transactions or Newsletter. No Bylaw or amendment shall take effect until it has been published and it has been approved by the Technical Activities Board of the IEEE.~~



(President's Message continued from page 7)

three-year rotation between North/South America, the Asia/Pacific region and Europe/Middle East/Africa. The new rotation will soon be in effect, with the first full cycle from 2012–2014.

- 2) Our new AdCom structure has been implemented since January 2010, and the necessary changes in the Constitution and Bylaws (published in this issue of the Newsletter) have been approved by the AdCom. This was an important step for our society in order to have our internal operations better reflect the focus of our activities. We have implemented a new portfolio with a Vice-President of Publications. Activities under this portfolio include the governance of our journals (TGRS, GRSL and J-STARS) and symposia publications, as well as of future publications. Prof. Wool Moon has been appointed as Vice-President of Publications for 2010.
- 3) Invitation of two teams from North America to submit a formal proposal to hold IGARSS 2014. The GRS-S AdCom will decide in favor of one of the proposals during the July meeting.
- 4) AdCom approval for the GRS-S technical co-sponsorship of 6 specialty symposia: International Workshop on Multi-Platform/Multi-Sensor Remote Sensing and Mapping – M2RSM 2011 (China), APSAR 2011 (Korea), URBAN 2011 (Germany), Pattern Recognition in Remote Sensing – PRRS 2010 (Turkey), URSI Microwave Signatures 2010 (Italy), GNSS Reflectometry, GNSS-R 2010 (Spain). More information is available in the announcements provided on our web site and in the last pages of the Newsletter. The approval of technical co-sponsorship is based on a strong involvement of GRS-S in the technical program organization and in the conference.
- 6) Production of a new GRS-S brochure showing the portfolio of activities and products of GRS-S.
- 7) Increase in the number of issues per year for our Geoscience and Remote Sensing Letters (GRSL) journal from 4 to 6 (starting in 2011).
- 8) Approval of two new awards: GRS-S GOLD Early Career Award and J-STARS Prize Paper Award. Final approval by the IEEE Awards Board is expected in June 2010.
- 9) Implementation of cross-cutting working groups in Earth Science focus areas in order to increase the connectivity among our 5 technical committees. Organization of an international workshop by our technical committee on Instrumentation and Future Technologies (IFT) early next year at ESA/ESTEC.
- 10) GRS-S Web Site: Development of a mobile version of the web site (optimized for portable devices). A number of features are already available on our web site, for example Facebook and LinkedIn groups, a webcast

pilot project of the IEEE GOLD Conference held in Livorno, Italy during April 2010 as well as the on-line version of the GRS-S Newsletter. Compilation of an updated article of the GRS-S history to be published in the Newsletter. Provision of web-based live broadcast of selected oral presentations during IGARSS 2010.

Our next AdCom meeting will be held in Honolulu, Hawaii on July 23–24, just prior to IGARSS 2010. It consists of a two-day meeting involving 18 elected members of the AdCom and several other ex-officio members and volunteers.

During the past few months, two new GRS-S Chapters have been formed, one in China (Nanjing Section, Chapter Chair Dr. Jiao Feng) and the other in Australia (Australian Capital Territory and New South Wales Joint Sections Chapter, Chapter Chair Dr. Xiuping Jia). Other chapter formation initiatives are underway in India and Turkey. GRS-S has now a total of 34 chapters, including two student chapters. The chapters provide an excellent opportunity to network with colleagues and experts in the local member community. Please check our web site for the GRS-S Chapter point of contact nearest to your home city.

Our Society is very proud to have our Past President, Prof. Anthony (Tony) Milne, as a candidate for the position of IEEE Director Division IX. Division IX consists of seven societies (including GRS-S) in the field of Signals and Applications. The elections will be held during August/September 2010 either by e-vote or paper ballot. Each GRS-S member will receive postal information about the election process, which will also include voting for IEEE President and 3 members of the GRS-S AdCom. Please join us in supporting Tony's candidacy with your vote. Please refer to <http://www.ieee.org/about/corporate/election/candidates.html> for more information.

