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The IAG Newsletter is under the editorial responsibility of the Communication and Outreach Branch (COB) of the IAG.

It is an open forum and contributors are welcome to send material (preferably in electronic form) to the IAG COB (newsletter@iag-aig.org). These contributions should complement information sent by IAG officials or by IAG symposia organizers (reports and announcements). The IAG Newsletter is published monthly. It is available in different formats from the IAG new internet site: http://www.iag-aig.org

Each IAG Newsletter includes several of the following topics:

I. news from the Bureau Members  
II. general information  
III. reports of IAG symposia  
IV. reports by commissions, special commissions or study groups  
V. symposia announcements  
VI. book reviews  
VII. fast bibliography

Books for review are the responsibility of:  
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Meeting Announcements

Summer School “GRACE / GRACE-FO applications for the terrestrial water cycle”
September 15-19, 2014 Mayschoss, Germany

Dear Colleagues,

the German DFG1257 ”Mass transport” program invites PhD students to participate in a summer school on the topic "GRACE / GRACE-FO applications for the terrestrial water cycle". The school will be held from September 15-19, 2014 in Mayschoss, near Bonn (Germany). Registration is possible starting now until July 15th. For more information please see the following website:

http://www.massentransporte.de/?summerschool

Please distribute this invitation to potentially interested students.

Kind regards,
Annette Eicker, Jürgen Kusche

Meetings Calendar

30th IUGG Conference on Mathematical Geophysics
June 2-6, 2014, Merida Yucatan, Mexico
URL: http://eventos.iingen.unam.mx/IUGG2014/

EUREF Symposium 2014
June 4-6, 2014, Vilnius, Lithuania
URL: http://www.euref.eu/euref_symposia.html

ICC&GIS 2014
June 15-21, 2014, Riviera, Bulgaria
5th Jubilee International Conference on Cartography & GIS
URL: www.iccgis2014.cartography-gis.com

IGS Workshop 2014
June 23-27, 2014, Pasadena, CA, USA
URL: http://igscb.jpl.nasa.gov/pipermail/igsmail/2013/008013.html

The 3rd International Gravity Field Service (IGFS) General Assembly
June 30-July 6, 2014, Shanghai, China

International Symposium on Certification of GNSS Systems & Services
July 8 - 9, 2014, Dresden, Germany
URL: http://www.dgon-cergal.org/

GENAH 2014
July 22-25, 2014, Matsushima, Miyagi, Japan
International Symposium on Geodesy for Earthquake and Natural Hazards
URL: http://genah2014.jpn.org/index.html

**AOGS 11th Annual Meeting**

*July 28-August 1, 2014, Sapporo, Japan*


**40th COSPAR Scientific Assembly**

*August 2-10, 2014, Moscow, Russia*

URL: http://www.cospar-assembly.org/

**XXXI General Assembly and Scientific Symposium of the URSI**

*August 16-23, 2014, Beijing, China*

URL: http://www.chinaursigass.com/

**3rd International School on “Least Squares Approach to Modelling the Geoid”**

*August 18-22, 2014, Stockholm, Sweden*

URL: http://www.kth.se/en/abe/inst/som/avdelningar/geo/geodesi/handelser-1.78120

**18th WEGENER General Assembly: Measuring and Modelling our Dynamic Planet**

*September 1-4, 2014, Leeds, UK*

URL: http://see.leeds.ac.uk/wegener/

**Summer school on “GRACE/GRACE-FO applications for the terrestrial water cycle”**

*September 15-19, 2014, Mayschoss, Germany*

URL: http://www.massentransporte.de/?summerschool

**Journees 2014 “Systemes de reference spatio-temporels”**

*September 22-24, 2014, Pulkovo Observatory, St. Petersburg, Russia*

URL: http://journees2014.gao.su/

**Eighth FORMOSAT-3/COSMIC Data Users’ Workshop**

*September 30 – October 2, 2014, Boulder, USA*

URL: www.cosmic.ucar.edu/workshop_2014/

**INTERGEO / Geodätische Woche**

*October 7-9, 2014, Berlin, Germany*

URL: http://www.intergeo.de

**European VLBI Network (EVN) Symposium**

*October 7-10, 2014, Cagliari, Italy*

URL: http://www.evlbi.org/meetings/meetings.html

**REFAG2014**

*October 13-17, 2014, Luxembourg*

IAG Commission 1 Symposium 2014 “Reference Frames for Applications in Geosciences”

