



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

The IUGG Electronic Journal

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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. IUGG – The People at the Forefront (VI)

Eduard Petrovsky, Bureau Member 2019-2023

I was born and grew up in the High Tatras mountains in northern Slovakia (former Czechoslovakia). My father worked for some years at the Lomnický Peak astronomical observatory and was involved in design and construction of instruments for recording cosmic rays. He was the first Slovak who spent a full winter at the Soviet Mirnyi base in Antarctica in 1962-63. Maybe I inherited from him the bias for exact natural sciences and graduated in solid state physics at the Faculty of Natural Sciences of Safarik University in Kosice. However, due to political activities and the attitude of my father during the “Prague Spring” upheaval in 1968, our family was black-listed and I was aware of possible troubles in making a professional career. Therefore, I decided to move to Prague, more than 600 km away from my home. Despite that, my career was affected politically and I was not allowed to start a PhD until the revolution in 1989. Nevertheless, I started my professional career at the Institute of Geophysics (present Czech Academy of Sciences) in Prague where I work until now. My first steps were in paleomagnetism, but later I switched to the newly emerging field of environmental magnetism. This is, simply speaking, the application of the knowledge



Measuring magnetic properties of rocks

about iron oxides to various environmental problems, from past climatic changes to present soil pollution.

Shortly after the “Velvet Revolution” in 1989, several of my senior colleagues left research and moved to commercial business. Thus, I was left with the organisation of regular biennial meetings on paleo and rock magnetism, which started in 1988, known in the corresponding community as “Castle Meetings”. In cooperation with my co-workers from Slovakia, I acted as the main organiser of 12 of them. Since 2012, the meetings are organised by colleagues in different European countries. I think it was mostly due to these meetings that I was accepted by the paleomagnetic and rock magnetic community. My first major meeting was IUGG in Vienna, Austria, in 1991. Later on, along with the assemblies of the former European Geophysical Society (EGS), I became active in organising the scientific sessions of IAGA and at the IAGA/ IASPEI Assembly in Hanoi, Vietnam in 2001 I was elected as co-chair of the IAGA Working Group on Paleo and Rock Magnetism. This service to the community progressed. At the 2007 IUGG Assembly in Perugia, Italy I was elected a member of the IAGA Executive Committee. At the 2011 IUGG Assembly in Melbourne, Australia I was elected IAGA Vice-President, and since the 2015 IUGG Assembly in Prague I served for four years as the IAGA President. My service to the community culminated in the 2015 IUGG Assembly in Prague, where I served as the Chair of the Scientific Programme Committee.

After my short initial stage in paleomagnetism, my research focused on environmental magnetism. This was timely, the subject was trendy, and in particular environmentalists and soil scientists became very interested in using rock magnetic methods. This enabled me to establish several international research collaborations. Until now, I am author or co-author of about 70 papers in peer-reviewed journals, with a total of more than 1400 citations. I co-edited two books and since 2012 I have been acting as an editor of *Geophysical Journal International*. I was principal investigator of several research projects funded by the Czech Academy of Sciences or the Czech Science Foundation. In 2000-2003, I acted as scientific coordinator of the EU-funded research project MAGPROX. During 1998-2001, I was associate professor at University Aix-Marseille III in France lecturing on physical properties of rocks. Until 2017 I taught the same course at the Faculty of Natural Sciences, Charles University in Prague, and I continue to give this course at the Palacky University in Olomouc, Czech Republic. I also give lectures on iron oxides in the environment (Magnetomineralogy) at the Faculty of Natural Sciences, Charles University in Prague, and Helsinki University, Helsinki, Finland, where I received the title Associate Professor in 2016. In 2007, I initiated the IAGA Young Researcher Award and in 2013 the IAGA Summer Schools, which started in 2013 in Merida (Mexico) with great support of the IAGA Executive Committee members (M. Manda, K. Whaler, A. Yau and others).



Sailing in Croatia

And let me conclude with some few informal words. Being of mountainous origin, I like nature and travelling. I also like enjoying life, with good food and drinks and nice people around. I still do my best to do some sports, after an active sportive career in childhood. I like skiing in the Alps, and my present favourite hobby is sailing (in particular in beautiful Croatia). As a result of my rather active career, both in terms of research and service to the community, I feel I can use my expertise and experience as an IUGG Bureau member. I am looking forward very much to this stage and to cooperation with all IUGG Executive Committee Members.

