Geosciences Instrumentation and Data Systems (GI) Division Meeting Pietro TIZZANI GI Division President

EGU23 | 25 April 2023



Meetings | Publications | Outreach | www.egu.eu

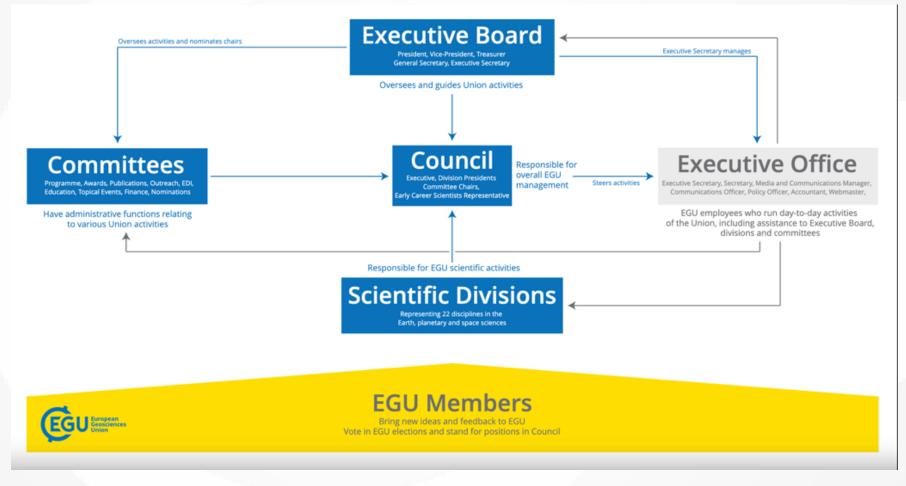




The EGU Council welcomes you to the EGU General Assembly 2023!

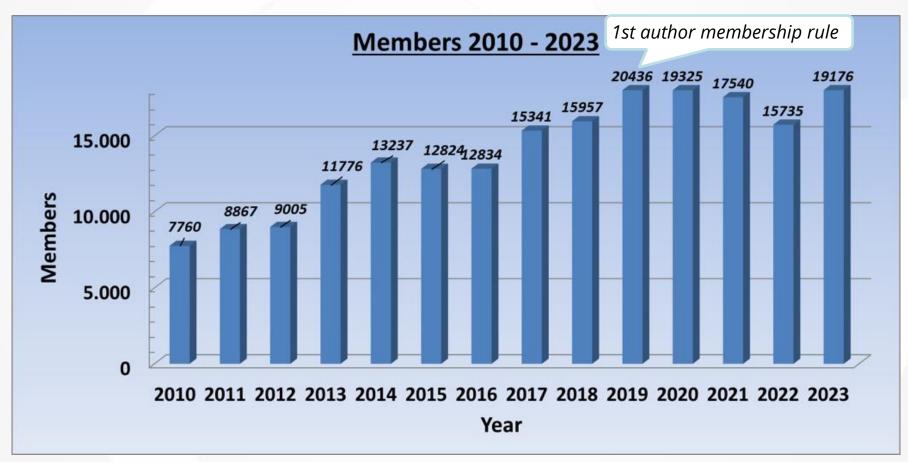


The EGU is a bottom-up organisation structured in scientific divisions, committees, and a council.



