NewsLetter

ISPRS Student Consortium

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ISPRS SC NewsLetter

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Frontpage designed by Ayda Aktaş

Would you like to join SC Newsletter team? Do you want to make a difference? Want to learn new skills?

SC Newsletter is at a stage where getting broader and better demands more people to be involved in the process of it's formation. That's why SC Newsletter team is looking for the following volunteers:

- More **people who would be willing to prepare articles** for existing or new rubrics,
- Designers of Newsletter,
- **English native speakers** for proof reading.

If you can help us with any of the above, please let us know!

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And also...
If you **would like to publish your research work** in the SC Newsletter send us your abstract on email written above. We will soon contact you for further information.

Dear Friends,

A new century has begun in the history of ISPRS. On the 4th of July at the centenary celebrations in Vienna, a new strategic plan was adapted by the approval of the General Assembly for upcoming years. This decision contains a broader and updated vision for future and is guidance for young generation. We should be aware of the foresight of experiences and understand it. Summer of 2010 in the Northern Hemisphere has been a very active period for ISPRS SC. Representatives of SC and board members attended and organized a number of technical and social events in collaboration with the ISPRS TC Presidents and local organizing committees at many of the ISPRS Technical Commission Symposiums. Furthermore, we are excited to organize the 5th ISPRS Student Consortium & WG VI/5 annual Summer School between 6th and 10th of November, in the city of Hanoi, Vietnam. The summer school will be focusing on the advanced remote sensing for a sustainable environment.
A last remark regarding the future and activities of SC; I had been given the opportunity to attend the United Nations, ISPRS and Scientific and Technological Research Council of Turkey (TUBITAK) "Workshop on Space Technology Applications for Socio-Economic Benefits". One of the key outputs of this very first of a series of workshops was to advance the current and future collaboration of ISPRS in related UN activities. I find this opportunity a great possibility for a future role and participation of the SC.

I conclude my message of this issue with good wishes for a successful and enjoyable summer school for the participants in Hanoi. I hope all our members benefit of Student Consortium; networking, support for their research and of course have fun!

On Behalf of Student Consortium,
Cemal Özgür KIVILCIM
ISPRS SC Chair

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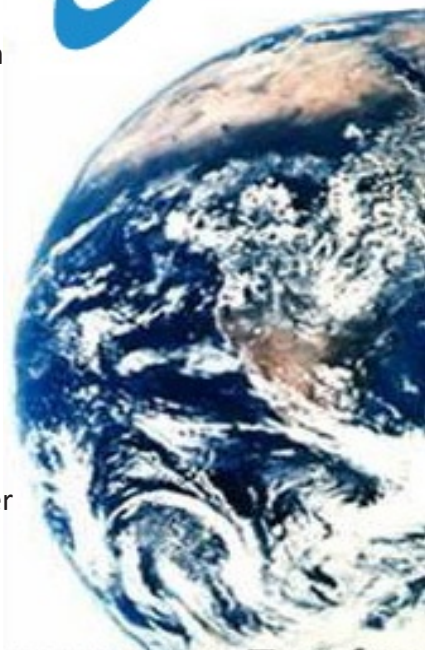


Let's Come Together to Make The World Smaller and Smaller, While Enlarging and Powering Our Student Consortium Network!!

JOIN US!!!

Interview
by Urša Kanjir

Dr. Nguyen Dinh Duong

Hanoi is not only the city where the 5th ISPRS SC Summer School will take place but also a place where our interviewee comes from. Professor Dr. Nguyen Dinh Duong is the Director of the Departement of Environmental Information Study and Analysis at the Institute of Geography in Hanoi, Vietnam. He is working on digital image processing, algorithm development, land cover classification and integration of RS and GIS. Currently, he is co-chair of ISPRS Working Group VI/5 »Promotion of the Profession to Young People« , Regional Representative of ISPRS for South-East Asia and he is actively involved in other organisations and journals. He won several awards during his work.

Can you explain us what is your research field/professional work at the moment?

My research field is application of geoinformatics in environmental studies. Maybe it is too broad, so I would like to narrow it down to the research activities, which I have been conducting for long time.

- Digital image analysis algorithm and software development: I have developed the WinASEAN software for education purposes and practical application. The version 3.0 has been awarded the silver prize in the CATCON during the ISPRS congress 1996 in Vienna. The CARST 1.0 package which is a combination of WinASEAN 5.0 with digital remote sensing and GIS textbooks (Remote Sensing Notes and GIS work books of Prof. Shunji Murai) was also awarded the silver prize in the CATCON organized during the ISPRS Commission VI symposium in Tokyo 2006.
- Development of spectral pattern analysis algorithm called GASC (Graphical Analysis of Spectral reflectance Curve) for land cover mapping using multitemporal and multispectral medium spatial resolution datasets: The algorithm was used for land cover mapping of the Indochina peninsula using the ADEOS-II GLI data.
- Oil spill detection by ALOS PALSAR data: An algorithm of oil spill extraction and classification including SAR brightness correction in image cross-track section has been proposed and implemented in a software package called OilDetect.
- Land use / land cover change detection is also one of my favour topics. I developed a quite nice tool in the WinASEAN package for change detection study which can visualize the cross matrix as colour image. The change matrix is usually shown in table form in popular image analysis systems.

