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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

**Books for review are the responsibility of:**

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## General Announcements

### **Special Issue 'VLBI' of the Journal of Geodesy**

#### CALL FOR PAPERS

We are seeking contributions for a special issue of the Journal of Geodesy (JoG) which will be dedicated to VLBI. JoG is the official journal of the International Association of Geodesy. All papers will be peer-reviewed according to JoG review procedures.

*Deadline for submissions: March 31, 2006.*

We solicit papers that focus on topics such as

- results of geodetic and astrometric VLBI and interpretations,
- theoretical and/or modeling studies,
- combination of VLBI with other space geodetic techniques.

The special issue is not intended to include papers on purely instrumental aspects of the VLBI technique.

Submissions should be marked "VLBI special issue" and sent to the Editorial Office of the Journal of Geodesy in the usual way (double-spaced, single-column, with figures and tables at the end). Instructions for authors are available at the Springer web site at the URL:

<http://www.springer.com/sgw/cda/frontpage/0.11855.4-110-70-1101678-0.00.html>

The editors of the special issue will be happy to take a look at abstracts and drafts ahead of time, to let you know whether the paper would fit with the issue. In this case, please send your material to one of the editors.

Special issue editors:

Harald Schuh ([harald.schuh@tuwien.ac.at](mailto:harald.schuh@tuwien.ac.at))

Axel Nothnagel ([nothnagel@uni-bonn.de](mailto:nothnagel@uni-bonn.de))

Chopo Ma ([Chopo.Ma@nasa.gov](mailto:Chopo.Ma@nasa.gov))

DIRK BEHREND  
IVS COORDINATING CENTER

### **Call for Contributions: VI Hotine-Marussi Symposium of Theoretical and Computational Geodesy: Challenge and Role of Modern Geodesy**

*Wuhan University, PR China, 29 May - 2 June 2006.*

The symposium will focus on the following five topics:

1. Satellite gravity missions: open theoretical problems and their future application;
2. Earth-environmental, disaster monitoring and prevention by geodetic methods;
3. GNSS: Mathematical theory, engineering applications, reference system definition and monitoring;
4. Deterministic and Ramdon fields analysis with application to BVP, approximation theory and inverse problems; and
5. Statistical estimation and prediction theory, quality improvement and data fusion.

All scientists are welcome to attend the Symposium. The deadline of submitting an abstract is 1 March 2006. For more information, please visit the website: [http://www.sgg.whu.edu.cn/icct\\_hm.html](http://www.sgg.whu.edu.cn/icct_hm.html).

PEILIANG XU

## Meeting Announcements

### ***International Workshop "Height Systems, Geoid and Gravity of the Asia-Pacific"***

*Ulaanbaatar, Mongolia, June 6-8, 2006.*

Organized by MonMap Engineering Services, Administration of Land Affairs, Geodesy and Cartography, and the Mongolian Academy of Science.

Sponsored by the International Association of Geodesy and the International Gravity Field Service.

Web site with meeting information: [www.igfs.net](http://www.igfs.net).

The *International Gravity Field Service* (International Association of Geodesy) is the host organization for the "Height Systems, Geoid and Gravity" Workshop, June 6-8, 2006. The aim of the workshop is to bring together geodesists and geophysicists from the region working in the gravity field and height determination fields. The workshop will be arranged around the following topics:

- Height systems and national leveling networks
- Regional and local geoid modeling
- Airborne gravity survey
- Satellite gravity and new earth gravity field models
- Different vertical datums and dynamic reference systems

Papers for oral or poster presentations are solicited in the above areas. We also encourage presentations of ongoing and future international or national projects.

