No. 110 June 2025

IAMG Newsletter

Official Newsletter of the International Association for Mathematical Geosciences

Contents

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YouTube

The IAMG now has a YouTube channel! Presentations from past IAMG award winners have been uploaded where available.

https://www.youtube.com/@IAMG-mathgeo

IAMG is on LinkedIn, Twitter and Facebook!

Join the conversation using @IAMG_Math_Geo

From the Editor

The next IAMG conference will be in beautiful Zhuhai, China, from Oct. 9-14. In addition to the technical sessions, the conference will include 5 short courses, 7 keynotes and a panel discussion. In addition, attendees can join a city tour to see Qi'ao Island and Tangjia Ancient Town and a field trip to Naqin Peninsula Park and Kaiping Diaolou. I hope to see you there.

The IAMG Distinguished Lecturer for 2026 is Professor Renguang Zuo. If you are interested in hosting one of his lectures please get in contact.

Please consider nominating someone for one of the IAMG awards. Nominations for the William Christian Krumbein Medal, the John Cedric Griffith Teaching Award, the Founders Scholarship, the 2027 IAMG Distinguished Lecturer, and the Georges Matheron Lecturer are due by 31 October 2025.

Katie Silversides

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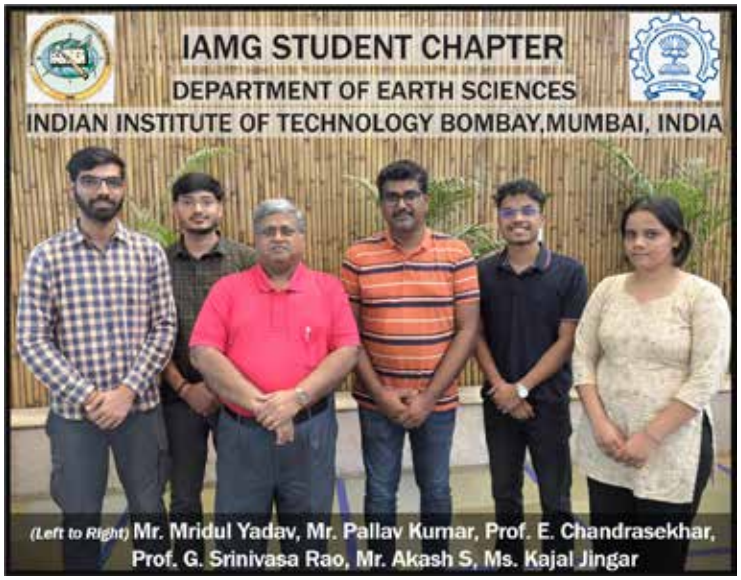
New IAMG Student Chapter

The IAMG President, Dr Raimon Tolosana Delgado, has approved the establishment of a new student chapter at the Indian Institute of Technology Bombay, Mumbai, India. This chapter will be hosted in the Department of Earth Sciences, IIT Bombay, under the mentorship of Associate Prof. G. Srinivasa Rao.



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The mission of the IAMG is to promote, worldwide, the advancement of mathematics, statistics and informatics in the Geosciences

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PRESIDENT'S FORUM

The 23rd annual conference of the IAMG will be held in early October this year in Zhuhai, China. By the time you read this letter, the abstract submission will already be closed for some weeks and the members of the Organising Committee will have prepared a strong program comprised of around 260 contributions, as well as 7 plenary keynote lectures. You can find more information about the plans of the Organising Committee on pages 4-5 of this newsletter.

Speaking of conferences, the Outreach Committee has been negotiating a series of agreements with other scientific societies. Among other advantages, these agreements allow IAMG members to attend events organised by these other societies with the same conditions as their members. **Keep an eye on our https://iamg.org website for the current list of active agreements and their conditions,** and make use of them when you attend events of our partner societies.

There are also other new items on the website that may be of interest to you. Our YouTube channel has been active for a while, but now it is linked to the website! It already contains interesting lectures and videos from IAMG members and keynote speakers at previous conferences, and more will come. If you wish to submit additional content to the channel, please contact the Chair of the Outreach Committee. We have to curate it, to make it a showroom of excellence in mathematical geosciences and geoinformatics. The IAMG is also present in other so called "social networks", such as LinkedIn and twitter/X: **if you are active in these forums, please link your profiles to that of the IAMG and regularly interact with us!** These are all good ways to increase our visibility and get new members.

And indeed, we need to grow. Our membership has been stuck at just above 600 members for many years. Although this is not an immediate existential threat thanks to our excellent financial situation, our society has an age pyramid similar to that of long-industrialized countries and this makes us vulnerable to the passage of time. We need new members, particularly younger members. **If you lecture at a college or a universtity, please make IAMG known to your students!** If you are involved in an MSc or PhD program related to mathematical geosciences or geoinformatics, please invite the IAMG Distinguished Lecturer to your institution. Make your fellows or students aware of our travel grants and research grantsand discuss the establishment of a student chapter with them . You can find an entire section devoted to Student Affairs at the https://iamg.org website.

