



IAMG

No. 93 December 2016

Newsletter

Official Newsletter of the International Association for Mathematical Geosciences

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Request for Nominations for

IAMG Special Lectures:

The **2019 Distinguished Lecturer** and
the **2018 George Matheron Lecturer**.

The Distinguished Lecturer prepares a series of lectures preferably on a variety of subjects in the mathematical geosciences to be presented in places where IAMG Annual Meetings are not normally held.

The Georges Matheron Lecturer should be a scientist with proven research ability in the field of spatial statistics or mathematical morphology. This lecture is presented at the Annual Meeting of the IAMG.

Letters of nomination for both these roles should include a curriculum vitae of the nominee and a short statement summarizing the ways in which he or she fulfills the nomination criteria.

For more information see

<https://iamg.org/special-lectures.html>

Letters should be directed by e-mail no later than

31st October 2017

to the Chair of the Lectures Committee, Christien Thiart:

christien.thiart@uct.ac.za

Elections around the globe are changing governments in many countries this year and often disrupting the existing political systems. Our election of new IAMG officers and councilors has produced some changes but also some overlap in personnel that provides continuity for the steady course set by Qiuming Cheng, our past president. Continuity has been achieved over the history of IAMG by electing the previous Secretary General as President (in the first seven elections) and later the Vice-President in most of the following elections. This time it is Jennifer McKinley, VP from 2012 to 2016, who is now our new President.

From the Editor
From the Editor
From the Editor

These changes inspire me to reflect on the IAMG mission statement that always appears on the bottom of this page: the global promotion of mathematical geosciences. The IAMG of the early years until 2000 was

dominated by governing teams from the USA, and our conferences were limited to "olympic" years as part of the International Geological Congress every four years. This doesn't mean that IAMG was xenophobic - there were plenty of international members and many of the councilors and committees came from other countries.

In 1994 IAMG started to have annual conferences that were organized by local committees all over the world (and once in the USA - 2009 at Stanford). This has helped IAMG to become an organization with a truly international reach. Growth and outreach into related scientific fields and other areas of research has been the agenda of each new President and we can see the results when we compare today's IAMG with the one that started almost 50 years ago.

This growth has involved affiliation and increased interaction with global organizations, e.g. the International Union of Geological Sciences (IUGS), International Union of Geodesy and Geophysics (IUGG), Earth Science Matters (ESM), Young Earth Scientists (YES). These efforts are often based on personal connections: IUGS now has as president Qiuming Cheng our past president; Jenny McKinley is a Communications Officer of the IUGS Initiative for Forensic Geology (IFG). Also, the IAMG Council is communicating with the European Association of Geoscientists and Engineers (EAGE) exploring the feasibility of a joint relationship.

IAMG is involved in supporting or sponsoring meetings of related associations (Geostatistical World Congress - Geostats2016, and geoENV2016) or chairing special IAMG sessions (ISI World Statistics Congress, SIAM Conference Mathematical and Computational Issues in the Geosciences). Ed de Mulder and Frits Agterberg co-chaired a session on "Multifractals and singularity analysis in mineral exploration and environmental assessment" in Vienna at the annual General Assembly of the European Geoscience Union (EGU). This session 12(NP3.4) co-sponsored by the IAMG had both an oral and a poster component. Eric Grunsky will organize sessions at the First Conference on Resources for Future Generations (IUGS) in Vancouver, 16-21 June 2018. The IAMG is co-sponsoring the 7th International CoDa Workshop to be held in Siena, Italy, June 5-9, 2017.

Another area of outreach is the cooperation with state agencies and involvement in government programs and other large national institutions. Yan Guangsheng, our new VP, will be instrumental in cooperation of IAMG with China Geological Survey (CGS). Jenny McKinley continues to sit on the Northern Ireland Government Assembly All-Party Group on Science and Technology as the Geological Society of London representative, and VP Christien Thiart will see how and where IAMG can become active in Africa.

While our activities are increasing on the academic and government agency side there are still relatively few connections with industry. A notable exception is our 2016 Distinguished Lecturer Sean McKenna who works at IBM Research.

All of these goals of IAMG to get more globally involved require effort and time of our members. That's a challenge for a relatively small organization, and it is astonishing how far IAMG has come in the last 15 or 20 years. We wish Jenny McKinley and her team much success in the next four years.

Harald S. Poelchau

International Association for Mathematical Geosciences

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PRESIDENT'S FORUM

The IAMG has a wonderful legacy of individuals whose pioneering spirit has provided real impetus to our work and the innovative development of a robust mathematical geoscience. During a recent visit by Professor Frits Agterberg to Northern Ireland - when we visited Professor Walther Schwarzacher - I was so inspired listening to two dear colleagues as they described how they used funding from sponsored workshops in the early years to make mathematical geoscience accessible across the globe. Rather affectionately, they referred to themselves as the Flying Circus.

As I take on the role of IAMG President, I am extremely honoured and wonder how we might emulate the "Flying Circus" as we face together the new opportunities and scientific challenges ahead. Building on the excellent leadership of our previous President Qiuming Cheng and my fellow committee members and colleagues, my vision is for the IAMG to continue to be as impactful and effective as possible, as a diverse and inclusive scientific community and network, addressing the global research challenges of our time.

To my mind there are several areas ripe for development. These include: extending our current student chapters as part of increasing our global reach, growing new collaborative research partnerships which nurture cutting edge research and generate fresh insights - rooted in good science, and securing new sponsorship partners to support our international conference activity.

At the same time, I am acutely aware that such an ambitious agenda cannot be delivered or sustained without the full participation of all of the existing members - and any new members we attract going forward. For this reason, I do hope that you will continue to give serious thought as to how you might contribute your talents and your creative ideas to our important work in 2017 and beyond.

IAMG sessions at the 35th International Geological Congress (IGC) held from 27th August to 4th September in Cape Town, South Africa were a real success and I would like to thank all of those who chaired sessions and participated in the conference.

Congratulations too to all of our award winners, keynote speakers and student award winners who gave excellent presentations. Special thanks to Christien Thiar and the local organizing committee for making the conference such a success; to David Collins, our Treasurer, and Regina van den Boogaart, IAMG Office Manager for collaborating so effectively with the conference organizers and to Ute Herzfeld, for the excellent IAMG booth, which became the natural meeting place for so many, including our student travel grant awardees.

IAMG plenary lectures were presented at the 35th IGC by Dr. Jeffrey Yarus as the 2016 Georges Matheron Lecturer, Professor Peter Dowd the 31st winner of the William Christian Krumbein Medal and Professor Juan José "Juanjo" Egozcue as the recipient of the 2016 John Cedric Griffiths Teaching Award. Their lectures provided excellent examples of how IAMG is developing fresh insights and approaches to engage with the global research challenges.