Why did you decide for this profession in the first place (maybe you can tell us something more about your first steps)?

In 1983, I returned from Czechoslovakia as young scientist with the doctor engineering degree after 11 years of study in geodesy, cartography and photogrammetry. I joined the Center for Geography and Natural Resources, Vietnam Academy of Sciences and Technology. I decided to apply the knowledge I obtained in Czechoslovakia to the development of remote sensing applications. At that time, Vietnam was still under the US embargo so it was almost impossible to have access or to buy remote sensing software and equipment for use. Of course, visual interpretation was the most popular technique to extract information from satellite imagery. But as we know there are many disadvantages accompanying this. And also most satellite images are in digital form, so I decided to devote my research effort to digital image analysis. I am very proud that I have almost 30 year experience in digital image analysis programming. I like mixed language programming with C++ and FORTRAN. Windows programming is one of my fields but frankly speaking it is quite complicated and even if I have so many years of experience in programming I can not say today that I have mastered it. Now I am 56 years old but I still develop computer programs. This year I completed the new software package OilDetect for detection of oil spills at sea using SAR data.

"...even if I have so many years of experience in programming I can not say today that I have mastered it"

What would you advice to students and young professionals to be successful in their future career?

Well, this is a good question. Different experts will have different answers. Mine is maybe odd to you. There are many countries with diverse educational systems over the world today. However, I would like to make my answer common for all students. I do not like dogmatic advices, so I give you straight what I think:

- Be good in English. English is very important for Geomatics engineers today. Of course we cannot be at a very high level but capability of reading technical literature, discussion, writing technical papers is mandatory.
- To have broad knowledge over application fields. We need to be ready for different tasks. This is very important for students in developing countries where everything can change from day to day, including research topics.
- Have skills in computer programming. This is very important for Geomatics engineers and researchers in general. There are many advantages associated with programming, for example, you can implement your own algorithm, automate analysis, do a deep

See more on next page

research to compare different analysis approaches etc. When you master programming, you will love it. For me computer programming is like a hobby and time passes very fast when I sit in front of my computer and do programming to test new algorithms.

"We need to be ready for different tasks"

In your opinion how important is participation of young people in international professional events like Congresses, workshops, etc? What do you think are the benefits of such activities to youth and to profession?

Participation in workshops, seminars, conferences is very important for young researchers. It is a wonderful occasion to have an overview on what is going on, in particular the research field you have interest in. The goal of such events is to exchange information, to learn from others and to share your points of view. Do not be shy and develop your contacts to be in touch after the events. But for students from developing countries, participation in conferences, workshops etc. can be difficult due to travel expenses. But there are many donors and also many awards that if you win, you will get support. So my advice to you is work first and money later. When you show or publish a good research result, you may get financial support and you can participate in workshops and conferences, where you will have the opportunity to share your knowledge and improve your research. That was my way to develop my career. In 1992, at that time I was still a poor but very hard working researcher. I attended the Tropical Ecosystem Seminar in Khao Yai National park, Thailand. I demonstrated my image analysis software for IBM PC to Prof. Shunji Murai and other experts from Japan. After the seminar, I got financial support from RESTEC (Remote Sensing Technology Center of Japan) to develop the image analysis system ASEAN (Advanced System for Environmental Analysis with remote sensing data) for IBM PC compatible computers. By using the budget, I could participate in many ISPRS congresses, Asian conferences on remote sensing etc.

"...my advice to you is work first and money later"

How do you see the future of spatial information sciences (RS, photogrammetry, GIS, etc.)? What do you think are the most challenging fields and research problems in the profession?

Spatial information sciences will have a very promising future I think. The world around us should be assessed spatially. There are many challenging fields but I myself like to work in development of remote sensing based classification methodology. Nowadays, most analysis methods come from statistical data analysis concepts which are common for general data processing as maximum likelihood classification or neural network methods etc. None of these methods takes into consideration spectral characteristics of particular remote sensing sensors and uses the spectral invariants as one of the a-priori knowledge for classification. Also the issue how to overcome cloudiness in optical remote sensing could be interesting. There are many opportunities for young scientists and I hope that you will find out one you would like to try.

Hanoi, City of the Rising Dragon

This year's ISPRS summer school will take place in the capital of Vietnam, Hanoi, also known as the city of lakes, shaded boulevards and verdant public parks. The city is located in the northern part of the country on the right bank of the Red River and it is the second most populated city in Vietnam (after Ho Chi Minh City in the south of the country) with its 6.5 million inhabitants. Most foreigners on a short visit find Hanoi to be slow paced, pleasant and even charming.

The capital was founded in 1010, which means this year Hanoians are celebrating 1000 years of the establishment of the city. Hanoi is considered to be one of cultural centers of Vietnam, where most of Vietnamese dynasties had left behind their imprint. In 1888, the French took over the control and Hanoi became an administrative centre for the French colony of Indochina, some have called it even the Paris of the Orient. Hanoi's centre is an architectural museum piece, many of the colonial structures are an eclectic mixture of French and traditional Vietnamese architectural styles. The city hosts more cultural sites than any city in Vietnam, including over 600 pagodas and temples. Tourists mostly like to base themselves in the Old Quarter, part of Hanoi with most lively and unusual places, where you can buy anything from a gravestone to silk pyjamas.