#### **Deadlines:**

Apr 15: Abstract submission deadline and deadline for travel support grants

May 5: Deadline for registration/visa invitations and housing requests

Chairman of the Scientific Committee and liason to the LOC:

RENE FORSBERG

(chairman of IGFS)

Danish National Space Center

### ***IGeS Geoid School 2006. "The Determination and Use of the Geoid"***

*University of Copenhagen, June 19-23, 2006.*

The new Geoid School 2006 will be organized in Copenhagen, Denmark. The Preliminary Program and the Registration Form are now available from the IAG webpage:

[http://www.iag-aig.org/index.php?tpl=text&id\\_c=23&id\\_t=197](http://www.iag-aig.org/index.php?tpl=text&id_c=23&id_t=197)

**The final deadline for the Registration is 15th May 2006.**

#### **Local Organizing Committee:**

C.C.Tscherning, M.Veicherts, C.Schneider Pedersen, E.Enemærke, all at Niels Bohr Institute, University of Copenhagen, Juliane Maries Vej 30, DK-2100 Copenhagen Ø, Denmark.

Phone: 004535320605, Fax: 004535365357. E-mail: [geoid06@gfy.ku.dk](mailto:geoid06@gfy.ku.dk).

Registration fee: Payment before May 15, 2006 or IAG Individual Member: Euro 300; Full registration 350 Euro. Payment cover CD with software used at the school and lecture notes.

4 IAG Travel Grants à 500 Euro available, with preference for participants from developing countries.

#### **Preliminary Program**

1<sup>st</sup> day (June 19):

09.00 Registration and Opening Cerimony

09.30 Lecture 1 – General Introduction to Physical Geodesy (Prof. F.Sansò)  
 11.00-11.15 Coffee Break  
 11.15 Lecture 2 – General theory of Geoid Computation (Prof. F.Sansò)  
 12.30-13.30 Lunch  
 13.30 Lecture 3 – The remove – restore concept (Prof. F.Sansò)  
 15.00 – 15.15 Coffee Break  
 15.15 Seminar: Geoid, gravity and sea-level from radar altimetry (Dr. O.B.Andersen)  
 16.30 Day ends  
 17.00 Ice-breaker reception

2<sup>nd</sup> day (June 20):

09.00 Lecture 4 – The global geopotential models (Prof. N.Pavlis)  
 10.45-11.00 Coffee Break  
 11.00 Lecture 4- continued  
 12.30-13.30 Lunch  
 13.30 Exercises 1, Global Models (Prof. N.Pavlis)  
 15.00-15.15 Coffee Break  
 15.15 Exercise 2, Global Models (Prof. N.Pavlis)  
 16.30 Day ends.

3<sup>rd</sup> day (June 21) :

09.00 Lecture 5 – The collocation method in Physical Geodesy, (Prof. C.C.Tscherning)  
 10.45-11.00 Coffee Break  
 11.00-12.30 Exercise 1 on Collocation  
 12.30-13.30 Lunch  
 13.30 Lecture 6 – The FFT methods in Physical Geodesy, (Prof. M.Sideris)  
 15.00-15.15 Coffee Break  
 15.15 Lecture 6, continued (Prof. M.Sideris)  
 16.30 Day ends  
 18.30 Official Dinner

4<sup>th</sup> day (June 22):

09.00 Lecture 5 – continued (Prof. C.C.Tscherning)  
 10.45-11.00 Coffee Break  
 11.00 Exercise 2 on Collocation  
 12.30-13.30 Lunch  
 13.30 Exercise 1 on FFT (Prof. M.Sideris)  
 15.00-15.15 Coffee Break  
 15.15 Exercise 2 on FFT  
 16.30 Day Ends

5<sup>th</sup> Day (June 23):

09.00 Lecture 7 – The terrain effect in geoid estimation (Prof. R.Forsberg)  
 10.45-11.00 Coffee Break  
 11.00 Lecture 7 – continued  
 11.30 Lecture 8 - Fitting Gravimetric Geoids to GPS-levelling - "the GPS geoid"  
 12.30-13.30 Lunch  
 13.30 Exercise on Terrain effects and Geoid Fits (Prof. R.Forsberg)  
 15.00-15.15 Coffee Break  
 15.15-16.00 Closing Session.

***International workshop on quality improvement and coast-land applications of satellite altimetry***

*An IAG Special Group 2.3 workshop on satellite altimetry  
 July 21-22, 2006, Beijing, China.*

Organized by Chinese Academy of Surveying and Mapping, National Chiao Tung University, and Ohio State University.

Web site with meeting information: <http://space.cv.nctu.edu.tw/altimetryworkshop/ALT2006.htm>.

