



**INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS**  
**UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE**

## **The IUGG Electronic Journal**

**Volume 21 No. 6 (1 June 2021)**

This monthly newsletter is intended to keep IUGG Members and individual scientists informed about the activities of the Union, its Associations and interdisciplinary bodies, and the actions of the IUGG Secretariat, Bureau, and Executive Committee. Past issues are posted on the IUGG [website](#). E-Journals may be forwarded to those who will benefit from the information. Your comments are welcome.

### **Contents**

1. IUGG – The People at the Forefront (XIX)
2. IUGG Annual Report 2020
3. IUGG Business Meetings 2021
4. IAHS Digital Platform Innovation Call
5. ITU/WMO/UNEP Focus Group on AI for Natural Disaster Management
6. GEO-Microsoft Planetary Computer Programme
7. Awards and Honours
8. Meeting Calendar

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### **1. IUGG – The People at the Forefront (XIX)**

#### **Kenji Satake, President of the International Association of Seismology and Physics of the Earth's Interior (IASPEI), 2019-2023**



*Kenji Satake, IASPEI President,  
2019-2023, explaining a recent  
earthquake on Japanese TV*

Kenji Satake is a member of the IUGG Executive Committee, being the President of the International Association of Seismology and Physics of the Earth's Interior (IASPEI). He is a Professor and the Director of the Earthquake Research Institute, the University of Tokyo, Japan. He is a Fellow of the American Geophysical Union, a conferred Fellow of IUGG, and the 2020 Axford medallist of the Asia Oceania Geosciences Society.

#### ***My graduate student days and IUGG***

I finished my undergraduate and first graduate studies at Hokkaido University, Japan. The Department of Geophysics of Hokkaido University covers all the areas of IUGG. I took classes and attended field- and lab-works in meteorology including snow and ice (IACS, IAMAS), hydrology (IAHS), oceanography (IAPSO), and solid earth geophysics with emphasis on earthquakes and volcanoes (IAG, IAGA,

IASPEI, IAVCEI). These made me familiar with at least the basics of all IUGG disciplines, and more importantly, come to know people in other areas.

In May 1983, I was a second-year graduate student, and alone in the Usu Volcano Observatory while other volcanologists were absent doing fieldwork at another volcano. Then an earthquake with magnitude M 7.7 occurred in the Sea of Japan, not very far away from the observatory. I had to respond to all inquiries from local government and companies, while frequently changing magnetic tapes to record aftershocks. The earthquake generated a devastating tsunami, causing about 100 casualties, and I joined the tsunami field survey in the following week. This earthquake and tsunami became the subject of my Masters and Ph.D. theses.

From 1984, I continued my earthquake and tsunami research for my Ph.D. thesis at the Earthquake Research Institute, University of Tokyo. In 1985, the IASPEI Scientific Assembly was held in Tokyo. An assembly being held in your home country was a very exciting opportunity for Japanese young scientists, as it was not common in those days that graduate students could attend international meetings. It was my first international conference and I met many seismologists from all over the world. At the assembly, it was the first time I met Thorne Lay, IASPEI President (2015-2019), and we climbed Mt. Fuji together.

In 1987, I attended the first IUGG General Assembly in Vancouver, Canada, where I presented my Ph.D. work in the tsunami session, sponsored by the Joint Tsunami Commission of IASPEI, IAPSO and IAVCEI.

### ***My professional career and IUGG***

From 1988 to 1990, I was a postdoctoral fellow at the Seismological Laboratory, California Institute of Technology, where I progressed my tsunami work as well as learning about advances in seismology. In 1990, I became an Assistant Professor in the Department of Geological Sciences, University of Michigan. The 1992 Nicaragua Earthquake, known as a tsunami earthquake, generated tsunami damage. This was the first tsunami for which international tsunami survey teams were formed, and international coordination has become active since this event, mostly thanks to internet (e-mail) communication. Being in a department with many geologists, I also became interested in earthquakes and tsunamis from geological perspectives, e.g. tsunami deposits. I attended field-trips for paleoseismological evidence of the Cascadia Subduction Zone, where I learned that the most recent giant earthquake occurred ~300 years ago. While it was prior to European settlement in that part of North America, it was historical time in Japan, and I found Japanese historical documents describing the trans-Pacific tsunami. These records allowed us to estimate the date (26 January 1700) and size (M~9) of the most recent giant earthquake in the Cascadia Subduction Zone.