The 2016 Distinguished Lecturer, Dr Sean McKenna, presented lectures at a number of international locations including an IAMG sponsored keynote at geoENV2016 in Lisbon, Portugal. The 2017 Distinguished Lecturer, Professor Clayton Deutsch gave a plenary presentation at Geostat2016 in Valencia, Spain. The commitment of our distinguished colleagues, in taking on this important IAMG role,

highlights the impact of good science. Indeed, almost fifty years later, this may be our equivalent of the inspirational "Flying Circus."

I am excited to be joined by, and very grateful for the support of, my colleagues on the Executive Council; Executive Vice President, Dr. Raimon Tolosana-Delgado (Germany), Secretary General, Dr. Eric Grunsky (Canada) and Treasurer, Dr. David Collins (USA).

Professor Christien Thiar (South Africa) and Dr. Yan Guangsheng (China) have agreed to take on the roles of the Vice Presidents appointed by the President. Christien Thiar will develop IAMG links more broadly in Africa and Dr. Yan Guangsheng will represent the IAMG in the China Geological Survey, encouraging closer links between the IAMG and the UNESCO International Centre on Global-scale Geochemistry.

The members of the new Council are from many different nations and reflect fundamental IAMG principles of encouraging diversity and promoting early career and young scientists. The Councilors are Professor Gerald van den Boogaart (Germany), Dr. Xiaogang (Marshall) Ma (USA), Professor Guillaume Caumon (France), Professor Jaime Gómez-Hernández (Spain), and IGC Councilor: Professor Hari Shankar Pandalai (India).

Congratulations to Qiuming Cheng on his new role as president of IUGS. This is a tremendous achievement and a well-deserved personal honour for him and his family. It is also a wonderful opportunity for the IUGS and the IAMG to develop stronger links in future.

In 2017, our annual IAMG conference will be held in Perth, Australia. The Organizing Committee is chaired by Oktay Erten. In 2018, the scientific conference will be held in Olomouc (Czech Republic), 2-8 September, 2018. In conjunction with the conference, a celebration of the 50th anniversary of IAMG's founding will be held in Prague. The Organizing Committee is chaired by Karel Hron. You are encouraged to submit your papers and to propose sessions for these conferences. A Golden Anniversary book: "Fifty Years of IAMG" edited by Professor B.S. Daya Sagar and co-edited by Qiuming Cheng and Frits Agterberg will be published by Springer and launched at IAMG2018 in Olomouc.

As part of our international collaboration, the IAMG continues to work closely with governmental agencies worldwide to advance the role of mathematics, statistics and informatics.

IAMG has been actively interacting with other international associations including the International Union of Geological Sciences (IUGS), International Statistical Institute (ISI), International Union of Geodesy and Geophysics (IUGG), European Geoscience Union (EGU), Earth Science Matters (ESM), Southern African Institute of Mining and Metallurgy (SAIMM), International Association for Young Earth Scientists (YES), Future Earth Coast (former LIOCZ), European Association of Geoscientists and Engineers (EAGE), Geological Society of London (GSL), the Royal Irish Academy (RIA) and China Union of State Key Laboratories in Solid Earth Sciences.

With the support of my colleagues in the Executive Council and the broader IAMG Council I am confident that we can continue to serve the IAMG community well - to build on all of our work - and ensure that we position Mathematical Geosciences as an integral part of scientific thinking; able to meet the challenges of our interaction with a dynamic earth.

Thank you once again for your contribution to the IAMG.

Jenny McKinley

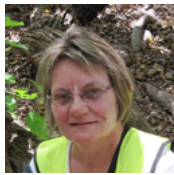


Association Business

Newly appointed Vice-Presidents

Christien Thiar

My appointment as one of the president's vice presidents came as a surprise and a delight. My main role will be to chair the Lectures Committee; I am also a member of the Meetings Committee and hope this will create communication between the two committees. I will also assist the president in developing IAMG links more broadly in Africa. I would also like to play a role in getting involved in the Curriculum Committee, not so much in the curriculum context but in disseminating this material in Africa and in a way making this material available and accessible to all Geosciences students in Africa through an online portal and thus expose them to Geoinformatics and quantitative analysis.



Christien Thiar

Yan Guangsheng

First of all I'm very grateful for being appointed as VP of IAMG. China is a big country in geology and mineral resources in academic study, technological innovation and public interest application. Being VP of IAMG and the Chief Geoscientist of the China Geological Survey (CGS) provides the opportunity to commit myself to strengthening the links between IAMG and CGS and promoting cooperation based on their strong points. And above all it's very important to share the thoughts and plans with all IAMG members.

In my opinion there are two major plans. Firstly, CGS has initiated the 3 to 5-year Geological Big Data and Mineral Resources and Environment Assessment Project. The vision is to realize sharing of the vast volume of geological, geophysical, geochemical data, as well as data in other disciplines. To achieve this goal, it's essential to develop technology for data mining and platform establishment. In this connection, we'd like to explore more cooperation with IAMG in the process, esp. data mining and information processing technologies. It's also possible to set certain thematic sessions during the annual meeting of IAMG, to promote the cooperation and public sharing of the data.



My second work plan is to develop closer links between the IAMG and the UNESCO International Centre on Global-scale Geochemistry, through jointly working in data sharing techniques, standards and data sharing platforms, so as to promote accessibility and utilization of the data shared by all sides. Besides, there's also potential for cooperation in research and promotion of methodology and technology concerning geochemical mapping data analysis and expressing at this scale.

These are the major two work plans. In addition we'd also like to share the good practices in China with our IAMG members.

Yan Guangsheng

New Committee Chairs

Following this year's elections several committees have had chairing changes:

K. Gerald van den Boogaart who is also one of the IAMG councilors is taking over the chair of the Publications Committee from **Eric Grunsky**.

Helmut Schaeben, formerly chair of Student Affairs, is now replacing **Ricardo Olea**, the longtime chair of the Meetings Committee.

Ute Mueller is the new chair of Student Affairs which has been renamed "Research Grants and Student Affairs Committee" (see p. 6).

VP **Christien Thiar** has taken over the chair of the Lectures Committee from **Jenny McKinley**, new President.



Noel Cressie - 2017 Matheron Lecturer

Noel Cressie is an Australian and American statistician. His research interests include theory and applications of spatial and spatio-temporal stochastic models; Bayes and empirical-Bayes methods for hierarchical statistical models; environmental informatics.

He received his B.Sc. from the University of Western Australia and his M.A. and Ph.D. from Princeton. Cressie has taught at Iowa State, Ohio State and is currently Distinguished Professor at the School of Mathematics and Applied Statistics, University of Wollongong, Australia and director of the Centre for Environmental Informatics (NIASRA).

Cressie was professor and advisor at Iowa State of Carol Gotway Crawford, IAMG Vice President 1996-2000.

He will present the Matheron Lecture at the 2017 IAMG meeting in Freemantle.



Member News

Xiaogang (Marshall) Ma, TWC, RPI

had a recent job change. In August he moved from Troy, NY to Moscow, ID to start a faculty job at University of Idaho. He is Assistant Professor in the Department of Computer Science.

