



INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS
UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE

The IUGG Electronic Journal

Volume 21 No. 1 (1 January 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.

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1. Season's Greetings



Our best wishes for happy
holidays and a healthy
New Year

Nos meilleurs vœux de
joyeuses fêtes et de santé
pour la nouvelle année

The IUGG Executive Committee and the IUGG Secretariat thank the Adhering Bodies and National Committees, Union Associations and Union Commissions as well as all other groups and individuals who helped make the challenging year 2020 productive, and those who contributed to strengthening international scientific cooperation in Earth and space sciences for the benefit of society.

We wish you happiness, health and great success in 2021.

2. IUGG – The People at the Forefront (XV)

Mioara Manda, President of the International Association of Geomagnetism and Aeronomy (IAGA), 2019-2023

At present, I am the Programme Manager for Solid Earth at the Directorate for Innovation, Applications, and Science of the Centre National d'Etudes Spatiales – CNES, the French Space Agency – in Paris. In this role I provide technical, management, and strategic leadership in a wide variety of scientific projects based on the use of space missions' data. As for my educational background, I first graduated in Geology and Geophysical Engineering from the University of Bucharest, Romania. I then pursued my first PhD at the University of Bucharest in “Geophysics and Geophysical Prospecting” (1993), and my second PhD at the Institut de Physique du Globe de Paris in “Internal Geophysics” (1996). I then received the “Habilitation à Diriger des Recherches” (HDR) from the University Paris VII (2001). Though my studies, and my career thereafter, have driven me around Europe, my fascination for planetary magnetic fields has always remained constant.

From those first five years at the University of Bucharest, I obtained an in-depth knowledge not only of the principles of geology and geophysics, but also of the education, science, and engineering culture of the former Eastern Bloc countries – nations which are poised to become major players in the future scientific development of the world. With this preparation, I had leapt into the competitive world of geophysical surveying.

1989 – the year of incredible political change in Europe – gave me the opportunity to move to the Institut de Physique du Globe de Paris. My first contact with French universities (Paris VII, Rennes) convinced me that new technologies are crucial to the advancement of teaching and science. During those years in Paris, with this thought in mind, I began my extensive engagement with magnetic observations. My involvement with the daily operational activity of the Chambon la Forêt Observatory was carried out alongside the supervision of a number of Master and PhD students, and included research based on magnetic data from ground-based and satellite measurements. My geomagnetic field research was expanded to include planetary physics.

Though I have spent my entire life in Europe, I have always considered that is not possible to call oneself a full European citizen without being familiar with the educational, working, and living systems of a few EU countries. A move to Germany in 2005 afforded me the opportunity to experience more of our continent's broad range of cultures. There I served as a Professor at Braunschweig University and Head of the “Physics of the Earth” Department in the Helmholtz Centre Potsdam - German Research Centre for Geosciences (GFZ). In that time, I was able to enjoy sharing science and life. I taught and supervised PhD students, managed different contracts and cooperative agreements, and had responsibilities in the geoscientific community at both a European and international scale.



2012: The three satellites Swarm in a clean room at the space center of IABG in Ottobrunn, Germany, before launch. Mioara Manda (right) with Albert Zaglauer, Astrium Project Manager (left).



2001: Flying in a Twin Otter plane from Resolute Bay to the frozen Arctic Ocean to survey the North Magnetic Pole. It was the first time a woman had ever joined the expedition – Mioara Manda (right) with Larry Newitt (left) and Lorne McKee (middle).

In 2009, I moved back to France, for new adventures. With a fascination for the far-away Nordic landscape – and space, which lurked much farther – I became Deputy Director at the European Center for the Arctic – Université de Versailles Saint-Quentin-en-Yvelines, for a few months. This was then followed by a move to CNES in 2011.

So, I changed from one country to another – and changed my name too, from Alexandrescu to Manda!

Had I but one line to sum up my past and current research, I suppose I could say only that I am a geophysicist involved primarily in measuring, mapping, and understanding the multitude of magnetic fields encountered in space near the Earth and Earth-like planets.