A variety of options for entertainment in Hanoi can be found throughout the city. Modern and traditional theaters, cinemas, karaoke bars, dance clubs, bowling alleys, and an abundance of opportunities for shopping provide leisure activity for both locals and tourists. A popular traditional form of entertainment is water puppetry, which is shown for example at the Thăng Long Water Puppet Theatre.
Hanoi has rich food traditions and many of Vietnam's most famous dishes are thought to come from Hanoi. Perhaps most widely known is Phở, a simple rice noodle soup, often eaten as a breakfast dish at home, served in restaurants as a meal or found at street-side cafes.
Enjoy the city vibe!

Towards the Future of ISPRS Student Consortium

Kohei Cho
General Secretary
Asian Association on Remote Sensing (AARS)

AARS is one of the biggest regional remote sensing organizations in the world. Since 1980, we have been organizing the Asian Conference on Remote Sensing (ACRS) every year in some country in Asia. This year, we are organizing the 31st ACRS in Hanoi, Vietnam, and the ISPRS Summer School is planned to be organized in the same city just after the ACRS. This is a collaborative work between ISPRS and AARS. As many of you know, the ISPRS Summer School is one of the main activities of the ISPRS Student Consortium (SC). With this occasion, I would like to mention about my relationship with SC and my expectation for the future of SC.

Promotion of students is one of the important roles of ISPRS. In 2004 at the ISPRS Congress in Istanbul, I was assigned as the President of Technical Commission VI (TC VI) on education and outreach. During the Congress, about 20 international students came to meet me at the TC VI room and express their willingness to set up an official group on students within ISPRS. After several discussions with the Council members, the Student Consortium (SC) was set up under TC VI as the first official organization of students within ISPRS. In order to support SC, WG VI/5 on promotion of the profession to students was also set up. The perfect cooperation of WG VI/5 and SC realized a fruitful four Summer Schools during 2004 to 2009. SC has produced a number of Newsletters, and has expanded their network world-wide. At the Youth Forum Panel Session during the Beijing Congress in 2008, the SC statutes and SC officers were officially approved. As a supporter and an advisor of SC, I have to say that the progress of SC was much speedy and smoother than I first expected. Moreover, it is nice to see that the activities of SC are refreshing ISPRS.

Now, I have two expectations for the future of SC. One is “globalization” and the other is “graduation”. So far, the main members of SC are mostly from Europe. Coming to ISPRS symposiums and/or workshops are financially not easy for the students in other regions. In that sense, organizing the 5th Summer School in Asia just after the ACRS would be a good opportunity for the students in Asia to learn the activities of SC. It is also a good opportunity for the members of SC to exchange ideas with Asian students on the real globalization of SC. Now, let me talk about “graduation”. SC is not the final goal. After several years, the members of SC have to graduate SC and become regular members of ISPRS. Through the activities of SC, students are learning the system of ISPRS. We are expecting active students of SC to lead our society in the future. Don’t stay too long in SC. ISPRS WGs are waiting for your active participation.

ISPRS TC VII Symposium in Vienna

by Elena Lobo
Coordinator for Central America

Last July, ISPRS celebrated its 100th anniversary at its founding location in Vienna. The celebrations were followed by the Technical Commission VII Symposium, which took place from July 5th to July 7th. This symposium counted with an extensive and diverse scientific program. There were oral and poster sessions on a wide range of themes, including remote sensing applications, data fusion, Lidar and laser scanning, multi- and hyperspectral technologies, image processing, pattern recognition and many more.

To accompany the exciting scientific program, the event also counted with social activities, including an icebreaker and a conference dinner, which provided excellent opportunities for networking and learning about the local culture and traditions.

The attendance of the symposium was quite impressive, including young and senior scientists, commercial providers and representatives of institutions from all over the world.

A special note should be made about the presence of the SC at the event, which was made possible with the support from the organizing committee. There was a brief presentation at the opening session by Cemal Özgür (SC Chair) and we were able to have a booth throughout the duration of the symposium, which attracted interest from professors and students from diverse countries.

Altogether, the TCVII Symposium turned out to be a great experience and we encourage our readers to attend upcoming symposiums if they have the chance.

ISPRS Technical Commission V Symposium 2010, Newcastle upon Tyne, UK

by Marc Schulze, TU Dresden and
Matthias Kunz, Coordinator for UK

Between the 22nd and 24th June, the UK hosted the ISPRS Commission V Symposium in Newcastle upon Tyne. The venue for this conference was the stadium of Newcastle's football team Newcastle United.
After the official welcome from Prof. Jon Mills (President of Commission V) the program started with an opening keynote presentation on "Automation in Close-range Photogrammetry: A 25-year Journey". The developments and achievements of close-range photogrammetry over the last two decades are a good motivation for future work.
A wide field of topics (including laser scanning, cultural heritage, vision metrology, 3D modeling and many more) were covered in 18 technical and 2 poster sessions which offered something of interest for all participants. To give students a chance to present their work a special Student Consortium session was held. Alongside the technical sessions an industry exhibition showing the latest photogrammetric technology was available. The breaks were used to change experiences with peers and also to have meals or tea. In addition, it was possible to follow the FIFA world cup during the breaks. So everybody could join their interests; research, socialising and sport.
In the evening of 22nd June the ISPRS Student Consortium hosted a BBQ for all students attending the Commission V Symposium. The BBQ was held in a garden at the university campus and was free to attend for all students.