Dario Grana, U. of Wyoming

In November Dario received the 2016 SEG J. Clarence Karcher Award from the Society of Exploration Geophysicists. The J. Clarence Karcher Award is awarded in recognition of significant contributions to the science and technology of exploration geophysics by a young geophysicist of outstanding abilities.

B. S. Daya Sagar, Indian Statistical Institute,

will be a Visiting Professor at the University of Trento, ItalWy, in May 2017. He will teach a course of 20 Lectures on "Mathematical Morphology and Applications" for Doctoral students of the ICT International Doctoral School, Department of Information Engineering and Computer Science. This subject of three-credit hours is also being offered as an elective for Bachelor of Mathematics (BMATH), Bachelor in Technology (BTech), Master of Technology in Computer Science (MTech-CS), and PhD coursework.

Richard Reymont † 2016

Richard Arthur Reymont, born in 1926 in Melbourne, died on 30 March 2016 in Sollentuna, Sweden.

Reymont was the driving force behind founding and organizing the IAMG. The inspiration for founding the IAMG in 1968 came in considerable measure from Dick Reymont's enthusiasm to get mathematicians interested in geological problems. In a sense, his vision was that of emulating in the earth sciences the recent successes achieved by the biometricians. He was the Association's first Secretary General (1968-72) and its second President (1972-1976).



An Australian with Swedish roots, he graduated from the University of Melbourne in 1948; he was subsequently awarded the M.S. (1955) and the D.Sc. (1967) degrees from that University, and the Philosophie Doktor (1956) from the University of Stockholm. After working for six years with the Geological Survey of Nigeria (1950-1956) Reymont taught at the University of Stockholm and the University of Ibadan, Nigeria, before being appointed Chair of Geology and Professor of Geology and Paleontology in the Paleontological

Institute of the University of Uppsala in 1967. Professor Reymont was well known for his wide-ranging research on mathematical methods in the geological and biological sciences, and especially for statistical applications in paleogenetics and ecology. His research interests have also embraced history of geology, and molecular biology, magnetic reversals, ammonites, ostracods, and foraminifera - especially those of the Cretaceous and the Paleogene periods. Richard was a prolific author of some 350 papers and eleven books. He retired in 1991 from Uppsala University where he lived with his wife Eva, but remained active in research spending much of his time on biometry and quantitative genetics of living and fossil invertebrates and his special interests in linguistics, analyzing dialects, origin of words, and the relation of languages.

He was the recipient of IAMG's Krumbein Medal (1979) and became the second Honorary Life Member (2008) of IAMG.

John Mann † 2015

C. John Mann Jr., who taught Geology at the University of Illinois for nearly 40 years and retired in 1999, passed away on September 2nd, 2015. He was 83. Dr. Mann attended the University of Kansas for his B.S. and received a Ph.D. in Mathematical Geology from the University of Wisconsin, Madison. Until recently, he had visited the department regularly as he worked on a multi-volume book about simple wisdom. He enjoyed politics, jazz and playing bridge.

John was born on Oct. 16, 1931, in Junction City, KS. and was married to Diane K. Messmann of Kewanee, Wis. She passed away in 2007. Also preceding him in death was his brother, Robert Mann.

He was a veteran of the U.S. Army Engineering Corps and was stationed in Guam during the Korean War.

John was Editor-in-Chief of the IAMG journal *Mathematical Geology* from 1985 to 1989. He also was editor of the Oxford Monograph "Techniques for Determining Probabilities of Geologic Events and Processes".





David, Nelson & Norman

IAMG 2016 meeting at the 35th IGC in Cape Town



Christine Ash, Ralph Watzel &



Photos courtesy of Jenny McKinley and Ming Wu



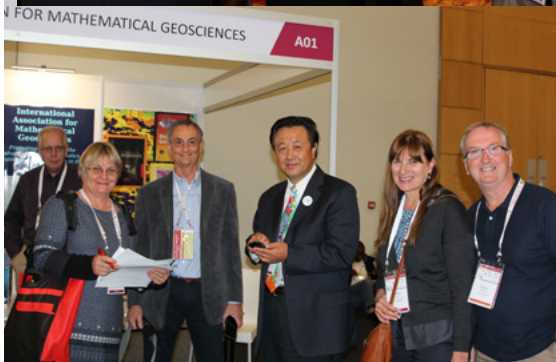
Qiuming Cheng, Richard Sinding-Larsen & Niichi Nishiwaki



Griffiths Award for Juan José Egozcue



Krumbein Medal for Peter Dowd



Get together at the IAMG booth



Student Affairs

Awards

2016 Computers and Geosciences Research Scholarships

Yu, Zhao (Univ. of Tulsa): 3D Non-Gaussian Facies and Reservoir Properties Estimation Based on Bayesian Geostatistical Framework

Long, Yaqian (Univ. Alberta): Machine Learning algorithms applied to geological mapping using hyperspectral data

Trantow, Thomas (Univ. Colorado): Constraining ice-dynamic models during acceleration events by spatiotemporal mapping of deformational provinces on a glacier surface

2016 Mathematical and Geosciences Student Awards

Liu, Qiyuan (SYSU): Spatial clustering analysis and risk assessment of long-term combined arsenic, lead, cadmium and zinc contamination and cancer mortality for residents based on GIS near Dabaoshan mine, south China.

Li, Xintong (KSU): Variogram Matrix Functions on All Sphere.

Petrakis, Manolis (TUC - Techn. Univ. Crete): Non-stationary covariance functions based on local interactions

2016 Natural Resource Research Student Awards

Hey, Jonathan (Western Univ., Ontario): Metallogenesis of DSO south of the Central Borden Fault, North Baffin

Gozzi, Caterina (Univ. Firenze): Geochemical modeling of groundwater systems by Compositional Data Analysis (CoDA) approach

Student Affairs Committee

Helmut Schaeben, Chair of the Student Affairs Committee has decided to step down after 12 years. He was the first to chair the newly organized committee in 2005 under president Agerberg. During his tenure he has seen many changes including the creation (and demise) of various IAMG Student Chapters and the journal research awards.

Ute Mueller (Australia) will succeed Helmut as new chair person.

We applaud Helmut and thank him for his long service to the Association.

The new Research Grants and Student Affairs Committee

This committee combines the former Student Affairs and the Research Grants committees into a single entity. The Student affairs committee was responsible for Student chapters and travel grants. Research Grants (C&G, MG and NRR) were allocated by two committees and administered the Computers & Geosciences Research Scholarships and the Mathematical Geosciences and Natural resources Research Student Awards.

The new committee will be responsible for Research Grants (C&G, MG and NRR), Student chapters and travel grants.

The membership of the committee is as follows:

Chair: **Ute Mueller** (Australia)

Four Members for Europe; Africa, China & India; North America; South America: NN

IAMG Treasurer: David Collins (non-voting)

Chair, Publications Committee: K. Gerald van den Boogaart

Editor or nominee of each of the IAMG journals: NN

Representative of IAMG President: Raimon Tolosana-Delgado

At this stage there are three vacancies on the committee. We will be seeking to appoint members to the committee according to the following principles: representation of the geographic spread of the IAMG membership, reasonable coverage of major IAMG themes and gender equity.