The 1995 Kobe Earthquake (M 7.3) caused more than 6,000 casualties. Because this earthquake occurred on a known active fault, studies of active faults and paleoseismology became an important seismological and disaster prevention topic in Japan. I moved back to Japan to join a group of paleoseismologists at the Geological Survey of Japan, and started studies of past earthquakes, mostly by geological methods. I also became involved in the government committee for long-term forecast of earthquakes.

In 2003, the IUGG General Assembly was held in Sapporo, Japan. Though I had attended all the IUGG Assemblies since 1987, it was my first time being involved in the Local Organising Committee (LOC). During the assembly, I became chair of the Joint Tsunami Commission of IAPSO/IASPEI/IAVCEI, without anticipating the huge tsunami events to come. The Indian Ocean Tsunami, caused by the Sumatra-Andaman Earthquake (M 9.1) on 26 December 2004, was the worst tsunami disaster in human history, affecting many countries around the Indian Ocean, as well as many European tourists spending Christmas vacation in tropical resorts. After this event, I became a frequent visitor to many Asian countries for field surveys of the 2004 earthquake as well as past earthquakes, to attend many national and international scientific meetings, including those of the Asia and Oceania Geosciences Society (AOGS), and to start several international projects with Asian countries. At the

2007 IUGG General Assembly held in Perugia, Italy, I presented the Union Lecture “Lessons from the 2004 Sumatra-Andaman Earthquake and the Asian Tsunami”.

In 2008, I moved to the Earthquake Research Institute (ERI) at the University of Tokyo, and I am currently the director of ERI. ERI has ~80 professors and ~20 researchers as well as ~70 graduate students in seismology, volcanology and the study of the Earth’s surface and interior. We cover the areas of IAG, IAGA, IASPEI and IAVCEI. ERI served as the LOC office for the 2017 Joint Scientific Assembly of IAG and IASPEI held in Kobe, Japan. As a faculty member of ERI, I often have to explain about earthquakes on TV (see photo) or for newspapers whenever large and damaging earthquakes occur.

### ***Earthquakes, tsunamis, and IUGG***

The 2011 Tohoku Earthquake (M 9.0) was the largest earthquake recorded by instruments in Japan. However, a similar earthquake in AD 869 was documented in the historical literature, and we were in the process of studying tsunami deposits and modelling the earthquake source. We could have finished the paleoseismological study if the Tohoku earthquake had not occurred.

At the 2011 IUGG General Assembly in Melbourne, Australia, a few months after the Tohoku Earthquake and Tsunami, I completed my tenure as the chair of Joint Tsunami Commission, and became an IUGG Bureau Member. At the 2015 IUGG General Assembly in Prague, Czech Republic, I became a Vice-President of IASPEI, at the 2019 IUGG General Assembly in Montreal, Canada, I was elected IASPEI President.



*Searching for evidence of past earthquakes and tsunamis in the field*

I am interested in giant earthquakes and tsunamis, however because of the long (~500 years) recurrence interval, we need to use various methods to study such infrequent giant earthquakes. For recent events (such as the 2011 Tohoku Earthquake), we can use high-resolution instrumental data (seismological, geodetic and tsunami) obtained by dense inland and offshore observation networks. For old events, we collaborate with historians to utilise historical documents to study past earthquakes or volcanic eruptions. For older events, we use geological methods, such as active fault surveys or tsunami deposits, typically in muddy marsh as shown in the photograph above. While the recurrence interval of giant earthquakes at each subduction zone is long, we can increase the samples by studying global subduction zones. Hence interdisciplinary and international collaborations are important to study giant earthquakes and tsunamis, and IASPEI and IUGG have provided such collaboration opportunities.