About student chapters, I want to congratulate our friends at the Indian Institute of Technology – Bombay (India) for establishing a new student chapter, focused on geophysics and sedimentary basin dynamics. This is our fifth active student chapter, together with those in Freiberg (Germany), Guangzhou (China), Nancy (France) and Wuhan (China), in alphabetical order.

Another aspect related to existential risks is that of our income. At present our income is dominated by royalties from publications, an income stream that we almost completely invest in student support activities and bringing our awardees to IAMG conferences. Our membership fees are the lowest of all international geoscientific societies. When these low fees were implemented, one of the aims was to set the entry bar to the IAMG as low as possible to attract more members. In my view this has failed and we may even be getting the opposite effect: to not be taken seriously. We may have to significantly increase them in the mid-term, at least for regular members. But this is not something to be decided lightly, the issue will be discussed in the next months and also at the next conference. **If you have a strong opinion about it, please contact me.** You can find the contact details on the preceding page. I am sure that there are members with more experience than me, or just *other* life experiences than mine, who have a different perspective.

Talking about experience: Graeme Bonham-Carter, our Archivist of many years, asked early this year to be relieved of this role, and we have proceeded. The Council nominated a new Archivist in its meeting of February 2025, but the archive is not going to move a lot: Eric Grunsky is the new Archivist, all remains within Ontario! We should all offer our gratitude to Graeme, who did this tedious but necessary job for many years and also to Eric who has taken on the role now.

I want to close this letter with a final plea to all our members. I ask you all to pause for a moment and consider nominating excellent candidates to any of the five awards and honours that the respective committees will be giving towards the end of the year. These are:

- the William Christian Krumbein Medal, the highest honour of the IAMG, for services to the Society or for breakthrough advances of Mathematical Geosciences and Geoinformatics worldwide,
- the John Cedric Griffith Teaching Award, honouring outstanding teaching that involves application of mathematics or informatics in the Earth Sciences,
- the Founders Scholarship, to an excellent student from any level,
- the 2027 IAMG Distinguished Lecturer, to support an excellent speaker and teacher to serve as ambassador of the IAMG for one year, giving lectures on IAMG related topics
- and the Georges Matheron Lecturer, to honour achievements in geostatistics and mathematical morphology.

The deadline for nominations for all of them is 31 October 2025. The awardees will be invited to attend the 24th Annual Meeting of the IAMG in Montreal, Canada, in August 2026. Please send the nominations to the chair of the corresponding committee, with CC to support@iamgmembers.org.

Raimon Tolosana Delgado

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Dear fellow (mathematical) geoscientists,

The 2025 annual conference of the International Association for Mathematical Geosciences (IAMG2025) will be held in Zhuhai, China, from Oct. 9-14. The main theme of the IAMG2025 is "Data-driven Discovery in Geosciences". The IAMG2025 includes 22 sessions, 5 pre-conference short courses, 7 keynotes, 1 panel discussion, 1 city tour and 1 field trip. In addition to the scientific program, we will visit Qi'ao Island and Tangjia Ancient Town (0.5 day city tour), featuring mangroves and modern historical cultural charm, and explore Naqin Peninsula's geological landscapes (granite, sea-eroded pillars, stone forests, black sand beaches) and Kaiping Diaolou's blend of overseas Chinese hometown culture and architectural art (1 day field trip). Besides, we will invite 5-6 experts to discuss advances of mathematical geosciences in the era of big data and AI (panel discussion). The IAMG2025 will be very interesting.

Thank you for your contributions to IAMG2025!

Looking forward to seeing you in Zhuhai!
IAMG 2025 Organizing Team

Program Overview

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<tr><td colspan="4">Coffee Break</td></tr>
<tr><td colspan="4">Parallel scientific sessions</td></tr>
<tr><td colspan="3">Lunch Break</td><td>Closing</td></tr>
<tr><td colspan="3">Keynotes
R. Zuo G. Chen D. Grana</td><td rowspan="5">City Tour</td></tr>
<tr><td colspan="3">Parallel scientific sessions</td></tr>
<tr><td colspan="3">Coffee Break</td></tr>
<tr><td colspan="3">Parallel scientific sessions</td></tr>
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<tr><td>Council Meeting</td><td></td><td></td><td></td><td></td><td></td></tr>
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Important dates

2025/07/30	Acceptance notifications to authors	2025/10/10 - 13	Scientific Sessions
2025/08/30	Early bird registration deadline	2025/10/13	City Tour
2025/10/09	Short Courses, Registration, Ice-Breaker	2025/10/14	Field Trip