Ute Mueller, Chair

Updates from the University of Wyoming

The University of Wyoming IAMG Student Chapter hosted the 2016 IAMG Distinguished Lecturer, Dr. Sean McKenna, who gave a seminar on groundwater flow. We also hosted a visiting scholar from the Department of Statistics of NTNU, Norway.

Dario Grana

Distinguished Lecturer Reports

Sean McKenna - 2016 DL

Sean has had a busy schedule lecturing during the current year with a total of 21 presentations in various states of the US and several European countries. Since the last newsletter (June 2016), he added 16 more IAMG DL talks including some other invited lectures, such as a keynote at SIAM's Mathematics for Planet Earth Conference. Titles of his talks were:

- Mapping the significance of El Niño/La Niña impacts on vegetation patterns in the Amazon Basin
- Modeling Groundwater Flow and Transport in Heterogeneous Media
- Smarter Planet, 2.0
- The Role of Models in Smarter Cities Solutions
- Big Data and Predictive Models for the Natural and Urban Environment
- Detecting Significance in Spatially Correlated Processes
- Hidden Markov Models in Environmental and Geoscience Applications
- Big Data Throughout the Food System: Driving Decisions, Designing the Future

You can find the list at the link here:

<https://sites.google.com/site/samcken/presentations>



With Vasily Demyanov at Heriot Watt University in Edinburgh (July)

With Dario Grana at the University of Wyoming in Laramie (Sept)

2017 Distinguished Lecturer

Clayton Deutsch was confirmed as the 2017 Distinguished Lecturer (DL). The new DL was introduced at the 35th IGC in Cape Town. Dr Deutsch was unable to attend the IGC, but presented his DL lecture topics as part of his keynote at Geostats2016 in Valencia in October.

The list of the DL2017 lecture topics includes:

1. All Realizations All the Time
2. Geometallurgy from a Geostatistical Perspective
3. Millimeter to Kilometer Scale Reservoir Modeling
4. Recent Developments in Multivariate Geostatistics

Short Courses:

- Fundamentals of Geostatistics (2 to 4 days)
- Mineral Resource Estimation (3 to 5 days)
- Geostatistical Reservoir Modeling (3 to 5 days)
- Advanced Multivariate Geostatistics (3 to 5 days)

More: iamg.org/special-lectures/current-distinguished-lecturer.html

Contact Dr. Deutsch (by email at cdeutsch@ualberta.ca) to discuss a possible short course.



Student Chapter of China University of Geosciences

On November 6th, 2016, a rap session was held in the 3D Virtual Reality Hall, the State Key Laboratory of Geological Processes and Mineral Resources. The former president of IAMG, Qiuming Cheng, and other faculty were invited, communicating with the members of IAMG-SCC. Participants discussed issues: 1) the front edge and orientation of geosciences; 2) the contribution of geomathematics made to geosciences in recent years; 3) the typical issues related to deep earth exploration. In addition, to inform participants about the developments and achievements of IAMG-SCC, the chairman of IAMG-SCC gave a PowerPoint Presentation at the end of the meeting. The members of IAMG-SCC got a good opportunity to exchange views with professors and get to know some of the hottest topics in the field of geoscience. Furthermore, the professors offered some guidance for IAMG-SCC, e.g., to hold more activities with undergraduate students to popularize geoscience and IAMG.



IAMG Journal Report



Computers & Geosciences

Last year was a good year for Computers & Geosciences. Since May 2014, Jef Caers and Edzer Pebesma have shared the load of Chief

Editor, Jef focusing on subsurface and visualisation, Edzer on surface and atmosphere and web services. Since May 2016, Gregoire Mariethoz has taken over from Jef, who served two terms of 3 years each.

2015 saw a strong incline in the IF as well as in the 5-year impact factor. The 1 year IF of 2.474 is the highest in CAGEO history, which is great news.

C&G is now ranked 19/104 (2014: 25/102) in the Computer Science, Interdisciplinary Applications Category, and 47/183 (2014: 64/175) in the Geosciences, Multidisciplinary category, indicating that both rankings climbed significantly in 2015.

Paul Cumine of Elsevier met with Gregoire and Edzer in person during EGU 2016; Paul indicated that the number of submissions is rising pretty strongly, and there may be room for a third editor. Gregoire and Edzer are actively trying to enlarge the board of associate editors, in order to cope with the increase in volume.

The new scope introduced in June 2012 has now taken full effect. The change is towards a focus on Computer Science. This means that papers now need to demonstrate originality in research in that area, not just providing some code based on a mostly methodology. Standard applications of GIS are no longer within the scope either. Authors keep submitting standard codes (without new science). Those papers are now declined outright, leading to high decline rates in 2014 and 2015. We are inclined to believe that the increased IF reflects this decision.

C&G Best Paper Awards 2015

The entire board voted on best papers which were nominated by readers. The winners are:

Computational papers:

Gautier Laurent, Guillaume Caumon, Mark Jessell, Interactive editing of 3D geological structures and tectonic history sketching via a rigid element method, *Computers & Geosciences*, Volume 74, January 2015, Pages 71-86, ISSN 0098-3004, <http://dx.doi.org/10.1016/j.cageo.2014.10.011>

Informatics papers:

Jarosław Jasiewicz, Paweł Netzel, Tomasz Stepinski, GeoPAT: A toolbox for pattern-based information retrieval from large geospatial databases, *Computers & Geosciences*, Volume 80, July 2015, Pages 62-73, ISSN 0098-3004, <http://dx.doi.org/10.1016/j.cageo.2015.04.002>

Natural Resources Research

The four issues of volume 24 (2015) have 508 pages in 25 articles. Compared with the 2010-2014 5-year average of 402 pages in 25 articles, we had 104 (26%) increase in number of printed pages but no increase/decrease in number of articles during 2015. This significant increase in printed pages is due to two reviews papers with a total of 122 pages – one with 56 pages and the other with 66 papers. The latter is the article from the EMD-AAPG (Energy Minerals Division of the American Association of Petroleum Geologists), our co-sponsor.

For the year 2015 we had:

- a) an 11% decrease in manuscripts submitted from 65 in 2014 to 58 in 2014;
- b) a 21% decrease in acceptance rate from 56% in 2014 to 44% in 2015 meaning we have increased our efforts to accept only high quality papers;
- c) a 31% decrease in average days to final disposition of accept from 140

in 2014 to 97 in 2015, meaning we have increased our efforts to reduce the peer-review period;

d) a 41% decrease in average days to final disposition of reject from 34 in 2014 to 20 in 2015, meaning we have increased our efforts to quickly screen papers that are unsuitable for publication.

The above figures mean that there were fewer accepted articles to publish in 2015 compared to those in 2014; yet, we still had a slight but healthy backlog of articles for publication in 2016. Volume 25 (2016) has a total of 496 pages and 31 articles. Because of the advanced publication of all four issues of volume 25 (2016), NRR will have a new publication schedule starting next year 2017, i.e., January – April – July – October so as to narrow the gap between the 4th issue of volume 25 and the 1st issue of volume 26 (2017).