This workshop is dedicated to the problems and solutions of coast and land applications of satellite altimetry in such areas as coastal gravity field modeling, coastal circulations, river level and lake level monitoring and desert study using satellite altimetry. This workshop is part of the activities of Special Group 2.3, International Association of Geodesy. The scientific committee and local organizing committee welcome world scientists interested in the these topics to participate in this workshop. The participants of this workshop are also encouraged to attend the Western Pacific Geophysical Meeting, July 24-27, 2006, Beijing (<http://www.agu.org/meetings/wp06>) to extend the discussions in a related session. Themes of the workshop are:

- methods for improving quality of coastal altimetry data
- waveform retracking for altimetry
- shallow-water tides from altimetry
- coastal gravity field modeling with altimetry
- vertical datum connection using altimetry
- land applications of altimetry
- altimetry applications and problems in polar seas
- lake level and river level changes from altimetry
- coastal circulations from altimetry
- Applications of altimetry to desert study

Submit your abstract to Xiaotao Chang at [changtao@public.bta.net.cn](mailto:changtao@public.bta.net.cn) and Cheinway Hwang at [hwang@geodesy.cv.nctu.edu.tw](mailto:hwang@geodesy.cv.nctu.edu.tw) in the word format. The deadline is *April 30, 2006*.

Chairman of the Scientific Committee:  
C. HWANG  
National Chiao Tung University

## ***IGAG Sponsored Meetings***

### **Fifteen Years of Progress in Radar Altimetry Symposium**

*13-18 March 2006, Venice, Italy*

Fifteen years after the launch of ERS-1 and TOPEX/POSEIDON, the European Space Agency, in collaboration with the French Space Agency, CNES, is organising an exceptional Symposium on "15 Years of Progress in Radar Altimetry". For details, visit the website <http://www.esa.int/venice06>.

### **3<sup>rd</sup> IAG Symposium on Geodesy for Geotechnical and Structural Engineering and 12<sup>th</sup> FIG Symposium on Deformation Measurements**

*22-24 May, 2006, Baden, Austria*

The FIG symposia on deformation measurements and analysis have a long tradition dated back to 1975. The IAG Symposium was established in 1998 and held twice. It will be the first time that the two symposia will be held together as a joint conference. Researchers, engineers, educators, designers, manufacturers, contractors, public authorities, and other professionals are cordially invited to attend this international event. Please also visit the symposium website for further details: <http://info.tuwien.ac.at/ingeo/sc4/baden>.

### **VI Hotine-Marussi Symposium of Theoretical and Computational Geodesy: Challenge and Role of Modern Geodesy**

*29 May - 2 June 2006, Wuhan University, PR China*

The symposium will be held at Wuhan University, PR China, 29 May - 2 June 2006. More information will be circulated as soon as available and can be found at the website: [http://www.sgg.whu.edu.cn/icct\\_hm.html](http://www.sgg.whu.edu.cn/icct_hm.html)

### **International Workshop "Height Systems, Geoid and Gravity of the Asia-Pacific"**

*6-8 June, 2006, Ulaanbaatar, Mongolia*

The aim of the workshop is to bring together geodesists and geophysicists from the region working in the gravity field and height determination fields. The workshop will be arranged around the following topics: Height systems and national leveling networks, Regional and local geoid modeling, Airborne gravity survey, Satellite gravity and new earth gravity field models, Vertical datum and dynamic reference systems. Web site with meeting information: [www.igfs.net](http://www.igfs.net).

#### **EUREF Symposium 2006 Riga**

*14-17 June 2006, Riga, Latvia*

The 2006 Symposium of EUREF, the Reference Frame Sub-Commission for Europe of IAG, will be held in Riga, Latvia, from 14 to 17 June, invited by the University of Latvia, State Land Service, Rigas GeoMetrs SIA and Riga Technical University. For further information visit the website <http://euref-2006.lu.lv/>.

#### **IGeS Geoid School 2006. "The Determination and Use of the Geoid"**

*19-23 June, 2006, Copenhagen, Denmark*

The new Geoid School 2006 will be organized in Copenhagen, Denmark. The Preliminary Program and the Registration Form are now available. For further information visit the IAG website <http://www.iag-aig.org>.