Keynote Speakers

Dr. Alik Ismail-Zadeh, Karlsruhe Institute of Technology: Data-Driven Computational Modelling in Geodynamics
Anna Nguno, Deputy Director at the Geological Survey of Namibia: Unlocking Geological Resource Potential and Fostering Institutional Development through Cross-Border Collaboration: A lesson from Southern Namibia
Prof. Dario Grana, University of Wyoming, Chayes Prize 2025: Revealing Subsurface Petrophysical Properties Through Bayesian Learning
Dr. Anirudh Prabhu, Carnegie Institution for Science, Vistelius Award 2025: Learning from Data, Learning from Planets: AI methods for Earth and Space Exploration
Prof. Guoxiong Chen, China University of Geosciences (Wuhan), Vistelius Award 2025: Data-driven traveling in deep time: a unique way of mathematical geologists for exploring the operation of early Earth.
Prof. Renguang Zuo, China University of Geosciences (Wuhan), Distinguished Lecturer 2026: Data-knowledge dual-driven mineral prospectivity mapping
Prof. Dionissios Hristopulos, Technical University of Crete, Matheron Lecturer 2024: From Particles to Patterns: An Odyssey from Physics to Geostatistics and Beyond

Short Courses:

Dionissios T. Hristopulos: Data-Driven Methods for Spatial and Spatiotemporal Regression
X.San Liang: Quantitative Causality Analysis with Information Flow: A Tool for Data-Driven Discovery in Earth and Geosciences
Karel Hron, Alessandra Menafoglio: Density data analysis for big data processing in geosciences
Klaudia Oleschko: Scale Invariance of Dolomite Structure: From SEM to Seismic through Digital Twins and Turing Patterns
Shaun Lovejoy, Qiuming Cheng: Multifractals in geophysics and geology

Field Trip: Naqin Peninsula Geological and Marine Park and Kaiping Diaolou

Experience the breathtaking coastal views at Naqin Peninsula Park, where you can engage in a variety of fun activities, marvel at unique rock formations, and relax on a beach that exudes a touch of French-inspired romance.

source: http://www.360doc.com/content/23/0116/19/43806054_1063910449.shtml

After lunch discover the Kaiping Diaolou Cultural Tourism Area in southwest Guangdong. Here, you can admire the UNESCO-listed Diaolou towers and immerse yourself in the rich culture shaped by the history of overseas Chinese communities.

source: https://www.mafengwo.cn/i/23452482.html

For more information visit the conference website: https://iamgconferences.org/iamg2025

Distinguished Lecturer Updates

Distinguished Lecturer 2026
Professor Renguang Zuo

Professor Renguang Zuo received his B.S. and Ph.D. degrees from the China University of Geosciences (CUG), Wuhan, China, in 2004 and 2009, respectively. He is currently a full professor at the State Key Laboratory of Geological Processes and Mineral Resources, CUG. In 2014, he was a senior visiting fellow at the James Cook University, Australia.

His research focuses on big data analytics and machine learning-based mineral prospectivity mapping and geochemical anomalies identification. Dr. Zuo has published over 160 peer-reviewed journal papers, 6 books, and book chapters. He has served as the Guest Editor for 8 special issues in international high-quality journals. His publications have amassed over 9,700 citations (Google scholar) across a range of esteemed international journals. In 2023, Dr. Zuo was awarded the Gold Medal, which is the highest award by the Association of Applied Geochemists (AAG). In addition, he was the inaugural recipient of the Kharaka Award by the International Association for GeoChemistry in 2015. Meanwhile, he was recognized as the Elsevier highly cited Chinese scholar and the World's Top 2% Scientist.

Dr. Zuo is the Vice President of AAG (2024-2025), and was a councillor of IAMG (2020-2024). He has received fellowships from AAG, Society of Economic Geologists, and Geological Society of London. He has been heavily involved in the editorial boards of many SCI-indexed journals, including Journal of Geochemical Exploration, Geochemistry: Exploration, Environment, Analysis, Computers & Geosciences, Natural Resources Research, Ore Geology Reviews, and Journal of Earth Science.

Lecture 1: Data-knowledge dual-driven mineral prospectivity mapping

Mineral prospectivity mapping (MPM), as a computer-based approach to delineate target areas

for a specific type of mineral deposits. MPM typically comprises knowledge-driven and data-driven models. Knowledge-driven MPM relies on expert knowledge, which is based on causal relationships but is not readily adaptable to dynamic changes. Data-driven MPM is capable of identifying underlying data patterns but involves poorly interpretable decision logic. This lecture will focus on the state-of-art big data analytics and AI in MPM to devise a data-knowledge dual-driven model coupling AI with a mineral systems approach to MPM.

Lecture 2: Big data analytics and AI-driven geochemical mapping

Geochemical mapping plays a crucial role in mineral exploration and environmental monitoring by providing insights into geological events and processes such as mineralization and environmental pollution. With the advent of the big data era, how to apply big data analytics and AI to mine geochemical exploration or environmental data from a variety of geological and environmental settings to extract subtle and complex geochemical anomalies associated with mineralization or pollution has become even more challenging. This lecture will focus on the state-of-art big data analytics and AI in geochemical mapping and document successful case studies.

