

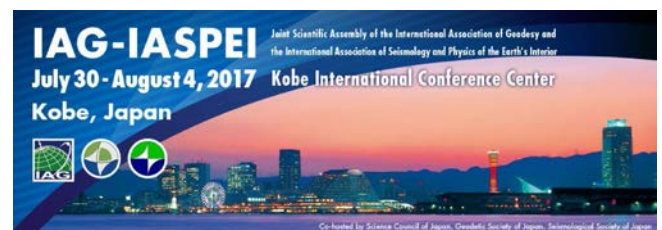
IASPEI Newsletter

March 2017

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Joint Scientific Assembly of IAG and IASPEI 2017



The joint Scientific Assembly of IAG (International Association of Geodesy) and IASPEI will be held at the Kobe International Conference Center, Japan, from July 30 through August 4, 2017.

The city of Kobe experienced a disastrous earthquake in 1995 with about 6,000 casualties, but has completely recovered. The surface rupture appeared on the Nojima fault on Awaji Island and is today preserved in the Hokudan earthquake memorial park. Half-day field trips to this park are planned on Tuesday and Thursday for details see http://iag-iaspei-2017.jp/scientific_field_trip.html.

The proposed scientific program consists of in total 43 symposia (7 IAG, 27 IASPEI and 9 Joint symposia) and more than 1200 abstracts have been submitted for oral and poster presentations. Now, the LOC and the conveners are working on to prepare the actual program. All authors will be informed about the outcome of their submissions at the beginning of April and the final schedule of the different symposia will be decided in the middle of April.



Foreword

Dear Readers,

In 2017, the Scientific Assembly of IASPEI will be the highlight of the IASPEI activities. This Assembly will be held together with the International Association of Geodesy (IAG) in Kobe, Japan and we start the newsletter with information about it. During the Opening Plenary, Eric Robert Engdahl will be awarded with the IASPEI Medal 2017.

Then, we have some information regarding the Scientific Assembly 2021 and news from the IUGG and the ISC.

Please don't forget to inform me about international conferences and workshops with IASPEI related topics. Then, I can add these events to the Meetings Calendar of future Newsletters.

Johannes Schweitzer
Secretary General

During the Opening Ceremony three keynote lectures will be given by Barbara Romanowicz on “Imaging the Earth's deep interior using seismic waves in the age of high-performance computing”, Manabu Hashimoto on “Evolution of Earthquake Science with Space Geodesy” and Kosuke Heki on “Geodesy in Japan: Legends and highlights”.

Please visit the conference website: <http://www.iag-iaspei-2017.jp/> that has the latest information about the scientific program, registration, accommodation and travel information. Also applications for exhibit booths are accepted at the conference website.

Some nationalities need visa for travelling to Japan. Please check for further information the web-page http://iag-iaspei-2017.jp/visa_information.html.

Early Bird registrations are still possible until May 10, 2017. The traditional IASPEI Dinner is planned for Thursday evening so please remember to sign in for this event.

We are looking forward to meeting you in Kobe!

IASPEI MEDAL WINNER 2017

International Cooperation for Better Understanding of the Earth

In 2013 IASPEI began to award a Medal for “sustaining IASPEI goals and activities and for scientific merits in the field of seismology and physics of the Earth's interior”. The IASPEI Bureau is proud to announce that it has unanimously selected as recipient of the 2017 IASPEI Medal: **Eric Robert Engdahl** for his outstanding career contributions to seismology and more than 40 yearlong engagement with IASPEI.

Laudatio



Eric Robert Engdahl, IASPEI Medal 2017

Eric Robert Engdahl, or for many of us, just Bob, has an almost 60 year long career in geosciences with many groundbreaking contributions to seismology and our understanding of the Earth. In parallel, Bob was remarkably active in many different positions in working groups and international bodies that organize and promote seismology as an international science.

Born in 1937 in Worcester, Massachusetts, USA, Bob Engdahl began his geoscience education by focusing on Geology (BS in 1958), continuing to study mathematics in the early 1960s, and then completing a widely cited PhD thesis on the velocity structure of the Earth's core in 1968. Beginning in the early 1960s, Bob started to work in Boulder, Colorado at the USGS forerunner, USC&GS. In the following years of his professional career in seismology he continued to work in different positions at USC&GS, NOAA/NOS, NOAA/ERL/CIRES, USGS and the University of Colorado, all located in Boulder.