#### **International workshop on quality improvement and coast-land applications of satellite altimetry**

*21-22 July 2006, Beijing, China*

An IAG Special Group 2.3 workshop on satellite altimetry will be held from 21-22 July 2006, Beijing, China. This workshop is dedicated to the problems and solutions of coast and land applications of satellite altimetry in such areas as coastal gravity field modeling, coastal circulations, river level and lake level monitoring and desert study using satellite altimetry. The webpage of the workshop can be reached at the following URL: <http://space.cv.nctu.edu.tw/altimetryworkshop/ALT2006.htm>.

#### **"Gravity Field of the Earth" – 1st International Symposium of the IGFS**

*28 August - 1 September 2006, Istanbul, Turkey*

The 1st symposium of IGFS as being a continuation of the symposia series of the former International Gravity and Geoid Commission will be held in Istanbul, Turkey. The major objective is to bring together the geoscientists working in general areas of modeling the Earth's gravity field. For more information visit the website: [www.igfs2006.org](http://www.igfs2006.org).

#### **XIII Assembly of the Wegener project**

*4-7 September 2006, Nice, France*

The 13th Assembly of WEGENER will provide a forum for discussion, coordination and scientific support for geoscientists interested in unravelling the kinematics and mechanisms of the broad Eurasian/African/Arabian collision zone. Details of the meeting are available: <http://wegener.unice.fr/>.

#### **Geodetic Reference Frames GRF2006**

*9-13 October 2006, Munich, Germany*

The Commission 1 „Reference Frames“ of the International Association of Geodesy (IAG) invites scientists and experts from all countries to participate in the Symposium “Geodetic Reference Frames”. The symposium shall give the opportunity to present new ideas, discuss improved models and approaches, and report on latest results of the definition and realization of geodetic reference frames. Detailed information is available at the symposium website: <http://iag.dgfi.badw.de/?grf2006>.

### **IAG Related Meetings**

#### **NTRIP Symposium & Workshop on "Streaming GNSS Data via Internet"**

*6 - 7 February, 2006, Frankfurt am Main, Germany*

The BKG will host a two-day symposium about "Streaming GNSS data via Internet" on 06-07 February 2006 in Frankfurt am Main / Germany. Under the auspices of RTCM, EUREF and EuroGeographics, the symposium's aims are to share knowledge, experiences and innovative ideas

concerning "Networked Transport of RTCM via Internet Protocol (NTRIP)".  
More information: [http://igs.ifag.de/index\\_ntrip\\_symp.htm](http://igs.ifag.de/index_ntrip_symp.htm).

#### **5th FIG Regional Conference – Promoting Land Administration and Good Governance**

*March 8-11, 2006, Accra, Ghana*

The focus of the 5th FIG Regional Conference will be on land administration and good governance as conditions for sustainable development. It will discuss these topics also through the technical tools that modern surveying technology can offer in promoting these main goals. More information on the conference web site: [www.fig.net/accra](http://www.fig.net/accra).

#### **EGU General Assembly 2006**

*02 – 07 April 2006, Vienna, Austria*

The EGU General Assembly 2006 will bring together geoscientists from all over Europe and the rest of the world into one meeting covering all disciplines of the Earth, Planetary and Space Sciences. The EGU invites all geoscientists to participate in the assembly, submit contributions to the topical sessions and share their research with colleagues and friends. Please also visit the conference website for further details: <http://meetings.copernicus.org/egu2006/>.

#### **EURISY Conference “GALILEO Services: Chances for Business”**

*24-25 April 2006, Prague, Czech Republic*

In cooperation with the Czech Space Office, Eurisy organises a conference entitled “Galileo Services: Chances for Business” which will take place on 24/25 April 2006 in Prague, Czech Republic. This Conference is co-sponsored by ESA, UN/OOSA and the Galileo Point Poland. For details, please visit <http://www.eurisy.org>.

#### **IEEE/ION PLANS 2006**

*April 24-27, 2006, Loews Coronado Bay Resort, San Diego, California*

IEEE – the world's largest professional engineering organization – through its Aerospace and Electronics Systems Society (AESS), and the Institute of Navigation (ION), invite you to attend and enjoy the Position Location and Navigation Symposium, PLANS 2006. PLANS is sponsored every two years. For details, please visit <http://www.plans2006.com/>.