Throughout my career, I have concentrated my work in a few main directions:

- i. I have participated in general efforts to measure the Earth's magnetic field, from ground to space.
- ii. I have developed my own research, driven by my interest in modelling the core magnetic field and its temporal variations (with a special emphasis on geomagnetic jerks), as well as in investigating other field contributions (i.e. lithospheric and external fields).
- iii. I have used geomagnetic information to determine the physical properties of the deep Earth's interior (with special studies on the lower mantle conductivity and fluid motions at the core-mantle boundary).
- iv. I have considered that the Earth's magnetism should be studied in the context of Planetary magnetism and in the broader domain of geophysics.
- v. Planetary magnetism studies are very “attractive”; however, my scientific research has also revolved around some other geophysical domains, such as gravity fields.
- vi. Finally, as a geophysicist, my interest includes a wider range of topics, mainly related to the solid Earth’s observation from space.

I am of the opinion that doing science is a vocation to be shared with others – both colleagues and students. The students I have worked with (for their internship or their PhDs) have performed well, gone on to obtain good qualifications, and come back with pleasure to discuss geophysics and other matters. I have also considered that it is our duty to work for our community, and have therefore dedicated myself to many activities that serve the community. Of these, I would first like to mention my involvement in IUGG/IAGA. My first major IUGG meeting was in Vienna in 1991, where I was very impressed by the meeting and the people I encountered. I realised that IAGA and IUGG are more than just conferences, and have found myself participating in different Business Meetings ever since. From these, I have come to understand the context of my research within the broader community, and have had the opportunity to discuss science in more informal settings. All these have motivated me to increase my involvement in IAGA activities. Consequently, I found myself elected to a number of positions: chair of the Working Group V-8, today named V-MOD (1999-2003); co-chair of Division V (2003-2007); member of the Executive Committee (2007-2009); Secretary General (2009-2019), and President of IAGA since 2019. My service to the IAGA community will cover two full solar cycles by the time my Presidential mandate will finish!

Secondly, I would like to underline that I have also undertaken other community service, mainly for the European Geosciences Union. To identify a few: I have been elected President of Earth Magnetism and Rock Physics Division (2007-2011), Secretary General (2012-2016), and chair of the Outreach Committee since 2018. I should also mention my role of chair of the Education Award Committee of American Geophysical Union (2010-2012), Chair of the Science Committee – International Space Science Institute (2016-2019), and President of the Geophysical Maps Commission of the Commission for the Geological Map of the World since 2008.

I have learnt a great deal from these activities, and am exceedingly grateful for the manner in which my experiences within these various capacities have aided in building my scientific career. I have been honoured for my research through various awards, such as the Van Straelen prize (French Geological Society), the Hepites prize (Romanian Academy), the International Award of AGU, and the Petrus Peregrinus Medal of EGU. I am also a Titular Member of the Academy of Romanian Scientists, a Member of the Academia Europaea, a Member of the Royale Académie de Belgique, and a member of the Russian Academy of Science. I have also received the prestigious French title of “Chevalier – Ordre National du Mérite”, and have been declared an Honorary Citizen of Comanesti, my native town in Romania.

The time dedicated to the IAGA activities has been a wonderful occasion for me to experience the continuous growth of the association, involving scientists from all over the world and attracting more motivated young scientists with each passing year. During the course of my term as IAGA President, I would like to enhance two main directions for future activities: to promote IAGA and its members to the larger scientific community – by disseminating geomagnetism and aeronomy information beyond our community – and to ensure a wider dissemination of our activities to the new generation of scientists, politicians, economists, and other decision-makers. I look forward to my time as IAGA President, and I hope that we can come together to maintain and strengthen the association and the IUGG.

3. IUGG Membership and Financial Situation 2021

As of 1 January 2021, IUGG has 73 National Members including 58 countries in paying status. The paying members are placed in categories from 1 to 14 depending on their financial contribution to the Union (the membership dues rise with increasing category number). At present, the highest category is category 11. The members pay dues according to the number of units assigned to their category (in category 1 the number of units is 1, and in category 11 the number is 35). Following a decision made at the XXII IUGG General Assembly (Boulder, USA, 1995), the price of 1 unit is determined every year using an inflator index obtained from the Bureau of Labor Statistics, U.S. Department of Labor. In 2021, the price of 1 unit will be US\$2,080. The 58 paying members represent a total of 276 units, which is equivalent to a total income of US\$574,080. The funds received as dues are the basis for IUGG’s operations as a scientific union, although Union Associations may have their own funds earned through book sales, donations, or other means. The funds are spent to support: (i) scientific activities of Union Associations and Commissions; (ii) international scientific programs, projects and services; (iii) general and scientific assemblies, symposia, workshops, and schools; (iv) the IUGG Grants Program; (v) the International Lithosphere Program; (vi) the International Science Council; (vii) travel of students, early career scientists, and scientists from developing countries to attend scientific meetings; and (viii) administration and management.