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Distinguished Lecturer 2024 Michael Pyrcz

The IAMG 2024 DL events were presented in the USA mining, geology and petroleum departments of Virginia Tech, Missouri Tech, University of Oklahoma, University of Houston, Penn State, Rice University, Stanford and Montana Tech.

A pictorial round up of the tour is included on the left.

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IAMG Student Chapter at Sun Yat-sen

From May 24 to 25, 2025, the IAMG Student Chapter at Sun Yat-sen University successfully held its annual graduation defense for the 2025 cohort. A total of 4 PhD candidates and 7 master's students completed their thesis defenses and officially graduated.

More information can be found here: www.iamgmembers.org/news/SunYatSen_May2025.pdf

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IAMG Journal Reports

Journal Statistics

Mathematical Geosciences:

- 2023 ISI Impact factor: 2.8
- 5-Year Impact Factor: 2.4
- Average review time: 7 days (submission to first decision (median))

Computers & Geosciences:

- 2023 Impact Factor: 4.2
- 5-Year Impact Factor: 4.4
- Average review time: 15 days (submission to first decision (median))

Natural Resources Research:

- 2023 ISI Impact Factor: 4.8
- 5-Year Impact Factor: 4.6
- Average review time: 7 days (submission to first decision (median))

Applied Computing and Geosciences:

- 2023 ISI Impact Factor: 2.6
- 5-Year Impact Factor: 2.7
- Average review time: 5 days (submission to first decision (median))

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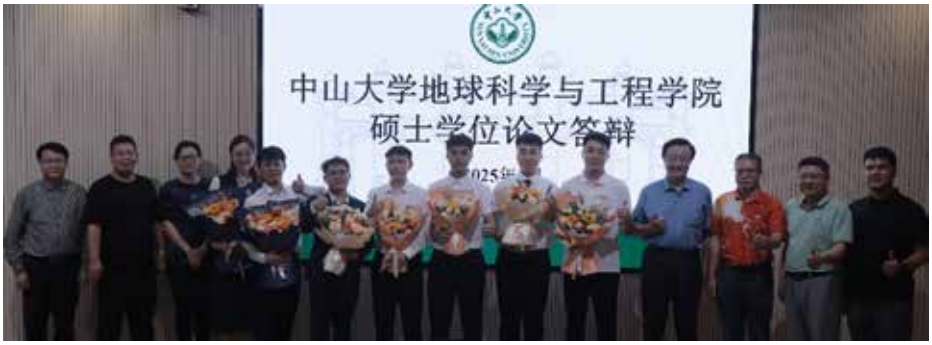

Dr. Xiaogang Ma Appointed Co-Editor-in-Chief of Applied Computing and Geosciences

In April 2025, The Elsevier journal Applied Computing and Geosciences appointed Dr. Xiaogang (Marshall) Ma as its new Co-Editor-in-Chief, succeeding Dr. Mark Engle. Dr. Ma is an associate professor of computer science at the University of Idaho. His research focuses on developing and deploying geoinformatics and data science for real-world uses. Dr. Ma has been an associate editor of the journal since its inception in 2019. He has also taken many leadership roles in IAMG, the journal's other publisher.

The journal extends its deepest gratitude to Dr. Mark Engle for his dedicated service as Co-Editor-in-Chief. Dr. Engle is a professor of Earth, environmental and resource sciences at the University of Texas at El Paso. His expertise in geochemistry and hydrogeology and commitment to editorial process have significantly contributed to the journal's reputation in the scientific community.

Dr. Ma will serve alongside Dr. Alessandra Menafoglio of the Polytechnic University of Milan, the other Co-Editor-in-Chief, to continue the journal's mission to publish cutting-edge research at the intersection of computing and geosciences. For more information about the journal and its editorial board, please visit the Applied Computing and Geosciences website.