Unusually for Newcastle, the weather was good and the student enjoyed burgers, salads and drinks outside under the blue sky. Over 60 students from across the globe attended this event and it was a good chance for networking and relaxing. Another nice event was the conference dinner in the Great North Museum. This natural history museum shows the diversity of animal and plant kingdoms in the north-east of England. After dinner a folklore group showed typical dances. This event was a good occasion to recover from the usual timetable.

Student BBQ

One of the last agenda items was reserved for presenting the next ISPRS congress in 2012 in Melbourne/Australia. We hope that the organization will be just as good as in Newcastle this year and hope that the work of the Student Consortium will be continued in form of events and student sessions. Finally, the best presentations and posters were awarded in form of books with photogrammetric topics. It is an amazing fact that so many scientists from different countries (over 240 people at this event) are working on close-range photogrammetric problems and it is good to know that people around the world are interested in the results.

Conference

Spatial@Gov

by Joanne Poon
Coordinator for Australia

The past month has been busy in the Australian region for the geospatial community. "Spatial@Gov 2010" was recently held in the capital city, Canberra. This conference showcased how spatial information plays a key part in enabling government and business practices. It emphasised that collaboration between the government, academic and private sectors has the potential to drive the industry in good stead into the future. Shortly following this conference, the" Asia Pacific Spatial Excellence Awards" were held to recognise the achievements of individuals and organisations which have demonstrated excellence in projects with a spatial information component in a range of categories, such as innovation, environment, infrastructure to name a few. Individual awards were also presented to acknowledge service to the industry. It is great to see that there were also categories for best undergraduate, postgraduate and Young Spatial Scientist of the Year awards, recognising the contribution and importance of trainees, graduates and researchers to the future of our profession. Congratulations to all the winners!

More on Spatial@Gov at: http://www.cebit.com.au/2010/conferences/spatial-at-gov

by Mete Ercan Pakdil

Over the two years, the web site of ISPRS SC has continuously being developed and updated, reaching all over the world 24/7 use. The functionality and user interface is improved with the recent version 3.0 released late July last year.
We are keen on not only providing latest news, new opportunities and upcoming events from all over the world but also offering a social, up-to-date and user-friendly website to users. The web site manages and spreads this information by means of providing a social platform to members perfectly. For instance, a person John from United Kingdom can easily find another person who is from China and already has knowledge about his research topic, also he can use the private messaging module for communication. In addition, members are able to share their local events, news and job opportunities to members from different countries.

Here are some recent facts of the web site by mid of October 2010:

- SC has currently 453 members from 74 countries,
- The pages are visited over 16000 times every month,
- Over 60 topics are being discussed by our members,
- Over 20 events were added,
- This issue of the newsletter and all previous ones are available online free of charge.

And of course there is a lot more for newcomers and existing users to participate in projects!

To take more advantage of the website, join the SC at our WEB site today!

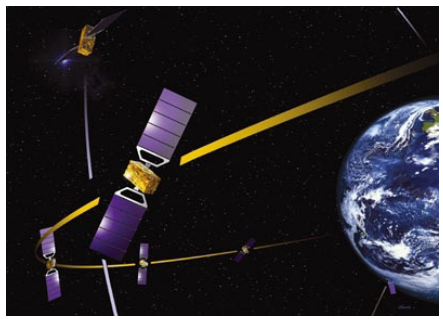
THE SATELLITE NAVIGATION SYSTEM PRINCIPLES

And Its Integration to Photogrammetry and Other Related Disciplines

by Thanasis Moysiadis,
University of Thessaly

Satellite navigation systems are systems that use signals transmitted by satellites and provide positional, navigational and timing information to the users. A satellite navigation system consists of a constellation of satellites (space segment) that continuously transmit signals to earth and are placed in orbit such that at least four can be seen from any location on earth. A receiver (end user segment) acquires the signals of the satellites that can be seen and uses a clock to record the time it takes to receive a signal from a satellite and the position of the satellite. Then, the distance to the satellite can be calculated multiplying the time and the speed of light. The satellite navigation receiver computes its position and time by making simultaneous measurements to the satellites. A signal from three satellites will sort out a 2D dimensional position or horizontal position. A 3D dimensional position can be acquired by at least four satellites within the signal range. A worldwide network of monitoring and control stations exists which determine the orbital path and monitor the health of the signals (ground control segment). The receiver best works when the antenna has a clear view of the sky; the signal can be largely affected by buildings or by dense vegetation. The range measurements a receiver makes to a satellite give errors such as orbit errors, atmospheric delays, timing errors and reflected signals. Satellite navigation systems can define the location from few meters to few millimetres accuracy according to the equipment and the data processing:

- hand-held navigational system (>5m)
- differential code-phase measurements (< 1m)
- carrier-phase measurements (< cm)



Source: ESA- J.Huart.

The Global Positioning System (GPS) is the most widely used satellite navigation system created and controlled by the US Department of Defense, initially for military purposes but extended later for civilian usage. It consists of a constellation of 24 satellites (4 satellites in 6 orbital planes) orbiting around the Earth at an approximate altitude of 20200 km every 12 hours. Each satellite transmits in dual frequency (L1 1575.42MHz and L2 1227.60MHz).