Niels Andersen, IUGG Treasurer

4. IUGG Yearbook 2021

The [IUGG Yearbook 2021](#) is now available. Thanks to the National Committees, the Associations and Commissions for helping to update the information in the Yearbook! During 2021, updates on addresses and other information in the Yearbook should be sent to the [IUGG Secretariat](#) as soon as they are known. Our aim is to update the Yearbook as needed throughout the year.

5. IUGG co-organises the International Year of Basic Sciences for Sustainable Development

On 15 December 2020, the IUGG signed a Memorandum of Understanding with the International Union of Pure and Applied Physics (IUPAP) to co-organise the International Year of Basic Sciences for Sustainable Development (IYBSSD) as a Founding Union.

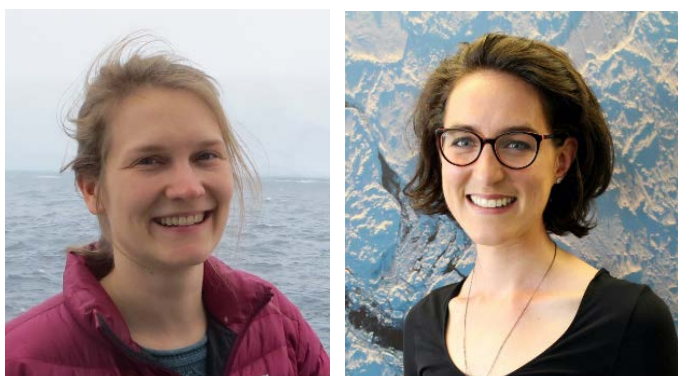
It is intended that IYBSSD will be organised in 2022, under the aegis of UNESCO and with the collaboration of UNESCO International Basic Sciences Programme (IBSP). Multiple scientific organisations support this initiative as Founding Unions or Partners.



During IYBSSD, there will be several international events organised by Founding Unions and Founding Partners, with the aim to promote the role of basic sciences in the achievement of the United Nations 'Sustainable Development Goals'. We encourage anyone with an idea (or already ongoing project) that could fit within the scope of IYBSSD to apply for a grant. There will also be communication actions at various scales, and incentives for local, regional and national organizations to set up their own events with the same aim.

More information about IYBSSD can be found [here](#).

6. IACS-IAPSO Joint Commission on Ice-Ocean Interactions



Isabel Nias (left) and Felicity McCormack (right) are co-chairing the new IACS-IAPSO Joint Commission.

IACS and IAPSO are pleased to announce the establishment of a new Joint Commission with a focus on ice-ocean interactions. Ocean-driven mass loss from the Antarctic and Greenland Ice Sheets is projected to increase as a result of climate change, with broad-scale impacts on sea level rise, ocean circulation and heat content, ice sheet dynamics, and ecosystems. However, the processes of ice-ocean exchange remain poorly understood, and poorly resolved by the numerical ocean and ice sheet models used to project scenarios of climate change.

This Joint Commission aims to address these knowledge gaps by providing a framework to reconcile numerical model estimates of ocean-driven ice mass loss with observations and evaluate projections of ice melt.

The Joint Commission will develop ties with international working groups to exchange knowledge and engage with the wider ice-ocean research community. This will include groups undertaking model intercomparisons of ice-ocean interactions and developing broad-scale observational networks in Antarctica and Greenland.

The working group is co-chaired by Dr. Isabel Nias (IACS) and Dr. Felicity McCormack (IAPSO). For more information on how to contribute, please contact [Dr. Nias](#) or [Dr. McCormack](#).

7. IACS Early-Career Scientist Awards – Call for Nominations

The IACS Early Career Scientist Prize is awarded to two nominated early career scientists who are assessed as having published the best scientific papers on a cryospheric subject during the calendar years 2019 or 2020. The award is a cash prize of EUR 1,000 plus a certificate, which will be awarded in 2021. Nomination form and guidelines are found on the IACS [webpage](#). Nomination deadline is **1 February 2021**.



