

IASPEI Newsletter

September 2019

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Please do not 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

Greetings from the new IASPEI President Kenji Satake

I feel great honor and responsibility to serve as the IASPEI president for 2019 – 2023. The new IASPEI Bureau members are First Vice-President: Michelle Grobbelaar (South Africa), Second Vice-President: Li Li (China) and Secretary General/Treasurer: Johannes Schweitzer (Norway). The IASPEI Executive Committee consists, in addition to the Bureau, of Sergio Barrientos (Chile), Fiona Darbyshire (Canada), Daniela Pantosti (Italy), Dmitry Storchak (UK) and the past president Thorne Lay. As you can see from the above list, the new members are well balanced in terms of gender (4 females and 5 males), regional distribution (3 from the Americas, 3 from Europe, 2 from Asia and 1 from Africa), as well as scientific specialization.

Foreword

Dear Readers,

This is the first Newsletter after the General Assembly in Montréal, Canada in July. It contains at first the greetings from our new President, Kenji Satake, to the IASPEI members, then follows more information from the successful General Assembly, with the election results for the members of the IASPEI Bureau and Executive Committee for the period 2019 – 2023 and the acceptance speech of this year's IASPEI Medallist Brian L. N. Kennett.

Then, we received a call for input from the IASPEI Working Group on Magnitude Measurements, reports from two training courses held this September in Potsdam, Germany and the call for IGCP-UNESCO proposals.

In the past four years, I supported the Past President Thorne Lay as a Vice President, with Michelle Grobbelaar. I acknowledge great leadership of Thorne and daily volunteering tasks of Johannes Schweitzer as Secretary General. We held the 2017 Scientific Assembly jointly with IAG (International Association of

Geodesy) in Kobe, Japan, with great success, and agreed to set up an inter-association commission on seismo-geodesy. Because of rapid development of space geodesy, the boundary between geodesy and seismology is diluting.

IASPEI is one of the eight associations of IUGG and promotes seismology and studies of the physics of the Earth's interior. To achieve its goal, IASPEI has seven commissions on Seismological Observation and Interpretation (CoSOI), on Tectonophysics and Crustal Structure, on Earthquake Generation Process - Physics, Modelling, and Monitoring for Forecast, on Earth Structure and Geodynamics, on Earthquake Hazard, Risk and Strong Ground Motion (SHR), on Earthquake Source Mechanics (ESM), and on Education and Outreach. I note that organization and activities vary significantly from commission to commission. For example, CoSOI is well organized and very active, publishing and updating observatory manuals. The minimum task of commissions is to plan and organize the scientific sessions at the general and scientific assemblies.

Besides these topical commissions, IASPEI has four regional commissions in Europe (since 1951), Asia (since 1996), Africa (since 2011) and Latin America (since 2013). These regional commissions meet bi-annually, typically with training courses, to promote seismology in each region. In 2020, the European Seismological Commission will meet in Corfu (Greece) on 6 – 11 September, the African Seismological Commission in Kasane (Botswana) on 28 June – 4 July, the Latin American and Caribbean Seismological Commission in Quito (Ecuador) on 3 – 5 August and the Asian Seismological Commission will meet 1 – 3 June in Sharm el-Sheikh (Egypt).

In 2019, IUGG celebrated the centennial anniversary. On this occasion, Johannes Schweitzer and Thorne Lay published an article on history of IASPEI and global seismology in open-access journal "History of Geo- and Space Sciences" (<https://www.hist-geo-space-sci.net/10/173/2019/>). According to

the article, early history of IASPEI is as follows. Seismology started at national scale for describing the earthquake phenomena and their effects. First seismological societies were established in Switzerland (1878), Italy (1879) and Japan (1880). After the first teleseismic recording in Germany from an earthquake in Japan (1889), seismology became an international science, and the First International Seismological Conference was held in Strasbourg in 1901, representing 8 countries. In 1904, the International Seismological Society was established. In 1922, it became a part of IUGG (established in 1919), changing its name to IAS in 1930 and IASPEI in 1951.

