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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](mailto: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

## General Announcements

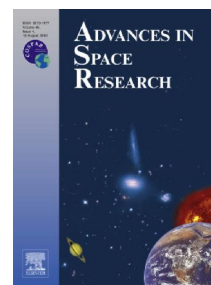
### *Advances in Space Research – Top 10 Reviewers*

Dear colleagues,

for your information, two well-known scientists among geodesists and aerospace engineers have been selected among the Top 10 Reviewers of Advances in Space Research (ASR), COSPAR official journal:

- Graham Appleby (Herstmonceux Geodetic Observatory, U.K.) and
- Pieter Visser (Delft University of Technology, The Netherlands).

The ASR Editorial Board, based on quality and quantity of the referee reports for this Journal, made the selection. The names and bios of these Top 10 Reviewers will be published in the April 2015 issue of Space Research Today (SRT), COSPAR companion journal of ASR, available on-line at <http://www.journals.elsevier.com/space-research-today/>. To acknowledge the important contribution of these individuals to ASR, Elsevier will offer them an Amazon voucher.



I remind you that submissions to ASR can be done electronically at any time using the EES System (<http://ees.elsevier.com/asr>).

Published articles can be found online at <http://www.sciencedirect.com/science/journal/02731177>

PASCAL WILLIS  
Editor-in-Chief  
Advances in Space Research.

## Meeting Announcements

### *Meetings Calendar*

#### WCDRR

March 14 – 18, 2015, Sendai, Japan  
UN World Conference on Disaster Risk Reduction  
URL: <http://www.wcdr.org/>

#### Mapping Water Bodies from Space (MWBS 2015)

March 18 – 19, 2015, Frascati, Italy  
URL: <http://due.esrin.esa.int/mwbs2015/>

#### Munich Satellite Navigation Summit 2015

March 24 – 26, 2015, Munich, Germany  
URL: <http://www.munich-satellite-navigation-summit.org>

#### European Navigation Conference ENC 2015

April 7 – 10, 2015, Bordeaux, France  
URL: <http://www.enc2015.eu/>

### IFCS-EFTF 2015

April 12 – 16, 2015, Denver, Colorado, USA

Joint Conference of the IEEE International Frequency Control Symposium & European Frequency and Time Forum