GLObal NAvigation Satellite System (GLONASS) is managed by the Russian Federal Space Agency and operated by the Russian Ministry of Defense, started during the Cold War in 1976 and became operational in 1995. It consists of 24 satellites (3 orbital planes) at an altitude of 19100 km every 11 and 1/4 hours. Each satellite transmits in slight different frequency (L1 and L2 bands) opposed to GPS. Due to the changes in the ex-Soviet Union it temporarily stopped its operation and nowadays is expected to become fully operational again.

GALILEO is a joint initiative of the European Commission (EC) and the European Space Agency (ESA) and will be inter-operable with GPS and GLONASS. GALILEO is based on a 30-satellite constellation orbiting at an altitude of 23600km every 14 hours. Each satellite will be in the same place in the sky every 10 days. By offering dual frequencies as standard, Galileo will deliver real-time positioning accuracy down to the metre range. GALILEO is expected to be fully operational in 2013.

COMPASS is China's navigation system, a constellation of 35 satellites and the ranging signals will have typical complex structure typical to GALILEO and GPS. There will be two levels of positioning service: open and restricted for civil and military purposes respectively. The system is expected to be operational by 2020.

Indian Regional Navigational Satellite System (IRNSS) is India's autonomous satellite navigation system developed by the Indian Space Research Organisation approved in 2006 and indented to be operational in 2014. It will be consisted of 7 satellites; the first satellite is to be launched in 2011 providing an accuracy of better than 20 meters.

How these satellite navigation systems can be integrated in photogrammetric processing and other related disciplines? Satellite navigation systems can be used for ground control points' generation, controlling photo acquisition and determining image positions. Other navigational systems such as the inertial navigation systems (INS) contain precise linear and angular accelerometers which provide positional and orientation information respectively. Aerial triangulation (block adjustment) combines the basic photogrammetric processes of resection and intersection. Due to the widespread use of the aforementioned satellite navigation systems, increased accuracy and reduction of control points to the minimum required can be achieved since positional and orientation information is available. Most of the triangulation processes uses the bundle adjustment which allows the incorporation of additional data such as navigational information for the determination of the exposure stations. Moreover, it provides an independent estimate of the image position for the photogrammetric resection.

In airborne laser scanning systems, in addition to the lidar, INS and precision satellite navigation receivers provide geo-referenced laser beams while in terrestrial laser scanning systems, the resulted point cloud can be directly georeferenced into the local geographical projection system. Similarly, navigation systems combined with INS are integrated in Unmanned Aerial Vehicles (UAV), providing information on the vertical and horizontal movements of the UAV relative to the ground.

Source *

Satellite Navigation Systems have many applications from the general aerial surveying-3D mapping and imaging to archaeology, agriculture, biology, geology and soil science. Its fairly easy use and the integration to airborne and terrestrial platforms can reduce the ground control point's requirements and provide an independent estimate in photogrammetric processing.

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Source*: Front cover of the book "Elements of Photogrammetry; with applications in GIS"-Wolf, P.R. and Dewitt, B. A.

The time series change detection methods of remote sensing

by Kaja Kandare

In this article we are going to present the change detection methods of multi – spectral image data. We will largely concentrate on time series analysis in spite of other methods like characteristic analysis of spectral types and vector analysis of spectral changes. There are three main methods of change detection discussed:

1. Image subtraction method;
2. Image ratio method;
3. The method of change detection after classification.

After that we will proceed with the basic principles of the three main methods, which are introduced. The experiments of the methods are performed with ERDAS software, analyzing their results and comparing their advantages and disadvantages. The image subtraction method is one of the most extensively used methods. It has a simple and straightforward concept, is easy-to-understand and easy-to-use. It is beneficial for collecting change information at areas such as the beach zones, estuaries and water channel ditches. The main shortcoming of this method is that it does not reflect the class type of changes and is not suitable for change detection of urban areas. The image ratio method can be used to estimate change detection in cities and analysis of vegetation and soil. The choice of threshold value is difficult. Its disadvantage is also that it cannot reflect the class type of changes. The method of change detection after classification is more complicated and time-consuming than the two previous ones. Its benefit is that it can provide information on class type of changes, i.e. what class is changed to what class. The drawback of this method is that it is not suitable for change detection of details of urban areas.

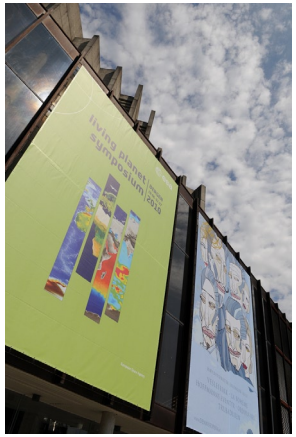
To read more about ***change detection methods*** click here

Source: http://herd.typepad.com/

ESA's Living Planet Symposium

by Vasileios Kalogirou, RSAC c/o ESA/ESRIN.