In IASPEI, there is almost no major officer position which has not been held by Bob Engdahl: His international engagement started in 1971, when he became member of the IASPEI Committee on a Standard Earth Model as Chairman of the Subcommittee on P-Velocity Distribution in the Core (1971 –

1983). In parallel, he was Chairman of the IASPEI Sub-Commission on Earthquake Algorithms (1977 – 1983). Then, he continued his contribution as Chairman of the Commission on Practice (1983 – 1991) and elected Member of the IASPEI Executive Committee (1983 – 1987). In 1987, he was elected as second Vice-President of IASPEI (1987 – 1991) before he became IASPEI's Secretary-General/Treasurer for three periods (1991 – 2003). For eight years, he was also the IASPEI representative to FDSN (1991 – 1999). In 2003, during the IASPEI General Assembly in Sapporo, Japan, Bob Engdahl was elected as IASPEI President for the following four years, followed by service as Past-President until 2011. By the completion of his official IASPEI engagement after more than 40 years he had been a member of the IASPEI Executive Committee (elected or ex-officio) for 29 years.

In addition to IASPEI, Bob Engdahl contributed many years of service to the International Seismological Centre (ISC) as Member of the Governing Council and the Executive Committee (1983 – 1991), and as Chairman of the Executive Committee (1987 – 1991).

His international scientific recognition resulted in a long list of countries in which he worked as visiting scientist: during his career he had longer visits in Japan (1979), Germany (1983), Australia (1995), The Netherlands (1996) and Norway (2003, 2004). These visits generated a large number of joint publications contributing to the more than 110 peer-reviewed publications authored or co-authored by Bob.

Bob Engdahl's research interests in seismology span a wide range of topics: global seismology; seismic source location; structure of the Earth's interior (seismic tomography; deep Earth structure and dynamics, lateral heterogeneities in the Earth's mantle and core); structure and seismotectonics of subduction zones and earthquake source mechanisms. Today, he is an internationally recognized authority in seismology with more than 11.000 citations in

the scientific literature because of his many groundbreaking results and his scientific breadth. Here we highlight just a few of the most significant scientific contributions of Bob Engdahl.

Starting his career in the dawn of computer applications in seismology, Bob was involved in developing the seismic event location algorithms used at the USC&GS (USGS), and he introduced the – at that time – three-character long code for seismic station names and together with Edward A. Flinn the naming and numbering of geographic regions of global seismicity. More than 50 years after publishing the first version of the Flinn-Engdahl regions, these remain today the standard geographical system used by international data centers when reporting seismic event locations.

In the 1970s and 1980s, many of his publications were related to subduction zones around the Pacific and in particular Alaska. He worked on velocity structure, seismotectonics and seismic event locations. He recognized the need to re-evaluate the standard depth determinations of subduction zone events, exploiting accurate recognition of reflections from the sea floor (pP) and the ocean surface (pwP).

In the later 1980s and 1990s, Bob's main research focus moved to global seismology. Together with Brian L. N. Kennett he developed two global seismic velocity models, IASP91 (1991) and AK135 (1995, also together with R. Buland), which are extensively used today in research and international earthquake monitoring operations. These new velocity models were introduced along with new algorithms (such as Tau-p) that efficiently calculate consistent travel times for all seismic phases in a one-dimensional velocity structure. After many discussions in the community, AK135 was selected by both the USGS/NEIC and ISC to replace the venerable Jeffreys-Bullen tables, which had been in use for almost 50 years, as the Earth model for their routine earthquake locations.

Based on more than 30 years of experience with the problem of seismic event location, Bob developed together with R. van der Hilst and R. Buland an algorithm to relocate well-defined teleseismic events by applying AK135, a minimum number of seismic observations with an optimized geographical coverage, and calculating event depths after correction of surface reflection paths. In 1998, they published a subset of relocated seismic events from the ISC catalogue. This set of well-located events, also known as the EHB catalogue, has been used as a primary data set in a large number of tomography and seismicity studies, with Bob collaborating on many regional and global inversions. Bob regularly extended the EHB catalogue by relocating the ISC events of more recent years, and the catalogue contains today 141,478 events for the years 1960 to 2008.