URL: <http://ifcs-eftf2015.org/>

### European Geosciences Union General Assembly 2015

April 12 – 17, 2015, Vienna, Austria

URL: <http://www.egu.eu>

### SPACOMM 2015

April 19 – 24, 2015, Barcelona, Spain

URL: <http://www.iaria.org/conferences2015/SPACOMM15.html>

### RESENS 2015

April 19 – 24, 2015, Barcelona, Spain

URL: <http://www.iaria.org/conferences2015/RESENS.html>

### Eighth IVS Technical Operations Workshop (TOW 2015)

May 4 – 7, 2015, Westford, Massachusetts, USA

URL: <http://ivscc.gsfc.nasa.gov/meetings/tow2015/>

### 36th International Symposium of Remote Sensing of Environment (ISRSE)

May 11 – 15, 2015, Berlin, Germany

URL: <http://www.isrse36.org/>

### 8th Workshop on GNSS Reflectometry (GNSS+R 2015)

May 11 – 13, 2015, Potsdam, Germany

URL: <http://www.gnssr2015.org/>

### 22nd Meeting of the European VLBI Group for Geodesy and Astrometry (EVGA)

May 17 – 21, 2015, Ponta Delgada, Azores, Portugal

URL: <http://evga2015.raege.net/>

### FIG Working Week 2015

May 17 – 21, 2015, Sofia, Bulgaria

URL: <http://www.fig.net/fig2015/>

### CSNC 2015

May 21-23, 2015, Xi'an, China

6<sup>th</sup> China Satellite Navigation Conference

URL: <http://www.insidegnss.com/node/4239>

### GIA Modeling 2015

May 26-29, 2015, Fairbanks, Alaska

URL: <http://www.gia2015.org/>

### Ilulissat Climate Days 2015

June 2-5, 2015, Ilulissat, Greenland

URL: <http://www.polar.dtu.dk/english/Ilulissat-Climate-Days>

### Sentinel-3 for Science Workshop

June 2-5, 2015, Venice, Italy

URL: <http://seom.esa.int/S3forScience2015>

### EUREF Symposium 2015

June 3-5, 2015, Leipzig, Germany

URL: [http://www.euref.eu/euref\\_symposia.html](http://www.euref.eu/euref_symposia.html)

### TransNav 2015

June 17 – 19, 2015, Gdynia, Poland

URL: <http://transnav2015.am.gdynia.pl>

### XXVI IUGG General Assembly

June 22 – July 2, 2015, Prague, Czech Republic

Information about registration and accommodation will be available from June 2014. Call for abstracts will be open during summer 2014.

URL: [www.iugg2015prague.com](http://www.iugg2015prague.com)

### EVN TOG Meeting

June 26, 2015, Robledo, Spain

URL: <http://iag.dgfi.badw.de/index.php?id=291>

### AOGS 2015

August 2 – 7, 2015, Singapore

URL: <http://www.asiaoceania.org/aogs2015/>

### XXIXth IAU General Assembly

August 3 – 14, 2015, Honolulu, Hawaii, USA

URL: [http://www.iau.org/science/meetings/future/general\\_assemblies/1024/](http://www.iau.org/science/meetings/future/general_assemblies/1024/)

### 2015 APSG International Symposium

August 24 – 28, 2015, Moscow, Russia

Geodesic Datum and Regional and Terrestrial Reference Frame Realization

URL: <http://apsg2015.inasan.ru>

### ION GNSS+ 2015

September 14 – 18, 2015, Tampa, Florida, USA

URL: <http://www.ion.org/gnss/index.cfm>

### INTERGEO, Geodätische Woche

September 15 – 17, 2015, Stuttgart, Germany

URL: <http://www.intergeo.de/>

### ICTRS 2015

September 17 – 17, 2015, Rhodes, Greece

Fourth International (URSI) Conference on Telecommunications and Remote Sensing

URL: <http://www.ictrs.org>

### geo-Q International Autumn School

October, 4-9 2015, Bad Honnef, Germany

Global gravity field modeling from Satellite-to-Satellite Tracking data

URL: <http://www.geoq.uni-hannover.de/autumnschool.html>

### ISDE 2015

October 5 – 9, 2015, Halifax, Nova Scotia, Canada

URL: <http://digitalearth2015.ca/>

### Earth Observation for Water Cycle Science 2015

October 10 – 23, 2015, ESA-ESRIN, Frascati, Italy

URL: <http://www.eo4water2015.info/>

### 2nd Symposium of COSPAR: Water and Life in the Universe

November 9 – 13, 2015, Foz do Iguacu, Brazil

URL: <http://cosparbrazil2015.org/>

### IS-GNSS 2015

November 16 – 19, 2015, Kyoto, Japan

International Symposium on GNSS

URL: <http://www.isgnss2015.org/>

### AGU 2015 Fall Meeting

December 14 – 18, 2015, San Francisco, California, USA

URL: <http://fallmeeting.agu.org/2015/>

### EGU General Assembly 2016

April 17 – 22, 2016, Vienna, Austria

URL: <http://www.egu2016.eu/>

### FIG Working Week 2016

May 2 – 6, 2016, Christchurch, New Zealand

URL: <http://www.fig.net/fig2016/>

### 18th Geodynamics and Earth Tide Symposium 2016

June 6 – 9, 2016, Trieste, Italy

URL: <http://www.lithoflex.org/g-et/>

### 41st COSPAR Scientific Assembly

July 30 – August 7, 2016, Istanbul, Turkey

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

### INTERGEO, Geodätische Woche

October 11 – 13, 2015, Hamburg, Germany

URL: <http://www.intergeo.de/>

### AGU 2016 Fall Meeting

December 12 – 16, 2016, San Francisco, California, USA

URL: <http://meetings.agu.org/upcoming-meetings/>

## Reports

### *Meetings on Scientific Geodesy organized by the Leibniz Society of Sciences at Berlin on February, 12th and 13th, 2015:*

