



IUGG



International Association
of Geodesy

Newsletter

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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>

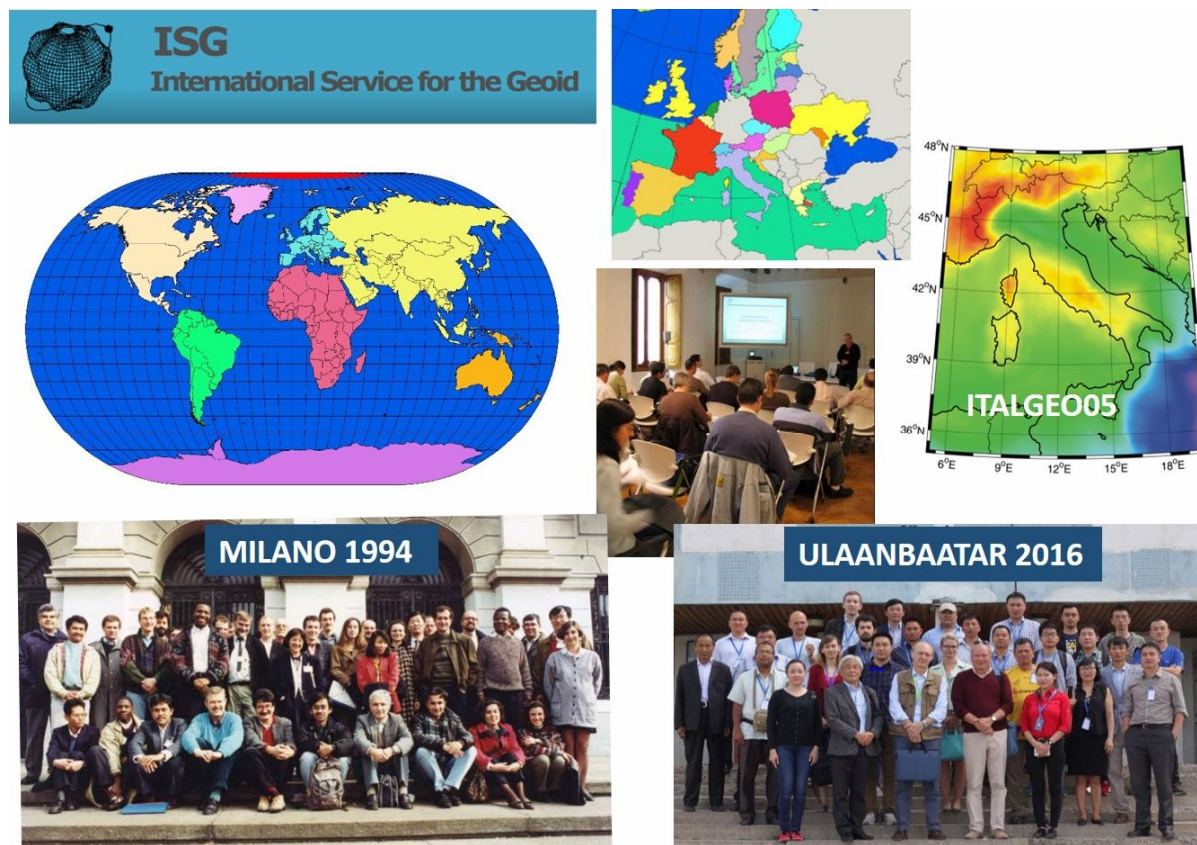
Each *IAG Newsletter* includes several of the following topics:

- 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

General Announcements

The International Service for the Geoid (ISG)

President: Mirko Reguzzoni, Director: Giovanna Sona



The International Service for the Geoid (ISG), hosted by Politecnico di Milano in Italy, was founded in 1992 as a working arm of International Geoid Commission (IGeC). It is currently an official service of the International Association of Geodesy (IAG), and is also related to the works of the IAG Commission 2 on Gravity Field. Its activities are coordinated by the International Gravity Field Service (IGFS), established in 2003, that integrate the broader gravity field researches of the: International Service for the Geoid (ISG), International Gravimetric Bureau (BGI), International Geodynamics and Earth Tide Service (IGETS), International Centre for Global Earth Models (ICGEM) and International DEM Service (IDEMS). ISG's activities are on educational, research, and data distribution sides: the principal purposes of ISG are the collection and distribution of geoid models, the collection and distribution of software for geoid computation, and the organization of technical schools and specific trainings on geoid determination techniques.