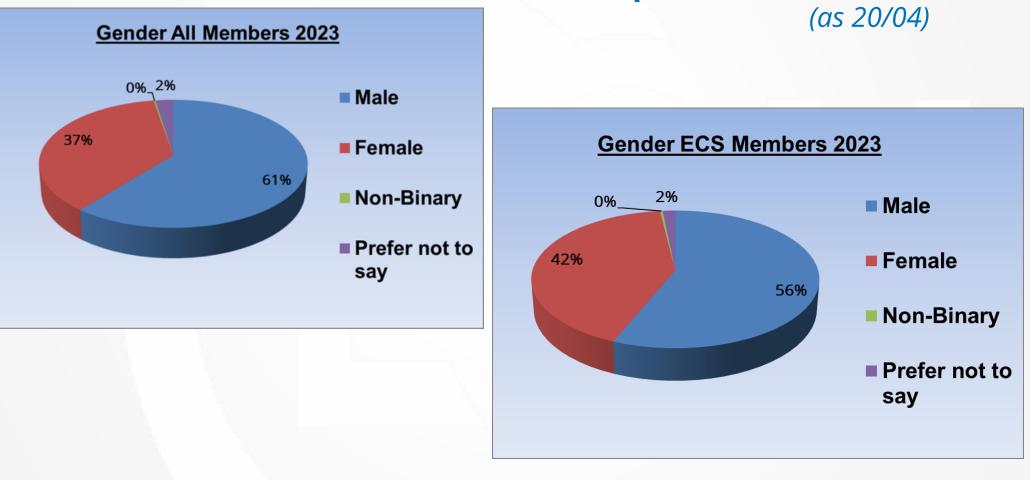


Evolution EGU e.V. Membership (as 20/04





EGU e.V. Membership 2023 – Gender balance





EGU members 2023 - Countries Germany Italy Gorn China France enand India Spain Iands Austria Norway Belgium Canada Switzenand India Spain Netherlands Austria Norway Belgium Canada Netherlands Republic Norway Belgium Canada USA

Central and Eastern Europe

Poland		226
Czechia		216
Hungary		131
Romania		84
Croatia		51
Slovakia		36
Ukraine		32
Estonia		32
Serbia		30
Slovenia		26
Bulgaria		15
Georgia		15
Latvia		14
Lithuania	10	
Armenia		9
Azerbaijan		7
Albania		3
N. Maced	1	

EGU e.V. Membership 2023 – Countries of affiliation (as 02/2023)



Vienna, Austria & Online | 23–28 April 2023

EGU23 Session Statistics (as of 12 Apr)

925 active sessions:

- 629 division-led sessions, of which 25 ITS sessions
- 14 Education and Outreach Sessions (EOS) + GIFT workshop
- 51 Short Courses + 2 Artist in Residence workshops
- 39 Medal and Award Lectures
- 5 Union Symposia and 6 Great Debates
- 114 Townhall & Splinter meetings scheduled
- 52 sessions (incl. 4 SC) co-sponsored by sibling organizations
- ECS Networking, Science for Policy, and EDI Committee events

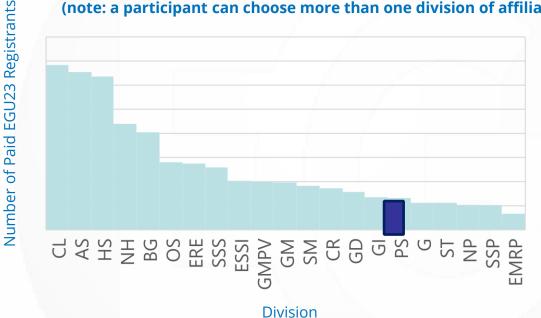
More on: <u>https://www.egu23.eu/</u>



Vienna, Austria & Online | 23–28 April 2023

EGU Division Affiliation of Paid Registrations

(as of 12 Apr)

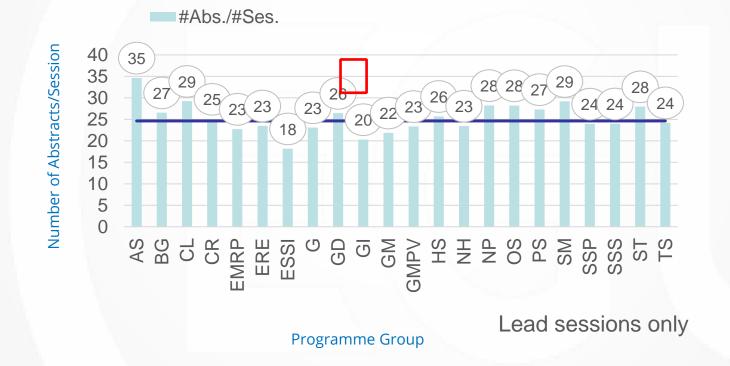


(note: a participant can choose more than one division of affiliation)



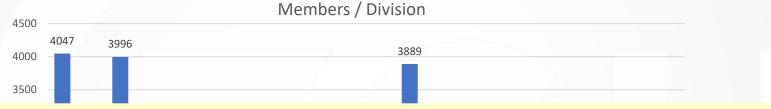
Vienna, Austria & Online | 23–28 April 2023

EGU23 Abstracts Per Session Per Programme Group (as of 12 Apr)