URL: http://iag.uni.lu/index.php?id=189

**The Climate Symposium 2014**

*October 13-17, 2014, Darmstadt, Germany*

URL: http://www.theclimatesymposium2014.com

**8th Coastal Altimetry Workshop**

*October 23-24, 2014, Lake Constance, Germany*

URL: http://www.coastalaltimetry.org/
SARAL/AltiKa Workshop
October 27, 2014, Konstanz, Germany
URL: http://www.ostst-altimetry-2014.com/

IDS Workshop
October 27-28, 2014, Konstanz, Germany
URL: http://www.ostst-altimetry-2014.com/

19th International Workshop on Laser Ranging
October 27-31, 2014, Greenbelt, MD, USA
URL: http://ilrs.gsfc.nasa.gov/about/meetings.html

Ocean Surface Topography Science Team (OSTST) meeting
October 28-31, 2014, Konstanz, Germany
URL: http://www.ostst-altimetry-2014.com/

Digital Earth Summit 2014
November 9-11, 2014, Nagoya, Japan
URL: http://gis.chubu.ac.jp/summit2014/

Third International VLBI Technology Workshop
November 10-13, 2014, Groningen/Dwingeloo, Netherlands
URL: http://www.jive.nl/ivtw2014/

ISPRS Technical Commission I Symposium Sustaining Land Imaging: UAVs to Satellites
November 17-20, 2014, Denver, Colorado, USA
URL: http://www.commission1.isprs.org/

ICSU GRC Conference “Improving Geophysical Risk Assessment, Forecasting and Management”
November 18-21, 2014, Madrid, Spain
URL: http://www.icus.org/

Symposium SIRGAS 2014
November 24-26, 2014, La Paz, Bolivia
URL: http://www.sirgas.org

11th International Conference on Location-based Services
November 26-28, 2014, Vienna, Austria
URL: http://www.lbs2014.org/

AGU 2014 Fall Meeting
December 15-19, 2014, San Francisco, CA, USA
URL: http://sites.agu.org/meetings/

18. Internationale Geodaetische Woche Obergurgl
February 8 – 14, 2015, Obergurgl, Austria
URL: http://www.mplusm.at/ifg/

European Geosciences Union General Assembly 2015
April 12 – 17, 2015, Vienna, Austria
URL: http://www.egu.eu

SPACOMM 2015
April 19 – 23, 2015, Barcelona, Spain
URL: http://www.iaria.org/conferences2015/SPACOMM15.html
**22nd Meeting of the European VLBI Group for Geodesy and Astrometry (EVGA)**
*May 17 – 21, 2015, Ponta Delgada, Azores, Portugal*

**XXVI IUGG General Assembly**
*June 22 – July 2, 2015, Prague, Czech Republic*
URL: [http://www.iugg.org/assemblies/](http://www.iugg.org/assemblies/)

**XXIXth IAU General Assembly**
*August 3 – 14, 2015, Honolulu, Hawaii, USA*

**41th COSPAR Scientific Assembly**
*July 30 – August 7, 2016, Istanbul, Turkey*

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**Reports**

**Recent activities of IAG Commission 4 – The growing importance of PNT for science, engineering, safety, security, and everyday life**

Commission 4 was established to promote research that leverages current and emerging positioning techniques and technologies to deliver practical and theoretical solutions for a wide range of engineering, scientific and mapping applications. Activities carried out by Commission 4 are highly interdisciplinary, and many of these activities are coordinated in close cooperation with IAG sister organisations, US Institute of Navigation (ION), International Society of Photogrammetry & Remote Sensing (ISPRS) and the International Federation of Surveyors (FIG). Recognising the central role of GNSS in providing high accuracy positioning information today and into the future, Commission 4 has a focus on developing tools that enhance and assure the positioning performance of GNSS-based positioning solutions for a range of geodetic, and other scientific, as well as engineering and other societal applications. In addition, Commission 4 promotes the study of backups to GNSS and integrated positioning solutions based on conventional and unconventional sensors to assure positioning, navigation and timing (PNT) in GNSS-challenged environments. In the past few years, the scope of Commission 4 has broadened to include geodetic remote sensing, using synthetic aperture radar (SAR), lidar and satellite altimetry systems for a variety of applications.

One of the primary examples of inter-organisational collaboration is co-sponsorship of professional workshops and seminars, such as the 2012 1st International School on Mobile Mapping, and the upcoming 2nd International School on Mobile Mapping, taking place at the National Cheng-Kung University, in Tainan, Taiwan, 9-13 June 2014 ([http://conf.ncku.edu.tw/mm2014/](http://conf.ncku.edu.tw/mm2014/)) – an interdisciplinary event co-sponsored by IAG Commission 4, FIG, ISPRS and ION. Another example of a highly interdisciplinary and inter-organisational event is the Mobile Mapping Symposium series, with the most recent 8th Symposium held in Taiwan in 2013, and the upcoming 9th Symposium to be held in Sydney, Australia in 2015.