In terms of NRR's impact, the indices seem to be improving for the 5-year period 2011-2015 implying that there was increasing interest in the articles published in NRR during the last 1-2 years or so, and that is quite encouraging. In fact, Petra van Steenberg – our contact Publication Editor in Springer – and I are currently checking all ISI criteria to see if we can submit an application next year for the Science Citation Index.

Attracting submissions of good papers continues to be a concern. We had a few submissions from IAMG members lately, but we still hope that more other members of IAMG will do the same. This year we are running a special issue on "GIS-Based Geochemical Anomaly and Mineral Prospectivity Mapping", with papers coming partly from the sessions I convened in the Goldschmidt2016 conference (26 June – 1 July 2016, Yokohama, Japan) and the 35th IGC (27 August – 4 September 2016, Cape Town, South Africa). In addition, we will be running a special issue on "Mineral Resources of the Future" with contributions coming from the presenters in the Theme "Resourcing Future Generations" of the 35th IGC which will be published in October next year.

John Carranza

Mathematical Geosciences

Collaboration and working relations with Springer are outstanding; we are grateful to the service of Dr. Annett Buettner, who continues to fulfill the role of Publishing Editor for our journal since 2012. In addition, we are equally grateful to Dr. Johannes Morawcsik, who continues to assume the role of as Production Editor.

Mathematical Geosciences published a total of 44 manuscripts in 2015 and has published another 29 already in the first six issues of 2016. Book reviews continue to constitute an important portion of published material. However and as always, please do note that suggestions of books to review and volunteering to do the reviews continue to be needed and are ALWAYS greatly appreciated. We did not have book reviews the last few months.

2015 Special Issues: 47(1) Special Issue on Geothermal Energy (Guest Editors: Roland Horne and Kewen Li)

As recently announced, the Impact Factor (Thomson Reuters) for 2015 is 1.777 (see table below). This number is considerably greater than last year's IF, with a significant increase in the number of cites as well. Please note that 723 cites for a journal that has published 44 papers in 2015 is not minor. We aim to maintain an upward trend on all fronts moving forward.

One of our goals is a stable IF above 2. And for this all of us need to be aware that we should not forget references to papers published in MG particularly the last couple of years.

Roussos Dimitrakopoulos

2014 MG Best Paper Award

"A new differential parameterization based on principal component analysis for the low-dimensional representation of complex geological models", *MG* vol.46(7), pp. 775-813 by **Hai Vo** and **Louis Durlofsky**.

Journal Statistics

Mathematical Geosciences:

ISI-impact factor for 2015: 1.777 (SJR= 1.562)

5-Year Impact Factor: 1.918 (SJR 4y=2.111)

Rejection rate: 59.4%

Turnaround time: 39.6 days (average; submission to first decision)

Computers & Geosciences:

2015 Impact Factor: 2.474 (SJR=1.268)

5-Year Impact Factor: 2.540 (SNIP=1.590)

Ave. review time (2015): 13 weeks

Natural Resources Research:

2015 SJR = 0.457; ISI IF = 1.227

5 year SNIP: 0.720 (2014); SJR 4y=0.942

Rejection rate: 56%

Ave. turnaround time: 97 days (submission to final decision)

IAMG Journal Contents

Natural Resources Research

Volume 25, Issue 4, December 2016

Statistical Distribution Laws for Metallic Mineral Deposit Sizes — Alberto E. Patiño Douce

Prospectivity Modeling for Cambrian–Ordovician Hydraulic Fracturing Sand Resources Around The Llano Uplift, Central Texas — B. A. Elliott, R. Verma, J. R. Kyle

An AHP–TOPSIS Predictive Model for District-Scale Mapping of Porphyry Cu–Au Potential: A Case Study from Salafchegan Area (Central Iran) — Hooshang H. Asadi, Atefeh Sansoleimani, Moslem Fatehi, Emmanuel John M. Carranza

Predictive Geological Mapping Using Closed-Form Non-stationary Covariance Functions with Locally Varying Anisotropy: Case Study at El Teniente Mine (Chile) — Francky Fouedjio, Serge Séguéret

Rigorous Analysis of Available Data from Cerro Prieto and Las Tres Virgenes Geothermal Fields with Calculations for Expanded Electricity Generation — Rosa María Prol-Ledesma, Claudia Arango-Galván...

Estimation of Mining Project Values Through Real Option Valuation Using a Combination of Hedging Strategy and a Mean Reversion Commodity Price — Md. Aminul Haque, Erkan Topal, Eric Lilford

Optimizing Ore–Waste Dig-Limits as Part of Operational Mine Planning Through Genetic Algorithms — Julian Ramirez Ruiseco, Jacob Williams, Mustafa Kumral

Bitumen Prices and Structural Changes in North American Crude Oil Markets — Emil D. Attanasi

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Mathematical Geosciences

Volume 48, Issue 6, August 2016

A three-dimensional classification for mathematical pore shape description in complex carbonate reservoir rocks — Steven Claes, Jeroen Soete, Veerle Cnudde, Rudy Swennen

About the Determination of Quasi Steady State Storativity and Connectivity Matrix of Wells in 3D Heterogeneous Formations — Benoit Noetinger

Fracturing, Crushing, and Directional Concentration — Serge Antoine Séguéret

Capability of Artificial Neural Network for Forward Conversion of Geodetic Coordinates (ϕ , λ , h) to Cartesian Coordinates (X , Y , Z) — Yao Yevenyo Ziggah, Hu Youjian, Xianyu Yu&

BEMMA: A Hierarchical Bayesian End-Member Modeling Analysis of Sediment Grain-Size Distributions — Shi-Yong Yu, Steven M. Colman, Linxiang Li

MG - Volume 48, Issue 7, October 2016

Complexity of Earth Surface System Evolutionary Pathways — Jonathan D. Phillips

An Integrated Approach to Simulate and Validate Orebody Realizations with Complex Trends: A Case Study in Heavy Mineral Sands — Tom Wambeke, Jörg Benndorf

— A Specific Volume to Measure the Spatial Sampling of Deposits — Jacques Rivoirard, Didier Renard

Iterative Thickness Regularization of Stratigraphic Layers in Discrete Implicit Modeling — Gautier Laurent

Analysis and Classification of Natural Rock Textures based on New Transform-based Features — Rodrigo Lobos, Jorge F. Silva, Julián M. Ortiz, Gonzalo Díaz, Alvaro Egaña

Announcement — Best Paper Award 2014

MG - Volume 48, Issue 8, November 2016

Has the Largest Field Been Discovered Yet? PETRIMES and GRASP 25 Years Later — Gordon M. Kaufman, Ray Faith, John H. Schuenemeyer

Multivariate Geostatistical Grid-Free Simulation of Natural Phenomena — Yevgeniy Zagayevskiy, Clayton V. Deutsch