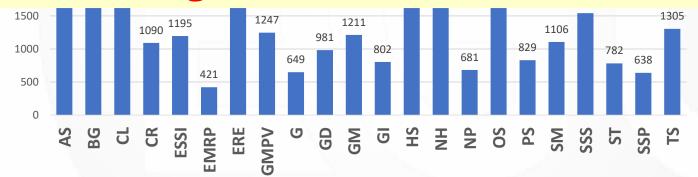


EGU e.V. Membership 2023 - Breakdown by Division



More infos...

https://www.egu.eu/admin/accounts/statistic/





GI GEOSCIENCES INSTRUMENTATION AND DATA SYSTEMS Division on Geosciences Instrumentation and Data Systems

The Division on Geosciences Instrumentation and Data Systems (GI) intends to be a forum for developments in instrumentation, technology, methods and data handling used in any field of the various geosciences.

By promoting the discussion between specialists from widely diverse fields, advances in instrumentation made in one field might be utilised in other areas also and encourage co-operation, thereby saving separate development work and making new approaches possible, which otherwise might still have to wait for years or even decades.

As nearly every other field of geosciences is related to one or the other instrumentation strategy, many of the GI-sessions are co-organized with sessions from other divisions. Potential contributors to any session are encouraged to evaluate the benefits of a multi-disciplinary discussion versus the specific interest of the own target group.



GI1 – Open session on geoscience instrumentation and methods (2 Sessions, 35 abs)

GI1.1 Open session on geoscience instrumentation and methods Including GI Division Outstanding Early Career Scientist Award Lecture Including Christiaan Huygens Medal Lecture Convener: Vira Pronenko Co-convener: Francesco Soldovieri, Pietro Tizzani	15
GI1.3 Monitoring networks Convener: Jeffery Riggs Co-convener: Misha Krassovski, Andrea Barone, Raffaele Castaldo	20



GI2 – Data networks and analysis (3 Sessions, 69 abs)

GI2.1

Data fusion, integration, correlation and advances of nondestructive testing methods and numerical developments for engineering and geosciences applications Convener: Andrea Benedetto | Co-conveners: Morteza (Amir) Alani, Andreas Loizos, Francesco Soldovieri, Fabio Tosti

GI2.2

Geoscience problems related to radioactive contamination originated from nuclear power plants and other human activities: Chernobyl, Fukushima, and Zaporizhzhia Convener: Daisuke Tsumune Co-conveners: Hikaru Sato, Liudmila Kolmykova, Masatoshi Yamauchi

20

27



GI2 – Data networks and analysis (3 Sessions, 69 abs)

GI2.3

Data and Information Services for Interdisciplinary Research and Applications in Earth Science Convener: Sebastien Payan Co-conveners: Hela Mehrtens, Wolfgang zu Castell, Frederic Huynh

22



GI3 – Planetary and Earth Observation instrumentation (3 Sessions, 53 abs)

GI3.1 Open Session on Planetary Instrumentation and Data Techniques Convener: Bernard Foing Co-conveners: Serena Crotti, Hakan Svedhem	25
GI3.2 Instrumentation & measurements for water systems Convener: Andrea Scozzari Co-conveners: Anna di Mauro, Francesco Soldovieri	15



GI3 – Planetary and Earth Observation instrumentation (3 Sessions, 53 abs)

Airborne observations in multidisciplinary environmental research using European Research Infrastructures; observations, campaigns and future plans Convener: Thomas Ruhtz Co-conveners: Kristine Dannenberg, Hannah Clark, Shridhar Jawak, Philip Brown

13



Lidar remote sens	GI4.1	
	ing of the atmosphere ener: Andreas Behrendt Gross, Joelle Buxmann	31



GI5 – Earth surface and subsurface methods of investigation (3 Sessions, 42 abs)

14	GI5.4 Ground Penetrating Radar and other geophysical techniques: Applications and Advancements Convener: Raffaele Persico Co-convener: Salvatore Piro, Martina Bevacqua, Valentina Schenone, Ilaria Catapano, Vincenzo Lapenna, Jean Dumoulin
	GI5.6 Open session on muography Convener: László Oláh Co-conveners: Ignacio Lazaro Roche, Jari Joutsenvaara, H. Tanaka
16	GI5.7 Advances in environmental geochemical monitoring and data elaboration to unveil contamination sources and understand processes Convener: Stefano Albanese Co-conveners: Caterina Gozzi, Antonella Buccianti, Gevorg Tepanosyanaka