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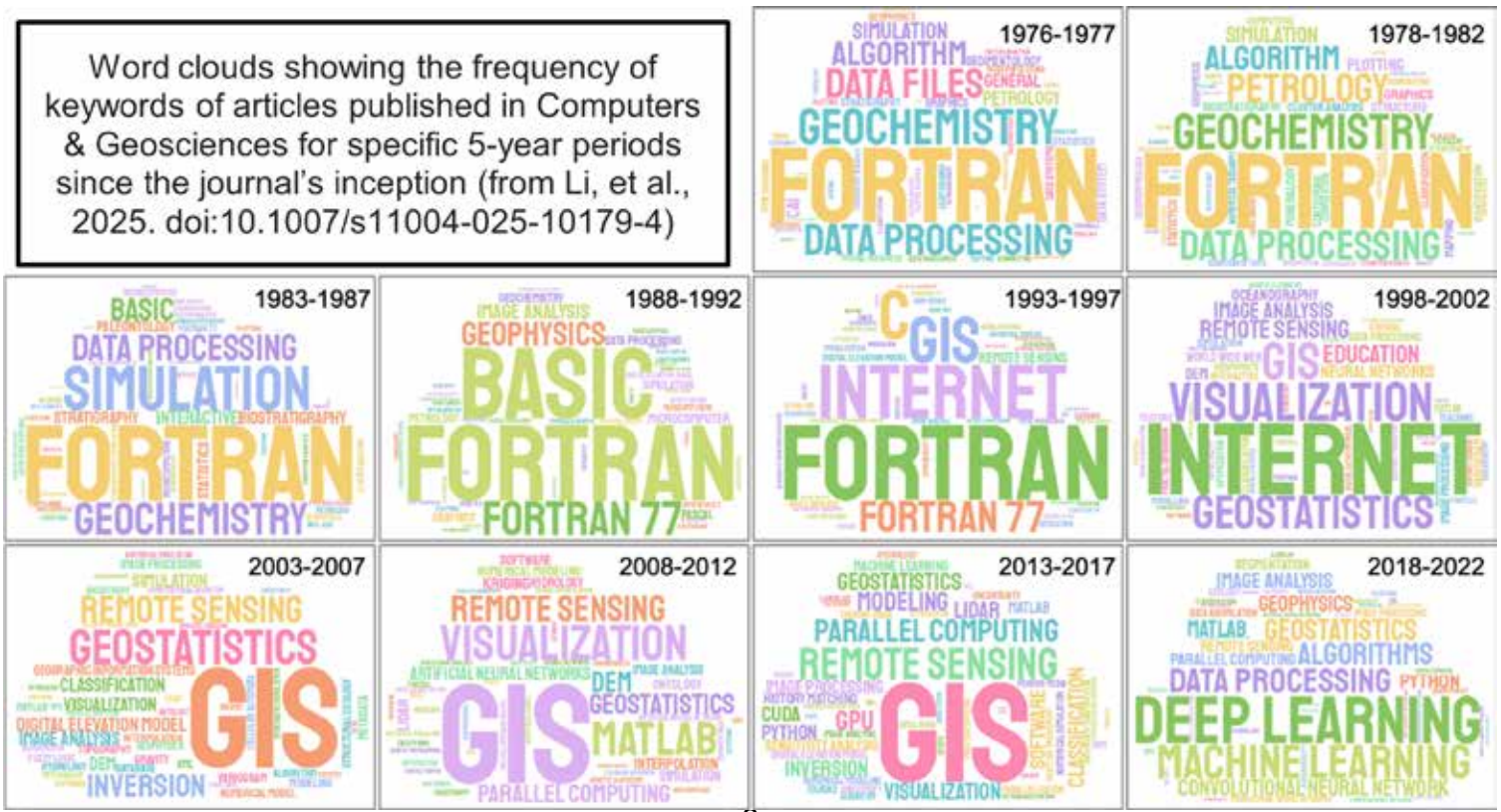
Foundation Models: The Next Wave of AI in Geoscience?

In recent years, geoscience has embraced machine learning and deep learning, using algorithms to analyze satellite images, model mineral deposits, and interpret geological patterns. But now we are facing something even more powerful: foundation models. Foundation models are large, general-purpose AI systems trained on massive amounts of data. Think of them as the brains behind tools like ChatGPT or image-generating AIs. What makes them special is their ability to learn broad patterns from text, images, and other data types, then adapt to specific downstream tasks with minimal extra training or even plain instructions. Why does this matter for geoscience? Because the field is rich in data, such as scientific literature, maps, 3D models, satellite images, core samples, thin sections, and more. Many of them are unstructured, scattered, or hard to interpret without years of expertise. Foundation models could change that. With the right guidance, they can read decades of research papers, summarize findings, extract trends, and even suggest new hypotheses.

Imagine asking a model to compare mineral exploration methods used for different deposit types, or to flag early signals of seismic activity from raw sensor data and scientific reports. These are the kinds of tasks that, until now, required expert teams and months of effort. Foundation models, with their multimodal capabilities, can process and connect diverse geoscience data types, including text, imagery, spatial maps, and time-series signals. This allows them to generate insights faster and more holistically, which, in turn, makes them ideal for complex applications in resource exploration, hazard assessment, and environmental monitoring where valuable knowledge is embedded across geoscience data of diverse structures and formats, and cannot be uncovered without joint interpretation and inference.

Of course, there are challenges to integrating foundation models into geoscience. These models

Word clouds showing the frequency of keywords of articles published in Computers & Geosciences for specific 5-year periods since the journal's inception (from Li, et al., 2025. doi:10.1007/s11004-025-10179-4)



must undergo extensive instruction and fine-tuning to effectively understand the specialized language of the field, which often includes technical terminology and complex concepts. Although they are capable of processing not only text but also a variety of data formats, the trustworthiness of the models and the quality of the generated results should be carefully checked. Most importantly, foundation models should be used responsibly. They are not a replacement for domain expertise but rather a tool that enhances and supports the work of geoscientists. Still, the potential is clear. Just as Fortran enabled the computational modeling of the Earth in the early days, GIS changed the way we map it, and machine learning revolutionized our approach to analyzing it (see diagram). Foundation models could now transform how we understand the Earth, i.e., to connect dots we didn't even know existed.

