

# IASPEI Newsletter

March 2018

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Two reports follow, one about the workshop on “Problems of Complex Geophysical Monitoring of the Russian Far East” and one about the summer school on “Earthquakes: nucleation, triggering, rupture, and relationships to aseismic processes”.

With great sadness, I must inform you that one of our colleagues passed away. We remember him with an obituary.

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



## Foreword

Dear Readers,

In 2018, all our Regional Commissions will have their biannual General Assemblies, most of them during the coming two months. The Regional Assemblies are an essential part of the IASPEI activities with the goal to promote the urgently needed continent-wide cooperation in seismology. Please consider participating in one or more of these Assemblies and be aware of the different deadlines for abstract submission and registration.

The ExeComs of IAGA and IASPEI decided in February about the venue of the 2<sup>nd</sup> Joint Scientific Assembly in 2021. Please find all details in the first Chapter of this Newsletter.

Then, a warning to all our members follows regarding fake emails.

## The 2021 IAGA-IASPEI Joint Scientific Assembly

IAGA and IASPEI received two bids, one from Hyderabad, India and one from Lisbon, Portugal to host the 2021 IAGA/IASPEI Joint Scientific Assembly. Both bids were carefully discussed between Bureau members of IAGA and IASPEI during the IUGG ExeCom Meeting in Montreal, in September 2017.

After collecting additional information and continuing to discuss different options, the IASPEI and IAGA Bureau members both voted for Hyderabad to host the 2021 IAGA/IASPEI Joint Scientific Assembly.

Together with the LOC in Hyderabad, the date for the 2<sup>nd</sup> Joint Scientific Assembly of IAGA and IASPEI was set to 22 – 27 August 2021.

In addition, it was decided that IAGA and IASPEI will join again in Lisbon in 2025 if the Portuguese are also interested to host a 2025 IAGA/IASPEI Joint Scientific Assembly. The decision about such a possible 3<sup>rd</sup> Joint Scientific Assembly of IAGA and IASPEI will be made during next year's IUGG in Montreal.

Now, IAGA and IASPEI are looking forward to a fruitful co-operation with the Indian LOC on making the IAGA-IASPEI 2021 Joint Scientific Assembly in Hyderabad, India, a most memorable one.

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## Fake IASPEI Emails

Recently, at least three National Correspondents of IASPEI received fake emails, in which the names of IASPEI Bureau members were used to construct emergency cases about colleagues in trouble. The trick is to ask for money support for these people in trouble.

**Please be aware that if IASPEI has to help people, IASPEI will never ask its members or officers to transfer any money.**

So, please be on alert, report these emails as fraud attempts if you have this option, and don't forget to delete them without trying to come in contact with the sender.

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## VI Scientific Biennial Conference “Problems of Complex Geophysical Monitoring of the Russian Far East”

The 4<sup>th</sup> Scientific Biennial Conference “Problems of Complex Geophysical Monitoring of the Russian Far East” (<http://www.emsd.ru/en/conf2017>) – organized by Kamchatka Branch of Geophysical Survey Rus. Ac. Sci. – was held in Petropavlovsk-Kamchatsky, Kamchatka, Russia, October 1 – 7, 2017. The scientific program consisted in total of 67 oral and 40 poster presentations delivered by participants from 12 different cities of Russia, France and Kazakhstan.

This meeting is the only regular multidisciplinary conference in Russia which covers the scientific, methodical, technical and applied aspects of monitoring and research of geodynamic processes in the Far East of Russia and nearby areas. Here, the most active seismic and volcanic zones are located as the Kamchatka-Kuril-Japan arcs, the Kluchevskoy and other active volcanoes, and assessment of seismic, tsunami and volcanic hazards are our top priorities.

In 2017, researchers of Kamchatka celebrate several significant dates as: 55 years of Kamchatka Regional Earthquake Catalogue, 55 years of the Institute of Volcanology and Seismology, 50 years of Geodynamic Studies in Kamchatka, 40 years of Hydrogeoseismic Studies in Kamchatka, 20 years of GPS-GNSS KAMNET network, and 10 years of Scientific Biennial Conference itself.

The key topics of the Conference were “Geophysical Monitoring of Geodynamic Processes in the Far East of Russia and nearby areas”, “Seismicity and Seismic Hazard”, “Hardware and Software Tools for Geophysical Monitoring”, “Precursors of Earthquakes and Volcanic Eruptions”,

“Modeling in Geophysics”, and “Tsunami and Early Warning Systems”. Among covered issues, significant ones are: (1) the current state of geophysical monitoring system and the perspectives of its development, (2) funding of seismic subsystem used for Tsunami Warning System, (3) volcanic eruptions and earthquakes forecasting and its limitation (with focus on mostly populated area), (4) faced challenges of big data processing (with focus on seismic waveforms and GPS data sequences) and others.