A Multivariate Geostatistical Methodology to Delineate Areas of Potential Interest for Future Sedimentary Gold Exploration — Pierre Goovaerts, M. T. D. Albuquerque, I. M. H. R. Antunes

Error Propagation in Isometric Log-ratio Coordinates for Compositional Data: Theoretical and Practical Considerations — Mehmet Can Mert, Peter Filzmoser, Karel Hron

Numerical Simulation of Reactive Transport on Micro-CT Images — Peyman Mostaghimi, Min Liu, Christoph H. Arns

Nonparametric Estimation to Reconstruct the Deformation History of an Active Fold in the Caspian Basin — I. R. Sánchez-Borrego, J. I. Soto, M. Rueda, I. Santos Betancor

Book Review — Value of Information in the Earth Sciences by Jo Eidsvik, Tapan Mukerji and Debarun Bhattacharjya — Mohan Kelkar

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Computers & Geosciences

Volume 91, June 2016

A. Roslin, J.S. Esterle — Electrofacies analysis for coal lithotype profiling based on high-resolution wireline log data

Kristín Björg Ólafsdóttir, Michael Schulz, Manfred Mudelsee — REDFIT-X: Cross-spectral analysis of unevenly spaced paleoclimate time series

Masoud Babaei, Indranil Pan — Performance comparison of several response surface surrogate models and ensemble methods for water injection optimization under uncertainty

Zhongxian Liu, Jianwen Liang, Chengqing Wu — The diffraction of Rayleigh waves by a fluid-saturated alluvial valley in a poroelastic half-space modeled by MFS

Mohammad Javad Abdollahifard, Gregoire Mariethoz, Mohammadreza Pourfard — Improving in situ data acquisition using training images and a Bayesian mixture model

A. Modave, A. St-Cyr, T. Warburton — GPU performance analysis of a nodal discontinuous Galerkin method for acoustic and elastic models

T. Salles, L. Hardiman — Badlands: An open-source, flexible and parallel framework to study landscape dynamics

Basile Hector, Jacques Hinderer — pyGrav, a Python-based program for handling and processing relative gravity data

Hong-Mei Sun, Rui-Sheng Jia, Qian-Qian Du, You Fu — Cross-correlation analysis and time delay estimation of a homologous micro-seismic signal based on the Hilbert–Huang transform

Morteza Javadi, Mostafa Sharifzadeh, Kourosh Shahriar, Shahrbanou Sayadi — Migration tracing and kinematic state concept embedded in discrete fracture network for modeling hydrocarbon migration around unlined rock caverns

Eun Young Lee, Johannes Novotny, Michael Wägreich — BasinVis 1.0: A MATLAB®-based program for sedimentary basin subsidence analysis and visualization

Hamza Kaabeche, Moulley Charaf Chabou, Abderrahmane Bendaoud, Jean-Louis Bodinier, Olivier Lobry, Fabien Retif — MetClass: A software for the visualization and exploitation of Dill's (2010) "chessboard" classification of mineral deposits

C & G Vol. 92, July 2016

Weiguo Han, Liping Di, Genong Yu, Yuanzheng Shao, Lingjun Kang — Investigating metrics of geospatial web services: The case of a CEOS federated catalog service for earth observation data

Jakub Silhavy, Jozef Minár, Pavel Mentlík, Ján Šládek — A new artefacts resistant method for automatic lineament extraction using Multi-Hillshade Hierarchic Clustering (MHHC)

Esther T. Arning, Steffen Häußler, Wolfgang van Berk, Hans-Martin Schulz — PEACH4 v.2.0: A modelling platform to predict early diagenetic processes in marine sediments with a focus on biogenic methane — Case study: Offshore Namibia

Qiancheng Liu, Jianfeng Zhang, Hao Zhang — Eliminating the redundant source effects from the cross-correlation reverse-time migration using a modified stabilized division

Adeline Lach, Faïza Boulahya, Laurent André, Arnault Lassin, Mohamed Azaroual, Jean-Paul Serin, Pierre Cézac — Thermal and volumetric properties of complex aqueous electrolyte solutions using the Pitzer formalism — The PhreeSCALE code

Maoteng Zheng, Yongjun Zhang, Shunping Zhou, Junfeng Zhu, Xiaodong Xiong — Bundle block adjustment of large-scale remote sensing data with Block-based Sparse Matrix Compression combined with Preconditioned Conjugate Gradient

Vahid Jafari Azad, Chang Li, Circe Verba, Jason H. Ideker, O. Burkan Isgor — A COMSOL–GEMS interface for modeling coupled reactive-transport geochemical processes

William H.M. James, Jonathan L. Carrivick — Automated modelling of spatially-distributed glacier ice thickness and volume

Gabriel Ruiz-Martínez, Germán Daniel Rivillas-Ospina, Ismael Mariño-Tapia, Gregorio Posada-Vanegas — SANDY: A Matlab tool to estimate the sediment size distribution from a sieve analysis

Henrique Rennó de Azeredo Freitas, Corina da Costa Freitas, Sergio Rosim, João Ricardo de Freitas Oliveira — Drainage networks and watersheds delineation derived from TIN-based digital elevation models

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Volcanic edifice alignment detection software in MATLAB: Test data and preliminary results for shield fields on Venus — Bradley J. Thomson, Nicholas P. Lang

Modelling of global mass effects in hydrology, atmosphere and oceans on surface gravity — M. Mikolaj, B. Meurers, A. Güntner

Assessing the impact of graphical quality on automatic text recognition in digital maps — Yao-Yi Chiang, Stefan Leyk, Narges Honarvar Nazari, Sima Moghaddam, Tian Xiang Tan

Feature tracking in high-resolution regional climate data — Neil R. Massey

Reducing disk storage of full-3D seismic waveform tomography (F3DT) through lossy online compression — Peter Lindstrom, Po Chen, En-Jui Lee

Cellular automata to understand the behaviour of beach-dune systems: Application to El Fangar Spit active dune system (Ebro delta, Spain) — Fernando Barrio-Parra, Inmaculada Rodríguez-Santalla

Rock.XML – Towards a library of rock physics models — Erling Hugo Jensen, Ragnar Hauge, Marit Ulvmoen, Tor Arne Johansen, Åsmund Drottning

A new program on digitizing analog seismograms — Maofa Wang, Qigang Jiang, Qingjie Liu, Meng Huang

ST-HASSET for volcanic hazard assessment: A Python tool for evaluating the evolution of unrest indicators — Stefania Bartolini, Rosa Sobradelo, Joan Martí

pSIN: A scalable, Parallel algorithm for Seismic Interferometry of large-N ambient-noise data — Po Chen, Nicholas J. Taylor, Ken G. Dueker, Ian S. Keifer, Andra K. Wilson, Casey L. McGuffey, Christopher G. Novitsky, Alec J. Spears, W. Steven Holbrook

Data Environment Analysis as a tool for the exploration phase of mining — Tommi Kauppinen