Finally, I would like to thank Dr. David Kunkee for his exceptional work as Editor of the GRS-S Newsletter. David has just handed over the editorship to Prof. Lorenzo Bruzzone last month. David's contributions to our society have been multi-faceted, including chairing the Frequency Allocations in Remote Sensing (FARS) Technical Committee, serving as the GRS-S liaison to the IEEE-USA's Communication Policy Committee and GRS-S Newsletter Editor (2007–2010), and last but not least as Technical Co-Chair for IGARSS 2010. David will continue contributing to GRS-S in the scope of his three-year term (2010–2012) on the AdCom. I take the opportunity to warmly commend to you our new Newsletter Editor, Prof. Lorenzo Bruzzone, who has started very quickly in this position and is also supporting our society as Chair of the GRS-S Chapters Committee.

I look forward to seeing you again soon in Honolulu.

*Sincerely*  
**Alberto Moreira**  
*President, IEEE GRS-S*  
[alberto.moreira@dlr.de](mailto:alberto.moreira@dlr.de)



## CALL FOR PAPERS

Papers are solicited for a special issue of the IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing on *Ground Penetrating Radar: Modeling tools, Imaging methods and Systems concepts*. Submissions on Ground Penetrating Radar (GPR) related topics that address advancement of GPR technology are welcome. Paper submission in the following areas is highly encouraged:

- Novel GPR Systems & Antennas
- Quantitative and Qualitative Imaging methods
- Buried UXO/Landmine Detection/Classification Using Radars
- Subsurface Tomography Using Borehole Radars
- Subsurface Hydraulic Events Characterization Using GPR
- Planetary Subsurface Radar Survey
- Through- and Intra-wall surveys and concealed objects detection

### *Submission Instructions*

Authors should submit their manuscripts electronically to <http://mc.manuscriptcentral.com/jstars>. Prospective authors should follow the regular guidelines of the IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing as listed inside the back cover of the Journal and on the website. Please indicate in your submission that the paper is intended for the special issue by selecting “Ground Penetrating Radar: Modeling tools, Imaging methods and Systems concepts” from the pull down menu for manuscript type. Questions concerning the submission process should be addressed to [jstars-editor@ieee.org](mailto:jstars-editor@ieee.org).

**Manuscript Submission Deadline: October 1, 2010**

Inquiries concerning the special issue should be directed to the Guest Editors:

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## Call for papers

### *IEEE Transactions on Geoscience and Remote Sensing*

### *Special Issue on Spectral Unmixing of Remotely Sensed Data*

**Submission deadline: 30 September 2010**

A Special Issue of the *IEEE Transactions on Geoscience and Remote Sensing* on the topic of *Spectral Unmixing of Remotely Sensed Data* has been recently approved by the *IEEE Geoscience and Remote Sensing Society* (GRSS). Spectral unmixing has been an alluring exploitation goal since the earliest days of remote sensing. Due to limited spatial resolution, the spectral signatures collected in natural environments are invariably a mixture of the signatures of the various materials found within the spatial extent of the ground instantaneous field view of the imaging instrument. In recent years, the availability of instruments with a number of spectral bands that exceeds the number of spectral mixture components has fostered active research efforts in this area.

This *Special Issue on Spectral Unmixing of Remotely Sensed Data* is intended to present the state-of-the-art and the most recent developments in spectral unmixing from a remote sensing perspective. The *Special Issue* is expected to bring together experts from different institutions to provide a sample of latest-generation techniques in this active research area. The focus will be on recent developments in techniques and applications of spectral unmixing for data sets collected by hyperspectral imagers, which have substantially increased their spectral resolution (imagers with hundreds of narrow spectral channels are currently available, and instruments with thousands of spectral bands are under development), thus producing a nearly-continual stream of high-dimensional image data which demands effective techniques for data interpretation with sub-pixel precision.