2. New deadline for submission of IUGG grant applications

Due to the coronavirus pandemic, the deadline to submit project proposals for the [IUGG Grants Program 2020/21](#) is extended until *1 June 2020*.

3. Reports by the IUGG National Committees

Several IUGG National Committees have published Quadrennial Reports on their activities from 2015 to 2019. The reports from Argentina, Canada, China, Croatia, Greece, India, Russia, Serbia, and the Slovak Republic are now available [here](#).

IUGG National Committees are invited to [submit](#) their annual/quadrennial reports at any time.

4. Reports on the ICTP-IUGG joint geoscience education activities

Since 2011, the Abdus Salam International Centre for Theoretical Physics (ICTP) and IUGG have been working together to enhance geophysical and geodetic education and science collaboration. IUGG annually awards grants (54 awards between 2011 and 2020) to support science education events, such as workshops and training schools, organised by ICTP.

Founded in 1964, by the late Nobel Laureate Abdus Salam, ICTP seeks to accomplish its mandate by providing scientists from developing countries with the continuing education and skills that they need to enjoy long and productive careers. ICTP has been a major force in stemming the scientific brain drain from the developing world. The impact of ICTP extends well beyond the Centre's facilities to virtually every corner of the Earth.

ICTP-Rwanda Joint School on Subseasonal to Seasonal Weather and Climate Prediction

The school was organised at the University of Rwanda, Kigali, Rwanda, from 29 April to 3 May 2019.

The school introduced the Copernicus platform which provides open access to climate services. Lectures held on the following topics were followed by hands-on exercises using the reanalysis, real-time seasonal forecast and climate model products.

Topics: (i) Analysis and Reanalysis Products, (ii) Subseasonal to Seasonal Forecasting, (iii) Predictability, ENSO and Teleconnections, and (iv) Copernicus Climate Services and the Data Store.

Cosponsors: International Union of Geodesy and Geophysics (IUGG), University of Rwanda (UR), East African Institute for Fundamental Research (EAIFR)

Organisers: A. Tompkins (ICTP), O. Akin-Ojo (EAIFR), F. Kucharski (ICTP), S. Bonfils (UR)

[More information.](#)

International Space Weather Initiative Workshop

The workshop was organised at the Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, from 20 to 24 May 2019.

The International Space Weather Initiative (ISWI) is a programme of international cooperation to advance space weather science by a combination of instrument deployment, analysis of space weather data from these instruments in conjunction with other data, and the communication of such results. The ISWI activities are coordinated by a Steering Committee, supported by its Secretariat.

A total of 115 scientists from 47 countries attended the workshop and 60 of them presented their research results during the event. IUGG funds supported the participation of 4 female and 4 male young scientists (from Bulgaria, P.R. of China, India, Kazakhstan, Peru, Republic of Sudan, Turkey) offering them accommodation, meal coupons and a fixed living allowance.

Topics: (i) Instrumentation, (ii) Solar Physics, (iii) Magnetosphere, Ionosphere, and Thermosphere Solar-Terrestrial Coupling and Space Weather, (iv) Space Weather Effects on Global Navigation Satellite Systems (GNSS), (v) New Space Weather Scientific Results, and (vi) Capacity Building, Education and Outreach.

Cosponsors: International Union of Geodesy and Geophysics (IUGG), ISWI, ICTP, Boston College, the International Committee on Global Navigation Satellite Systems (ICG), ESA, SCOSTEP, National Space Research and Development Agency of Nigeria.

Organisers: P. Doherty (Institute for Scientific Research, Boston College, USA), S. Gadimova (International Committee on GNSS, UNOOSA), N. Gopalswamy (NASA, USA), S. M. Radicella (ICTP)

[More information.](#)



Participants of the International Space Weather Initiative Workshop

Fifth Workshop on Water Resources in Developing Countries: Hydroclimate Modelling and Analysis Tools

The workshop was organised at the ICTP Adriatico Guest House (Kastler Lecture Hall) and Informatics Laboratory, Trieste, Italy, from 27 May to 7 June 2019.