Another outcome of Bob Engdahl's efforts to achieve a better understanding of global seismicity was his work to relocate global seismicity from the pre-ISC period. Due to limited seismological knowledge and errors in phase tables, the seismicity from before 1964 needed to be relocated. A first step in this direction was the scanning of the ISS Bulletins and relocating the largest events for the IASPEI Millennium Catalogue 1900 – 1999, which he published together with A. Villaseñor in 2002. Based on the experience with the Millennium Catalogue, Bob continued to be involved in the ISC project to compile an instrumentally located reference catalogue of significant earthquakes for the earthquake hazard community (ISC-GEM Catalogue). This is now broadly used as the definitive earthquake catalogue extending throughout the instrumental record.

During his outstanding career Bob Engdahl has been honored by the American Geophysical Union as Elected Fellow (1972) and by the Seismological Society of America with its Medal (2001). IASPEI is proud to recognize and honor Bob Engdahl's contributions to seismology and international seismology with the 2017 IASPEI Medal.

Call for bids for the 2021 Scientific Assembly

The Bureaus of the International Association of Geomagnetism and Aeronomy (IAGA) and IASPEI decided to plan their 2021 Scientific Assemblies as a joint conference. In June 2016, all National Representatives of IAGA and IASPEI were informed about this decision and were asked to consider hosting this event.

In the case that you would like to invite the IAGA – IASPEI community to your country, please contact your National Representatives of IAGA and IASPEI and discuss your idea with them.

Then, the National Representatives have to formally submit their official bids until the end of May 2017. IAGA and IASPEI will decide between all received bids for the 2021 venue during their next Scientific Assemblies in Cape Town and Kobe, respectively.

News from the IUGG

Union Commission on Data and Information renewed

The Union Commission for Data and Information (UCDI) provides a focused and sustainable organizational structure supporting and strengthening IUGG science through integrated scientific information activities. As the Commission was inactive since the IUGG General Assembly in Prague in 2015, the IUGG Bureau decided to renew its membership in its mid-term, and the Executive Committee endorsed the decision. Union Associations nominated several candidates for the Commission, and the IUGG Bureau selected the final list of the members including Commissioners, who served for the previous term.

The IASPEI representative in this Union is **Michelle Guy**, USGS, USA.

More actual information about IUGG can be found in the monthly IUGG eJournal Newsletter:

<http://www.iugg.org/publications/ejournals/>



The ISC Bulletin Rebuild: additional network bulletins from 1980 onwards are still welcome

Traditionally, the ISC produces its Bulletin year-after-year as the earthquakes and explosions occur and as the original bulletins become available after months of careful analysis by analysts at local, national, regional and global data centres. These data are then parsed into the ISC database, grouped per seismic event, relocated, reviewed by the ISC analysts and finally made available to users. Once published, the ISC Bulletin data were almost never changed retrospectively.

The ISC is now engaged in a unique project of rebuilding its Bulletin for the entire period of time. Such work is unique because it requires comparatively large human resources that are not normally available on an on-going basis. As part of the project, we re-compute all ISC hypocentres using our most recent earthquake location program and ak135 velocity model, re-assess the ISC magnitudes and make necessary overall quality checks that weren't easily possible with computer facilities of the past. Using this one-off opportunity, we also introduce the bulletin datasets that were missing, interrupted or

simply weren't available at the time of the original Bulletin production.

The rebuilding work on the 1960s and 1970s will soon be finished and made available to the ISC users. It is still the time though to submit to the ISC the seismic bulletins from 1980s, 1990s or 2000s based on networks that have never reported to the ISC, such as permanent small local networks or temporary networks from seismic experiments or aftershock sequence deployments.

Further details on the Rebuild project are available here:

<http://www.isc.ac.uk/projects/rebuild/>

Meetings Calendar

We report below titles, dates, places and websites of the forthcoming meetings relevant to the interests of IASPEI scientists. If you are aware of events not listed below, please inform the Secretary General.

2017

Annual Meeting of the Seismological Society of America

April 18 – 20, 2017, Denver, Colorado, USA

URL: <http://www.seismosoc.org/meetings/>

EGU General Assembly 2017

April 23 – 28, 2017, Vienna, Austria

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

JpGU-AGU 2017, 1st Joint Meeting

May 20 – 25, 2017, Kaihin-Makuhari, Chiba prefecture, Japan

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

UNISDR, 2017 Global Platform for Disaster Risk Reduction

May 22 – 26, Cancun, Mexico

URL:

<http://www.unisdr.org/conferences/2017/globalplatform/en>

Gordon Research Conference: Interior of the Earth

June 4 – 9, 2017, Mount Holyoke College
South Hadley, MA, United States

URL:

<http://www.grc.org/programs.aspx?id=12545>

48th Nordic Seismology Seminar & 2nd Nordic EPOS Meeting

June 12 – 15, 2017, Helsinki, Finland

URL: <http://www.seismo.helsinki.fi/nordics2017>

CTBTO, Science and Technology (SnT)

June 26 – 30, 2017, Vienna, Austria

URL: <https://www.ctbto.org/specials/snt2017/>

International conference «The development of seismological and geophysical monitoring systems of natural and technological processes in the Northern Eurasia region»

July 11 – 13, 2017, Moscow, Russia

First Circular:

http://www.ceme.gsras.ru/new/eng/conf/files/2017_Moscow.pdf

IAG – IASPEI: Joint Scientific Assembly

July 30 – August 4, 2017, Kobe, Japan

URL: <http://www.iag-iaspei-2017.jp/>

AOGS 2017 14th Annual Meeting

August 6 – 11, Singapore

URL:

<http://www.asiaoceania.org/aogs2017/public.asp?page=home.htm>

XII International seismological workshop "Modern Methods of Processing and Interpretation of Seismological Data"

September 11 – 15, 2017, Almaty, Kazakhstan

First Circular:

http://www.ceme.gsras.ru/new/eng/conf/files/2017_Kazakhstan.pdf

6th Scientific Biennial Conference "Problems of Complex Geophysical Monitoring of the Russian Far East"

October 1 – 7, 2017, Petropavlovsk-Kamchatsky, Russia

URL: <http://www.emsd.ru/en/conf2017/>

AGU Fall Meeting

December 11 – 15, 2017, New Orleans, USA

URL: <http://fallmeeting.agu.org/2016/2017-fall-meeting-new-orleans/>

2018

EGU General Assembly 2018

April 8 – 13, 2018, Vienna, Austria

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

Latin American and Caribbean Seismological Commission (LACSC) and Seismological Society of America (SSA) joint meeting

April 24 – 26, 2018, San Juan, Puerto Rico

AOGS2018 15th Annual Meeting

June 3 – 8, 2018, Hawaii, USA

16th European Conference on Earthquake Engineering

June 18 – 21, 2018, Thessaloniki, Greece

URL: <http://www.16ecee.org/>

36th General Assembly of the European Seismological Commission (ESC)

End of August / Beginning of September, 2018, Valletta, Malta

AGU Fall Meeting

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

2019

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

AOGS2019 16th Annual Meeting

July 28 – August 2, 2019, Singapore

AGU Fall Meeting

December 9 – 13, 2019, San Francisco, USA

2021

AOGS2021 18th Annual Meeting
August 1 – 6, 2021, Singapore

General Information about IASPEI

The International Association of Seismology and Physics of the Earth's Interior is one of the eight Associations of the International Union of Geodesy and Geophysics [[IUGG](#)].

The other IUGG Associations are:

Int'l Association of Cryospheric Sciences [[IACS](#)]

Int'l Association of Geodesy [[IAG](#)]

Int'l Association of Hydrological Sciences [[IAHS](#)]

Int'l Association of Meteorology and Atmospheric Sciences [[IAMAS](#)]

Int'l Association for the Physical Sciences of the Oceans [[IAPSO](#)]

Int'l Association of Geomagnetism and Aeronomy [[IAGA](#)]

Int'l Association of Volcanology and Chemistry of the Earth's Interior [[IAVCEI](#)]

Scientific Assemblies

IASPEI holds an Ordinary General Assembly every four years in conjunction with each Ordinary General Assembly of IUGG. Between the General Assemblies, IASPEI holds a Scientific Assembly, sometimes meeting with one of the other Associations of IUGG.

Participation in IASPEI Activities

Since July 2015, all scientists participating in IASPEI activities are counted as **members** of IASPEI (see <http://www.iaspei.org/statutes.html>). IASPEI welcomes all scientists throughout the world to join in seismological research.

IASPEI is subdivided into a number of Commissions, many of which have working groups for the study of particular subjects in their general areas of interest. On occasion, these internal IASPEI groups issue their own newsletters or circulars and many maintain their own web sites. At the IASPEI Assemblies, the groups organize specialist symposia, invite scholarly reviews and receive contributed papers that present up-to-the-minute results of current research. The IASPEI web site gives, or provides links to, information on the range of IASPEI activities.

The IASPEI Web site

IASPEI can be found on the web at:
<http://www.iaspei.org/>

Contacting IASPEI

The Secretary-General is the main point of contact for all matters concerning IASPEI.

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