In the tight schedule there was a day off, when all participants were invited to take part in the excursion program, either a sea trip or a field trip to the Mutnovsky volcano.

The topics discussed correspond to the scope of IASPEI Commissions on Seismological Observation and Interpretation, on Earthquake Generation Process – Physics, Modeling, and Monitoring for Forecast, and on Earthquake Hazard, Risk and Strong Ground Motion.

The next meeting will be held in Petropavlovsk-Kamchatsky, Russia, in autumn 2019.

Evgenii Gordeev,  
Aleksei Malovichko,  
Danila Chebrov,  
Co-Chairs of the Conference

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## **EARTHQUAKES: nucleation, triggering, rupture, and relationships to aseismic processes**

**Summer training school, Cargèse, France  
2/10/2017 – 6/10/2017**



An international group of scholars assembled in early October at the Institut d'Etudes Scientifique on the stunning coast of Cargèse, Corsica to review and discuss recent progress in observations, experiments, and ideas concerning earthquake initiation and rupture for the 2nd Summer School of Earthquake Science. The school was organized by the scientific committee consisting of: David Marsan (ISTerre, Université de Savoie Mont-Blanc, CNRS), Greg Beroza (Stanford University), Michel Bouchon (ISTerre, CNRS, Université Grenoble Alpes), Joan Gomberg (USGS Seattle), and Anthony Sladen (GeoAzur, CNRS, Université Côte d'Azur).

### **How Earthquakes Start and Stop**

The 2<sup>nd</sup> Cargèse Summer School on Earthquakes covered important and persistently challenging topics in earthquake behavior, including: what factors control earthquake nucleation, how earthquakes are triggered – whether through static/dynamic stresses or fluid injection, and how recent progress in measuring aseismic deformation might inform our understanding of earthquakes. The 79 participants, mostly PhD students and postdocs representing 21 nationalities, and the 20 lecturers addressed these questions from a range of disciplines, and over a range of spatial and temporal scales. The first such school was held in

2014, and throughout the school a recurring topic of discussion was what new insights have been gained in the past three years?

New observations of complexity of earthquake rupture emphasize the critical role that geometric complexity must play. With some notable exceptions, earthquake scientists have confronted this only intermittently in the past, but recent developments in sensor technology (nodal-style seismic instruments), remote sensing (InSAR), and high-performance computing, increasingly allow scientists to both discern complexity and explore its role in earthquake behavior.

Multiple studies of large subduction zone earthquakes point to a preparation phase before at least some large events, sometimes originating at relatively shallow depths where the locking is supposedly strong. The question of whether this is the manifestation of a cascading failure process or is driven by an underlying aseismic process of unknown origin remains at issue. Also important to progress is the continuing development and application of new signal processing approaches to discern small earthquakes and weak deformation transients, especially as the mechanical processes at work in the latter are poorly known. Laboratory exploration of existing and proposed friction laws, both slip rate and slip dependent, will in that respect be essential. Both lab experiments and numerical simulations are making steady progress towards more realistic physics (fluids, roughness, damage zone, etc.) and providing new insight into earthquake processes.

Induced seismicity provides an opportunity to accelerate progress in understanding the role of fluids in faulting. It also fills the spatial gap between laboratory experiments and naturally occurring tectonic earthquakes. Greater access to data relevant to induced seismicity would help realize its potential for furthering earthquake science more generally.

At the end of the school there were rumblings about the next school. What current trends might we anticipate will be important? Machine learning and data mining applied to

earthquake science is one. Continued new insights from studies of induced seismicity, and potentially even a controlled earthquake experiment is another. Finally, new observational capabilities, such as the ramping up of InSAR satellites, LiDAR surveys, dense seismometer arrays, and novel and highly ambitious deployments, such as S-net, which spans the Japan Trench with seafloor instrumentation, are certain to provide new insights and will help ensure that we learn more than has previously been possible from earthquakes of the future.

The school was supported by: CNRS, NSF, OSUG, UCAJEDI program of Université Côte d'Azur, Université de Savoie MontBlanc, Université Nice Sophia-Antipolis, Observatoire de la Côte d'Azur, IUGG, IASPEI, and JSPS.