GEWEX is the lead project for WCRP's Grand Challenge on Water Availability, which focuses on how fresh-water availability will shift due to climate change in many food producing regions of the world. Fresh-water availability can vary in time due to reductions or increases in precipitation, evapotranspiration, runoff, ground water recharge or discharge, and snow melt.

Climate extremes are one factor that can influence the intensity of precipitation in time, the snow melt timing and the exchange of water with land and, therefore, the storage of a region. All these make it imperative to better understand and predict precipitation variability and change.

To this aim, the climate model community and, in particular, the regional climate community at one end is moving toward very high resolution simulation ensemble efforts down to convection permitting resolution (1-3 km); and at the other end is working to implement fully coupled Earth System models to be able to understand the role of coupled water cycle and land atmosphere interactions in understanding local climate response.

This will open new frontiers for the hydrological modelling community by bridging the spatial scale gap between regional climate models and impact models (hydrological models, ecosystem models, etc.); which will, in turn, affect the quality of the prediction of the hydrological cycle across several scales, from catchments to regional to global.

Topics: (i) Precipitation measurements: what we can use to validate precipitation coming from the model output?, (ii) Ensemble of high resolution regional climate model outputs: how can those be used as input of a hydrological model?, (iii) Regional Earth System models: which is the role of the coupled water cycle?, and (iv) Uncertainty in global and regional climate projections: how can this uncertainty be taken into account for hydro-climate simulation?

Cosponsors: International Union of Geodesy and Geophysics (IUGG)

Organizers: S. Sorooshian (University of California, USA), M. Verdecchia (University of L'Aquila, Italy)

[More information.](#)



Participants of the Fifth Workshop on Water Resources in Developing Countries: Hydroclimate Modelling and Analysis Tools

Advanced School and Workshop on American Monsoons: Progress and Future Plans

The school and workshop were organised at the ICTP-SAIJR, São Paulo, Brazil, from 19 to 24 August 2019.

The Advanced School and Workshop brought together scientists and students for presenting and discussing the progress in research on the American monsoons and their role in the global monsoon system, and for planning future activities.

The American monsoons are important components of the global monsoon system. A very high percentage of the annual precipitation over most of South America occurs during the summer monsoon, including subtropical regions. The economy, agriculture, water and energy resources and, consequently, the livelihoods of the great majority of South America populations are heavily dependent on the summer monsoon. Also, the North American monsoon provides crucial water resources for Mexico, Central American countries, several island nations in the Caribbean and parts of the southwest USA. Predicting the intensity of American monsoon rainfall is not only a regional challenge, but is also relevant in the framework of a global subseasonal to seasonal forecasting system.

The Advanced School and Workshop were fostered by the Working Group on American Monsoons, one of the regional monsoons working groups established under the coordination of the CLIVAR/GEWEX Monsoons Panel.

Topics: (i) Global context, main features, life cycle of the American monsoons, (ii) Variability on diurnal, mesoscale and synoptic time scales; subseasonal to seasonal variability, (iii) Variability on interannual and decadal/interdecadal time scales; modulation of extreme events by climate variability; longer term variability and climate change, (iv) Predictability and prediction (weather, subseasonal, seasonal and longer lead times); modelling studies, and (v) Impacts on society; future challenges;

plans for observational studies, diagnostic analyses, and modelling activities. Discussions on future collaboration.

Cosponsors: International Union of Geodesy and Geophysics (IUGG)

Organisers: A. M. Grimm (Universidade Federal do Paraná, Brazil), I. F. A. Cavalcanti (Centro de Previsão de Tempo e Estudos Climáticos – Instituto Nacional de Pesquisas Espaciais, Brazil), M. A. Gan (Centro de Previsão de Tempo e Estudos Climáticos – Instituto Nacional de Pesquisas Espaciais, Brazil), Fred Kucharski (International Centre for Theoretical Physics, Italy)

[More information.](#)



Participants of the Advanced School and Workshop on American Monsoons: Progress and Future Plans

Advanced Workshop on Earthquake Fault Mechanics: Theory, Simulation and Observations

The workshop was organised at ICTP Adriatico Guesthouse, Trieste, Italy, from 2 to 14 September 2019.