One of the main task of ISG is to collect, analyse and redistribute local, regional and continental geoid models, keeping its on-line repository constantly updated, and providing also software for estimating and handling geoid models. Public and on-demand regional geoid models are distributed with a unique ISG ASCII format. Basic information and references are provided for all regional models in the geoid repository, that recently exceeded the number of 150.

As regards research activities, ISG participates to international projects and working groups with the aim of improving methodologies for the determination of the geoid at global and local level. Among the others, ISG took part in the European Gravity Geoid Project, the International ESA Gradiometric Mission (GOCE), the Global Geodetic Observing System project (GGOS), the International Height Reference System project (IHRM) for the height datum unification, computation of improved geoids for Italy and the Mediterranean area GEOMED-2 project (2015-2017).

ISG staff is formed by four senior scientists (including president and director), four other scientists expert in Geodesy and one secretary. Moreover a group of ten international geodesists compose the ISG advisory board.

Within the structure of ISG, Working Groups can be established for specific purposes, limited in time.

A technical publication is edited, the IGeS Bulletin, transformed in 2003 into the Newton's Bulletin, and published in cooperation with the International Gravimetric Bureau (BGI). The Newton's Bulletin has a technical and applied nature and it has been recently selected by the geodetic community for publications on the assessment of EGM2008 and GOCE global gravity models. On the website www.isgeoid.polimi.it all the issues of the Bulletins are available.

As mentioned, the Service has also educational purposes: one of the main tasks of ISG consists in organizing or supporting technical schools on geoid estimation and related topics, held possibly every two years.

The First International School for the Determination and Use of the Geoid was organized in Milan in 1994, and since then many [other editions of the School followed](#), held in many countries, with the support of local organizing committees.

The following table shows the years, the locations, the number of participants and the number of involved countries of the past editions of the International Geoid School :

year	1994	1997	1999	2000	2002	2005	2006	2008	2009	2010	2013	2016
location	Italy	Brazil	Italy	Malaysia	Greece	Hungary	Denmark	Italy	Argentina	Russia	Ecuador	Mongolia
student	34	31	23	41	30	49	24	25	23	15	15	30
countries	17	13	12	13	13	19	15	12	5	5	9	10

During the schools both theoretical and practical aspects are illustrated, and students are trained in the use of the relevant software for geoid computation. The general purpose of the full-week intensive Geoid School is to prepare new graduate students, young scientists, employees of national agencies and services or industry staff, to compute and use gravimetric geoids for scientific and technical applications in geodesy, primarily in transforming ellipsoidal (GPS) heights into orthometric ones. The School provides a good opportunity to familiarize with the latest development in geoid determination, and to improve international contacts and collaborations among scientists dealing with gravity field modelling.

The School is structured in a way to be self-contained for any participant at graduate level with basic knowledge of geodesy. During a full week, theoretical lectures are followed by computer exercises based on the available software, according to the following general scheme:

- introduction to physical geodesy and to collocation theory in geoid computation;
- computation and use of high degree and ultra-high degree geopotential models;
- geoid computation using Stokes' integral;
- terrain effects in geoid estimation;
- FFT techniques in geodesy.
- some seminars on specific topics (e.g. height datum unification).

Lecture notes of the courses are distributed to the participants as well as a CD containing software and exercises. The CD containing software and examples on geoid computation, as well as the lecture notes, can be [requested through the ISG website](#), under the same restrictions applied when distributed during the geoid schools: freely available after a declaration stating for non commercial use of the software.

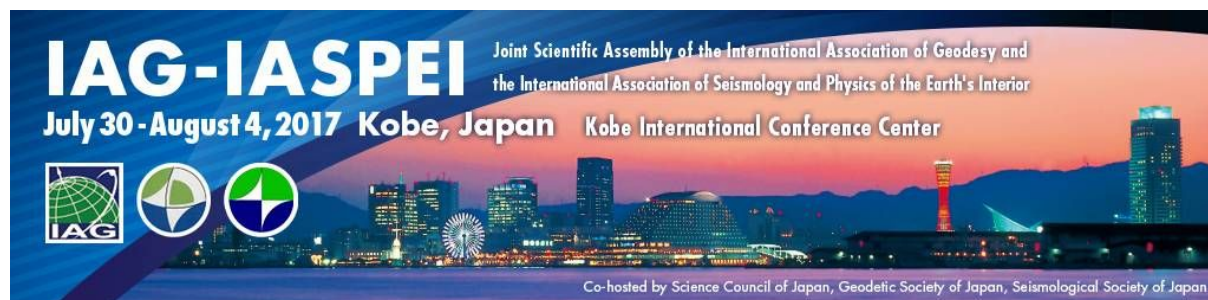
In addition to the International Geoid School, ISG gives support to foreign institutions and scientists in the field of geoid computation, by organizing, on request, specific training courses on geoid computation held at Politecnico in Milan.