The organizing committee:  
David Marsan (ISTerre, Université de Savoie Mont Blanc)  
Joan Gomberg (US Geological Survey, Seattle)  
Greg Beroza (Dept. of Geophysics, Stanford University)  
Michel Bouchon (CNRS, Université Grenoble Alpes)  
Anthony Sladen (CNRS, Université Côte d'Azur)

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## Obituary



### **Alberto Giesecke Matto (1918 – 2016)**

Alberto Giesecke Matto, Peruvian geophysicist and one of the most outstanding specialists in seismology and disaster mitigation in South America passed away on August 20, 2016, at the age of 98. He was the first director and president of the Geophysical Institute of Peru (1947 – 1982); director of the Regional Center of Seismology for South America – CERESIS (1968-2005); president of the Seismic Risk Advisory Committee of UNESCO and UNDRO; member of the Ad Hoc Group and the Scientific Committee of the International Decade of the United Nations for Natural Disaster Reduction (IDNDR); vice-president of the Pan American Institute of Geography and History (PAIGH) and president of its Geophysical Commission and editor on the PAIGH Geophysical Journal. He was also a fellow of the Third World Academy of Sciences, TWAS.

He was born in Cusco on February 28, 1918. With an American father and a mother from Cusco, he grew up trilingual - learned Quechua and Spanish in his early years, and then English in elementary school. His father, Dr. Albert Giesecke, then Rector of San Antonio Abad del Cusco National University

and Director General of Education of Peru, considered important that Alberto Jr. pursued high school and university studies in the United States. So, Alberto Jr. traveled by ship, alone, before turning twelve years old. He completed elementary school and high school in the small rural town of Enon Valley, Philadelphia, and later studied electrical engineering at Rensselaer Polytechnic Institute (RPI), the oldest and more prestigious engineering university in the United States.

He returned to Peru at the age of 19 because he wanted to know and work in his country, taking a job as an electrical engineer at Westinghouse Co., which took him to know the mines throughout Peru. Two years later he joined the Scientific Expedition to Hispano-America financed by the Swedish Axel Wenner Gren to study the native tribes in the region of Madre de Dios and the Amazon, and to explore roads and villages around Macchu Picchu.

Giesecke had his first contact with a natural disaster during his work for the construction of a hydroelectric plant in the Pato Canyon in the Callejón de Huaylas, together with the Canadian geologist Dr. Luke Lowther. They were inside the canyon when on December 13, 1941, a glacier detached from the Cordillera Blanca overflowing Acocha and Cojup lagoons. More than 10 million m<sup>3</sup> of mud wiped out part of Huaraz city causing the death of 5,000 people. Both scientists saved their lives climbing a rock more than 20 meters.

Alberto Giesecke's bond with Geophysics begins on the Magnetic Observatory in Huancayo, built by the Department of Terrestrial Magnetism of Carnegie Institution, Washington. The observatory had begun in 1922 and became one of the most important observatories in the world because of its location near the magnetic equator, the accuracy, reliability and continuity of its data, and the diversity of studies which included: chromospheric activity of the sun, ionospheric physics, atmospheric electricity, cosmic radiation, meteorological variations,

seismicity, and telluric currents. The aim of these studies was to know the origin and nature of the Earth's magnetic field. From the moment he arrived at Huancayo on January 1942, Giesecke stopped being an "electrical engineer" and considered himself a geophysicist, starting his career in "geomagnetism" with the Carnegie Institution. His labor relationship with Carnegie lasted six years, until the observatory was transferred to the government of Peru in January 1948.

In 1966, Alberto Giesecke contributed to the creation of the Regional Center of Seismology for South America (CERESIS), which he directed for almost 40 years (1968-2005). He delivered in CERESIS his best efforts to promote integration among the regional researchers and also promoted projects towards the identification of volcano-tectonic hazards. At the same time, he fostered the development of Seismology in countries like Brazil as well as the development of an international cooperation spirit between scientists and engineers from all countries. He also improved conditions for American and European seismology groups to carry out important research projects in the Andean region.

Working to mitigate the effects of earthquakes in the region, Giesecke created consciousness of the vulnerability in front of natural disasters and the need to reduce their effects. The phrase that he created and became a paradigm is "we must live in pacific coexistence with earthquakes".

The vast trajectory and productive labor of Alberto Giesecke reveals a personality with high human and scientific qualities. He had a great will of service, with a solid and open management during more than six decades, and became a milestone in our community. For all this we recognize Alberto Giesecke Matto as the great Ambassador of Earth Sciences in Latin America.

Leandro Rodríguez  
Director of CERESIS

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## 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.