So, are foundation models the next wave of AI in geoscience? All signs point to yes. And for a field that thrives on discovery, this wave is one worth riding.

Xiaogang (Marshall) Ma

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Two Decades of the Georges Matheron Distinguished Lecture Series

Georges Matheron (1930-2000), a pioneering French mathematician and a Member of the French Academy of Sciences, is considered the father of geostatistics and a co-founder of mathematical morphology along with Jean Serra. The Georges Matheron Distinguished Lecture Series was instituted by the IAMG in 2005 to honour Professor Matheron's remarkable scientific contributions. The then President and Vice President of the IAMG, Frits Agterberg, Nick Fisher, and Eric Pirard, were instrumental in instituting the IAMG's Matheron Lecturer Award in 2005. The first award recipient was Jean Serra, who delivered the Matheron Award lecture at Liège, Belgium, in 2006 at the IAMG conference. In the last two decades, seventeen academics and researchers received the prestigious honour for their outstanding research ability in spatial statistics or mathematical morphology. The recipients of the Georges Matheron Award are:`

2006— Jean Serra, École des Mines, France. Random Set Modeling. Liège, Belgium

2007— Wynand Kleingeld, De Beers, South Africa. Narrating on a journey to solve a sampling problem, Beijing, China

2008— Adrian Baddeley, University of Western Australia. Spatial point process models on exploration geology, Oslo, Norway

2009— Jean-Laurent Mallet, École Nationale Supèrieure de Géologique, Nancy Université, France. GeoChron: A Mathematical framework for sedimentary geology, Stanford, California, USA

2010— Donald A. Singer, United States Geological Survey, USA. Solving the wrong resource assessment and exploration problems precisely, Budapest, Hungary

2011— B. S. Daya Sagar, Indian Statistical Institute, Bangalore, India. Mathematical Morphology in Geomorphology and GISci, Salzburg, Austria

2012— Jean-Paul Chilès, Ecole des Mines de Paris, Fontainebleau, France. Is There Still Room for New Developments in Geostatistics?, Brisbane, Australia

2013— Peter A. Dowd, University of Adelaide, Australia. Quantifying uncertainty for mineral and energy resource exploitation—sources, randomness, scale and structure. Madrid, Spain

2014— Karl Gerald van den Boogaart, TU Bergakademie Freiberg, Germany. Multiple Point Statistics understood in Matheronian Principles, New Delhi, India

2015— Roussos Dimitrakopoulos, McGill University, Montreal, Canada. Smart(er) Mining Complexes and Mineral Value Chains: A technological perspective on risk management and sustainability, Freiberg, Germany

2016— Jeffrey Yarus, Halliburton, USA. The Geostatistical Invasion of the Petroleum Industry; One Perspective from an Applied Geostatistician, Cape Town, South Africa

2017— Noel Cressie, School of Mathematics and Applied Statistics, University of Wollongong, Australia. A conditional approach to multivariate geostatistics, Perth, Australia

2018— Christian Lantuéjoul, Ecole des Mines de Paris, Fontainebleau, France. Conditional Simulations for Extremes Events, Olomouc, Czech Republic

2019— Vera Pawlowsky-Glahn, University of Barcelona, Spain. Compositional Data in Geostatistics, State College, Pensylvania, USA

2020— Marc G. Genton, King Abdullah University of Science and Technology (KAUST) in Saudi Arabia. From Matheron's Theory of Regionalized Variables to Exascale Geostatistics. OnLine, Everywhere

2023— Xavier Emery, Universidad de Chile, Chile. A journey into covariance models for spatial data, Trondheim, Norway

2024— Dionissios T. Hristopulos, Technical University of Crete, Greece. From Particles to Patterns: An Odyssey from Physics to Geostatistics and Beyond, Zhuhai, China

This prestigious award is given during the IAMG annual conference, where the recipient delivers a plenary talk. The authors of this article and the past recipients of this award encourage the members of the IAMG and others to nominate potential nominees with outstanding research ability in spatial statistics or mathematical morphology. Nomination guidelines are available on the IAMG's official website at www.iamg.org. More details of this award are also available at https://en.wikipedia.org/wiki/Georges_Matheron_Lectureship. This information appears more detailed in Mathematical Geosciences, v. 57, no. 5, 2025.