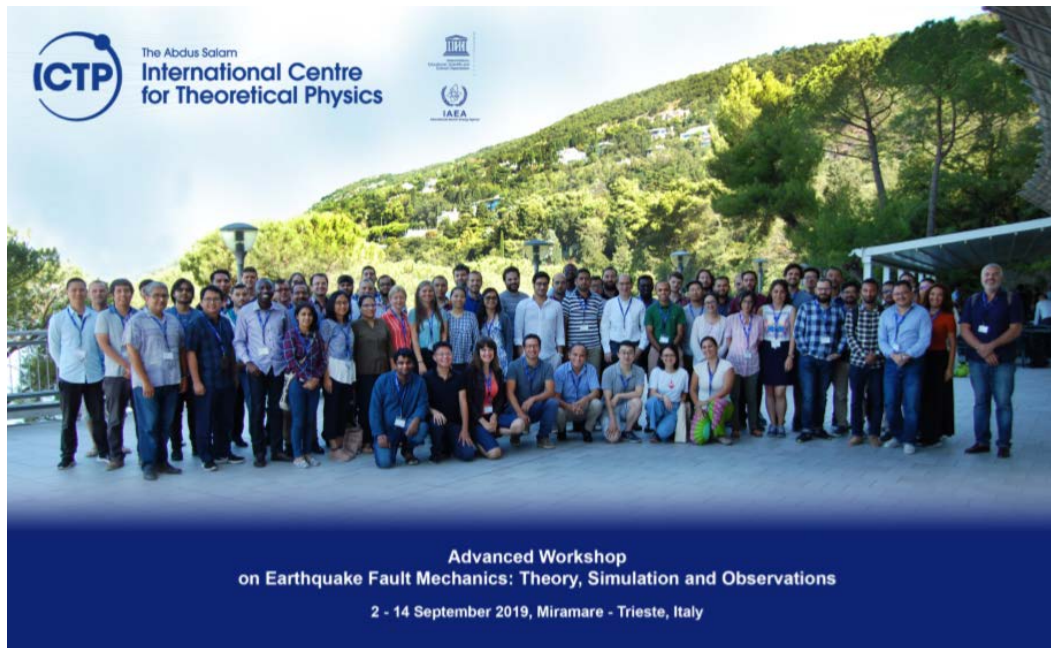
The main focus of the workshop was on theory, simulations and observations of earthquake dynamics.

Topics: (i) Theoretical Earthquake Dynamics, (ii) Computational Earthquake Dynamics, (iii) Connecting Earthquake Models to Observations, (iv) Kinematic Earthquake Source Inversion, (v) Dynamic Source Inversion and Strong Motion, (vi) Earthquake Cycle Modelling, (vii) Rupture Imaging, and (viii) Machine Learning in Seismology.

Cosponsors: International Union of Geodesy and Geophysics (IUGG), GENERALI - Assicurazioni Generali, Regione Autonoma Friuli Venezia Giulia

Organisers: A. Aoudia (ICTP), J.P. Ampuero (IRD)

[More information.](#)



Participants of the Advanced Workshop on Earthquake Fault Mechanics: Theory, Simulation and Observations

Workshop on Distilling Climate Information for Sectoral Applications

The workshop was organised at Ateneo de Manila University, Manila, Philippines, from 9 to 14 December 2019.

There is an urgent need to enhance the resilience of developing countries to climate and weather shocks in order to foster sustainable development. Better management of current climate variability can help societies better adapt to future climate change. For example, effective use of subseasonal to seasonal forecasts of rainfall hold the promise of effective early warning systems for floods and droughts, and actionable information for decision makers in agriculture, water management, and public health. Meanwhile, robust use of climate change scenarios can inform longer term policy decisions on time-scales of decades. For these applications, it is essential to build capacities for researchers, policy-makers and practitioners in developing countries to appropriately use climate information for evidence-based planning, and to apply a systems thinking lens towards discerning how climate considerations weave into interconnected sectoral issues. This one-week workshop therefore highlighted the need for mainstreaming the integration of climate information into systems across sectors. Researchers and policy-makers need to understand the basics of climate data and their sources and uncertainties, and to become familiar with simple techniques for processing and distilling these into useful information for different scenarios or contexts. To achieve this, lectures combined with hands-on exercises have been implemented. Participating researchers and practitioners have been guided towards the application of concepts and techniques learned towards specific applications in their respective sectors, which will serve as the culminating activity of the workshop.