### 2018

#### **2<sup>nd</sup> General Assembly of the African Seismological Commission (AfSC)**

April 23 – 27, 2018, Al Hoceima, Morocco

URL: <https://afsc2018.sciencesconf.org/>

#### **EGU General Assembly 2018**

April 8 – 13, 2018, Vienna, Austria

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

#### **12<sup>th</sup> General Assembly of the Asian Seismological Commission (ASC) together with the 4<sup>th</sup> International Conference on Continental Earthquakes (ICCE)**

May 12 – 14, 2018, Chengdu, China

URL: <http://www.4thicce.com/>

#### **3<sup>rd</sup> General Assembly of the Latin American and Caribbean Seismological Commission (LACSC) and Seismological Society of America (SSA) joint meeting**

May 14 – 18, 2018, Miami, USA

URL: <http://seismology2018.org/>

#### **2<sup>nd</sup> BestPSHANI workshop "Issues and challenges towards full Seismic Risk Analysis"**

May 14 – 17, 2018, Cadarache Chateau, France

URL: <http://www.institut-seism.fr/en/2nd-workshop-best-psha-ni-may-2018-cadarache-chateau-france/>

#### **1<sup>st</sup> Scientific Congress Turkish National Union of Geodesy and Geophysics (TNUGG)**

30 May and 2 June 2018 in Izmir, Turkey

URL: <http://www.tujjbkongre2018.org/en>

### **AOGS2018 15<sup>th</sup> Annual Meeting**

June 3 – 8, 2018, Hawaii, USA

URL: <http://www.asiaoceania.org/aogs2018>

### **2018 Joint Meeting of CGU, CSSS, CIG, ES-SSA and CSAFM**

June 10 – 14, 2018, Niagara Falls, ON, USA

URL: <https://meeting2018.cgu-ugc.ca>

### **2018 IRIS workshop: Foundations, Frontiers, and Future Facilities for Seismology**

June 12 – 14, 2018, Albuquerque, NM, USA

URL:

[https://www.iris.edu/hq/workshops/2018/06/iris\\_workshop\\_2018](https://www.iris.edu/hq/workshops/2018/06/iris_workshop_2018)

### **16<sup>th</sup> European Conference on Earthquake Engineering**

June 18 – 21, 2018, Thessaloniki, Greece

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

### **16<sup>th</sup> SEDI 2018**

July 8 – 13, 2018, Edmonton, Alberta, Canada

URL: <https://sedi2018.sciencesconf.org/>

### **International Symposium on Geodesy and Geodynamics (ISGG2018)**

July 30 – August 2, 2018, Kunming, China

URL:

<http://isgg2018.csp.escience.cn/dct/page/1>

### **Goldschmidt2018**

August 12 – 17, 2018, Boston, MA, USA

URL: <https://goldschmidt.info/2018/>

### **1<sup>st</sup> International Conference on Earthquakes and Tsunamis**

23-24 August 23 – 24, 2018, Huatulco, Oaxaca, Mexico

Contact: Nelly Zúñiga

[nellyzuniga@huatulco.umar.mx](mailto:nellyzuniga@huatulco.umar.mx)

### **36<sup>th</sup> General Assembly of the European Seismological Commission (ESC)**

September 1 – 7, 2018, Valletta, Malta

URL: [www.escmalta2018.eu](http://www.escmalta2018.eu)

### **AGCC 2018 (Australian Geoscience Council Convention)**

October 14 -18, 2018, Adelaide, Australia

URL: <https://www.agcc.org.au>

### **AGU Fall Meeting**

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

URL: <https://fallmeeting.agu.org/2018/>

## **2019**

### **EGU General Assembly 2019**

April 7 – 12, 2019, Vienna, Austria

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

### **Seismological Society of America (SSA)**

April 23 – 26, 2019 Seattle, Washington, USA

### **27<sup>th</sup> IUGG General Assembly**

July 8 – 17, 2019, Montreal, Canada

### **AOGS2019 16<sup>th</sup> Annual Meeting**

July 28 – August 2, 2019, Singapore

### **AGU Fall Meeting**

December 9 – 13, 2019, San Francisco, USA

## **2020**

### **AOGS2020 17<sup>th</sup> Annual Meeting**

June 28 – July 4, 2020, South Korea

## **2021**

### **AOGS2021 18<sup>th</sup> Annual Meeting**

August 1 – 6, 2021, Singapore

### **2<sup>nd</sup> Joint IAGA-IASPEI Scientific Assembly**

August 22 – 27, Hyderabad, India

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# General Information about IASPEI

The International Association of **S**eismology and **P**hysics of the **E**arth's Interior [[IASPEI](#)] is one of the eight Associations of the International Union of **G**eodesy and **G**eophysics [[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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