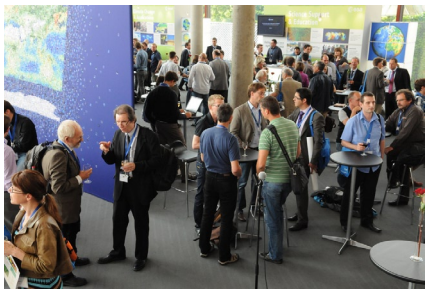
Almost four months have passed from the end of ESA's Living Planet Symposium, but it is worth to have a look in the achievements and highlights. It is the largest scientific meeting regularly organized by ESA and the first that I personally attended. More than 1200 scientists and users attended the event, which took place in Bergen - Norway, from 28th June - 2nd July. The weather was generous with the attendees, allowing also some visits in the beautiful port of Bergen.


Credit: ESA - T. Schonfelder

Mr. Trond Giske, Norwegian Minister for Trade and Industry welcomed the attendees in Bergen. The opening plenary session was partly dedicated to the **Earth Explorers** of ESA, so it involved presentations on the operational condition of the ones that are already in orbit (i.e. GOCE, Cryosat and SMOS). I found particularly interesting the way Prof. Rummel, from University of Munich, explained the basic principle of GOCE (Gravity field and steady-state Ocean Circulation Explorer) measurements. Prof. Kerr from CESBIO, reported on the good condition of the Soil Moisture & Ocean Salinity mission (SMOS) and also highlighted the problems that they are currently facing with radio frequency interference (RFI) from illegal radio transmissions.

There were two sessions on the GEO (Group on Earth Observations) task on Forestry, involving presentations on the coordinated acquisitions for data provision in developing countries. **GEO Forest Carbon Task** has been presented and its support to UNFCCC activities and UN's REDD initiative (Reducing Emissions from Deforestation and Forest Degradation in Developing Countries). Scientific results from ESA's projects on biomass estimation utilizing various SAR data have been presented by Dr. Maurizio Santoro and Prof. Christiane Schmullius, from University of Jena. On the Land Cover session, Dr. Olivier Arino and his team from ESA reported on the upcoming **GlobCover 2009** production, the next global land cover map which is going to be released by ESA.

The GMES session (Global Monitoring for Environment and Security) overviewed the current condition of the future Sentinel missions. Many attendees followed the **Climate Change Initiative** sessions, presenting the expectations for the next 3 years. The Climate Change Initiative has been launched by ESA in 2009 to support the systematic generation of Essential Climate Variables (ECVs). Mark Doherty, Head of Exploitation and Services Division, introduced the attendees into the program, followed by individual presentations by the partners of each ECV project. The symposium hosted a large variety of sessions covering thematic applications such as coastal, ocean and land altimetry, sea ice, glaciology, wetlands etc.


Credit: ESA - T. Schonfelder

It is difficult to fit in a short report the achievements of a symposium which ran in **8 parallel sessions for five days**. Poster sessions were hosted every afternoon, spread all around the main hall. We all left Bergen with positive impressions for both the city and the organization. If you didn't have the opportunity to attend the Living Planet Symposium, you could still have a look at ESA's website: http://www.esa.int/SPECIALS/Living_Planet_Symposium_2010/.

Geoinformation Student Forum

by Hiroyuki Miyazaki

On 21st September 2010, the Geoinformation Student Forum 2010 was successfully held as an event of G-Spatial EXPO at Yokohama, Japan. It has been held every year since 1999 to promote students' communication and networking over geoinformation-related studies with the support of Japan Association of Surveyors.


Poster session

This year, 80 students came from undergraduate, master and PhD courses of 12 universities across Japan to present their research work with posters, videos and demonstrations. The topics ranged from basic techniques (remote sensing, photogrammetry, global datasets, laser scanning, wearable sensors and sensor networks) to applied research (environmental management, disaster management, urban study, archaeology, location-based services and regional information services). It gave a great opportunity to exchange benefits from technologies and needs from applications. The students broadened their vision on their own work and stimulated the motivation of each other. The program also included an idea competition on how maps would be realized 200 years later. Group discussions over various fields and ages created exciting plots for new maps in the future: 3D maps for flyable cars; maps recorded with sound, smell and touch; wearable maps on eyes.

The 12-year activities of the Geoinformation Student Forum have strengthened the network among students of geoinformation in Japan. Last year, some students in Kansai (west part of Japan) launched a new conference inspired by Geoinformation Student Forum. The second Kansai conference will be held on 23rd November 2010 (http://gi-studentjp.co.cc/kansai/2010/). I hope that the growing community of Japanese students will increasingly and actively cooperate in the international student activities of the ISPRS Student Consortium.

Visit Geoinformation Student Forum at: http://gi-studentjp.co.cc/s_forum

Silvilaser

by Krzysztof Stereńczak

Last September, more than 200 scientists from around the world have met in Freiburg to share their experience in using LIDAR systems for forest ecosystems studies at the 10th International Conference on LiDAR Applications for Assessing Forest Ecosystems which was held in Freiburg, Germany. The main topics of the conference were as follows:

1. Terrestrial lasers for forestry applications
2. Airborne lasers for forestry applications
3. Multi-sensoral data
4. Ecological and landscape inventories
5. Biomass and forest fuel assessment
6. Satellite-based Lidar systems

Credit: Piotr Tompalski

The main part of the conference was covered by topics related to Airborne Laser Systems, especially for single tree inventory methods. This topic is still of high scientific interest and needs more methodological improvements and development. New algorithms were evaluated with using different datasets. This evaluation was done under the WoodWisdom WW Iris Project. Terrestrial Laser Systems once again were the second topic of interest. Because of technological developments, their size has become very small, so their potential use for inventory purposes become more feasible.