GI6 – Multidisciplinary sessions on geoscience instrumentation, data networks and analysis (5 Sessions, 81 abs)

Gl6.1 New frontiers of multiscale monitoring, analysis and modeling of environmental systems Convener: Raffaele Castaldo Co-conveners: Antonello Bonfante, Pietro Tizzani, Nemesio M. Pérez, Andrea Barone	
Gl6.2 Remote Sensing and UASs approaches in Geoscience Research Platforms for the 21st century Convener: Vincenzo De Novellis Co-conveners: Misha Krassovski, Antonello Bonfante, Carlo Alberto Brunori, Francesco Zucca, Riccardo Civico	
Gl6.3 Remote sensing for environmental monitoring Convener: Annalisa Cappello 20 Co-conveners: Sabine Chabrillat, Gaetana Ganci, Gabor Kereszturi, Veronika Kopackova	



GI6 – Multidisciplinary sessions on geoscience instrumentation, data networks and analysis (5 Sessions, 81 abs)

Gl6.5 Radioactivity in the environment: challenges and opportunities for geoscience Convener: Virginia Strati Co-conveners: Susana Barbosa, Xuemeng Chen, Anita Erőss, Nesrine Mezerreg	21
GI6.7 Application of remote sensing and artificial intelligence for safe, sustainable and cost-efficient mining operations Convener: Jari Joutsenvaara Co-conveners: Kamen Bogdanov, Sanna Uusitalo	22
Gl6.8 Cosmic rays across scales and disciplines: the new frontier in environmental research Convener: Martin Schrön Co-conveners: Konstantin Herbst, Jannis Weimar, Cosimo Brogi, Daniel Rasche	20



GI Session NEW Organization TEAM and STUCTURE

DIVISION PRESIDENT Deputy President

Science Officer TEAM

Sub Program TEAM

Committes TEAM

For each sub-programme group, a responsible is appointed in order to solicit new session proposals and propose sessions themselves to fill thematic gaps, interact and get suggestions/request from conveners, and help the Division President in setting-up the Division Programme at the General Assembly.



GI Session NEW Organization TEAM and STUCTURE

To submit your application at OPEN CALL, please send a short curriculum vitae to: pietro.tizzani@cnr.it . Deadline: 25 June 2023

	GI Division President		Pietro Tizzani	gi@egu.eu
	GI Deputy President		Raffaele Castaldo**	raffaele.castaldo@cnr.it
	Programme Group Chair		Pietro Tizzani	gi@egu.eu
Black the confirmed officer		Cultural and Archaeological Heritage	Nicola Masini	nicola.masini@cnr.it
osition approved during the Division meeting		Seismic, Acustic sounding, geodetic and geochemistry Instrumentations to geo-environmental surveillance networks	Luca D'Auria**	ldauria@iter.es
approved during the Division meeting Scier		Gravimetric, Magnetic and Electromagnetic, instrumentations		OPEN CALL
	Science Officer	New technological platforms for Earth Observation		OPEN CALL
		Infrastructures instrumentation and monitoring	Jean Dumoulin	jean.dumoulin@univ-eiffel.fr
		Instrumentation for Polar Regions and Harsh Environment	Ari-Matti Harr	ari-matti.harri@fmi.fi
		Space, Oceanic and Atmosphere Instruments	Bernard Foing	foing@strw.leidenuniv.nl
		Data Systems and Publishing	Dirk Fleischer	dirk.fleischer@ulb.hhu.de

(**) Nominated by Division President



GI Session NEW Organization TEAM and STUCTURE

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	GI – Geosciences Instrumentation & Data Systems	Pietro Tizzani	gi@egu.eu
	GI1 – General sessions on geoscience instrumentation	Vira Pronenko	pron@isr.lviv.ua
	GI2 – Data networks and analysis	Masatoshi Yamauchi	m.yamauchi@irf.se
	GI3 – Planetary Atmosphere and Ocean instrumentation system	Bernard Foing**	foing@strw.leidenuniv.nl
Sub-Program Group	GI4 – Earth Observation systems & instrumentation		OPEN CALL
	GI5 – Earth surface and subsurface methods of investigation	Jean Dumoulin	jean.dumoulin@univ-eiffel.fr
	GI6 – Multidisciplinary sessions on geoscience instrumentation, data networks, and analysis	Francesco Soldovieri	soldovieri.f@irea.cnr.it