IASPEI has played important roles in unifying seismological observations, such as naming seismic phases, defining measurement procedures, or improving the network of seismic stations, and published Manuals of Seismological Observatory Practice (the latest version in 2012). IASPEI also provided standard seismic velocity structure models of the Earth, such as iasp91 and ak135. Global distribution of earthquakes in the Earth and the reference Earth models have been important basic data for developing the science such as plate tectonics, or structure and dynamics of the Earth's interior. In the past, IASPEI also conducted peer reviews and evaluated the published precursory phenomena for earthquakes. IASPEI developed and distributed seismological software, and International Handbook of Earthquake and Engineering Seismology.

IASPEI has a close relation with the International Seismological Centre (ISC), which has produced seismological bulletins based on the IASPEI standards. IASPEI supports FDSN (International Federation of Digital Seismograph Networks), which is composed of groups responsible for installation and maintenance of seismological networks, and activities of CTBTO (Comprehensive Test-Ban Treaty Organization). IASPEI also supports joint commissions with other associations of IUGG, such as ILP (International Lithosphere Project),

on tsunamis, volcanology or on space geodesy.

Finally, I would like to emphasize the difference of IASPEI from other societies such as American Geophysical Union, European Geoscience Union, or Seismological Society of America. IASPEI is an international, non-governmental and non-profit organization, and consists of each member state of IUGG, as well as individual members. Its major task is to promote seismology in a global scale. This includes to lead the forefront but also raise the standards. The regional commissions are expected to perform the latter task. Another important aspect of IASPEI is that it does not have any professional support. All the officers are voluntary. Therefore, support from all the members is needed. Nevertheless, if you have any questions, ideas or requests to promote seismology in the global scale, please let us, Bureau and Executive Committee members, know.



IUGG 2019 Montréal Canada

Some information from the 40th IASPEI General Assembly during the IUGG General Assembly in Montréal, Canada, are already available on the IASPEI webpage (<http://www.iaspei.org/assemblies-conferences/2019-iugg-iaspei-40th-general-assembly-montreal-canada>) and more will be published in near future.

One highlight of the Assembly was the celebration of the 100th Anniversary of the IUGG foundation. IUGG published a collection of papers about the history of IUGG and its Associations, which can be downloaded with free access from https://www.hist-geo-space-sci.net/special_issue996.html.

The conference had 3993 registered participants from 103 different countries of which 525 gave IASPEI as their primary Association. 89 of the IASPEI participants were supported with grants to participate the Assembly.

The scientific program consisted in total of 239 symposia with 4919 abstracts submitted. IASPEI organized 26 IASPEI Symposia and 10 Joint Symposia and contributed to all 10 Union Symposia, as well as 19 Symposia organized by other Associations. All accepted abstracts will be made available on the IASPEI website within this autumn.

During the IASPEI Opening Plenary on Friday, 12 July 2019, the fourth IASPEI medal was awarded to Brian L. N. Kennett (see own Chapter in this Newsletter) and John Adams gave a keynote lecture with the title “Montréal Shakes – Local Earthquakes in Their Canadian Context” (see <http://www.iaspei.org/assemblies-conferences/2019-iugg-iaspei-40th-general-assembly-montreal-canada/iaspei-lecture>).

During the Assembly, the IASPEI Commissions and the IASPEI-sponsored bodies also had their business meetings. The names of the current Commission chairs can be found on the Commission web-pages (<http://www.iaspei.org/commissions>).

The traditional IASPEI Dinner with more than 100 participants was held on Monday, July 15, 2019. Some of the pictures taken during the General Assembly and the IASPEI Dinner will be posted on the IASPEI website.

The General Assembly finished with the Closing Plenary on Wednesday, July 17, 2017. During this Plenary the following members of the IASPEI Bureau and the IASPEI Executive Committee were elected for the period 2019 – 2023.

President:
Kenji SATAKE (Japan)

1st Vice-President:
Michelle GROBBELAAR
(South Africa)

2nd Vice-President:
Li LI (China)

Secretary-General / Treasurer:
Johannes SCHWEITZER (Norway)

Other IASPEI Executive Committee Members:
Sergio BARRIENTOS (Chile)
Fiona Ann DARBYSHIRE (Canada)
Daniela PANTOSTI (Italy)
Dmitry STORCHAK (UK)
Thorne LAY (USA) (Past President)

At the end of the plenary, the participants endorsed the following IASPEI resolution:

Resolution 1

RECOGNISING the enormous effort required to organise the IUGG General Assembly,

IASPEI

THANKS and CONGRATULATES the IUGG Local Organizing Committee and its Chair, Fiona Darbyshire, as well as the Scientific Programme Committee and its Chair, Spiros Pagiatakis, for a memorable meeting at an excellent venue in Montréal.