#### **Asia Oceania Geosciences Society's 3rd Annual Meeting (AOGS 2006)**

*July 10-14, 2006, Singapore, Malaysia*

The AOGS mission is to promote geophysical science for the benefit of humanity in Asia and Oceania. Hence, AOGS 2006 will once again bring together geoscientists from all over Asia, Oceania and the rest of the world to present their works and ideas. AOGS invites all geoscientists to convene their own sessions and present their findings at AOGS 2006 in Singapore. For further details, visit <http://www.asiaoceania-conference.org/>.

#### **3<sup>rd</sup> International conference on Cybernetics and Information Technologies, Systems and Applications**

*July 20-23, 2006, Orlando, Florida*

CITSA '06 is an International Multi-Conference being organized with the purpose of providing researchers, practitioners, developers, consultants, and end-users of computerized, communications and/or control systems and technologies, as well as their industrial and social applications in the private and the public sectors, an opportunity to join in a common place sharing experience and knowledge. For details, please visit the conference website <http://www.info-cybernetics.org/citsa2006/>.



## Obituary

### **Torben Krarup**

Former Stategeodesist, Dr.tech.h.c. Torben Krarup died November 24, 2005, 86 years old. He was born in Odder, Denmark in March 2, 1919 a small city close to Horsens, where he lived since his retirement from the Geodetic Institute of Denmark in 1986.

After high school in 1938 he studied mathematics, physics, astronomy and chemistry at the University of Copenhagen and graduated as cand.mag. in mathematics in 1945. In 1949 he was offered a position at the Geodetic Institute, initially working with photogrammetry. In 1952 he graduated as mag.scient in geodesy and came to work at the Geodetic Department I, the research department of the institute.

During his work with the conversion of positions in the national coordinate system to UTM coordinates in ED1950 he developed a profound interest in geodetic data electronic processing and its use in all fields of geodesy.

At that time the computer market was dominated by IBM computers, which had numerical properties and functions which were not optimal for geodesy. Krarup became member of a team with the task of designing a “geodetic” computer, and this led to the construction of the first fully transistorized computer GIER (Geodætisk Instituts Elektroniske Regnemaskine), which was commercialized by the Danish company “Regnecentralen”.

Having access to an efficient computer, Krarup became deeply engaged in the development of fundamental geodetic software for network adjustment and coordinate transformation.

In 1959 Krarup was introduced to the theory of Molodenskij, which presented a new rigorous view on physical geodesy. Here the theory of the gravimetric boundary value problem presented challenges both theoretically and computationally, which was a great inspiration to Krarup. He became member of IAG Special Study Group 5.31 on mathematical methods in geodesy. With the encouragement of its president, Prof. Helmut Moritz, he continued his theoretical work, which was circulated in the form of “Letters” to the Study Group.

The high point was the publication in 1969 of “A contribution to the Mathematical Foundation of Physical Geodesy”. This publication has had a profound impact on geodesy. One high point was the introduction of least-squares collocation, which permits the rigorous combination of all types of measurements related to the gravity field for the construction of a numerical model of the gravity field.

He further developed his ideas into a theory of “Integrated geodesy” in which physical and geometric measurements may be treated within the same mathematical model and computational framework.

At the occasion of his 70<sup>th</sup> birthday a “Festschrift” was published in which a full listing of Krarup’s scientific publications up to 1989 can be found. However, he has until his death in 2005 continued scientific work resulting in publications co-authored with distinguished colleagues. He was honored for his work by the Technical University of Graz, Austria, by a Dr.tech. h.c. degree in 1982, and was in 1999 awarded the IAG Levallois Medal.

Torben Krarup was a wonderful person: kind, gentle, helpful, unselfish and impeccably honest.

C.C.TSCHERNING

#### *Reference:*

Kejlsø, E., K.Poder and C.C.Tscherning (Ed.): Festschrift to Torben Krarup. Geodætisk Institut, Meddelelse No. 58, København, 1989.