scientific sessions on 12.02.2015 with talks by *Hans Sünkel* (Graz) and *Harald Schuh* (Potsdam), both Members of the Leibniz Society, elected in May 2014; and Scientific Colloquium on 13.02.2015 with about 30 contributions on the topic „Geodesy-Mathematics-Physics-Geophysics“ to honour *Erik W. Grafarend*, Member of the Leibniz Society, on the occasion of his 75th birthday

The full text of the report is published on the website of the Leibniz Society: [www.leibnizsozietaet.de](http://www.leibnizsozietaet.de). There the words in bold types indicate links to further information.

The promotion of Geodesy in ways typical for academies of sciences has a long tradition in the Learned Society called „Leibniz-Sozietät der Wissenschaften zu Berlin e.V.“ since 1993. The society of outstanding scientists the meeting place of it is Berlin was founded, according to the ideas of Gottfried Wilhelm Leibniz, in 1700 as „Kurfürstlich Brandenburgische Sozietät der Wissenschaften“, already in 1701 renamed to „Königlich Preußische Sozietät der Wissenschaften“. By the renomination the program of the Learned Society was

underlined to promote and to use single-mindedly the sciences for the ascent of the principalities, duchies et al. in the possession by the Brandenburg Prussian Hohenzollern dynasty towards an unified powerful state in Europe. The first paper published by Leibniz in the publication series of the Learned Society was dedicated to a problem of Geodesy at that time highly important: the determination of the longitude. Since 1993 the Learned Society is a private law association, the name of which indicates its purpose clearly. As before its permanent meeting place is Berlin, now to be understood as the German capital and a metropolis in Europe. Actually the Leibniz Society has 320 members: researchers in Science, Technology, and Medicine, as well as in the Humanities, Social and Political Sciences. Under them the Geodesy is currently represented by: Erik W. Grafarend (Stuttgart), Petr Holota (Prague), Heinz Kautzleben (Berlin), Helmut Moritz (Graz), Reiner Rummel (Munich), Harald Schuh (Potsdam), Oliver Schwarz (Siegen), and Hans Sünkel (Graz). There was a poster entitled: Geodesy in the Learned Society called Leibniz Society of Sciences at Berlin since 1993. At several times the scientific meetings of the Leibniz Society, in which usually competent guests are coworking, are requests for the floor by the Learned Society with respect to extremely interesting scientific and social topics. The meetings on Geodesy on February 2015 having a remarkable large number of elitist participants can be regarded as such a request.

Hans Sünkel has chosen as topic of his talk: The geoid – *theoria cum Praxi et commune bonum*. Harald Schuh gave a paper on the topic „Contributions by Geodesy to the better understanding of natural hazards and climatic influences“. The talks, by which the newly elected members introduced themselves into the scientific activities of the Leibniz Society, at the same time are prologues to the Colloquium on the next day the Leibniz Society organized, to honour its member Erik W. Grafarend on the occasion of his 75th birthday, on topics out of his scientific fields of interests, summarized under the title „Geodesy-Mathematics-Physics-Geophysics“.

The Colloquium has been supported by the Stuttgart University where Erik Grafarend was professor of Geodesy and director of the Geodetic Institute from 1980 up to 2005. The University was represented by the current director of the Geodetic Institute Nico Sneeuw. The Alexander von Humboldt Foundation to which Erik Grafarend had served over two decades contributed to the success of the Colloquium by supporting the participation of several „Humboldtians“ financially.