8. IACS Survey Results: Are IUGG General Assemblies too long?

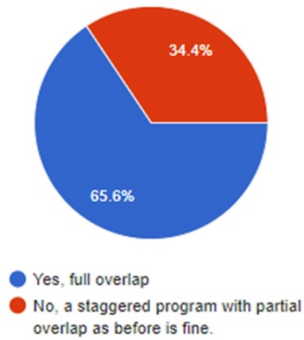
IUGG General Assemblies are significantly longer (11 days in Montreal) than other international conferences which typically last not more than 5 days. The scientific program of most IUGG Associations only spans periods of 5 to 6 days, but the program is staggered with typically only 2 days of overlap among all Associations, and IUGG business meetings stretch over the entire length of the Assembly.

IACS conducted an online survey among its National Correspondents to inquire about their views on the length of the IUGG General Assemblies and whether or not the current model (which requires them to stay beyond the period of the IACS scientific program) has affected their attendance at Business Meetings. The survey was sent to 49 Correspondents in spring 2020. Two thirds responded, 57% indicated that they also are or have been an IUGG National Delegate.

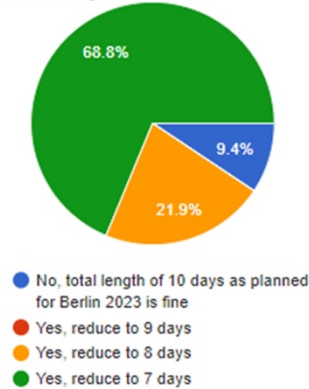
More than 90% of the 32 respondents favour a shortening of the Assembly length planned for Berlin in 2023 to 8 days or less. Almost 70% favour a reduction to 7 days. Furthermore, more than 71% of respondents did not participate in Business Meetings they were supposed to attend despite attending part of the Assembly. Hence results indicate that Assembly length has negatively affected attendance of the Delegates in Business Meetings.

The survey supports the unanimous view of the IACS Bureau that IUGG Assemblies should be further reduced in length, not only to enhance the experience for the participants through larger overlap of the scientific program but also to increase participation of National Delegates in IUGG Business Meetings. Similar surveys among the other Associations' National Delegates could reveal how representative the IACS results are within IUGG.

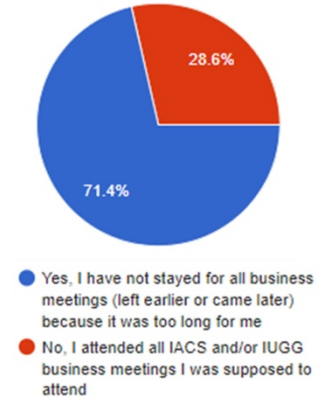
Should the days of the scientific program of all associations fully overlap (which implies equal length for all associations)?



Should the total length of IUGG General Assemblies be reduced? The total length includes 5 days of IACS scientific program and additional days for IUGG/IACS business meetings.



Has the length of the Assemblies affected your attendance?



Regine Hock and Stanislav Kutuzov, on behalf of the IACS Bureau

Editorial Note: The IUGG General Assembly 2023 in Berlin, Germany, is scheduled for 11-20 July 2023 with a scientific program *between 12 and 19 July 2023*.

9. IAGA Calls for Submissions “Coupling Processes in Terrestrial and Planetary Atmospheres”



Frontiers in Astronomy and Space Sciences has launched a new Research Topic in “Coupling Processes in Terrestrial and Planetary Atmospheres”. We would like you to participate by submitting your research. Accepted article types are: original research, methods, commentary, review, mini review, hypothesis and theory, data report, and brief research report.

Coupling Processes in Terrestrial and Planetary Atmospheres

The atmosphere-ionosphere system on Earth and also on other studied planets is controlled by upward propagating waves of various spatiotemporal scales from below, and by solar and magnetic effects, i.e., space weather effects from above. In order to better understand the structure and evolution of the middle and upper atmospheres both coupling processes should be taken into account.

Our Research Topic focuses on various coupling processes in terrestrial and planetary atmospheres from the lower atmosphere to the thermosphere-ionosphere, especially regarding multi-scale wave coupling phenomena. New measurements, numerical modelling, and theoretical results are encouraged, including electrodynamical and chemical studies.

