

IASPEI Newsletter

December 2020



**MERRY HOLIDAY SEASON and a
HAPPY and HEALTHY NEW
YEAR 2021 to
ALL OF YOU!**

IN THIS ISSUE

| | |
|--|---|
| Foreword | 1 |
| 3 rd IAGA – IASPEI Joint Scientific Assembly Hyderabad, India – Planning Status & Symposia | 2 |
| Call for IASPEI Medal 2021 nominations | 2 |
| 13 th General Assembly Asian Seismological Commission (ASC) | 3 |
| 3 rd General Assembly African Seismological Commission (AfSC) Kasane, Botswana | 3 |
| 37 th General Assembly European Seismological Commission (ESC) | 3 |
| 4 th Regional Assembly Latin American and Caribbean Seismological Commission (LACSC) | 3 |
| Rescuing Legacy Seismic Data FAIR'ly | 3 |
| Seismological Dataset Repository at the ISC | 4 |
| Educational Comics “When the Earth Quakes” | 4 |
| Obituary | 5 |
| Meetings Calendar | 6 |
| General Information about IASPEI | 7 |

Foreword

Dear Readers,

During 2020, the COVID-19 pandemic has affected our professional and private lives. Almost all conferences, workshops and meetings have been either cancelled, postponed, or changed to virtual meetings. Now, it looks like that at least the first half of 2021 will not become much different. All larger conferences have been moved to virtual format. If you plan to participate in any of these events, please regularly check the corresponding webpages.

In this Newsletter we have first the latest news regarding the 3rd IAGA-IASPEI Scientific

Assembly, which will be now also a virtual event, a call for nominations for the IASPEI Medal 2021 and the latest information about the next Assemblies of our regional commissions.

Then, I received a workshop report, an announcement from ISC and information on some new educational material about seismology and earthquakes.

With great sadness I must inform you that we lost one of our colleagues. We remember him with an obituary.

Please do not forget to send me information or corrections about international conferences and workshops with IASPEI related topics. This list can only be complete and correct when I receive information about such events and can update the Meetings Calendar of future Newsletters.

Stay healthy,

Johannes Schweitzer
Secretary General

3rd IAGA – IASPEI Joint Scientific Assembly Hyderabad, India

Planning Status & Symposia

After 1969 in Madrid, Spain, and 2001 in Hanoi, Vietnam, IASPEI will join again the International Association of Geomagnetism and Aeronomy (IAGA) for a common Scientific Assembly in Hyderabad, India, in August 2021.

After several meetings and discussions between the LOC in Hyderabad and the two Associations IAGA and IASPEI, it was decided that we continue with our plans for the Assembly but change from an in-person meeting in Hyderabad to a fully virtual

conference during the same dates in August 2021.

The coming Assembly will become a new experience for all of us and many things have to be changed with respect to our traditional meetings. The LOC in Hyderabad has started to organize the Assembly under these new conditions. We all hope for a long list of participants and think the new conference form will enable many colleagues in the IASPEI community, who were not previously planning to come to India, to participate.

Two weeks ago, the 2st Circular was distributed with more information about the Assembly, including deadlines and a list of the planned Symposia and please follow the newest announcements on the conference website <http://www.iaga-iaspei-india2021.in/>.

Johannes Schweitzer

Call for IASPEI Medal 2021 nominations

The award of an IASPEI medal has been decided during the 2011 General Assembly in Melbourne.

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 Bureau is in charge of taking the decision about who, among the candidates nominated at large, will be the medal recipient.

Until now, the IASPEI Medal has been awarded to Robin Adams (2013), Willie H. K. Lee (2015), Bob Engdahl (2017) and Brian L. N. Kennett (2019).

Nominations of candidates for the IASPEI Medal 2021 are due until 28 February 2021.

Please send nominations attached with a CV of the candidate and a letter of motivation for the nomination to:

Johannes Schweitzer, IASPEI Secretary-General (iaspei@norsar.no)

13th General Assembly Asian Seismological Commission (ASC)

The 13th General Assembly of the ASC will be held as part of the virtual Joint IAGA-IASPEI Scientific Assembly, 22 – 27 August 2021.