The next IASPEI Scientific Assembly will be held in Hyderabad, India, in August 2021.

J. Schweitzer

IASPEI Medal 2019

The IASPEI medal is awarded for merits in seismology: for sustaining IASPEI goals and activities and for scientific merits in the field of seismology and physics of the Earth's interior.

The IASPEI Medal 2019 was awarded during the Opening Plenary at the General Assembly

in Montréal to Brian L. N. Kennett, who could unfortunately not attend. Brian sent instead his acceptance speech as a video message, which was shown during the plenary:

Acceptance Speech by Brian L. N. Kennett

I am sorry that I am not able to be in Montréal today for the presentation of the 2019 IASPEI medal. I would like to thank my nominators and the IASPEI Bureau for this unexpected honour.

My association with IASPEI started in 1971 when, as a graduate student, I attended the IUGG General Assembly in Moscow and went to the Seismology Symposia. In 1983 at Hamburg I gave the first of several Association Lectures and then was elected to the Executive Committee at Vancouver in 1987. I served as IASPEI President from 1999 – 2003, which was itself a great honour.

My interests in Seismology have been broad – Including theoretical seismology, array studies, source characterisation and structural seismology on a wide variety of scales. A number of these aspects have come together in my activities with IASPEI, notably effective non-linear earthquake location by parameter space searches, and the development of new representations of travel times for global studies.

I would like to thank my many collaborators for their contributions to understanding the way the Earth works, particularly in studies of the Australasian region and the nature of subduction zones.

The value of IASPEI became very apparent to me when I moved to Australia, indeed it was through IASPEI that I established my Asian connections and made links to many other colleagues. Seismology needs to remain truly international – earthquakes do not respect borders.

Earthquake Magnitudes: We Need You

Seismological agencies operating at all scales from local to regional to global compute magnitudes and report them to the International Seismological Centre (ISC, www.isc.ac.uk) and other organizations. Often the procedures for magnitude calculation are not well documented, making it difficult to evaluate their meaning and to compare the magnitudes from one agency to another.

The ISC is the most comprehensive and final repository of seismological parameter data. The IASPEI Working Group on Magnitude Measurements (WG-MM) is tasked with the development of IASPEI standards for magnitude measurements that should be implemented by regional and global networks as part of their routine operations. The ISC and the WG-MM are working together to develop a comprehensive database of magnitude procedures. To further this goal, a questionnaire has been developed for agencies to document and share their magnitude computation procedures.

The questionnaire was previously emailed to agencies reporting magnitudes to the ISC. More than 20 agencies responded (e.g., <http://www.isc.ac.uk/cgi-bin/agency-get?agency=OTT>) but many have yet to do so. To facilitate the reporting, we have developed an online version of the questionnaire ([http://iaspei.org/commissions/commission-on-seismological-observation-and-interpretation/DOCUMENTATION MAGNITUDE PRACTICE.docx](http://iaspei.org/commissions/commission-on-seismological-observation-and-interpretation/DOCUMENTATION_MAGNITUDE_PRACTICE.docx)).

We thank those agencies who have already completed the questionnaire and encourage those who have not yet completed it to do so.

Agencies who report more than one magnitude type to the ISC may enter the information for all magnitudes on a single form or fill out a separate questionnaire for each magnitude type. The completed documentation will be

made available on the ISC website (<http://www.isc.ac.uk/iscbulletin/agencies/>).

Your input is valuable to the ISC, the WG-MM and the many seismologists, who use ISC data in their research.

Allison Bent and Domenico Di Giacomo,
IASPEI Working Group on Magnitude
Measurements
September 2019

Training Course „Seismology and Seismic Hazard Assessment“ 2019

The international training course "Seismology and Seismic Risk Assessment" was conducted at the German Geosciences Research Center GFZ (Potsdam, Germany) from August 12 to September 6, 2019. The GFZ-funded course was supported by UNESCO and co-financed by the German Federal Foreign Office.