(**) Nominated by Division President

in Red the new groupings approved during the Division meeting

in Black the confirmed groupings approved during the Division meeting



GI Session NEW Organization TEAM and STUCTURE

To submit your application at OPEN CALL, please send a short curriculum vitae to: pietro.tizzani@cnr.it . Deadline: 25 June 2023

GI Division Committees

News, Media, Education and Public OUTREACH	Vincenzo De Novellis (**)	vincenzo.denovellis@cnr.it
Christiaan Huygens Medal Committee Chair	Vincenzo Lapenna (**)	vincenzo.lapenna@cnr.it
OSPP Coordinator	Misha Krassovski	krassovskimb@ornl.gov
ECS Representative	Veronica Escobar Ruiz (**)	v.escobarruiz@reading.ac.uk
ECS Co-Representative	Andrea Barone (**)	barone.a@irea.cnr.it

(**) Nominated by Division President

in Red the new figures approved during the Division meeting

in Black the confirmed figures approved during the Division meeting



https://www.egu.eu/gi/home/

GI GEOSCIENCES INSTRUMENTATION AND DATA SYSTEMS

twitter Home

@EGU_GI



Linked in

To create a blog and make the GI presence on social media stronger, GI needs to create a Communication Team. composed by the blog editors and by the social media account administrators

Division on Geosciences Instrumentation and Data Systems

President: Pietro Tizzani (gi@egu.eu) Deputy President: vacant

The Division on Geosciences Instrumentation and Data Systems (GI) intends to be a forum for developments in instrumentation, technology, methods and data handling used in any field of the various geosciences. By promoting the discussion between specialists from widely diverse fields, advances in instrumentation made in one field might be utilised in other areas also and encourage co-operation, thereby saving separate development work and making new approaches possible, which otherwise might still have to wait for years or even decades.

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Recent awardees

Maurizio Fedi

📋 2023 🏾 🏆 Christiaan Huygens Medal

The 2023 Christiaan Huygens Medal is awarded to Maurizio Fedi for his ground-breaking contributions to gravity and magnetic field modelling and the analysis of geophysical potential fields.





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Find GI on



Subscribe to

- EGU newsletter
- GI mailing list
- GI-ECS mailing list

Tweets by @EGU_GI

EGU GI Division tl Retweeted

Mike Burton @... Jun 24, 2020

A reminder that the deadline for EGU medals and awards is less than a week away on 30 June. @EGU_GMPV @EuroGeosciences



Christiaan Huygens Medal

The <u>Christiaan Huygens</u> Medal was established by the Geosciences Instrumentation and Data Systems Division to recognise significant contributions in fields within the scope of the division.

The medal is awarded for an innovation, development or discovery that has had major impact in its field, or for a series of contributions, during an extended period, that has led to significant progress.

The medal has been exclusively designed for the EGU by <u>József Kótai</u>.