Other topics were treated by more than 20 presentations. Once again this was a great and very fruitful event organized by Professor Barbara Koch - Conference Chair, Dr. Gerald Kändler - Conference Co-Chair and the teams of FELIS Albert-Ludwigs-University and Forest Research Institute of Baden-Württemberg.

For more info about Silvilaser visit: http://www.silvilaser.de/

Pacific Island GIS & RS User Conference 2010
Suva, Fiji, 22 - 27 Nov 2010
For more info visit: http://www.picisoc.org/PacGISRS2010

3D Digital Landscape Models "From 2D cartographic to 3D topographic data" - 2nd EuroSDR Workshop
Munich, Germany, 29 - 30 Nov 2010
For more info visit: http://www.eurosdr.net/workshops/3d_2010/

5th Session of the International Conference Geotunis 2010: The use of GIS & Remote Sensing for Sustainable Development
Tunis, Tunisia, 29 Nov - 3 Dec 2010
For more info visit: http://www.geotunis.org/2010/

European LiDAR Mapping Forum Conference & Exhibition "European event for airborne, bathymetric & terrestrial LiDAR, with a particular focus on mobile mapping systems"
The Hague, Netherlands, 30 Nov - 1 Dec 2010
For more info visit: http://www.lidarmap.org/ELMF/

2nd International Conference on Science and Engineering (ICSE 2010)
Yangon, Myanmar, 2 - 3 Dec 2010
For more info visit: http://icse.most.gov.mm

IAA Conference
Yaounde, Cameroon, 6 - 7 Dec 2010
For more info visit:
http://www.un-spider.org/event-en/3688/2010-12-06/international-iaa-conference-yaound%C3%A9-cameroon-6-7-december-2010

WG I/3 International Workshop on Multi-platform/Multi-sensor Remote Sensing & Mapping (co-sponsored with IEEE GRSS)
Xiamen, China, 10 – 12 Jan 2011
For more info visit: http://www.mpmsrsm2011.org/

Geospatial World Forum
Hyderabad, India, 18 – 21 Jan 2011
For more info visit: http://www.geospatialworldforum.org/

STUDIES AND PRACTICAL WORK

This column serves as a guide for the students who are thinking or are willing to go studying or doing practical work abroad. We have searched for new opportunities in different faculties, schools and other learning programs all over the world in order to encourage as many students as possible to take new steps towards new horizons.

EUMETSAT is seeking an **Optical Scientist** for Sentinel-3 Satellites. This scientist will support the advancement of the understanding and utilisation of optical instruments on low earth orbit satellites, in particular those embarked on the Sentinel-3 satellites. He/She will also be responsible for scientific developments to improve the use of data from optical instruments on Sentinel-3. Based in **Darmstadt, Germany**, the post is offered on an initial four-year contract. Applications should be received by November 14, 2010.
Read full announcement at: http://www.nature.com/naturejobs/science/jobs/165055-Optical-Scientist-for-Sentinel-3-Satellites

The **WFI International Fellowship Program** is open to U.S. and Foreign Citizens. For over a decade, the **World Forest Institute** (WFI) has offered a unique International Fellowship Program to professionals in natural resources—such as foresters, environmental educators, land managers, NGO practitioners and researchers—to conduct a practical research project at the **World Forestry Center in Portland, Oregon, U.S.A.** In addition to their specific research projects, Fellows participate in weekly field trips, interviews and site visits to Northwest forestry organizations, state, local and national parks, universities, public and private timberlands, trade associations, mills, and corporations. The Fellowship is a unique opportunity to learn about sustainable forestry from the Pacific Northwest forestry sector, and to work with colleagues from around the world. Applications are accepted year-round for 6-12 months term fellowships.
Read full announcement at: http://www.scholarshipnet.info/nondegree/usa-world-forest-institute-wfi-international-fellowship-program/

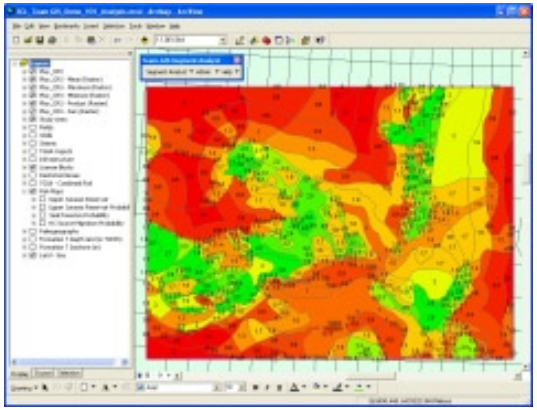
The **University of Sydney** (Australia), is awarding a **PhD scholarship in Plate Tectonics/Geodynamics** to work with **Professor Dietmar Müller's EarthByte Group** at the School of Geosciences, as part of the project **"The Virtual Geological Observatory: a four dimensional view into the Earth through deep-time data-mining"**. The position will focus on building plate kinematic models, including plate deformation, and on linking plate kinematic models to mantle convection, mantle seismic tomography and geological observations, such as palaeogeography, basin stratigraphy, and data constraining rock uplift. Applications should be received by **December 10, 2010**.
Read full announcement at: http://www.scholarshipnet.info/postgraduate/australia-phd-scholarship-in-the-virtual-geological-observatory-the-university-of-sydney/