The most recent educational cooperations have been :

- Support to the National Geophysical Research Institute of Hyderabad (India) in computing a gravimetric geoid in South India.
- Training course on geoid computation procedures, held in June 2011, attended by three researchers of the Center of Geodesy and Geodynamics of Nigeria (Center of Geodesy and Geodynamics-National Space Research and Development Agency).
- Local gravity model estimation over Bangladesh, based on GPS/leveling points locally collected, in cooperation with a researcher of the Survey of Bangladesh hosted at ISG in Milano, in February 2009, with individual training course.
- Training course on geoid computation, held in November 2015, attended by two researchers of the Service of Surveying-National Institute of Cartography of Cameroon.

GIOVANNA SONA

IGAG-IASPEI Scientific Assembly, Kobe, Japan, July 30 – August 4, 2017



The International Association of Geodesy (IAG) holds its Scientific Assemblies traditionally midterm between two IUGG-IAG General Assemblies. The next one will be held middle of the General Assemblies 2015 (Prague, Czech Republic) and 2019 (Montreal, Canada) together with the International Association of Seismology and Physics of the Earth (IASPEI) in Kobe, Japan, from July 30 to August 4, 2017. There will be nine joint symposia of IAG and IASPEI, and seven IAG specific symposia. The titles are:

Joint Symposia

- J01 Monitoring of the cryosphere
- J02 Recent large and destructive earthquakes
- J03 Deformation of the lithosphere: Integrating seismology and geodesy through modelling
- J04 Geohazard early warning systems
- J05 Crustal dynamics: Multidisciplinary approach to seismogenesis
- J06 The spectrum of fault-zone deformation processes (from slow slip to earthquake)
- J07 Tracking the sea floor in motion
- J08 Imaging and interpreting lithospheric structures using seismic and geodetic approaches
- J09 Geodesy and seismology general contributions

IAG Symposia

- G01 Reference frames
- G02 Static gravity field
- G03 Time variable gravity field
- G04 Earth rotation and geodynamics
- G05 Multi-signal positioning: Theory and applications
- G06 Geodetic remote sensing
- G07 Global Geodetic Observing System (GGOS) and Earth monitoring services

Most important dates for contributions to the symposium are:

- December 7, 2016: Abstract submission and registration open;
- February 8, 2017: Deadline for abstract submission and travel support application;
- April 5, 2017: Notification of acceptance;
- May 10, 2017: Closure of early bird registration;**
- July 7, 2017: Closure of pre-registration.

All interested persons are invited to submit abstracts for oral presentations or posters. For more details of the assembly please visit the Homepage <http://www.iag-iaspei-2017.jp>.

HERMANN DREWES, IAG Secretary General

Meeting Announcements

EGSIEM Autumn School for Satellite Gravimetry Applications

11 – 15 September 2017

GFZ Helmholtz Centre, Potsdam, Germany

This autumn school, held in the historic surroundings of Telegrafenberg, Potsdam, will educate scientists and students in state of the art Satellite Gravimetry Applications, and prepare them for the usage of the products being developed within the framework of the EGSIEM project. Presentations from key members of the EGSIEM consortium will be augmented by high profile guests giving presentations on selected topics.

