WHISPERS WORKSHOP - REPORT
all info on whispers2009 and 2010: www.ieee-whispers.com

With the technical sponsorship of the IEEE Geoscience and Remote Sensing Society (GRSS) and held last August in Grenoble, France, the 2009 Workshop on Hyperspectral Image and Signal Processing – Evolution in Remote Sensing (WHISPERS) was a great success, gathering 200 researchers from 30 different countries worldwide.

There were a total of 158 submitted papers, including 108 regular submissions and 50 invited contributions for selected special sessions. Among the 108 regular submitted papers, 87 have been accepted, corresponding to a 20% rejection rate. The evaluation of all the papers (including special session papers) was performed based on the reports of anonymous reviewers. In average, each paper received 2.8 reviews. The final program includes 16 oral sessions for 86 presentations and 6 poster sessions for 51 presentations. It also includes 3 outstanding plenary talks: Alan M. Lefcourt, from the Environmental Microbial and Food Safety Lab., USDA Agricultural Research Service, Beltsville, USA, Gianrico Filacchione, from the VIRTIS science/technical team, INAF-IASF Rome, Italy, and Kamaruzaman Jusoff, from the Department of Forest Production, Faculty of Forestry, Universiti Putra Malaysia (UPM), Malaysia.

All the papers published at WHISPERS 2009 are now available on IEEE Xplore (“browse conferences”, look for whispers)

• Hyper-I-Net partners for a best paper award!
  Jochem Verrelst, Michael Schaepman and Jan Clevers
  received one of the three best paper awards for their outstanding contribution “Fusing Minaert-K with Spectral Unmixing Forest Heterogeneity Mapping Using CHRIS-PROBA Data”. The authors received one of the most sought-after trophée, a copy of the “golden whispers” and a certificate of recognition. Congratulations!

• Hyper-I-Net partners sponsor / exhibit at WHISPERS
  Norsk Elektro Optikk AS, our Norwegian partner NEO, was present, demonstrating their most recent equipment. All the volunteering participants could have the chance to serve as model and enjoy a hyperspectral picture of themselves.
  Spectral Imaging Oy Ltd., our partner from Finland SPECIM, was also part of the event as one of the main sponsors of the conference.

HYPERINET NEWS

• First announcement: whispers 2010 in Reykjavik, Iceland, June 2010. The Second IEEE GRSS Workshop on Hyperspectral Image and Signal Processing - Evolution in Remote Sensing - (WHISPERS'10) will be held in Reykjavik, Iceland June 14-16, 2010. As for the very successful Whispers '09, Whispers '10 is intended for all researchers working with hyperspectral data, i.e., from physical modelling, sensor acquisition and calibration, to data processing and applications. The deadline for full 4 pages paper submission is on February 15, 2010. Please, visit the WHISPERS website: http://www.ieee-whispers.com/ Please note that the call also includes a call for special sessions you might organize and chair and a call for potential exhibitors / sponsors.

• Special issue on hyperspectral image and signal processing, IEEE Trans. on Geoscience and Remote Sensing (http://www.grss-ieee.org/Publications/TGARS) submission deadline: November 30, 2009. If you need an extra delay for your submission, please be in touch with the guest editors: Jocelyn Chanussot (jocelyn.chanussot@gipsa-lab.grenoble-inp.fr, GIPSA-Lab, Grenoble Institute of
PARTNER’S CORNER
No. 1 - Neural Networks Signal Processing Group, University of Extremadura, Spain

The Neural Networks and Signal Processing Group at University of Extremadura is currently formed by approximately 15 people, including professors, pre-doctoral and post-doctoral students. The main research areas comprise hyperspectral image analysis, signal processing, and efficient implementations of large-scale scientific problems on high performance computing architectures, including commodity Beowulf clusters, heterogeneous networks of computers and Grids, and specialized computer architectures such as field-programmable gate arrays (FPGAs) or graphical processing units (GPUs).

Previous experience of the group in transfer of knowledge and international research collaboration includes participation in various EU projects (in addition to HYPERINET), and also in projects funded by the national government of Spain and the regional government of Extremadura. The group has established collaboration agreements for transfer of knowledge and exchange of researchers with different institutions, such as the Computational and Information Sciences & Technology Office at NASA’s Goddard Space Flight Center, or the Remote Sensing Signal Image Processing Laboratory (RSSIPL) at University of Maryland in Baltimore. Members of the group have been involved in technical committees of relevant conferences at the IEEE and SPIE level, and top-cited scientific publications and patents have been produced related with the exploitation of hyperspectral imaging technology in different areas.