A few recent and upcoming highlights of the numerous activities of Commission 4 include: (1) Sub-commissions 4.1, 4.2 and 4.5 co-sponsored the “2nd Joint International Symposium on Deformation Monitoring” held at the University of Nottingham, UK in September 2013; (2) Sub-commission 4.2 co-sponsored the “UAV-g 2013” conference, with a focus on the use of unmanned vehicles in surveying, mapping and precision framing applications, held in September 2013 in Rostock, Germany (see photo); (3) Sub-commission 4.4 co-organised the “17th General Assembly of WEGENER” on Earth deformation and the study of earthquakes using geodesy and geodynamics, to be held in Leeds, UK in September 2014; (4) Sub-commission 4.5 co-organised the “10th International Symposium on Location Based Services” at Tongji University, Shanghai, China in November 2013; as well as (5) the “International Workshop on GNSS Precise Point Positioning”, held in Ottawa, Canada in June 2013; and (6) Sub-commission 4.6 co-organised the “International Symposium on Planetary Exploration and Sciences” and the “International Summer School on Planetary Remote Sensing and Geodesy”, both held in July 2013 in Shanghai, China.
A major upcoming event is the joint symposium “Sustaining Land Imaging: UAS to Satellites” co-organised by the ISPRS Technical Commission I, Sensors and Platforms for Remote Sensing, and IAG Commission 4. This event is part of the William T. Pecora Memorial Remote Sensing Symposium, organised by the American Society for Photogrammetry & Remote Sensing, and will be held in Denver, Colorado on 17-20 November 2014 (http://www.asprs.org/ASPRS-Conferences/blog.html). The primary topics of this joint ISPRS/IAG symposium are:

- Data acquisition and pre-processing, and integration of various imaging sensors with other relevant systems on remote sensing platforms.
- Design, construction, characterisation, and installation of imaging and non-optical imaging sensors (IR, SAR, IfSAR, Lidar, RF, etc.) for aerial and spaceborne missions for Earth observation.
- Data quality and performance validation of SAR, Lidar and optical systems for DEM generation.
- Testing, calibration and evaluation of optical and non-optical imaging sensors, including laboratory, in-flight/in-situ, inter-calibration and test fields.
- Data processing techniques, including direct sensor orientation, evaluation of line sensors for DEM generation, and on-board data processing.
- Image technologies and data transfer protocols, standardisation of definitions and measurements of active and passive imaging sensor parameters, geometric and radiometric properties, quality standards, and factors affecting data quality.
- Integrated platform guidance, navigation, direct geo-referencing and integrated sensor orientation.
- Mobile mapping, UAV/UAS, and autonomous system applications.
- Airborne remote sensing applications.

Website: http://www2.ceegs.ohio-state.edu/IAG-Comm4/

CHRIS RIZOS
President of IAG

Report of 11th International IGeS School: heights and datum height
Universidad Técnica Particular de Loja, Ecuador, October 7 – 11, 2013.

The 11th International IGeS School: heights and datum height has been organized at Geology, Mine and Civil Engineering Department of Universidad Técnica Particular de Loja, Ecuador, from 7 to 11 October, 2013.

Organizing Committee: Prof. Fernando Sansò (IGeS), Prof. Richard Serrano (UTPL)
**Teachers and lectures:**
The School includes both theoretical lectures and computational exercises on heights and datum height, given by Professors: Fernando Sansò and Riccardo Barzaghi, Politecnico di Milano, Italy; Nikolaos Pavlis, National Geospatial Intelligence Agency, USA; Denizar Blitzkow, Escola Politécnica da Sao Paulo, Brasil; and, Laura Sánchez, DGFI, Germany.

**Final Program:**

1st day: Monday, October 7, Prof. Sansò F.
08:45 Inauguration 11th IGeS School
09:00 – 12:30 Lecture 1: Geodetic Heights, Part 1.
15:00 – 18:30 Lecture 2: Geodetic Heights, Part 2.

2nd day: Tuesday, October 8, Prof. Pavlis N.

3rd day: Wednesday, October 9.
09:00 – 12:30 Lecture 5: Modeling the topographic effect Terrain Correction, Helmert Reduction; from TC to Residual TC, Prof. Blitzkow D.
15:00 – 18:30 Lecture 6: Local improvements of the Geoid, Prof. Barzaghi R.