3rd General Assembly African Seismological Commission (AfSC) Kasane, Botswana

The new date for the postponed third General Assembly of the AfSC is 6 – 10 September 2021. Please stay informed by regularly checking the conference website <http://afsc3ga2020.co.bw/site/>.

37th General Assembly European Seismological Commission (ESC)

The 37th General Assembly of the ESC had to be postponed to 2021 and will be held as a virtual meeting on 19 – 24 September 2021. Please stay informed by regularly checking the conference website <https://www.erasmus.gr/microsites/1193/>

4th Regional Assembly Latin American and Caribbean Seismological Commission (LACSC)

The fourth Regional Assembly of the LACSC had to be postponed to 2022. Conference date and location will be decided in early 2021.

Rescuing Legacy Seismic Data FAIR'ly

In recognition of the pressing need to preserve legacy seismic data, the first U.S. workshop on Securing Legacy Data to Enable Future Discoveries was held September 18 – 19, 2019 in Albuquerque, New Mexico. The participants outlined a vision to create a community and infrastructure necessary to advance the preservation, access, and usage of analog seismic data. Knowledge of this resource is essential in describing current holdings and identifying the metadata necessary to find data and make them available to modern research techniques. Lowering the barriers to usage includes easing access and creating the tools necessary to transform the data to digital forms, whether as scanned images or a digital time series, in making them accessible to modern seismic analysis methods. Building a community of users includes inspiring early career researchers, leading special sessions at professional meetings on research uses, volunteering to be an Editor of a special issue, or teaching workshops on tools and methods. Only good stewardship by the community will secure these primary observations for future generations and preserve our scientific heritage. We invite you to join the effort to safeguard this resource and make it FAIR for current and future generations of earth scientists.

See:

Hwang, L. J., Ahern, T., Ebinger, C. J., Ellsworth, W. L., Euler, G. G., Okal, E. A., Okubo, P. G., & Walter, W. R. (2020a).

Rescuing Legacy Seismic Data FAIR'ly.
Seismol. Res. Lett. doi: 10.1785/0220200027

Hwang, L. J., Ahern, T., Ebinger, C. J., Ellsworth, W. L., Euler, G. G., Okal, E. A., Okubo, P. G., Walter, & W. R. (2020b). Workshop Report: Securing Legacy Seismic Data to Enable Future Discoveries September 18-19, 2019 Albuquerque, New Mexico. <https://doi.org/10.31223/osf.io/dre8m>

Lorraine J. Hwang on behalf of the Workshop Committee
University of California, Davis, California, USA

Seismological Dataset Repository at the ISC

www.isc.ac.uk/dataset_repository/

This relatively new supplementary ISC service allows individual researchers or groups to submit seismological datasets that they wish to be openly available to scientific community for a long period of time. This service will assist a positive trend in scientific publishing to require article authors to make the original research data openly available so that their conclusions could be both tested and used by other researchers.

The examples of acceptable datasets include but are not limited to seismic event catalogues/bulletins, results of earthquake source studies, results of structure studies, velocity models, notable earthquake observations, seismological computer code.

This long-term secure repository of seismic datasets includes all necessary metadata such as a DOI, author contact information, affiliation, relevant scientific publication, date of submission as well as associated information such as comments, formats, positions of relevant seismic stations etc.

The ISC Repository is an open facility that has a good potential to serve geophysicists for a

very long time. This facility is likely to be viewed by scientific journal editors as one of the legitimate independently maintained secure places for depositing author processed datasets to satisfy editorial board requirements on open access to data.

Dmitry Storchak, ISC

Educational Comics “When the Earth Quakes”

We are researchers and science communicators of the Institute of Geophysics of the Czech Academy of Science and we would like to attract your attention to new educational comics “When the Earth Quakes” accompanied with a board game that has been recently released in an English version.