He is a Senior Member of IEEE and currently serves as an Associate Editor for the IEEE Transactions on Geoscience and Remote Sensing journal (since March 2007) in the areas of Hyperspectral Image Analysis and Signal Processing. He has edited a book on High-Performance Computing in Remote Sensing for CRC Press/Taylor and Francis, and guest edited several special issues for different journals, including a special issue on High Performance Computing for Hyperspectral Imaging for the International Journal of High Performance Computing Applications, and a special issue on Architectures and Techniques for Real-Time Processing of Remotely Sensed Images for the Journal of Real-Time Image Processing. Additional information about the research activities carried out by Dr. Plaza is available online at the following website: http://www.umbc.edu/rssipl/people/aplaza. Dr. Plaza is currently guest editing two open special issues (submission deadline in 2010) that may be of interest to HYPERINET partners:

Two outstanding researchers have been appointed with the University of Extremadura in the framework of the HYPERINET project:

- Dr. Maciel Zortea (original from Brazil) was integrated during 12 months as a HYPERINET experienced researcher (ESR) in an effort oriented towards the definition and implementation of advanced hyperspectral image processing techniques, in the context of remote sensing applications, by making use of the complementary nature of spatial and spectral information available in the data. Resulting from this effort, a new method for spatial pre-processing prior to endmember extraction for spectral unmixing of hyperspectral data was recently published in the *IEEE Transactions on Geoscience and Remote Sensing* journal (html). The relevance of the endmembers produced using this approach was also investigated and published in different conferences, such as the *First IEEE Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing* (html) or the *IEEE International Symposium on Signal Processing and Information Technology* (html).

- Mr. Marian-Daniel Iordache started his appointment at University of Extremadura on September 1st, 2009, and will be appointed as a HYPERINET early-stage researcher (ESR) for a period of 18 months, in the framework of a joint contract with the Technical University of Lisbon (IST) in Portugal. Mr. Iordache’s PhD is supervised by Prof. Jose M. Bioucas-Dias at IST and Prof. Antonio J. Plaza at the University of Extremadura. The research work that Mr. Iordache is carrying out is related with the concept of sparse hyperspectral unmixing, which aims at evaluating the suitability of the concept of sparsity in the improvement of abundance estimations of pure spectral constituents (endmembers) in mixed pixels obtained by remotely sensed hyperspectral imaging instruments. The first results obtained in the framework of this methodology have been recently presented in relevant conferences such as the *IEEE International Geoscience and Remote Sensing Symposium* held in Cape Town, South Africa, in July 2009, or the 6th *European Association of Remote Sensing Laboratories (EARSeL) SIG IS Workshop*, held in Tel-Aviv, Israel, in March 2009. Currently, Mr. Iordache is working towards the development of an advanced system for sparse unmixing of remotely sensed hyperspectral imaging and is planning on submitting a manuscript on this topic to be considered for publication in the prestigious *IEEE Transactions on Geoscience and Remote Sensing* journal.

Last but not least, another HYPER-I-NET ESR will be appointed at University of Extremadura in 2010: Mr. Alberto Villa, who is currently developing his research work in Reykjavik, Iceland, under the supervision of Prof. Jon Atli Benediktsson (University of Iceland) who coordinates his PhD research work together with Prof. Jocelyn Chanussot (GIPSA-Lab, Grenoble Institute of Technology). Additional information about the very interesting research activities currently being developed by Mr. Alberto Villa in the areas of hyperspectral image analysis and spectral unmixing can be found at the ESR/ER’s corner section of issue number 6 of this HYPERINET Newsletter.

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**ESR/ER’s Corner**

Katya Carmina, Centre National de la Recherche Scientifique, France

Originally I am coming from Kiev that is in Ukraine, there I was born and grew up. Shortly after graduating high school my family and I moved to Israel, there I continued my education with student preparation program. My BA studies were done in Tel-Aviv University at Geography department. There I encountered first time with a topic of remote sensing, which I found being the most exciting for me, so I decided to continue my studies towards Masters in this direction. The subject of my Master thesis focused on soil properties mapping using hyperspectral remote sensing tools. During my studies I encountered with many interesting projects, which required applications of remote sensing tools, teaching students. After graduating my masters (with excellence) in 2007, I applied to position in Hyper-I-Net project; it was an exceptional opportunity for me to continue my education towards PhD in geo-sciences and remote sensing. According to the program I will spend 2.5 years in France, in the laboratory of Planetology and Geodynamics of Nantes University, then 6 months in Lissabon, Portugal, finally my diploma will be obtained in Nantes University. For a current moment I am already 1.5 year in Nantes. My current study focuses on rocks and minerals properties and their spectral features at different scales. To perform a proper research in this field knowledge in mineral identification and basics petrology is required. This is quite new field for me, so I have to fill the gaps by taking related courses in our department. Doing this required French language knowledge (all courses in the department are in French), so I took an
intensive language course, which gave me basic knowledge. Now I continue learning French with an evening course, trying to improve my language level. People in our department in Nantes are really nice and help me a lot. And I am grateful to Hyper-I-Net project that gave me this exceptional opportunity.

**Questions & Answers**

**What is in your opinion the typical profile of a Hyper-I-Net ESR/ER?**

I don’t think there should be a typical profile of ESR or ER, all of us are different: coming from different fields and different countries and that is what unites us. I think all of us want to produce an excellent research, to give our part to the field of hyperspectral remote sensing.

**How in your opinion are young researchers like you benefiting from such an experience?**

This is a great opportunity for young researcher to work in different places over the Europe, to integrate to different communities in their institutes, to visit scientific conferences and to meet colleagues.

**How do you see your career perspectives and which are your expectations?**

First of all I expect to get some meaningful results of my work and to finish my PhD. Afterwards I would like to continue working in academic field.

**Recent Publications**