4th day: Thursday, October 10, Prof. Barzaghi R.
09:00 – 12:30 Exercises;
15:00 – 18:30 free evening.

5th day: Friday, October 11, Prof. Sánchez L.
09:00 – 12:30 Lecture 7: Vertical datum standardization, Part 1.
15:00 – 18:30 Lecture 8: Vertical datum standardization, Part 2.

Coffee breaks: 10:15 – 10:45 / 16:15 – 16:45
Lunch break: 12:30 – 15:00

**Participants:**
The total number of participant was 15. They come from Brazil, Colombia, Dominic Republic, Ecuador, Egypt, Greece, Mexico, United States of America and Venezuela. The list of participants is:

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Almeida Vega Margarita</td>
<td>Mexico</td>
</tr>
<tr>
<td>2.</td>
<td>Arciniega Susana</td>
<td>Ecuador</td>
</tr>
<tr>
<td>3.</td>
<td>Carranco Oscar</td>
<td>Ecuador</td>
</tr>
<tr>
<td>4.</td>
<td>Cioe Pérez Víctor</td>
<td>Venezuela</td>
</tr>
<tr>
<td>5.</td>
<td>Coyago Remache Ricardo</td>
<td>Ecuador</td>
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<tr>
<td>6.</td>
<td>Espinosa Cardeña Juan</td>
<td>Colombia</td>
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<tr>
<td>7.</td>
<td>Holteinson Henr Alexander</td>
<td>Dominic Republic</td>
</tr>
<tr>
<td>8.</td>
<td>Kelly Kevin</td>
<td>United States of America</td>
</tr>
<tr>
<td>9.</td>
<td>Luciene Ferreira Gama</td>
<td>Brazil</td>
</tr>
<tr>
<td>10.</td>
<td>Mansì Ahmed</td>
<td>Egypt</td>
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<tr>
<td>11.</td>
<td>Mora Torres Francisco</td>
<td>Colombia</td>
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<tr>
<td>12.</td>
<td>Pilapanta Amagua Christian</td>
<td>Ecuador</td>
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<tr>
<td>13.</td>
<td>Trejo Manuel</td>
<td>Colombia</td>
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<td>14.</td>
<td>Vatalis Antonios</td>
<td>Greece</td>
</tr>
<tr>
<td>15.</td>
<td>Virla Alvarado María</td>
<td>Venezuela</td>
</tr>
</tbody>
</table>

Table 1: Participants
Students have been some printed lectures notes, and IGeS CD with software and data for exercises. At the end of School, Local Committee gave a CD with all the lectures presented in the School, photos and Loja city video. Each student and professor received a Participation Certificate.

**School venue:**
The venue of 11th IGeS School was UTPL Campus, [www.utpl.edu.ec](http://www.utpl.edu.ec). Theoretical morning lectures were held in Virginia Riofrío Auditorium, Electronic Department. The exercises were realized in Informatics Lab of Electronic Department.
11th IGeS Committee:
President: Riccardo Barzaghi, riccardo.barzaghi@polimi.it
IGeS Coordinator: Giovanna Sona, giovanna.sona@polimi.it
Local Coordinator: Richard Serrano, rg.serrano@utpl.edu.ec
Official School web site: www.11iges.utpl.edu.ec

Registration fees:
The registration fee for attending 11th IGeS was USD 350. The fee covered participation to lectures, exercises, professor’s notes, CD with all School material, certificate and coffee breaks.

Sponsors:
Universidad Técnica Particular de Loja, www.utpl.edu.ec

Feedback questionnaire:
A questionnaire (taken from 9 th IGeS School) was completed by 7 of students (50%). The results of this survey are:

<table>
<thead>
<tr>
<th>Topic</th>
<th>very poor</th>
<th>poor</th>
<th>sufficient</th>
<th>good</th>
<th>very good</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Length of School</td>
<td></td>
<td>2</td>
<td>5</td>
<td></td>
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<tr>
<td>2 Scientific level</td>
<td></td>
<td>1</td>
<td>6</td>
<td></td>
<td></td>
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<tr>
<td>3 Quality of lectures/ notes</td>
<td></td>
<td>1</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>4 Quality of teachers/lectures</td>
<td></td>
<td></td>
<td>7</td>
<td></td>
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<tr>
<td>5 Quality of computer exercises</td>
<td></td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6 Overall School evaluation</td>
<td></td>
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</table>

Other pictures