The overarching goal of this Research Topic is to better understand the various dynamical, thermodynamical, and electrodynamical interaction processes in terrestrial and planetary atmospheres. Research results pertaining to comparative planetology in the context of coupling processes are also relevant to this Research Topic.

In particular, studies in the following areas and topics are most welcome:

- General circulation modeling and numerical modelling.

- Observation of Earth's middle and upper atmospheres, e.g., via radars, lidars, GPS-TEC, satellites.
- Global structure, variability, and sources of gravity waves, planetary-Rossby waves, Kelvin waves, and solar tides.
- Ion-neutral coupling and plasma dynamics.
- Ionosphere-thermosphere-mesosphere response to lower and middle atmosphere variability and disturbances.
- Travelling atmospheric and ionospheric disturbances.
- Wave generation (primary & secondary) and propagation effects in the neutral and ionised atmosphere.
- Remote sensing of terrestrial and planetary atmospheres. For example, among others, recent results from MAVEN, New Horizon, and ExoMARS, GOLD and ICON.
- Sudden stratospheric warmings.
- Radiate transfer, radiative processes, cloud formation.

Deadline for submissions: **15 February 2021**

Topic editors: Erdal Yiğit, Hermann Lühr, Alexander S. Medvedev, William Ward, Sonal Jain

More information can be found [here](#).

Erdal Yiğit, Co-chair of WGII-C: Meteorological Effects on the Ionosphere,
IAGA Division II – Aeronomic Phenomena

10. Meeting Calendar

January

- 28-4 February, COSPAR, Sydney, Australia, [43rd COSPAR Scientific Assembly](#)

February

- 1-5, ISC, Online, [Extraordinary General Assembly of the International Science Council](#)
- 9-12, IAG, Hobart, Australia, [Australian Earth Sciences Convention – ‘Core to Cosmos’](#)

March

- 20-26, IASC, Lisbon, Portugal, [Arctic Science Summit Week 2021](#)
- 29-31, IAG, Online, [1st ICCG Workshop on Geodesy for Climate Research](#)
- IAGA, Sao Jose dos Campos, Brazil, [VIII SBGEA & VIII SimFAST Joint Symposium](#)

April

- 19-30, EGU, Online, [EGU General Assembly 2021](#)

May

- 9-14, IWA, Copenhagen, Denmark, [IWA World Water Congress & Exhibition](#)
- 12-14, IASPEI, GFZ, Potsdam, Germany, [Cermak7 – 7th International Meeting on Heat Flow and the Geothermal Field](#)
- 26-28, IAG, Ljubljana, Slovenia, EUREF 2021 Symposium

June

- 5-12, IAVCEI, Hokkaido, Japan, [14th CCVG Field Workshop on Volcanic Gases](#)
- 7-9, IAMAS, Columbus OH, USA, 16th Workshop on Antarctic Meteorology and Climate

- 7-12, IASPEI, Želiv Premonstratensian Monastery, Czech Republic, 19th International Workshop on Seismic Anisotropy & 2nd Workshop on Active and Passive Seismics in Laterally Inhomogeneous Media
- 12-15, ISC, Brisbane, Australia, [Sustainability Research & Innovation Congress 2021](#)
- 14-18, IAMAS, Thessaloniki, Greece, [Quadrennial International Radiation Symposium](#)
- 14-18, IAVCEI, Heraklion, Greece, [Cities on Volcanoes 11](#)
- 22-26, IAG, Wuhan, China, [19th International Symposium on Geodynamics and Earth Tides](#)
- 28-2 July, CTBTO, Vienna, Austria, [CTBT Science and Technology 2021 Conference](#)
- 28-5 July, IAG, Beijing, China, IAG Scientific Assembly
- IACS, McCarthy AK, USA, International Summer School in Glaciology
- IAGA, Bergen, Norway, [8th HEPPA-SOLARIS](#)
- IAGA, Kazan, Russia, [XIXth IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing](#)
- IAMAS, SCOR, WCRP, Mindelo, [Cape Verde, SOLAS Summer School 2021](#)