Previous Christiaan Huygens Medal Recipients



R. Giles Harrison 2021



Raffaele Persico 2020



Lev V. Eppelbaum 2019



<u>Vivekanandan</u> 2018



<u>Riccardo Lanari</u> 2017



<u>Karl U.</u> <u>Schreiber</u> 2016



<u>Kristine M. Larson</u> 2015



<u>Martin</u> <u>Hürlimann</u> 2011



<u>Jean-Loup</u> <u>Bertaux</u> 2010



<u>Valery</u> <u>Korepanov</u> 2009



Horst Uwe Keller 2008

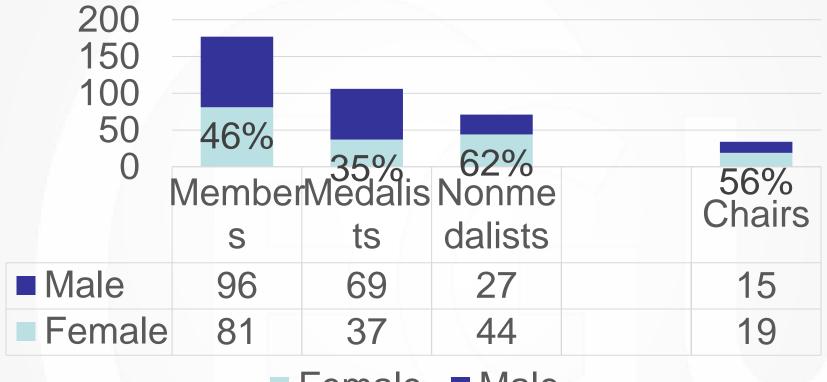


Christiaan Huygens Medal Committee APPROVED

 Chairman: Vincenzo Lapenna
 Current Members: Raffaele Persico Giles Harris Ilaria Catapano Maurizio Fedi



Committee composition 2024



Female Male



How to become an awardee?

- » Nominations are exclusively by EGU members (no self nomination)*
- » Candidates do not need to be EGU members.
- » Individual award and medal committees are then evaluating the nominations selecting the most deserving candidate based on scientific achievements**.

- * An exception is one award to promote excellence in journalism allowing nominations from nonmembers and self nominations
- ** plus one medals each for journalism, outreach and service to the union





How to nominate

Where: https://www.egu.eu/awardsmedals/nominations/

When: Deadline is June 15 every year

What is required:



	Division and Union medals	Outstanding Early Career Scientists Awards
Nomination letter	1 page	% раде
Curriculum Vitae	2 pages	1 page
Selected bibliography	2 pages	У page
Supporting letters	3-5 (maximum 1 page each)	



Early Career Scientist

An Early Career Scientist (ECS) is a student, a PhD candidate, or a practising scientist who received their highest certificate (e.g. BSc, MSc or PhD) within the past seven years. The seven-year period can be extended to allow for periods when the scientist was not working in science because of, but not limited to, caring and/or parental responsibilities, disability, personal illness, community obligations or national service.

For the purpose of the awards the nominee should satisfy one of the above criteria by 1 January of the year when the award is presented.

https://www.egu.eu/awards-medals/ecs-definition/



OSPP

Outstanding Student and PhD candidate Presentation contest



OSPP: Outstanding Student and PhD candidate Presentation contest

What is evaluated?

- scientific content (relevance, methods, ...)
- presentation (organization, aesthetic appeal, ability to answer questions, ...)

Who can participate?

- first and presenting author
- either currently a BSc or MSc student or PhD candidate
- or last degree obtained in year of GA

Who votes?

- 3 pre-defined judges per participating presentation
- ALL EGU participants (from post-doc level on, not co-author, no shared affiliation) can vote as well on abstract page!

• WE NEED YOU!!!

Why participate?

- Better visibility for your research
- Award certificate and ceremony
- Free open-access publication in one of the EGU journals
- Conference fee waiver for next EGU







Geoscientific Instrumentation, Methods and Data Systems (GI)

Journal Report to GI DM

OUTLINES

25th April, 2023

- 1. Journal Scope
- 2. Journal Summary
- 3. Questions to address at the 2023 Editorial Meeting

The current executive editors: Meeting Jean Dumoulin Salvatore Grimaldi Håkan Svedhem





Geoscientific Instrumentation, Methods and Data Systems (GI) Journal Scope

Challenging Mission: Multi-Trans-Inter Disciplinary

It covers all aspects of instrumentation, methods and data systems across all fields covered by the EGU. A unique feature of the journal is the emphasis on the synergy between science and technology that facilitates advances in GI.

•concepts, design, and description of instrumentation;

- •concepts, design, and description of data systems;
- •retrieval techniques of scientific products from measurements;
- •calibration and data quality assessment;
- •uncertainty in measurements;
- •newly developed and planned research platforms and community instrumentation capabilities;
- •major national and international field campaigns and observational research programmes;
- •new observational strategies to address societal needs in areas such as monitoring climate change, preventing natural disasters, and urban health monitoring;
- •networking of instruments for enhancing high temporal and spatial resolution of observations;
- •urban instrumentation and remote sensing;
- model-calibrated remote sensing;
- •advanced data analytics and assimilation methods;
- •multi-scale and multi-physical sensing;
- •new concept in measurements system architecture;
- •Internet of things (IoT) and massive low-cost instrumentation;
- •citizen science data management;
- •human sensing.