B. S. Daya Sagar

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Encyclopedia of Mathematical Geosciences

Springer's "Encyclopedia of Mathematical Geosciences" edited by B. S. Daya Sagar, Qiuming Cheng, Jennifer McKinley, and Frits Agterberg Volumes 1 & 2, First Edition (June 2023), p. 1756, June 2023, Springer Nature International Publishers, was published and released in June 2023. This Encyclopedia of Mathematical Geosciences consists of 349 Chapters under different categories. More details can be seen at https://link.springer.com/referencework/10.1007/978-3-030-85040-1

The Encyclopedia of Mathematical Geosciences is considered a sequel to "Dictionary of Mathematical Geosciences" and "Handbook of Mathematical Geosciences", published by Springer during the latter part of the last decade. The Encyclopedia is available not only as a two-volume printed version but also as an online reference work at http://springerlink.com. During the five years (2018-2023), there was massive coordination among authors, reviewers, sectional editors, editors, the staff of Springer Nature Publishers, and the production department. We gratefully acknowledge the help and support of the authors, who have graciously contributed excellent chapters, investing their time, knowledge, and expertise. This project is successful primarily because of the guidance received from colleagues, viz., Ricardo Olea, Gabor Korvin, Eric Grunsky, Jack Schuenemeyer, Jaya Sreevalsan Nair, Xiaogang (Marshall) Ma, and Sin Liang Lim. The considerable support from Annett Büttner, Sylvia Blago, and Johanna Klute from Springer Nature Publishers is remarkable.

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Member News

Prof. Emmanuel John Carranza elected Member of the Academy of Science of South Africa (ASSAf)

Prof. Emmanuel John Carranza is a full professor at the University of the Free State, South Africa. Prof. Carranza is currently editor-in-chief of Natural Resources Research (NRR), and was the recipient of the William Christian Krumbein Award in 2022, which is the highest award by the International Association for Mathematical Geosciences (IAMG). In addition, Prof. Carranza was former President (2022–2023), former Vice President (2020–2021), former Councillor (2009–2010, 2011–2012) of the Association of Applied Geochemists (AAG).

Prof. Carranza being given his certificate of election as Member of ASSAf in 2024 by its Interim President Prof. Stephanie Burton.

The focus of Prof. Carranza's research is on geochemistry for mineral exploration, ore genesis studies, environmental studies, spatial mathematics/statistics for predictive modelling of mineral resources, and remote sensing for geological/mineral exploration. Prof. Carranza has published more than 308 papers in various journals. His publications have been cited more than 22,300 times and his H-index is 83 according to Google Scholar. Prof. Carranza has been guest-editor of several special issues in high-quality international geoscience journals, including 3 in Ore Geology Reviews (OGR), 3 in Geochemistry: Exploration, Environment, Analysis (GEEA), 3 in Journal of Geochemical Exploration (JGE), 3 in NRR, 1 in Mathematical Geosciences (MG), 1 in Computers & Geosciences (C&G), and 1 in Resource Geology. Prof. Carranza has delivered 11 invited keynote lectures/presentations at international geoscience conferences and delivered 40 invited special topic lectures/presentations to academe/industry/government.

In addition, Prof. Carranza served as editorial board member/associate editor of JGE, OGR, C&G, GEEA and Journal of Resource Geology. Prof. Carranza has supervised 17 Ph.D. and 34 M.Sc. students, and has therefore significantly influenced the research directions of the next generations of geoscientists.

Prof. Carranza has a distinguished record of applications of mathematics/informatics to the earth sciences, and has provided service/support in several ways to professions involved in the earth sciences. Because of his excellent contributions to science, Prof. Carranza has been elected Member of the Academy of Science of South Africa (ASSAf) in 2024.

Prof. Dr. Renguang Zuo

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Noel Cressie honoured with Hannan Medal by Australian Academy of Science

Distinguished Professor Noel Cressie at the University of Wollongong (UOW) Australia has been awarded the Hannan Medal from the Australian Academy of Science.

Noel is Director of UOW's Centre for Environmental Informatics in the National Institute for Applied Statistics Research Australia (NIASRA) and Distinguished Professor in the School of Mathematics and Applied Statistics at UOW. The Hannan Medal, which recognises outstanding research in mathematics including statistical science, is named for the late Professor E.J. (Ted) Hannan FAA FASSA.

Noel is a world leader in the analysis of spatial and spatio-temporal data and a leading authority on statistical methods in environmental science, especially for large-scale phenomena such as oceanic and atmospheric processes and climate. He has developed powerful Bayesian-statistical methodology that integrates physical principles with stochastic models to capture uncertainties in scientific inference from large and complex datasets.

His research has been instrumental in scientific applications that include global CO2 flux, regional climate, sea surface temperature, air pollution, disease mapping, ocean biogeochemical cycles, soil carbon dynamics, glacier movement, and river pollution. Noel's recent work on uncertainty in climate-model downscaling investigates causal links between ecology and climate, and hence it has impact in evidence-based policy making.