Although analysis of hyperspectral data will be an important component of the *Special Issue*, contributions on spectral unmixing for other types of remotely sensed data are also welcome. Particular attention will be given to the possibility of applying spectral unmixing concepts to scenes with moderate spectral resolution (multispectral), and to the use of spectral unmixing for data compression purposes. High-quality contributions are solicited with emphasis placed on (but not limited to) the following topic areas:

- Linear and nonlinear mixture models for analysis of remotely sensed data
- Incorporation of spectral similarity measures in spectral mixture modeling
- Data dimensionality issues for spectral mixture analysis
- Automatic and semi-automatic endmember extraction in remotely sensed data
- Supervised endmember extraction and pure class modeling
- Adaptive endmember selection and multiple endmember spectral mixture analysis
- Unconstrained versus constrained fractional abundance estimation in remotely sensed data
- Blind source separation and its relation with spectral unmixing of remotely sensed data
- Incorporation of sparsity and spatial information in spectral unmixing of remotely sensed data
- Quantitative assessment of spectral unmixing
- Statistical validation of spectral mixture analysis models
- Extension of spectral unmixing to multispectral scenes
- Applications of spectral mixture analysis of remotely sensed data
- Analysis of intimate mixtures in remotely sensed data: soil, vegetation and other application-specific studies
- Spectral unmixing in planetary exploration
- High performance computing implementations of spectral unmixing techniques

Inquiries about the *Special Issue* may be directed to the Guest Editors listed below. Papers can be submitted using the manuscript central web link: <http://mc.manuscriptcentral.com/tgrs> and selecting *Spectral Unmixing Special Issue* from the 'Manuscript type' pull-down menu.

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Special Issue of the  
IEEE Transactions on Geoscience and Remote Sensing  
on contributions to EUSAR 2010 in the field of  
Synthetic Aperture Radar (SAR) Technologies and Techniques

This Special Issue is associated with the **8th European Conference on Synthetic Aperture Radar (EUSAR)**, which was in Aachen, Germany in June 2010 (<http://www.eusar.de>). **EUSAR** is the only international conference worldwide entirely dedicated to the technology, techniques development, and applications of Synthetic Aperture Radar for remote sensing. For the last 14 years **EUSAR** has provided an excellent forum for exchanging information and discussion on a wide variety of SAR topics, representing the latest SAR developments, and has helped to establish an international community of SAR engineers and scientists.

The objective of the Special Issue, open to all researchers, is to select outstanding contributions on recent advances in the field of synthetic aperture radar, bringing together participants from the research, industrial and academic communities who are engaged in projects on the technologies and techniques of synthetic aperture radar.

Contributions on topics of primary interest are expected. These include SAR and ISAR systems and sensors, innovative SAR concepts and applications, advanced SAR modes (ScanSAR, Spotlight, Squint, Bistatic), very low frequency SAR systems, bistatic and multistatic SAR systems, passive SAR systems, multimode and reconfigurable SAR systems, multi-satellite and small satellite SAR systems, sparse aperture SAR, ultra wide bandwidth and high resolution SAR, new SAR antenna concepts, digital beam forming, SAR signal processing, motion compensation and geocoding, signal processing for advanced SAR modes (spotlight, squint, bistatic), SAR data evaluation and handling, along and across-track interferometry, polarimetry and polarimetric interferometry, and moving target detection, STAP and change detection.

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Additional information for authors from [matthias.weiss@fhr.fraunhofer.de](mailto:matthias.weiss@fhr.fraunhofer.de) or:

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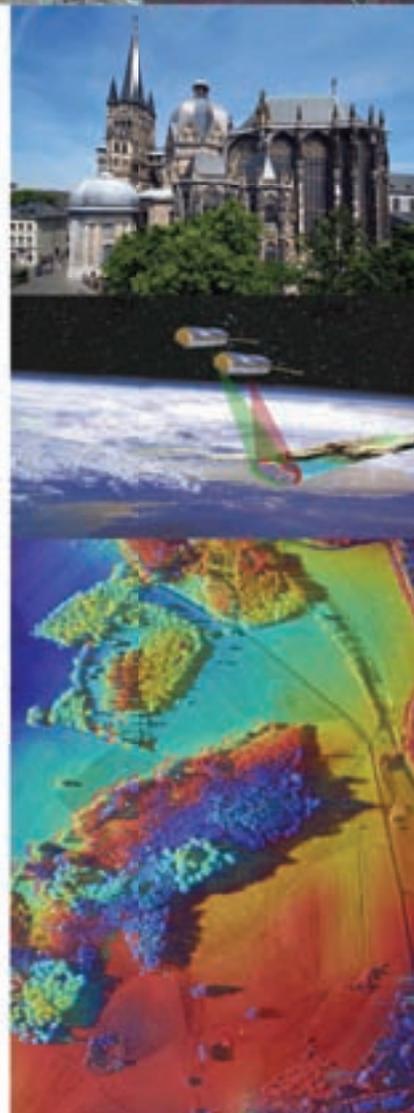
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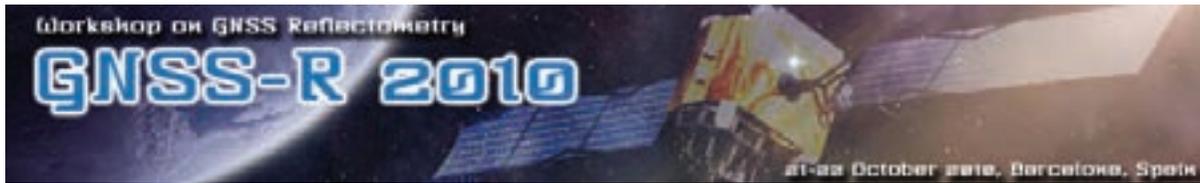
Submission deadline: 30 September 2010