OpenHVSr: imaging the subsurface 2D/3D elastic properties through multiple HVSr modeling and inversion — S. Bignardi, A. Mantovani, N. Abu Zeid

ARTc: Anisotropic reflectivity and transmissivity calculator — Reza Malehmir, Douglas R. Schmitt

Single Layer Recurrent Neural Network for detection of swarm-like earthquakes in W-Bohemia/Vogtland—the method — Jana Doubravová, Jan Wiszniowski, Josef Horálek

Paleomagnetism.org: An online multi-platform open source environment for paleomagnetic data analysis — Mathijs R. Koymans, Cor G. Langereis, Daniel Pastor-Galán, Douwe J.J. van Hinsbergen

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Development and programming of Geophonino: A low cost Arduino-based seismic recorder for vertical geophones — J.L. Soler-Llorens, J.J. Galiana-Merino, J. Giner-Caturla, P. Jauregui-Eslava, S. Rosa-Cintas, J. Rosa-Herranz

ISOT_Calc: A versatile tool for parameter estimation in sorption isotherms — José L. Beltrán, Joseph J. Pignatello, Marc Teixidó

Large-scale seismic waveform quality metric calculation using Hadoop — S. Magana-Zook, J.M. Gaylord, D.R. Knapp, D.A. Dodge, S.D. Ruppert

Geological and hydrological visualization models for Digital Earth representation — Jadwiga R. Ziolkowska, Reuben Reyes

spMC: an R-package for 3D lithological reconstructions based on spatial Markov chains — Luca Sartore, Paolo Fabbri, Carlo Gaetan

A parallel code to calculate rate-state seismicity evolution induced by time dependent, heterogeneous Coulomb stress changes — C. Cattania, F. Khalid

Realizing parameterless automatic classification of remote sensing imagery using ontology engineering and cyberinfrastructure techniques — Ziheng Sun, Hui Fang, Liping Di, Peng Yue

A GRASS GIS module to obtain an estimation of glacier behavior under climate change: A pilot study on Italian glacier — Daniele Strigaro, Massimiliano Moretti, Matteo Mattavelli, Ivan Frigerio, Mattia De Amicis, Valter Maggi

GlaRe, a GIS tool to reconstruct the 3D surface of palaeoglaciators — Ramón Pellitero, Brice R. Rea, Matteo Spagnolo, Jostein Bakke, Susan Ivy-Ochs, Craig R. Frew, Philip Hughes, Adriano Ribolini, Sven Lukas, Hans Renssen

Self-potential data inversion through a Genetic-Price algorithm — R. Di Maio, P. Rani, E. Piegari, L. Milano

A chemical EOR benchmark study of different reservoir simulators — Ali Goudarzi, Mojdeh Delshad, Kamy Sepehrmoori

Tensor based geology preserving reservoir parameterization with Higher Order Singular Value Decomposition (HOSVD) — Sardar Afra, Eduardo Gilidin

Robust and portable capacity computing method for many finite element analyses of a high-fidelity crustal structure model aimed for coseismic slip estimation — Ryoichiro Agata, Tsuyoshi Ichimura, Kazuro Hirahara, Mamoru Hyodo, Takane Hori, Muneo Hori

Remote sensing clustering analysis based on object-based interval modeling — Hui He, Tianheng Liang, Dan Hu, Xianchuan Yu

New ArcGIS tools developed for stream network extraction and basin delineations using Python and java script — Adel Omran, Schröder Dietrich, Abdou Abouelmagd, Märker Michael

EOS7Cm: An improved TOUGH2 module for simulating non-isothermal multiphase and multicomponent flow in CO₂-H₂S-CH₄-brine systems with high pressure, temperature and salinity — Hongwu Lei, Jun Li, Xiaochun Li, Zhenjiao Jiang

Microsoft excel spreadsheets for calculation of P-V-T relations and thermodynamic properties from equations of state of MgO, diamond and nine metals as pressure markers in high-pressure and high-temperature experiments — Tatiana S. Sokolova, Peter I. Dorogokupets, Anna M. Dymshits, Boris S. Danilov, Konstantin D. Litasov

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A visualization tool for the kernel-driven model with improved ability in data analysis and kernel assessment — Yadong Dong, Ziti Jiao, Hu Zhang, Dongni Bai, Xiaoning Zhang, Yang Li, Dandan He

IGMESH: A convenient irregular-grid-based pre- and post-processing tool for TOUGH2 simulator — Litang Hu, Keni Zhang, Xiaoyuan Cao, Yi Li, Chaobin Guo

Automatic extraction of discontinuity orientation from rock mass surface 3D point cloud — Jianqin Chen, Hehua Zhu, Xiaojun Li

Geospatial approach towards enumerative analysis of suspended sediment concentration for Ganges-Brahmaputra Bay — Palak Pandey, Pravin D. Kunte

An open-source Matlab code package for improved rank-reduction 3D seismic data denoising and reconstruction — Yangkang Chen, Weilin Huang, Dong Zhang, Wei Chen

Smart maintenance of riverbanks using a standard data layer and Augmented Reality — Roberto Pierdicca, Emanuele Frontoni, Primo Zingaretti, Adriano Mancini, Eva Savina Malinverni, Anna Nora Tasseti, Ernesto Marcheggiani, Andrea Galli

Whitebox GAT: A case study in geomorphometric analysis — J.B. Lindsay

Optimization-based multiple-point geostatistics: A sparse way — Sadeq Kalantari, Mohammad Javad Abdollahifard

Spectral analysis of time series of categorical variables in earth sciences — Eulogio Pardo-Igúzquiza, Francisco J. Rodríguez-Tovar, Javier Dorador

Multi-view horizon-driven sea plane estimation for stereo wave imaging on moving vessels — Filippo Bergamasco, Alvise Benetazzo, Francesco Barbariol, Sandro Carniel, Mauro Sclavo

Bounds and self-consistent estimates of the elastic constants of polycrystals — Christopher M. Kube, Andrea P. Arguelles

Optimisation of decision making under uncertainty throughout field lifetime: A fractured reservoir example — Dan Arnold, Vasily Demyanov, Mike Christie, Alexander Bakay, Konstantin Gopa

MAX UnMix: A web application for unmixing magnetic coercivity distributions — Daniel P. Maxbauer, Joshua M. Feinberg, David L. Fox

Comparison of particle swarm optimization and simulated annealing for locating additional boreholes considering combined variance minimization — Saeed Soltani-Mohammadi, Mohammad Safa, Hadi Mokhtari

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Representing and publishing physical sample descriptions — Anusuriya Devaraju, Jens Klump, Simon J.D. Cox, Pavel Golodoniuc

Three-dimensional morphological analysis method for geologic bodies and its parallel implementation — Xiancheng Mao, Bin Zhang, Hao Deng, Yanhong Zou, Jin Chen

Sediment micromechanics in sheet flows induced by asymmetric waves: A CFD-DEM study — Rui Sun, Heng Xiao

TiConverter: A training image converting tool for multiple-point geostatistics — Mohamed M. Fadlemlula F., John Killough, Michael Fraim