Geoscientific Instrumentation, Methods and Data Systems (GI) **Journal Summary**

CURRENT SITUATION

Journal report 2022

Manuscripts submitted (report year)

-6% Relative change (pre-report year)

Manuscripts submitted (all time)

Articles published (report year)

8% Relative change (pre-report year)

Articles published (all time)

Manuscripts submitted by year of submission Manuscripts published by year of publication Submissions Publications 2013 2014 2013 2014 2015 2016 2017 2018 Year Year

(1/3)

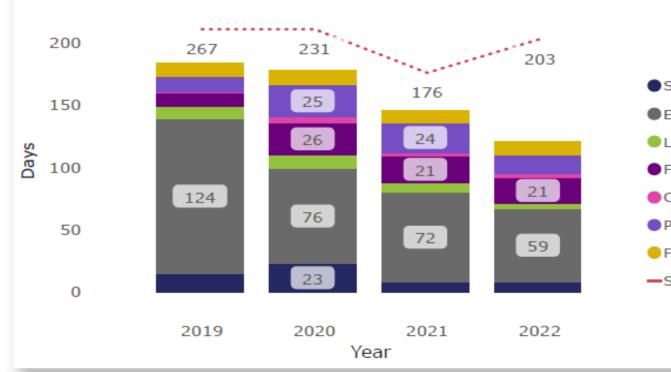




Processing times (days median) by year of journal publication

Geoscientific Instrumentation, Methods and Data Systems (GI) Journal Summary

CURRENT SITUATION

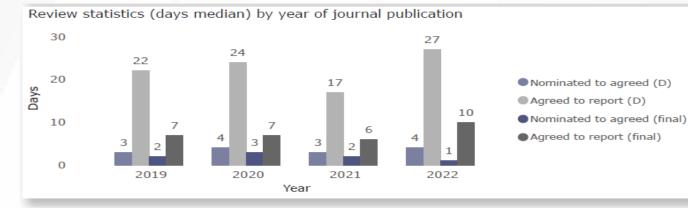




(2/3)



Geoscientific Instrumentation, Methods and Data Systems (GI) Journal Summary CURRENT SITUATION (3/3)



Renewing AE board

For topics in :

- Hydrology
- Geomorphology
- Citizen science
- Signal and image processing
- Artificial Intelligence

Considering a Mix of early & advanced career scientist

CRITICAL ISSUES





Journal Metrics







Geoscientific Instrumentation, Methods and Data Systems is indexed and archived in the following databases (as of April 2023):

ø	CAS			COPE	Crossref	Clarivate [®]	DEUTSCHE NATIONAL BIBLIOTHEX	
ADS	Chemical Abstracts	CLOCKSS	CNKI	COPE	Crossref	Current Contents/P	dnb	
// DOAJ	EBSCO	Θ	🗘 Clarivate [®]	GALE A Cengage Company	G	GeoRef	Go OA	
DOAJ	EBSCO	Ei Compendex	ESI	Gale	GBA	GeoRef	GoOA	
•		J-Gate	LIBRARY	PORTICO	ProQuest.	🗘 Clarivate [®]	Scopus [*]	
Google Scholar	GWLB	J-Gate	Library of Congress	Portico	ProQuest	SCIE	Scopus	
Jisc	Where the World Goes to Read WORLD LIBRARY							
SHERPA/RoMEO	WPL							
Crossref report for articles published in the past 2 years			Assets defined in articles published in 2022		GI articles and preprints published in 2022 in the media		Selected mentions DOI Source Link	
100% Abstracts	60% Funding statemer	50% nts Any asset	29% Code	0 Tweets	0 Newsfeeds	10.5194/gi-12-25-2023	3 wikipedia	
84% Orcids	100% References	43% Data	0% Video supplements	1 Wiki	O Wordpress Blogs			
100% Similarity reports	100% Licence information	0% on Video abstracts	5					



Geoscientific Instrumentation, Methods and Data Systems (GI) Questions to address at the 2023 Editorial Meeting (1)