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## **2. IUGG Annual Report 2020**

The [IUGG Annual Report 2020](#) provides a summary of the activities of the Union including its Associations, Union Commissions and Programs. IUGG thanks everyone who contributed to the report. We invite you to download this impressive summary of last year’s activities.

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### 3. IUGG Business Meetings 2021

Due to the COVID-19 pandemic all IUGG Business Meetings 2021 will be held online. This includes the regular meetings of the Bureau as well as the meetings of the Executive Committee (15-16 September 2021), the Finance Committee, the Scientific Program Committee in preparation for the IUGG General Assembly 2023 in Berlin, and others.



*Greetings from our last Bureau Meeting on 20 May 2021*

### 4. IAHS Digital Platform Innovation Call



As a worldwide learned society, the International Association of Hydrological Sciences ([IAHS](#)) has always facilitated collective epistemological progress, knowledge capitalisation and scientific dialogue, through the mechanisms of networking, sharing and debating on emerging topics and through agenda-setting initiatives. In line with our parent bodies IUGG and ISC, IAHS has been

proactive in bridging divides and defending values, which are now reframed in the [Open Science principles](#).

The demographics and practices of the community are changing, the digital revolution is accelerating, and the current pandemic induces both constraints and innovations.

To reinforce IAHS's values - for the community and from the community - we are inviting ideas for the Association's digital acceleration. To coincide with its centenary, IAHS wishes to implement a

web platform and software system to effectively link and display global hydrological knowledge and scientific findings, and to facilitate new networking and knowledge management.

Systems could involve existing and/or new products and could potentially address some of the following requirements:

1. Graphic display of hydrological case studies from each continent, with community input
2. Overview of ongoing hydrological activities and scientific achievements
3. Opportunity for data sharing
4. Ability to link groups and foster scientific collaboration
5. Internal community building within and between IAHS Commissions and Working Groups
6. Engagement of and with partners, stakeholders and citizens
7. Framework for displaying and linking projects involved in the [Panta Rhei](#) and [Unsolved Problems in Hydrology \(UPH\)](#) initiatives
8. Evolution and innovation over time to provide an on-going platform and archive.

To enable the Association to brainstorm ideas for this community-led strategic shift, please [submit](#) your outline suggestions and aspirations by **15 June 2021** by e-mail.

Christophe Cudennec, IAHS Secretary General

## 5. ITU/WMO/UNEP Focus Group on AI for Natural Disaster Management

Are disruptive technologies and natural hazards your topic? Then mark your calendar for the upcoming virtual [workshop](#) (23 June 2021) and [meeting](#) (24-25 June 2021) of the ITU/WMO/UNEP Focus Group on AI for Natural Disaster Management ([FG-AI4NDM](#)). Please be sure to complete both registration forms. Enjoy thought-provoking presentations (including presentations from IAVCEI- and IAMAS-affiliated experts), engage in high-level scientific discussions, and have your research included in our activities! To see the full agenda, to register, and to propose a use-case for inclusion in our analyses and technical reports (deadline for submission is 10 June), please visit the FG-AI4NDM [homepage](#). For any questions, please contact our [secretariat](#).

**ITU Webinars**

**ITU/WMO/UNEP workshop  
on AI for natural disaster  
management**

*Nature can be disruptive;  
so can technology*

23 June 2021  
10:00-15:30 CEST

<https://itu.int/go/AI4NDM-02/>

Co Organized by

**AI** for Natural Disaster Management  
ITU Focus Group

WORLD METEOROLOGICAL ORGANIZATION

UN environment programme

ITU

## 6. GEO-Microsoft Planetary Computer Programme

The GEO-Microsoft Planetary Computer Programme invites the GEO community to be among the early contributors to [Microsoft's Planetary Computer](#). This is a multi-petabyte catalogue of global environmental data with intuitive Application Programming Interfaces (APIs), to take advantage of open data and analytical tools, and to help shape the development of the platform in its early stages.