Topics covered will include:

- Analysing GRACE Data – Torsten Mayer-Gürr/Ulrich Meyer
- Glacial Isostatic Adjustment – Holger Steffen
- GRACE Follow On Mission – Frank Flechtner
- Ice Sheet Signals – Martin Horwath
- The EGSIEM Plotter – Stéphane Bourgoigne/Matthias Weigelt
- Remote Sensing – Hendrik Zwenzner/Sandro Martinis
- GNSS Loading – Tonie Van Dam
- Hydrology – Annette Eicker/Andreas Güntner

Registration Deadline: *31st July 2017*

Organisation of the autumn school is jointly managed by the EGSIEM project and GFZ

For more information please visit www.egsiem.eu/autumn-school

ADRIAN JÄGGI

First IUGG Symposium on Planetary Science



Planetary science is an interdisciplinary field across IUGG disciplines as well as geology, geochemistry, and astrobiology. The First IUGG Symposium on Planetary Science (IUGG-PS2017) “Interdisciplinary observation and understanding of the Solar System” will be held on 3-5 July 2017 in Berlin, Germany. The symposium aims to bring together international scientists and engineers focused on interdisciplinary work related to exploration and science of the solar system and seeking life beyond Earth. Topics include planetary geodesy, remote sensing, atmosphere, ionosphere/plasma physics, magnetic and gravity field, geomorphology, geophysics, geodynamics, geology, petrology, volcanology, geochemistry, interior physics, and life & astrobiology. More information will be available at <http://www.dlr.de/iugg-ps2017>. All of the IUGG community is welcome to attend the IUGG-PS2017.

Shuanggen Jin, Chair, IUGG Union Commission on Planetary Sciences

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Meetings Calendar

GEODATA 2017

April 3-7, 2017, Rosario - Santa Fe, Argentina

URL: www.geodata2017.com.ar

EGU General Assembly 2017

April 23-28, 2017, Vienna, Austria

URL: <http://www.egu2017.eu/>

IAU Symposium "Astrometry and Astrophysics in the Gaia Sky"

April 24-28, 2017, Nice, France

URL: <http://iaus330.sciencesconf.org/>

Ninth IVS Technical Operations Workshop

April 30 – May 4, 2017, Westford, MA, USA

URL: <https://www.iers.org/ IERS/EN/NewsMeetings/ForthcomingMeetings/forthcoming.html>

ENC 2017

May 9-12, 2017, Lausanne, Switzerland

URL: <http://www.enc2017.eu/>

23rd Working Meeting of the European VLBI Group for Geodesy and Astrometry (EVGA)

May 15-19, 2017, Gothenburg, Sweden

URL: <https://www.chalmers.se/en/conference/EVGA2017>

EUREF 2017 Symposium

May 17 – 19, 2017, Wroclaw, Poland

URL: http://www.euref.eu/euref_symposia.html

JpGU-AGU Joint Meeting 2017

May 20 – 25, 2017, Makuhari Messe, Chiba, Japan

URL: http://www.jpgu.org/meeting_e2017/

DORIS Analysis Working Group meeting

May 22 – 24, 2017, London, United Kingdom

URL: <http://ids-doris.org/ids/reports-mails/meeting-presentations/ids-awg-05-2017.html>

FIG Working Week 2017

May 29 – June 2, 2017, Helsinki, Finland

URL: <http://www.fig.net/fig2017/>

TransNav 2017

June 21 – 23, 2017, Gdynia, Poland

URL: <http://transnav2017.am.gdynia.pl>

Baltic Geodetic Congress 2017

June 22 – 25, 2017, Gdańsk, Poland

URL: <http://www.bgc.geomatyka.eu/2017/>

ICC 2017

July 2 – 7, 2017, Washington, DC, USA

URL: <http://icc2017.org/>

IGS Workshop 2017

July 3 – 7, 2017, Paris, France

URL: <http://kb.igs.org/hc/en-us/articles/216574478-IGS-Workshop-2017>

1st IUGG Symposium on Planetary Science (IUGG-PS2017)

July 3 – 5, 2017, Berlin, Germany

URL: <http://www.dlr.de/iugg-ps2017>

IAG/GGOS/IERS Unified Analysis Workshop (UAW)

July 10 – 12, 2017, Paris, France

URL: <http://ggosdays.com/en/conferences/unified-analysis-workshop/>

WCRP/IOC Conference 2017: Regional Sea Level Changes and Coastal Impacts

July 10 – 14, 2017, New York, USA

URL: <http://www.sealevel2017.org>

IAG and IASPEI Joint Scientific Assembly

July 30 – August 4, 2017, Kobe, Japan

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

AOGS 14th Annual Meeting

August 6-11, 2017, Singapore, Singapore

URL: <http://www.asiaoceania.org/aogs2017/>

Fifth International School on “Least Squares Approach to Modelling the Geoid”