Follow-up of 2021&22 listed actions

- The Associate Editor group still need to be renewed, and enlarged above all for specific disciplines : Underground instrumentation & measurement systems, Ground instrumentation & measurement systems, Airborne Instrumentation & measurement systems, Space Instrumentation & measurement systems, Signal & Image processing, Monitoring systems, Numerical system Engineering, Urban Monitoring, Multi-scale monitoring, AI, ...
 involving young and active researchers;
- ➤ A turn over of AEs → Pursue the renewing of the editorial board and enlarge it
- Toward 2 Associate Editor Calls (with only 2 days of lag). Following that, proceed with the direct assignment of the AE by EE.
 Improved now, but Not yet fully fixed by Copernicus (To avoid overwhelm EEs)
- > AEs should handle a minimum of 1-2 manuscript per year.
- > APC reduction for early career scientist.
- Special issue linked to the EGU Division, to the EGU General Assembly and to multidisciplinary topics (i.e. Citizen science) still has to be encouraged.



exercise instrumentation, de and Chitz Systems

Geoscientific Instrumentation, Methods and Data Systems (GI) Questions to address at the 2023 Editorial Meeting (2/2)

Our journal is multidisciplinary

➔ Difficulty for the present three EE's to appropriately cover all the topics

- The addition of one more EE should improve the coverage and lower the workload
- ➔ In addition, Håkan Svedhem (co-founder of the GI journal in 2011) and Salvatore Grimaldi both have indicated their desire to step down as EE's. They both have agreed to continue as AE's

Thus, there is a need for two to three new EE's in the short to medium term
 → New EE's should have significant experience from editorial work, preferably having worked actively for some time as AE for the GI journal or a similar journal (EGU or non-EGU)

EE's are appointed by the EGU council on recommendation from the EGU Publication committee



Vienna, Austria & Online | 23–28 April 2023

Union-Wide Events: Highlights

- EGU Award & Medal Celebration: Wed, 26 Apr, 17:30–19:30 (CEST) Room E1
- A broad programme of activities taking place throughout the week in addition to Division & ITS sessions:

Union-wide

- O Union Symposia (US)
- O Great Debates (GDB)
- Medal & Award Lectures and Celebrations (MAL)
- Short Courses (SC)
- $\odot~$ Education and Outreach Sessions (EOS)
- Networking (NET)
- Feedback and Administrative Meetings (FAM)

Community-led

- Townhall Meetings (TM)
- Splinter Meetings (SPM)
- Lectures organized by related scientific societies (LRS)
- Pop-up networking events
- Pop-up exhibitor events

More on: <u>https://www.egu23.eu/</u>



Union Symposia 1 Managing compounding impacts from extreme events through societal crises

Wed. 26 April, 10:45-12:30 CEST Room E1



Great Debate Gen access publishing: national strategies, challenges and solutions Thurs. 27 April, 8:30-10:15 CEST Room E1



Great Debate

Scientific Neocolonialism: tools and mechanisms to advocate and amplify the voices, knowledge and recognition of local knowledge in geoscience research

Thurs. 27 April, 10:45-12:30 CEST

Room E1



Great Debate The thrills and dangers of **extending human impact** beyond our planetary **boundaries** Thurs. 27 April, 14:00-15:45 CEST **Room E1**



Union Symposia 3

Juggling parenting and caring responsibilities with a career in the geosciences: barriers and opportunities to increasing accessibility and inclusion

> Fri. 28 April, 8:30-12:30 CEST Room E1



Vienna, Austria & Online | 23–28 April 2023

Science for Policy Sessions/Events





- SC3.14 How to create spaces for science-policy interaction and dialogue, Tue, 25 Apr, 10:45–12:30 (CEST) Room -2.85/86
- SC3.13 What are Science4Policy competences and why are they crucial for researchers to achieve policy impact, Wed, 26 Apr, 16:15–18:00 (CEST) Room -2.61/62
- EGU Science for Policy Help Desk, 12:00 13:00 everyday at the EGU Booth

More on: <u>https://www.egu23.eu/</u>



Call for Training School Submissions

The EGU Topical Events Committee announces the call for Training School applications: 8 May - 30 June, 2023



The EGU provides financial support to training school organisers in order to facilitate participation of early career scientists and/or to support the quality of the school through field trips or by inviting exceptional lecturers.

Learn more at www.egu.eu/meetings/training-schools



Please

Give Us Feedback!

Vienna, Austria & Online | 23–28 April 2023

EGU23 Feedback Survey

Survey open until end of June https://www.egu23.eu/feedbac

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Mark Your Calendar!

EGU General Assembly 2024 14-19 April 2024 Vienna, Austria & Online