This programme will support a number of 12-month projects that use the Planetary Computer to develop

applications using Earth observations to address environmental challenges, within the context of a Flagship, Initiative or Community Activity of the GEO Work Programme (GWP).



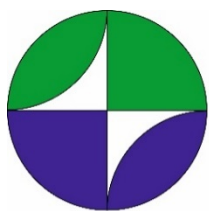
The deadline for applications is **25 June 2021, 11:59 PM CEST**.

To learn more about eligibility, selection criteria and how to apply, please visit [here](#). For any questions please contact: [Douglas Cripe](#)

The GEO Secretariat

## 7. Awards and Honours

### *International Association of Hydrological Sciences (IAHS) – Call for Applications*



IUGG



International Association  
of Hydrological Sciences

IAHS calls for applications for the [IAHS SYSTA](#) (Sivapalan Young Scientists Travel Awards) towards the costs of participating in the following IAHS-supported conferences in 2021 and 2022:

- [STAHY 2021](#) – virtual event (registration only)  
– 16-17 September 2021
- [4th International Conference of the Great Rivers of Africa](#) – Cotonou, Benin – 16-20 November 2021
- [IAHS 2022 Scientific Assembly](#) - Montpellier, France – 29 May - 3 June 2022

More information on the SYSTA eligibility criteria and application procedure are available [here](#).

The three key criteria are that applicants should be from, and currently reside in, a [financially disadvantaged country](#), be within 5 years of their PhD award and be first author of a paper in the *Hydrological Sciences Journal* ([HSJ](#)) or *Proceedings of the International Association of Hydrological Sciences* ([PIAHS](#)) or in another listed hydrological journal. Those who have previously received a SYSTA award for intercontinental travel are not eligible to apply. The maximum award value is EUR 2,500.

The closing date for SYSTA applications for the upcoming 2021 IAHS meetings is **18 June 2021** (noon; CET). The deadline for applications for the IAHS 2022 Scientific Assembly will be announced later. Any 2021 awards made under the SYSTA scheme will be transferred to the [IAHS 2022 Scientific Assembly](#) if it is not possible to use the awards in 2021 due to COVID-19 travel restrictions.

## *Nature Research – Call for Applications*

The 2021 Nature Research Awards for Inspiring Women in Science are now open for applications. These awards recognise leading women researchers working in STEM research and outreach. Apply by **20 June 2021** for your chance to win a grant of USD 40,000.

**nature  
research**

## *Asia Oceania Geosciences Society (AOGS)*



Asia Oceania Geosciences Society  
[www.asiaoceania.org](http://www.asiaoceania.org)

**Iver Cairns** (Australia), IAGA National Correspondent for Australia (2006-2015), was elected AOGS Honorary Member in recognition of his distinguished services to AOGS and excellence in space physics.

**Kuo-Fong Ma** (China, Rep. of), Executive Secretary of the IUGG National Committee for China, Academy of Sciences in Taipei (since 2016), was conferred the 2021 Axford Medal for her outstanding achievements in geosciences.