August 21-25, 2017, KTH, Stockholm

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

EUGEO 2017

September 4-6, 2017, Brussels, Belgium

URL: <https://eugeo2017.sciencesconf.org/>

ESA/JRC International Summerschool on GNSS 2017

September 4-15, 2017, Longyearbyen, Svalbard-Spitzbergen, Norway

URL: <http://www.esa-jrc-summerschool.org>

Workshop on Glacial Isostatic Adjustment and Elastic Deformation

September 5-7, 2017, Reykjavik, Iceland

URL: <http://www.polar.dtu.dk/english/Workshop-on-Glacial-isostatic-adjustment-and-elastic-deformation-2017>

EGSIEM Autumn School for Satellite Gravimetry Applications

September 11-15, 2017, Potsdam, Germany

URL: <http://www.egsiem.eu/autumn-school>

COSPAR 2017

September 18-22, 2017, Jeju Island, South Korea

3rd Symposium of the Committee on Space Research (COSPAR): Small Satellites for Space Research

URL: <http://cospar.kasi.re.kr/cospar-symposium-2017/>

IAG Workshop: Satellite Geodesy for Climate Studies

September 19-21, 2017, Bonn, Germany

URL: <http://www.igg.uni-bonn.de/apmg/index.php?id=ws2017>

Journees 2017

September 25-27, 2017, University of Alicante, Spain

URL: <http://web.ua.es/journees2017/>

ION GNSS+ 2017

September 25-29, 2017, Portland, Oregon, USA

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

Geodätische Woche / INTERGEO 2017

September 26-28, 2017, Berlin, Germany

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

ILRS Technical Workshop 2017

October 4-7, 2017, Riga, Latvia

URL: <https://ilrs.cddis.eosdis.nasa.gov/>

9th ABLOS Conference

October 10-11, 2017, IHB, Monaco

URL: <http://www.ablosconference.com/>

International Workshop on the inter-comparison of space and ground gravity and geometric spatial measurements

October 16-18, 2017, Strasbourg, France

URL: <http://geodesy.sciencesconf.org>

OSTST 2017

October 23-27, 2017, Miami, FL, USA

URL: <https://sealevel.jpl.nasa.gov/science/ostscienceteam/scienceteammeetings/>

6th International Colloquium on Scientific and Fundamental Aspects of GNSS / Galileo

October 25-27, 2017, Valencia, Spain,

URL: <http://esaconferencebureau.com/2017-events/17a08>

LAPIS 2017 School

October 29 – November 4, 2017, La Plata, Argentina

URL: <http://www.maggia.unlp.edu.ar/lapis2017>

AGU 2017 Fall Meeting

December 11-15, 2017, New Orleans, LA, USA

URL: <https://meetings.agu.org/>

LBS 2018

January 15-17, 2018, Zurich, Switzerland

URL: <http://lbsconference.org>

EGU General Assembly 2018

April 8-13, 2018, Vienna, Austria

URL: <http://www.egu2018.eu/>

AOGS 15th Annual Meeting

June 3-8, 2018, Hawaii, USA

URL: http://www.asiaoceania.org/society/public.asp?view=up_coming

10th IVS General Meeting

June 3-8, 2018, Longyearbyen, Spitsbergen, Norway

URL: <http://www.iers.org/IERS/EN/NewsMeetings/ForthcomingMeetings/forthcoming.html>

42nd COSPAR Scientific Assembly

July 14-22, 2018, Pasadena, CA, USA

URL: <http://cospar2018.org/>

IAU XXXth General Assembly

August 20-31, 2018, Vienna, Austria

URL: <http://astronomy2018.univie.ac.at/>

21st International Workshop on Laser Ranging

October 27-31, 2018, Canberra, Australia

URL: <http://www.iers.org/TERS/EN/NewsMeetings/ForthcomingMeetings/forthcoming.html>

AGU 2018 Fall Meeting

December 10-14, 2018, Washington, D.C., USA

URL: <https://meetings.agu.org/>

EGU General Assembly 2019

April 7-12, 2019, Vienna, Austria

URL: <http://www.egu2019.eu/>

27th IUGG General Assembly

July 8 – 17, 2019, Montreal, Canada

URL: <http://www.iugg.org/assemblies/>

AOGS 16th Annual Meeting

July 28 – August 2, 2019, Singapore, Singapore

URL: http://www.asiaoceania.org/society/public.asp?view=up_coming