The four-week intensive course was aimed at young scientists and students from developing countries worldwide to support observation and monitoring practice and to learn the latest techniques and tools for scientific and engineering applications. Theoretical lectures, computer-based exercises, real data applications, scientific excursions and symposia cover seismology, engineering seismology, hazard and risk assessment, satellite monitoring (InSAR) and modelling.

The New Manual of Observatory Practice (NMSOP), developed by the CoSOI Working Group in IASPEI, contains important background information provided during the course and is available online (<http://bib.telegrafenberg.de/en/publishing/distribution/nmsop/>).

For the course in 2019, we received 205 applications from 62 countries worldwide, from which a selection committee selected and invited 26 participants for the 2019 course. The participants came from Afghanistan, Albania, Argentina, China, Colombia, Congo DR, Costa Rica, Egypt, India (2), Indonesia, Iran (2), Kirgizstan, Madagascar, Malawi, Mongolia, Nicaragua, North Macedonia, Oman, Pakistan, Tajikistan (2), Thailand, Trinidad-Tobago and Turkey.

In 2019, a project qualification programme was linked to the course for the first time as an extension of further qualification. Following the training course, former course participants can apply for a project stay in Germany at the GFZ in order to initiate their own developments and applications in their home country that support seismic hazard analysis.

The international team of lecturers consisted of experts from various fields of seismology and engineering. Lecturers in 2019 came from GFZ Potsdam, the Federal Office of Civil Protection and Disaster Assistance (BBK), Bonn, Germany, the German Aerospace Center (DLR), Oberpfaffenhofen, Germany, the International Search and Rescue, I·S·A·R, Kleve, Germany, the Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (INOGS), Italy, and the University of Bergen, Norway.

The 2020 training course is organised in cooperation with a partner in Latin America. We plan to announce more information about the application and the program of the course in early 2020, and to select and invite about 26 people from spring 2020. More information will be found at

<https://www.gfz-potsdam.de/en/about-us/education-and-training/seismology-and-hazard-assessment/>

Torsten Dahm, CoSOI Chair

International Training Course on Ocean Bottom and Amphibian Experiment Seismological Data

From 5 to 6 September 2019, the GFZ Potsdam hosted a two-day training course for young scientists on the use of seismological data on the seafloor and amphibian experiments. About 16 participants came from Germany, Ireland, India, Kyrgyzstan, Norway and Spain.

With the introduction of bundled Ocean Bottom Station (OBS) infrastructures, more and more broadband seismological passive and active experiments are being conducted in the oceans. The use and processing of OBS data is often non-standardised and time-consuming, and young scientists are reluctant to enter the new field of ocean-bottom seismology. Non-Marine institutions often lack experts to advise young scientists and help them launch their own OBS experiment or use archived and available OBS data from previous expeditions.



The course aimed at supporting young scientists and promoting the use of OBS data. Lecturers from various European institutions, (T. Dahm, S. Heimann, J. Quinteros (all GFZ), D. Lange (GEOMAR), M. Schmidt-Aursch

(AWI), K. Hannemann (University of Leipzig), C. Juretzek (University of Hamburg), W. Crawford (IPGP Paris), S. Stähler (ETH Zurich) and N. Harmon (University of Southampton)) covered a wide range of topics, from synthetic seismogram computation at the seafloor, technical aspects and design of the OBS, available data and national pools, pre-processing, approaches to reduce seafloor noise, seafloor compliance, seismicity, ambient noise and teleseismic methods as receiver functions, polarisation and surface wave analysis. Course materials and computer labs can be made available to scientists on request.

The course received positive feedback from the participants and motivated the teaching team to repeat this new training activity at one of the future IASPEI-related conferences.

Torsten Dahm, CoSOI Chair

IGCP-UNESCO Call for Proposals

UNESCO is the only United Nations organisation with a mandate to support research and capacity in geology and geophysics, and the International Geoscience Programme (IGCP) is UNESCO's flagship scientific programme. The programme's mission includes promoting sustainable use of natural resources, advancing new initiatives related to geodiversity and geoheritage and geohazards risk mitigation, and facilitating international scientific cooperation in the geosciences. Its vision is: efficient, safe and sustainable Earth resources exploration and extraction; innovative renewable energy production and CO2 mitigation; and better understanding and prediction of climate change and geohazards. The programme emphasises women and young and early career scientists, who are especially encouraged to submit project proposals.