On May 2004 Erik Grafarend was elected by the plenum of the Leibniz Society for Member of the Learned Society because he had made progress to the scientific geodesy significantly, because he had shown leading abilities and an uncompromising judgement in his field of science. He does justice the expectations in exemplary fashion. The Colloquium confirmed the extremely high evaluation shown towards Erik Grafarend.

The Colloquium was declared open on behalf of the Presidium of the Leibniz Society by its Member Lutz-Günther Fleischer. The program of the Colloquium was very tight. It covers the laudatio by the Leibniz Society (prepared by Heinz Kautzleben), many greeting addresses and still more scientific contributions, where the differentiation between greetings and scientific contribution was not ever clear.

Several of the greeting addresses were delivered by representatives personally taking part: from the Finnish Academy of Sciences and Letters and the Hungarian Academy of Sciences, they had elected Erik Grafarend for their Foreign and Honorary Member, respectively, the addresses were delivered by Markku Poutanen (Helsinki) and Jozsef Adam (Budapest) respectively; from the four universities which had promoted Erik Grafarend to Doctor honoris causa, the addresses were delivered by Lars Sjöberg (Stockholm), Jozsef Adam (Budapest) and Günter Hein (Munich) respectively; from the International Association of Geodesy, to her Erik Grafarend had served over several decades, the address was delivered by its current Vice President Harald Schuh; from the German Geodetic Commission to which Erik Grafarend has been Ordinary Member since 1978, the address was delivered by its current chairman Theo Kötter (Bonn). The Alexander von Humboldt Foundation had sent its address by letter.



Photo of the participants

The list of the scientific talks:

- Helmut Moritz* (Graz): Erik Grafarend and the Theoretical Geodesy;  
*Reiner Rummel* (München): Operational Geodesy, Rank Deficiencies and Geodetic Heights;  
*Petr Holota* (Prague): Summation of Series and an Approximation of Legendre's Functions in Constructing Integral Kernels for the Exterior of an Ellipsoid: Approximation to Boundary Value Problems in Physical Geodesy;  
*Lars Sjöberg* (Stockholm): The geoid-to-quasigeoid separation expressed by gravity disturbances;  
*Friedrich Hehl* (Cologne/Minnesota): The gravitational field of the rotating Earth versus the Kerr field in Einstein's theory of gravity;  
*Hans-Reiner Trebbin* (Stuttgart): Application of fibre bundles in physics: From cosmology to electronic state of matter;  
*Rainer Schimming* (Potsdam): The book of the nature has been written in the language of differential equations;  
*Hartmut Hecht* (Berlin): Geodesy-Mathematics-Physics: Beginnings in the Brandenburg Prussian Society of Sciences under the presidency of Gottfried Wilhelm Leibniz;  
*Fernando Sanso & Antonios Vatalis* (Milano): Reference Systems – Reference Frames on Geodesy;  
*Zuheir Altamimi* (Paris): Reference frame representation of the deformable Earth: Application to the International Reference Frame;  
*Günter Hein* (Munich): From Science to Science: The Global Satellite Navigation System Galileo;  
*Philipp Bergiez & Bernhard Hofmann-Wellenhof* (Graz): Galileo and Grafarend on the way towards GNSS;  
*Janusz Zielinski* (Warsaw): The possible impact of the direct measurements of the non-gravitational accelerations on the GNSS performance;  
*Michael Schmidt* (Munich): Towards ellipsoidal representations of the Earth's gravitational field;  
*Evangelos Livieratos* (Thessaloniki): Digital analysis of the content of old maps;  
*Peter Varga* (Budapest): Long-term variations of the gravitational potential and the geodynamic properties of a deformable Earth due to axial despinning.
- There were applications to present five other talks at the Colloquium. But they could not be presented orally because their authors Willi Freeden (Kaiserslautern), Athanasios Dermanis (Thessaloniki), Zdenek Martinec (Dublin), Fritz Gackstatter (Berlin) and Oliver Schwarz (Siegen) became ill.