July

- 4-10, ISPRS, Nice, France, [24th ISPRS Congress](#)
- 11-17, IAHS, Perugia, Italy, [2020 International Summer School on Hydrology](#)
- 12-16, IAHS, Wallingford, UK, [Hydro-JULES Summer School 2020](#)
- 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)
- 19-23, ICA, Florence, Italy, [30th International Cartographic Conference](#)
- 25-31, IUHPST, Prague, Czech Republic, [26th International Congress of History of Science and Technology](#)

August

- 1-6, AOGS, Singapore, [AOGS 18th Annual Meeting](#)
- 2-6, IAHS, Moscow, Russia, [International Conference on the Status and Future of the World's Large Rivers](#)
- 2-6, IAMAS, Pune, India, [International Conference on Clouds and Precipitation](#)
- 14-22, IUCr, Prague, Czech Republic, [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, Istanbul, Turkey, [34th International Geographical Congress](#)
- 16-21, IUGS, New Delhi, India, [36th International Geological Congress](#)
- 16-27, IAU, Busan, Rep. of Korea, [31st International Astronomical Union General Assembly](#)
- 22-27, IUTAM, Milan, Italy, [25th International Congress of Theoretical and Applied Mechanics](#)
- 21-27, IAGA, IASPEI, Online and Hyderabad, India, [IAGA-IASPEI Joint Scientific Assembly](#) and 13th General Assembly of the Asian Seismological Commission (ASC)
- 28-4 September, URSI, Rome, Italy, [23rd URSI General Assembly and Scientific Symposium](#)

September

- 6-10, IASPEI, Kasane, Botswana, 3rd General Assembly of the African Seismological Commission
- 12-16, IAMAS, Manchester, UK, International Global Atmospheric Chemistry Conference
- 13-17, IUGG, Potsdam/Berlin, Germany, IUGG Business Meetings 2021

- 14-16, IAG, Perugia, Italy, [The 6th satellite soil moisture validation and application workshop](#)
- 19-24, IASPEI, Online and Athens, Greece, 37th General Assembly of the European Seismological Commission
- 27-1 October, IACS, IAHS, WMO, UNESCO-IHP, Reykjavik, Iceland, [Cryosphere 2021 – Symposium on Ice, Snow and Water in a Warming World](#)
- 27-1 October, IAG, Boulder CO, USA, [IGS Workshop 2021: Science from Earth to Space](#)
- AGU, Flagstaff AZ, USA, [Chapman on Distributed Volcanism and Distributed Volcanic Hazards](#)
- IAG, Berlin, Germany, Space Geodesy and Ionosphere Research (SGI 2021) Workshop
- IASPEI, Cargèse (Corsica), France, [3rd International School on Earthquakes: Nucleation, Triggering, and Relationship With Aseismic Processes](#)

October

- 3-9, IAMAS, Seoul, Rep. of Korea, [Quadrennial Ozone Symposium 2021](#)
- 11-15, ISC, Online, [2nd General Assembly of the International Science Council](#)
- 20-22, IUPAP, Beijing, China, 30th General Assembly of the International Union of Pure and Applied Physics

November

- 2-6, WLF, Kyoto, Japan, [5th World Landslide Forum](#)
- 8-11, CODATA, WDS, Seoul, Rep. of Korea, [International Data Week 2021](#)
- 16-18, IAHS, Cotonou, Benin, [Hydrology of the Major African Basins](#)
- IAG, Lima, Peru, Reference Frames in Practice Seminar

December

- 13-17, AGU, New Orleans LA, USA, [AGU Fall Meeting 2021](#)

Places and Dates to be confirmed

- IAMAS, Venice, Italy, Understanding the climatic response to strong volcanic eruptions - First VolMIP meeting
- IAPSO, Quito, Ecuador, Tsunamis in Latin America and the Caribbean: Recent Developments and Plans for the Future
- IASPEI, Sharm El-sheikh, Egypt, 13th General Assembly of the Asian Seismological Commission
- IASPEI, Quito, Ecuador, Regional Assembly of the Latin American and Caribbean Seismological Commission (LACSC)

Association Scientific Assemblies 2022

- 20-24 January, IAVCEI, Rotorua, New Zealand, [IAVCEI Scientific Assembly](#)
- 30 May - 3 June, IAHS, Montpellier, France, [IAHS Scientific Assembly](#)

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