2019 Special Topics defined by the IGCP Council are as follows: (1) Mining geosciences

and sustainability; (2) Efficient and sustainable extractive industry technologies and stimulation methods; (3) Geology for the sustainable and safe scale-up of renewable energy production; (4) Big Data, Cloud Computing and Artificial Intelligence in the geosciences; (5) Geohazards near metropolitan areas; (6) Global warming CO2 emission mitigation using new methods (such as Carbon Storage and Sequestration); (7) Sustainable small and volcanic islands: water, energy, resource management; (8) Geoheritage for sustainable development; and (9) Geoscience and the Anthropocene.

The 2019 project proposal call is open with the deadline for proposal submission of **15 October 2019**. More information on the proposal submission can be found here. For further information, please contact Ozlem Adiyaman Lopes or Marie-Laure Faber.

<http://www.unesco.org/new/en/natural-sciences/environment/earth-sciences/international-geoscience-programme/>

Prof. Carlos Alberto Vargas j.
Department of Geosciences, Universidad Nacional de Colombia
Member of the Scientific Board of the IGCP-UNESCO

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.

2019

8th Joint Workshop on High Pressure Planetary and Plasma Physics (HP4)
October 9 – 11, 2019, Dresden, Germany

URL:

<https://indico.desy.de/indico/event/22763/overview>

IGCP-659 Project Annual Meeting & 2nd Conference of Arabian Journal of Geosciences

November 25 – 28, 2019, Sousse, Tunisia

URL:

<https://www.cajg.org/index.php?p=workshops>

AGU Fall Meeting

December 9 – 13, 2019, San Francisco, USA

URL: <https://fallmeeting.agu.org/2019/>

2020

Seismological Society of America (SSA)

April 27 – 30, 2020, Albuquerque, New Mexico, USA

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

EGU General Assembly 2020

May 3 – 8, 2020, Vienna, Austria

URL: <https://www.egu2020.eu/>

ASC General Assembly 2020

June 1 – 3, 2020, Sharm el-Sheikh, Egypt

19th International Workshop on Seismic Anisotropy & 2nd Workshop on Active and Passive Seismics in Laterally Inhomogeneous Media

June 15 – 20, 2020, Želiv Premonstratsian Monastery, Czech Republic

URL: http://sw3d.cz/apslim/apslim-iwsa_2020.htm

AfSC 3rd General Assembly

June 28 – July 4, 2020, Kasane, Botswana

AOGS2020 17th Annual Meeting

June 28 – July 4, 2020, Gangwon, South Korea

URL: <http://www.asiaoceania.org/aogs2020>

LACSC 4th General Assembly

August 3 – 5, 2020, Quito, Ecuador

URL: <http://lacsc2020.com/>

ESC 37th General Assembly

September 6 – 11, 2020, Corfu, Greece

AGU Fall Meeting

December 7 – 11, 2020, San Francisco, USA

2021

EGU General Assembly 2021

April 25 – 30, 2021, Vienna, Austria

AOGS2021 18th Annual Meeting

August 1 – 6, 2021, Singapore

3rd Joint IAGA-IASPEI Scientific Assembly

August 22 – 27, 2021 Hyderabad, India

URL: <http://www.iaga-iaspei-india2021.in/>

AGU Fall Meeting

2021, New Orleans, USA

2022

EGU General Assembly 2022

April 3 – 8, 2022, Vienna, Austria

3rd European Conference on Earthquake Engineering and Seismology

June 19 – 24, 2022, Bucharest, Rumania

URL: <https://3eceeds.ro/>

AGU Fall Meeting

2022, Chicago, USA

2023

EGU General Assembly 2023

April 23 – 28, 2023, Vienna, Austria

AGU Fall Meeting

2023, San Francisco, USA

2024

EGU General Assembly 2024

April 14 – 19, 2024, Vienna, Austria

AGU Fall Meeting

2024, Washington, USA

2025

AGU Fall Meeting

2025, New Orleans, USA

2026

AGU Fall Meeting

2025, San Francisco, USA

General Information about IASPEI

The International Association of Seismology and Physics of the Earth's Interior [[IASPEI](#)] 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 several 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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