The new educational tool explaining the propagation of seismic waves through our planet is aiming to be used by science communicators and teachers to explain the basics about the earthquake origin, seismic wave propagation and Earth structure and to attract students to Earth and planetary sciences.

Creation of the comics and the board game was funded from public resources of the Czech Republic and European Union so we would like to allow the broadest public possible to be able to access it.

In this regard, if you like it and find it useful, we would like to kindly ask you to include it in your educational resources or help us to promote it through your channels to the public and teachers.

Both the comics and the board game are released under Creative Commons license allowing to be freely used for all possible purposes. Materials can be downloaded from <https://www.ig.cas.cz/en/outreach/comics-seismic-wave/> - both for home printing as well

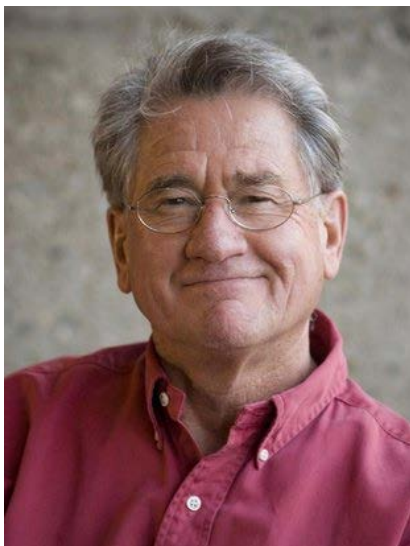
as for professional printing. Some other language versions are in preparation too and will be released on our web site.

For details or any question please contact us at: Matěj Machekv(mates@ig.cas.cz) or Petr Brož (petr.broz@ig.cas.cz).

Obituary

Donald V. Helmberger

1938 – 2020



Donald V. Helmberger, PhD and Smits Family Professor of Geophysics Emeritus at Caltech, and one of the most impactful seismologists to have lived, died on 13 August 2020. Don was born 23 January 1938, the youngest child of 13, in the small rural town of Perham, Minnesota. He completed his bachelor's degree in physics at the University of Minnesota in 1961. That summer he participated in a cruise involving seismic imaging of the oceanic crust in the Bering Sea and was inspired by the challenge of interpreting the recorded seismic waveforms – the beginning of a lifelong passion. That experience drew him to a new focus on geophysics and he enrolled in the graduate

program at UC San Diego, where he completed a master's degree in 1965 and a Ph.D. in 1967. His graduate work was strongly influenced by Russell Raitt and Freeman Gilbert. After a two-year appointment as a research associate at MIT, working with Frank Press and M. Nafi Toksöz, he joined the faculty for one year at Princeton University, and in 1970 moved to the Seismological Laboratory at Caltech where he was to spend the rest of his career. From 1998 to 2003 he served as Director of the Seismo Lab, one of the few intervals in which he let an administrative role divert him from seeking to understand the wiggles in seismograms. He became emeritus in 2017.

In his Ph.D. work, Don pulled together source and wave propagation theory to develop new synthetic waveform modeling capabilities. This was initially applied to active source seismic signals and nuclear test signals, for which the sources could be analytically prescribed. However, the recorded shaking from shallow earthquakes required a more complex representation of a complex source embedded in a varying velocity medium. The 1971 San Fernando earthquake spurred his interests in earthquake signals, and he focused on applying the powerful analytic techniques of Cagniard and de Hoop to develop quantitative waveform modeling capabilities in collaborations with colleagues such as Ralph Wiggins and graduate students Charles Langston and Thomas Heaton. This truly was the birth of quantitative synthetic waveform calculations for remote and local distances, and provided the foundation for the next 40 years of strong-motion and teleseismic waveform modeling, finite-fault source inversion, detailed waveform modeling of regional waveguides, upper mantle structure, lower mantle structure, and core structure.