Publication date: November 2011

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GNSS-R'10 is the new edition of the series of GNSS-R workshops organized since 1999 and hosted at different Institutions, to provide a forum for researchers working on different aspects and applications of the GNSS Reflectometry.

The Workshop is organized by the IEEC and will be held at the Universitat Politècnica de Catalunya (UPC), Barcelona, Spain on October 21-22, 2010.

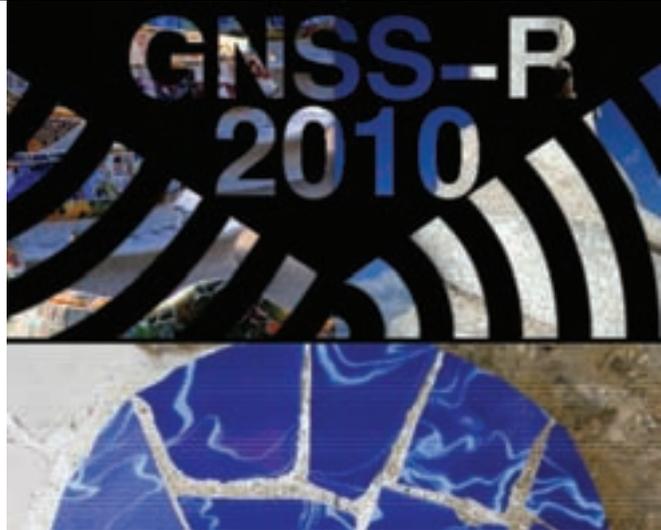
A preliminary, non-exhaustive, list of topics to be treated in the workshop is: Receivers and Simulators, New GNSS-R signals, Models, Applications: Sea Altimetry, Scatterometry, Soil Moisture and Vegetation, Sea Ice and Dry Snow, Radiometry/GNSS-R synergies, GNSS-R data and users, Planned missions etc.

Deadlines:

- Two page abstract: June 30, 2010
- Notification of acceptance: July 19, 2010
- Early payment and submission of final abstract: September 10, 2010



For more information please visit:  
<http://congress.cimne.com/gnss-r10>



**URSI Commission F  
 Microwave Signatures 2010  
 Specialist Symposium on Microwave  
 Remote Sensing  
 of the Earth, Oceans, and Atmosphere  
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**VI CeTeM-AIT Italian National Workshop  
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Centro di Telerilevamento a Microonde



Istituto di Fisica Applicata (IFAC-CNR)



Associazione Italiana di Telerilevamento

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 (IFAC-CNR, Florence, Italy)

**Registration fees:**

Before July 15: 350 Euro / After July 15 : 400 Euro

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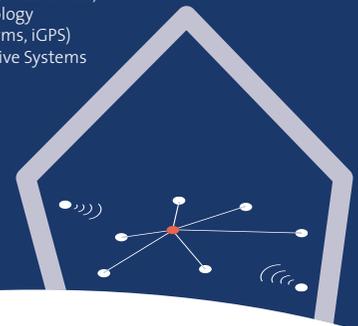
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*IGARSS 2010*  
*Honolulu*  
*July 25 – 30*

*Remote Sensing: Global Vision  
for Local Action*

*General Co-Chairs' Welcome*

On behalf of the IEEE Geoscience and Remote Sensing Society and the IGARSS 2010 Organizing Committee, we are pleased to invite you to Honolulu for IGARSS 2010. We are thrilled to be returning to Hawaii to host IGARSS on its 30th anniversary! In the true spirit of an international event, we will continue our tradition of gathering world-class scientists, engineers, and educators engaged in the fields of geosciences and remote sensing from around the world. We anticipate well over one thousand participants to enjoy a week of technical sessions, tutorials, exhibits and social activities.