## *The Royal Society*

**Anny Cazenave** (Switzerland), elected IUGG Fellow (2019), was elected a Foreign Member of the Royal Society.

**Donald B. Dingwell** (Germany), IAVCEI President (2015-2019), was elected a Fellow of the Royal Society.

**THE  
ROYAL  
SOCIETY**

## *Congratulations!*

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## **8. Meeting Calendar**

### *June*

- 8-18, IACS, McCarthy AK, USA, [International Summer School in Glaciology](#)
- 12-15, ISC, Brisbane, Australia and Online, [Sustainability Research & Innovation Congress 2021](#)
- 14-16, IAVCEI, Heraklion, Greece, [Cities on Volcanoes 11th Conference \(POSTPONED TO 20-25 June 2022\)](#)
- 14-18, IAHS, Lake Como, Italy, [School of Advanced Studies. Principles, Applications And New Frontiers In Isotope Geochemistry](#)
- 21-24, GEO, Online, [GEO 2021 Virtual Symposium](#)
- 21-25, IAMAS, Columbus OH, USA and Online, [16th Workshop on Antarctic Meteorology and Climate](#)
- 23-26, IAG, Wuhan, China, [19th International Symposium on Geodynamics and Earth Tides](#)
- 28-2 July, IAG, Beijing, China and Online, [IAG Scientific Assembly](#)
- 28-2 July, CTBTO, Vienna, Austria and Online, [CTBT Science and Technology 2021 Conference](#)
- 28-23 July, IASPEI, Les Houches, France, [2021 Summer School on "Core-Mantle Interactions through time"](#)

## **July**

- 5-9, ISPRS, Online, [24th ISPRS Congress](#)
- 11-17, IAHS, Perugia, Italy, [2021 International Summer School on Hydrology](#)
- 12-16, IAHS, Online, [Hydro-JULES Summer School 2021](#)
- 16-18, IUGG National Committee for China, Qingdao, China, [4th Congress of China Geodesy and Geophysics](#) (in Chinese)
- 19-23, IACS, IAMAS, IAPSO, Online, [Seminar Series](#) (replaces the IACS-IAMAS-IAPSO Joint Scientific Assembly planned to be held in Busan, Rep. of Korea, from 18-23 July)
- 25-31, IUHPST, Online, [26th International Congress of History of Science and Technology](#)

## **August**

- 1-6, AOGS, Online, [AOGS 18th Annual Meeting](#)
- 2-6, IAMAS, Online, [International Conference on Clouds and Precipitation](#)
- 3-6, IAHS, Moscow, Russia and Online, [International Conference on the Status and Future of the World's Large Rivers](#)
- 14-20, IAMAS, Brisbane, Australia, [21st International Conference on Nucleation and Atmospheric Aerosols](#)
- 14-22, IUCr, Prague, Czech Republic and Online, [25th Congress and General Assembly of the International Union of Crystallography](#)
- 16-20, IAGA, Online, [5th IAGA School](#)
- 16-20, IASPEI, Online, [IASPEI School](#)
- 16-20, IGU, Online, [34th International Geographical Congress](#)
- 16-21, IUGS, New Delhi, India, [36th International Geological Congress](#)
- 22-27, IUTAM, Online, [25th International Congress of Theoretical and Applied Mechanics](#)
- 21-27, IAGA, IASPEI, Online, [IAGA-IASPEI Joint Scientific Assembly](#) and 13th General Assembly of the Asian Seismological Commission (ASC)
- 28-4 September, URSI, Rome, Italy and Online, [23rd URSI General Assembly and Scientific Symposium](#)
- 29-3 September, IAHS, Online, [12th Annual Catchment Science Summer School](#)

## **Association Scientific Assemblies 2021-2023**

- 28 June - 2 July 2021, IAG, Beijing, China and Online, [IAG Scientific Assembly](#)
- 19-23 July 2021, IACS, IAMAS, IAPSO, Online, [Seminar Series](#) (replaces the IACS-IAMAS-IAPSO Joint Scientific Assembly planned to be held in Busan, Rep. of Korea, from 18-23 July)
- 21-27 August 2021, IAGA, IASPEI, Online, [IAGA-IASPEI Joint Scientific Assembly](#)
- 29 May - 3 June 2022, IAHS, Montpellier, France, [IAHS Scientific Assembly](#)
- 30 January - 3 February 2023, IAVCEI, Rotorua, New Zealand, [IAVCEI Scientific Assembly](#)

The full IUGG Events Calendar 2021 can be found [here](#).

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