The closing remarks were given by Erik Grafarend. The manuscripts of the talks worked out in good order shall be published as soon as possible.

HEINZ KAUTZLEBEN  
Member of the Leibniz Society

## *ISPRS Technical Commission I Symposium 2014*

*Denver, Colorado, November 17-20, 2014*

The ISPRS Technical Commission I Symposium in conjunction with the Pecora 19 and IAG Commission 4 Symposium was held 17-20 November 2014, at the Renaissance Denver Hotel in Denver, Colorado, with great success for all involved and in attendance. This short report was prepared by Dr Charles Toth, ISPRS TC I President, and acknowledges the important contributions made by the IAG in organising this unique event.

The Symposium welcomed over 480 attendees from more than 25 countries around the globe, representing all the six continents, for a unique and thought-provoking two and a half days of technical sessions. More than 190 speakers presented in 35 sessions, ranging in topic from “*UAS and Data Analysis*” to “*Landsat and Sentinel*”, “*Land Cover Change*”, “*Mobile Mapping Technologies*”, and many more.

The symposium theme, *Sustaining Land Imaging: UAS to Satellites*, carried throughout and particularly with the opening plenary session where Charles Toth, President ISPRS Technical Commission I, and ISPRS/IAG Committee Chair, from The Ohio State University; Tom Holm, Pecora Steering Committee Chair, U.S. Geological Survey EROS; and Dorota Grejner-Brzezinska, President IAG Commission 4, from The Ohio State University, welcomed attendees. The opening plenary talk, titled “*Landsat: A Vision Realized!*”, was given by Dr Berrien Moore III – an excellent presentation on the importance of the Landsat Program for science and society.

From the 102 submissions to the ISPRS TC I track, 62 were accepted for oral presentation. The manuscripts have been published in both the *ISPRS Annals* and *Archives*, and cover a broad range of topics related to remote sensing platforms and sensing technologies, providing a good review on recent developments in the state-of-the-art sensing techniques and methods of photogrammetry, remote sensing and engineering geomatics, as well as their applications to mapping and to the Earth Sciences. On the platform side, unmanned aerial systems (UAS)



and small satellite constellations have shown remarkable developments, generating unprecedented interest, and prompting sensor providers to better accommodate these remote sensing platforms. In particular, advancements in Lidar technologies are noteworthy, as miniaturised laser sensors are in high demand. Research to exploit the new sensor technologies and sensing capabilities offered by cooperating sensor platforms is rapidly increasing.

The symposium Technology Floor was also a bustling area of activity throughout the week. With industry developers, manufacturers, academia, government agencies, survey and mapping firms, agriculture firms, and companies from UAS-related industries, the Technology Floor held two lunches for the attendees and sponsored the always popular Exhibitors' Reception. Over 35 poster presentations also filled the Technology Floor and foyer.

The closing plenary session on Thursday, 20<sup>th</sup> November, titled "*Petapixel Computing for All: Transforming Remote Sensing in the 21<sup>st</sup> Century*", brought in a standing-room-only crowd for a fascinating presentation by Ms Rebecca Moore, Founder of the Google Earth Engine & Earth Outreach, Google Inc. Ms Moore demonstrated some of Google's most recent mapping tools, to showcase some of the world's most pressing problems in environmental conservation, human rights and cultural preservation.

Thanks go to all TC I WG officers as well as to symposium organisers from USGS, NASA and the IAG, for creating a fantastic program that included many high quality scientific presentations, industry leading contributions and fascinating plenary discussions.

Website: <http://www.isprs.org/2014tc1symposium/>

The IAG works closely with sister geospatial associations in a number of ways, here is an example of a joint symposium with ISPRS



President of the IAG Commission 4, Prof Dorota Grejner-Brzezinska



Some participants at the ISPRS TC I Symposium

CHRIS RIZOS