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Honors and Academy Fellowships received by Professor B. S. Daya Sagar

Prof. B. S. Daya Sagar of the Systems Science and Informatics Unit (SSIU) at the Indian Statistical Institute-Bangalore Centre has been (i) promoted to the Professor (Higher Administrative Grade) with effect from 1st March 2022, (ii) appointed as the Head and Chief Executive Officer of the Indian Statistical Institute – Bangalore Centre for four years (2023-2027) to oversee the overall administrative and academic activities, (iii) elected as a Fellow of the Indian Academy of Sciences (FASc), Fellow of the Indian National Science Academy- INSA (FNA), Fellow of the International Artificial Intelligence Industry Alliance (FAIIA), and as a Member of the Honors and Recognition Committee (HRC) of the American Geophysical Union (AGU) for a period of 2022-2025, and appointed as the "IEEE Geoscience and Remote Sensing Society (GRSS) Distinguished Lecturer (DL)" for the period between 2020-2024.

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J. Jaime Gómez-Hernández received the Research Award of the Univeristat Plitecnica de valenciafor his Trajectory in Civil Engineering

J. Jaime Gómez-Hernández was recognized by the Universitat Politècnica de València (UPV) with the Research Award for his Trajectory in Civil Engineering. The award, consisting of a small wood sculpture, was presented during a ceremony celebrated in February 2025. This is the highest award for his discipline given by UPV. Jaime stated that, after receiving several international prizes, being recognized by your closest colleagues from the University you proudly represent is always a great honor.

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HELMHOLTZ INSTITUTE FREIBERG FOR **RESOURCE TECHNOLOGY**

The Helmholtz Institute Freiberg for Resource Technology (HIF-HZDR) is offering a PhD position on

Modelling ore fabrics along comminution to predict liberation

The topic is at the interface between applied mathematics, process engineering and geometallurgy. We are looking for an individual having very successfully completed their studies (master/diploma) in STEM fields with strong background in any of these fields. Specifically, experience in either stochastic geometry, deep learning or comminution modelling is required, together with very good programming skills in at least one high level language (e.g. julia, python, R).

Interested individuals are asked to contact Dr. Raimon Tolosana-Delgado at r.tolosana@hzdr.de for more information. Formal applications will be collected through the HZDR online application system (https://www.hzdr.de/jobs).

DIALOGPOST
Ein Service der Deutschen Post

ALLEMAGNE Port payé

PRIORITY
PRIORITAIRE / LUFTPOST

International Association for Mathematical Geosciences
(IAMG)

c/o IAMG Office
Balthasar-Rößler-Str. 58
09599 Freiberg
Germany

جامعة الملك عبدالله
للعلوم والتقنية
King Abdullah University of
Science and Technology

Postdoctoral Researcher / Research Scientist

Data science for mineral exploration

Description: The new Mineral Exploration and Exploitation Group at King Abdullah University of Science and Technology (KAUST) under Professor Max Frenzel is currently recruiting for a 2-year Post-doc position (extendable). The focus of the position will be on the development of new methods integrating a variety of data types (remote sensing, geology, geophysics, geochemistry) for geological modelling and advanced exploration targeting of mineral deposits. These workflows will then be applied in relevant Saudi Arabian contexts to help discover new ore deposits.

The position will combine techniques from geological modelling, geostatistics, machine learning, and potentially geophysics (inversion) to develop new exploration targeting methods. These will be designed to make the most of the excellent outcrop conditions in Saudi Arabia, which means that a particular focus will be placed on the use of remote sensing data. Other relevant data types are geological maps, geophysical surveys (gravity, electromagnetic, seismic), and soil or stream sediment geochemistry. In terms of the application to specific regions in Saudi Arabia, the candidate will be free to choose their own case study(s). However, the willingness to collaborate closely with local exploration companies is expected.

Saudi Arabia is a fast-developing country offering unparalleled opportunities in mineral resources and other geoscience-related fields. In particular, the recent opening of Saudi Arabia for international exploration companies has led to a substantial increase of activity in the mineral exploration sector. Given the great geological potential of Saudi Arabia for different types of mineral deposits, it is probably the country with the most exciting mineral exploration opportunities right now.

Location: King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia

Starting date: As soon as possible, ideally within Q4 2025.

Qualifications: Qualified applicants will hold a PhD in geophysics, geosciences, geoengineering, or another relevant discipline. Excellent coding skills in python, R, or another relevant language are expected, as demonstrated by previously completed projects. Strong candidates will also have a firm background in geostatistics, geospatial modelling, and data science, and will show excellent oral and written communication skills in English, as evidenced by a strong publication and conference presentation record. In addition, candidates should hold a driver's licence or be willing to acquire one, and should be willing to undertake fieldwork. Experience in the mineral resource sector is desirable but not essential.

Application instructions: Application documents, including a statement of interest, a curriculum vitae with a list of publications, and the names and contact details of three referees, should be submitted through the PlutoEdu platform (https://www.plutoedu.com/form/792303138). Please clearly reference "Data science for mineral exploration" in your statement of interest.

Deadline: Review of applications will begin in June 2025. The position is open until filled.