For this 30th anniversary IGARSS we will celebrate our accomplishments over three decades of leadership in remote sensing instrumentation, techniques, and applications development. But perhaps more importantly we will look ahead to the future of our field with some fresh approaches and perspectives through our conference theme: Remote Sensing: Global Vision for Local Action. One such activity will be embodied in our plenary session, which will focus on the emerging field of Community Remote Sensing. We hope this plenary session, along with special tutorials and technical sessions, will inspire and excite our community for what is possible in the coming decade. We look forward to seeing you in Honolulu in July 2010!

Karen St.Germain and Paul Smits  
General Co-Chairs





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## UPCOMING CONFERENCES

See also <http://www.techexpo.com/events> or <http://www.papersinvited.com>

Name:	32nd Review of Atmospheric Transmission Models Conference	Location:	Honolulu, HI USA
Dates:	June 14–15, 2010	URL:	<a href="http://www.IGARSS2010.org">http://www.IGARSS2010.org</a>
Location:	National Heritage Museum, Lexington, Massachusetts	Name:	6th IAPR Workshop on Pattern Recognition in Remote Sensing, PRRS 2010
URL:	<a href="http://www.grss-ieee.org">http://www.grss-ieee.org</a>	Dates:	August 22, 2010
Name:	Whispers 2010 Hyperspectral Image and Signal Processing	Location:	Istanbul, Turkey
Dates:	June 14–16, 2010	URL:	<a href="http://www.iapr-tc7.org/prrs10/start">http://www.iapr-tc7.org/prrs10/start</a>
Location:	Reykjavik, Iceland	Name:	IPIN 2010 International Conference on Indoor Positioning and Indoor Navigation
URL:	<a href="http://www.ieee-whispers.com/">http://www.ieee-whispers.com/</a>	Dates:	September 15–17, 2010
Name:	The 18th International Conference on Geoinformatics	Location:	ETH Zurich Campus Science City, Switzerland
Dates:	June 18–20, 2010	URL:	<a href="http://www.ipin.ethz.ch">http://www.ipin.ethz.ch</a>
Location:	Beijing, China	Name:	SPIE Remote Sensing 2010
URL:	<a href="http://cn.geoinformatics2010.org/">http://cn.geoinformatics2010.org/</a>	Dates:	September 20–23, 2010
Name:	GPR2010 - XIII International Conference on Ground Penetrating Radar	Location:	Toulouse, France
Dates:	June 21–25, 2010	URL:	<a href="http://spie.org/remote-sensing-europe.xml">http://spie.org/remote-sensing-europe.xml</a>
Location:	Lecce, Italy	Name:	Workshop on GNSS Reflectometry
URL:	<a href="http://www.ibam.cnr.it/gpr2010">http://www.ibam.cnr.it/gpr2010</a>	Dates:	October 21–22, 2010
Name:	38th Scientific Assembly of the Committee on Space Research, COSPAR 2010	Location:	Barcelona, Spain
Dates:	July 18–25, 2010	URL:	<a href="http://congress.cimne.com/gnss-r10">http://congress.cimne.com/gnss-r10</a>
Location:	Bremen, Germany	Name:	8th International Conference of the African Association of Remote Sensing and the Environment (AARSE 2010)
URL:	<a href="http://www.cospar2010.org/index.html">http://www.cospar2010.org/index.html</a>	Dates:	October 25–29, 2010
Name:	International Geoscience and Remote Sensing Symposium, IGARSS 2010	Location:	Addis Ababa, Ethiopia
Dates:	July 25–30, 2010	URL:	<a href="http://www.aarse2010.org">http://www.aarse2010.org</a>