Topics: (i) Sources of Climate Data (e.g. IPCC Climate Atlas, Copernicus C3S, ERA5, CMIP, CORDEX, hydro-met agencies), (ii) Basic Linux-based Techniques for Processing Climate Data, (iii) Use of RS-GIS for Climate-related Applications, and (iv) Systems Approach to the Climate-Land-Energy-Water Nexus.

Cosponsors: International Union of Geodesy and Geophysics (IUGG)

Organisers: C. Kendra Gotangco (Ateneo de Manila University, Philippines), A. Tompkins (International Centre for Theoretical Physics, Italy)

[More information.](#)



Participants of the Workshop on Distilling Climate Information for Sectoral Applications

(Photos: courtesy of ICTP)

5. UNESCO International Geoscience Programme

18 new projects to join the International Geoscience Programme (IGCP) in 2020



United Nations
Educational, Scientific and
Cultural Organization



The IGCP Council, during their 5th Session of the annual Council meeting, decided to continue supporting 24 ongoing projects and approved 18 new projects, totaling 42 active IGCP projects in 2020.

UNESCO is the only United Nations organization with a mandate to support research and capacity building in geology and geophysics, and the IGCP is our flagship. The IGCP has long been globally recognized amongst geoscientists as one of the most successful models for promoting international scientific cooperation in geosciences sharing a global vision for research. This joint venture created 48 years ago by UNESCO, and the International Union of Geological Sciences

(IUGS) continues to promote the sustainable use of natural resources, advancing new initiatives related to geo-diversity, geo-heritage and geohazards risk mitigation with the financial supports of the Jeju Province Development Corporation and UNESCO Chinese National Commission. The IGCP Council, supported by the Scientific Board, is responsible for evaluating project proposals according to the IGCP Guidelines, as well as for the quality assessment of projects in progress.

This year, the Council meeting was scheduled to meet on 13-16 March 2020, but due to COVID-19 precautions and safety measures, the evaluations were held online through teleconferencing between

12-16 March 2020. In this meeting, the progress of the 31 ongoing projects was assessed and 26 new proposals - submitted as of October 2019 according to the guidelines of the Council – were reviewed.

The details of IGCP 2020 projects and [UNESCO Secretariat 2019 IGCP annual report](#) can be accessed through [UNESCO's webpage](#).

Call for members to join the IGCP Council

The purpose of this call is to invite nominations for three new candidates to become member of the IGCP Council. The current call concerns (i) Hydrogeology, (ii) Geodynamics, and (iii) Earth Resources.

If you are aware of excellent scientists, who have an exemplary track record in a particular field of research and a passion for international collaboration, please suggest to them that they apply to join the IGCP Council. There is no limit to the number of nominations an organization can submit. We especially encourage nominations from female researchers or researchers based in African, Asian or Latin-American countries.

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

UNESCO Secretariat would like to thank the IGCP community for their contributions and welcomes new projects.

UNESCO Secretariat

6. Meetings affected by COVID-19

AOGS

The [AOGS 17th Annual Meeting](#) planned to be held in Hongcheon, Republic of Korea, from 28 June to 4 July 2020 was cancelled. AOGS will reconvene in Singapore from 1 to 6 August 2021.

COSPAR

The [43rd COSPAR Scientific Assembly](#) planned to be held in Sydney, Australia, from 15 to 22 August 2020 was postponed to 28 January to 4 February 2021 at the same place.

EGU

The [EGU General Assembly 2020](#) planned to be held in Vienna, Austria, from 3 to 8 May 2020 was cancelled. EGU will reconvene in Vienna from 25-30 April 2021.

IUGS

The [36th International Geological Congress](#) (36th IGC) planned to be held in New Delhi, India, from 2 to 8 March 2020 was postponed for 9-14 November 2020 at the same place.