In concert with a host of talented Caltech graduate students, major discoveries ensued, including space-time models of faulting for large earthquakes, imaging of strong lithospheric lateral gradients in velocity structure, details of transition zone velocity discontinuities, discovery of lower mantle seismic discontinuities, discovery of ultra-low

velocity zones at the core-mantle boundary, existence of strong lateral gradients on the margins of large low shear velocity provinces in the deep mantle, anomalous gradients in seismic velocity above the inner core, faulting triggered by nuclear explosions in the form of tectonic release, quantitative explosion yield estimation from waveform modeling at regional and teleseismic distances, and a vast number of other applications. The common denominator through the many studies has been quantitative prediction of recorded seismic waveforms with flexible physical source representations. Don's enthusiasm for application of generalized ray theory to address modeling of high quality waveforms for just about any Earth problem was extraordinary and infectious for those of us fortunate enough to work with him. His impact was felt well beyond basic Earth Sciences, as it resonated with the nuclear testing treaty monitoring community and with the seismic hazard assessment community. He received many honors in recognition of his contributions including being selected as the first recipient of the American Geophysical Union Lehmann Medal in 1997 and being elected to the U.S. National Academy of Science in 2004. Throughout his career he was unassuming and generous, never seeking the limelight despite his profound contributions and creativity. And he was wicked fast, darn hard to catch on a football field. Truly, a giant of the golden age of seismic waveform modeling, and his impact will sustain for generations.

Thorne Lay, based on various internet sources and personal recollections.

Interview with Donald V. Helmberger:
<https://oralhistories.library.caltech.edu/155/>

PNAS Profile of Don Helmberger:
<https://www.pnas.org/content/103/7/2009>

Caltech Memorial:
<https://www.caltech.edu/about/news/donald-v-helmberger-19382020>

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 or changes regarding these events, please inform the Secretary General.

2021

LACSC 4th General Assembly
2021, Quito, Ecuador

Postponed

vEGU General Assembly 2021
April 19 – 30, 2021, virtual
URL: <https://www.egu21.eu/>

Seismological Society of America (SSA)
April 19 – 23, 2021, virtual, USA
URL: <https://www.seismosoc.org/annual-meeting/>

Čermák7 - 7th International Meeting on Heat Flow and the Geothermal Field
May 12 – 19, 2021, Potsdam, GFZ

Postponed

19th International Workshop on Seismic Anisotropy & 2nd Workshop on Active and Passive Seismics in Laterally Inhomogeneous Media
June 7 – 12, 2021, Želiv Premonstratensian Monastery, Czech Republic
URL: http://sw3d.cz/apslim/apslim-iwsa_2020.htm

CTBT Science and Technology (SnT) 2021
28 June 2021 to 2 July 2021, Vienna, Austria and virtual
URL: <https://events.ctbto.org/snt/snt2021>

AOGS2021 18th Annual Meeting
August, 2021, virtual
URL: <https://www.asiaoceania.org/aogs2021>

3rd Joint IAGA-IASPEI Scientific Assembly together with ASC, 13th General Assembly
August 22 – 27, 2021, virtual, Hyderabad, India
URL: <http://www.iaga-iaspei-india2021.in/>

AfSC 3rd General Assembly
September 6 – 10, 2021, Kasane, Botswana
URL: <http://afsc3ga2020.co.bw/site/>

ESC 37th General Assembly
September 19 – 24, 2021, virtual, Greece
URL: <https://www.erasmus.gr/microsites/1193>

AGU Fall Meeting
2021, New Orleans, USA

2022

Čermák7 - 7th International Meeting on Heat Flow and the Geothermal Field
To be decided
URL: <https://ihfc-iugg.org/meetings>

LACSC 4th General Assembly
To be decided

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

IUGG 28th General Assembly
2023, Berlin, Germany
URL: <https://www.iugg2023berlin.org/>

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
2026, 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.

Dr. Johannes Schweitzer / IASPEI
c/o NORSAR
Gunnar Randers vei 15
PO Box 53, N-2007 Kjeller
Norway

E-mail: iaspei@norsar.no