The **Departments of Meteorology and Scientific Computing at Florida State University** (USA) invite applications for a **Postdoctoral Research Associate position** to pursue work on topics related to variational **4-D data assimilation**. This research is related to a NOAA research grant for assimilating GOES-R lightning data in a WRF 4-D VAR version with observation operators. Candidates with experience in the use of adjoint codes for atmospheric model physics and their adjoint will be preferred. Exposure to MPI or OPEN MP is an additional plus. The position initially is for 12 months, with the possibility of extension to 3 years. Applications should be received by **December 1, 2010**.
Read full announcement at: http://www.earthworks-jobs.com/climate/fsu10101.html

The **European Erasmus Mundus Masters Program in Sustainable Forest and Nature Management (SUFONAMA)** is a two-year world-class integrated course aimed at qualifying graduates to deal with the enormous challenges in sustainable management of natural resources. The Masters Course is organized by a Consortium which involves five institutions: University of Copenhagen (Denmark), Bangor University (United Kingdom), University of Goettingen (Germany), Swedish University of Agricultural Sciences (Sweden) and University of Padova (Italy). Regarding 2011 edition, applications from international students (non-European and European) must be received no later than **December 1, 2010**.
Read full announcement at: http://www.sufonama.net/eng/Home/home_7_26.html

Exprodat Create Segment Analyst Version 202

Exprodat has released version 202 of Team-GIS Segment Analyst. The release contains support of raster and contour datasets as inputs, the ability to apply weightings to input layers and a data extraction tool that enables integration with third party applications. Team-GIS Segment Analyst is an ArcGIS Desktop extension that depends on a single toolkit to create common risk segment (CRS) maps while mapping play fairways. It creates CRS maps of basins and play fairways.

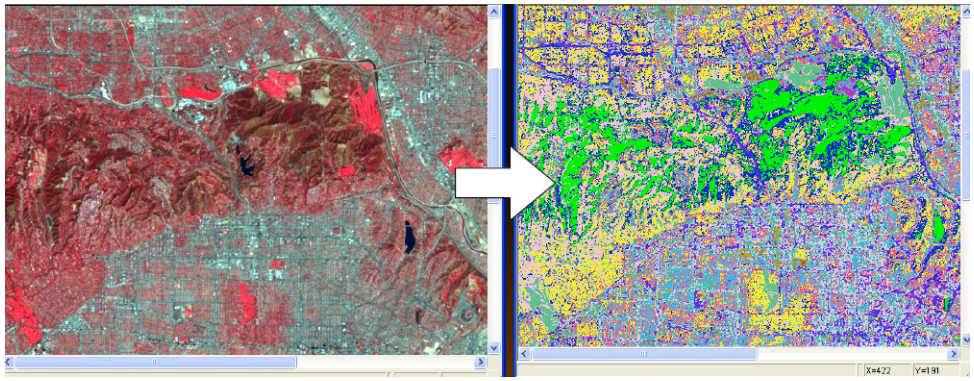


With Team-GIS Segment Analyst the user can better understand play extents, spatial risk distributions, identify 'sweet-spots' and ultimately develop and refine play and portfolio investment strategies.

Source: www.exprodat.com/software/TGSA

OpenDragon

The Global Software Institute (GSI)'s OpenDragon offers a full suite of image analysis and raster GIS capabilities including image enhancement, supervised and unsupervised classification, geometric correction, measurement and statistics, vector capture and display, slope, aspect and buffer calculations and multi-criterion decision making. OpenDragon also includes the OpenDragon Toolkit, which allows users who can program in C to extend the software functionality.
Source: www.open-dragon.org



GIS - Stack Exchange
Q & A for cartographers, geographers and GIS professionals
http://gis.stackexchange.com/

SERVIS
Regional Visualization and Monitoring System
http://www.servir.net/

RESOURCES
Remote Sensing/GIS and Human Health
http://geo.arc.nasa.gov/sge/health/rsgisbib.html

FREE SOFTWARE
Free Geography Tools
http://freegeographytools.com/

EDUCATION
GIS Programming Makes You Lazy
http://sites.google.com/site/boxshapedworld/tableofcontents

JOBS, CAREER OPPORTUNITIES
Earthworks
http://www.earthworks-jobs.com/

JOURNALS
Asian Journal of GEOINFORMATICS
http://www.geoinfo.ait.ac.th/ajg/

The Geospatial World Magazine
http://www.geospatialworld.net/

RELATED ORGANIZATIONS, ASSOCIATIONS
Asian Association on Remote Sensing
http://www.a-a-r-s.org/acrs/

Invitation to Join ISPRS SC Society

Please visit our SC web page www.isprs-studentconsortium.org where you will find more information about Student Consortium, our previous Newsletter issues, SC activities, photo galleries from previous Summer Schools, interesting links etc.

You can also register to our website. Just click on members area and recive ISPRS SC Newsletters, information about special student offers and grants, information on practical training, academic exchange and etc. within the related fields of ISPRS. Of course, by registering you can decide if you want to participate actively or not. In any case you are more than welcome to join SC community!

Our previous Newsletter issues