IUGG

The IUGG Bureau Meeting 2020 planned to be held in Seoul, Republic of Korea, from 26 to 27 June 2020 was cancelled. It is planned to organize the meeting in fall 2020 in Europe instead.

The [IUGG Conference on Mathematical Geophysics](#) planned to be held in Seoul, Republic of Korea, from 22 to 26 June 2020 was cancelled and moved to 2022 at the same place. The dates of the conference will be announced in due time.

IACS

The IACS sponsored [Third Annual Meeting of the Chilean Cryosphere Society \(SOChiCri\)](#) planned to be held in Concepción, Chile, from 13 to 15 May 2020, was postponed to 7 to 9 October 2020 at the same place.

IAG

The IAG sponsored [19th International Symposium on Geodynamics and Earth Tides](#) planned to be held in Wuhan, China, from 7 to 11 June 2020, was postponed to 22 to 26 June 2021 at the same place.

IAGA

The IAGA sponsored [9th VERSIM VLF/ELF Remote Sensing of Ionospheres and Magnetospheres Workshop](#) planned to be held in Kyoto, Japan, from 23 to 27 March 2021, was postponed to 21 to 25 November 2020 at the same place.

IASPEI

The IASPEI sponsored [Cermak7 – 7th International Meeting on Heat Flow and the Geothermal Field](#) planned to be held in Potsdam, Germany, from 12 to 14 May 2020, was postponed to May 2021 at the same place.

The IASPEI sponsored [13th General Assembly of the Asian Seismological Commission \(ASC 2020\)](#) planned to be held in Sharm el-Sheikh, Egypt, from 1 to 3 June 2020, will be postponed. Further information should be available soon.

IAVCEI

The IAVCEI sponsored conference [Cities on Volcanoes 11](#) planned to be held in Heraklion, Greece, from 21 to 25 May 2020, was postponed to 25 to 30 September 2020 at the same place.

ICTP Suspension of Educational Activities

[ICTP](#) has decided to cancel all conferences, schools, workshops and seminars taking place on its Trieste campus from Monday 24 February until 15 May. This includes the [Tenth ICTP Workshop on the Theory and Use of Regional Climate Models](#) (11-16 May 2020), which is co-sponsored by IUGG.

7. Meeting calendar

2020

May

- 23-28, AGU, JpGU, Chiba, Japan, [JpGU – AGU Joint Meeting 2020. For a Borderless World of Geoscience](#)
- 25-29, COSPAR, IAGA, Sao Jose dos Campos, Brazil, [VIII SBGEA & VIII SimFAST Joint Symposium](#)
- 27-29, IAG, Ljubljana, Slovenia, [EUREF 2020 Symposium](#)

June

- 1-5, IAHS, Bydgoszcz, Poland, [River sediment quality and quantity: environmental, geochemical and ecological perspectives](#)
- 6-16, IACS, IUGG, McCarthy AK, USA, [International Summer School in Glaciology](#)
- 8-10, IAGA, Bergen, Norway, [8th HEPPA-SOLARIS](#)

- 10-28, ICTP, Trieste, Italy, [Joint Summer School on Modelling Tools for Sustainable Development](#)
- 14-20, ISPRS, Nice, France, [24th ISPRS Congress](#)
- 15-20, IASPEI, Želiv Premonstratensian Monastery, Czech Republic, [19th International Workshop on Seismic Anisotropy & 2nd Workshop on Active and Passive Seismics in Laterally Inhomogeneous Media](#)
- 28-4 July, IASPEI, IUGG, Kasane, Botswana, [3rd General Assembly of the African Seismological Commission \(AfSC 2020\)](#)

2021

Association Scientific Assemblies

- 15-19 February, Rotorua, New Zealand, [IAVCEI Scientific Assembly](#)
- 28 June – 2 July, Montpellier, France, IAHS Scientific Assembly
- 28 June – 5 July, Beijing, China, IAG Scientific Assembly
- 18-23 July, Busan, Rep. of Korea, [IACS-IAMAS-IAPSO Joint Scientific Assembly](#)
- 22-27 August, Hyderabad, India, [IAGA-IASPEI Joint Scientific Assembly](#)

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