Parallel Priority-Flood depression filling for trillion cell digital elevation models on desktops or clusters — Richard Barnes

A Dynamic Time Warping based covariance function for Gaussian Processes signature identification — Katherine L. Silversides, Arman Melkumyan

Web-based application for inverting one-dimensional magnetotelluric data using Python — Wiwit Suryanto, Theodosius Marwan Irnaka

A geodata warehouse: Using denormalisation techniques as a tool for delivering spatially enabled integrated geological information to geologists — Andrew Kingdon, Martin L. Nayemil, Anne E. Richardson, A. Graham Smith

An optimal scheme for numerical evaluation of Eshelby tensors and its implementation in a MATLAB package for simulating the motion of viscous ellipsoids in slow flows — Mengmeng Qu, Dazhi Jiang, Lucy X. Lu

A general method to select representative models for decision making and optimization under uncertainty — Mehrdad G. Shirangi, Louis J. Durlofsky

Forward modeling magnetic fields of induced and remanent magnetization in the lithosphere using tesseroids — Eldar Baykiev, Jörg Ebbing, Marco Bröner, Karl Fabian

LibHalfSpace: A C++ object-oriented library to study deformation and stress in elastic half-spaces — Claudio Ferrari, Maurizio Bonafede, Maria Elina Belardinelli

FLAC/SPECSEM2D coupled numerical simulation of wavefields near excavation boundaries in underground mines — X. Wang, M. Cai

Binary 4D seismic history matching, a metric study — Romain Chassagne, Dennis Obidegwu, Julien Dambrine, Colin MacBeth

PolarBRDF: A general purpose Python package for visualization and quantitative analysis of multi-angular remote sensing measurements — Manoj K. Singh, Ritesh Gautam, Charles K. Gatebe, Rajesh Poudyal

A mixed finite element solver for natural convection in porous media using automated solution techniques — Chao Zhang, Sadiq J. Zarrouk, Rosalind Archer

On ISSM and leveraging the Cloud towards faster quantification of the uncertainty in ice-sheet mass balance projections — E. Larour, N. Schlegel

A similarity-based framework for the alignment of an ontology for remote sensing — Mohamed Farah, Hafedh Nefzi, Imed Riadh Farah

Novel accurate and scalable 3-D MT forward solver based on a contracting integral equation method — M. Kruglyakov, A. Geraskin, A. Kuvshinov

A time-space domain stereo finite difference method for 3D scalar wave propagation — Yushu Chen, Guangwen Yang, Xiao Ma, Conghui He, Guojie Song

Review

A survey on the geographic scope of textual documents — Bruno R. Monteiro, Clodoveu A. Davis Jr., Fred Fonseca

Letter to the Editor

Note on: 'EMLCCLER—A program for computing the EM response of a large loop source over a layered earth model' by N.P. Singh and T. Mogi, Computers & Geosciences 29 (2003) 1301–1307 — Majid Jamie



Conference Reports

SIAM MPE

I attended the inaugural Society for Industrial and Applied Mathematics (SIAM) Mathematics of Planet Earth (MPE) Conference in Philadelphia, Pennsylvania, USA on October 1st and 2nd 2016. SIAM is an international organization with ~14,000 members and many IAMG members may be familiar with their bi-annual SIAM Geosciences meeting

SIAM MPE is getting started and working to define themselves and the future directions that they will take. I would summarize their initial directions as focused on processes and systems that interact with earth resources from the earth surface upwards. From their website: "Climate change, biodiversity, infectious diseases, sustainability, energy, food, and water are among the areas of greatest global concern. The new SIAM Activity Group on Mathematics of Planet Earth (SIAG/MPE) provides a forum for mathematicians and computational scientists engaged in these critical priority areas. The interests of SIAG/MPE span the range from developing quantitative techniques to providing policy makers with tools for qualitative decision support." The MPE leadership is interested in connecting with other organisations and their focus areas may be a good fit with existing IAMG focus areas.

Link to the MPE conference: <http://www.siam.org/meetings/mpe16/>

Sean McKenna

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Words from IUGS President Qiuming Cheng

Dear IAMG members, I would like to take this opportunity to express my heartfelt thanks to the IAMG family for the strong support received through the years, especially during my presidency election for the International Union of Geological Sciences (IUGS). It is my honor to be elected as the current IUGS president at the IUGS General Assembly which was held on Sept 1, 2016 during the 35th International Geological Congress (35th IGC) in Cape Town. First of all, I would like to thank the IAMG Council for making the nomination. So many colleagues and friends have encouraged me and supported me during the election. Since IAMG was established during 23rd IGC in Prague in 1968 IAMG has always been closely linked with the IUGS, not only as one of the active IUGS affiliated associations but also having a joint conference at IGCs every four years, and IAMG members have actively served important roles in IUGS Executive, Council and Committees, such as professor Richard Sinding-Larsen as former Secretary General of IUGS, Dr. Ricardo Olea and professor Niichi Nishiwaki as nomination committee members, just to name a few. I myself have continuously participated in all IGCs (30th – 35th IGCs) since 1996. While I was IAMG president I participated in the IUGS Executive Committee (EC) meetings and other IUGS activities as an invited observer. IUGS has played important roles in promoting the geosciences worldwide, ultimately achieving its international reputation as one of the largest and most active scientific unions supporting more than 120 nations and a million geoscientists. As its new president, I realize that IUGS also faces huge global challenges and opportunities, particularly in finding ways to sustainably increase memberships and further improve our contributions, enhancing international influence and better serving both the science and the society. It always needs close collaborations with all organizations in geosciences including its adhering members and all affiliated organizations such as IAMG. I hope the new EC of IUGS and new IAMG council can build a stronger relation between IUGS and IAMG which should collectively promote global geosciences. Once again I thank each and every one of IAMG members and look forward to meeting each other.



Friends and members celebrating Qiuming's election as IUGS President

IAMG 2018 in Olomouc

As it was announced in previous IAMG Newsletters, the 19th Annual Conference IAMG 2018 will take place in Olomouc, Czech Republic in September 2-8, 2018. For us and for the Faculty of Science of Palacký University as a hosting institution, it is great pleasure to organize the Conference on the occasion of the 50th anniversary of the Association, established in Prague in 1968. In addition to the main scientific aim of the conference, where any contributions regarding the



applications of mathematics, statistics, computer science and informatics in solving problems of geosciences are welcome, we will proudly celebrate this occasion with all those who have contributed to the scientific growth of IAMG in the last decades.

In order to link to previous themes that are traditionally of interest at IAMG conferences, the initial list of topics will be taken over from the IAMG 2017 to be held in Perth (<http://iamg2017.com/abstract-submission/>). We will be grateful for any proposal for extension of this list covering the field of Mathematical Geosciences as well as for direct proposals of concrete sessions (+ conveners) that could be established based on post-stratification of contributions we receive. The leading topic of the conference is "Tools for Data Analysis in Geosciences" so think big! Please send concrete proposals directly to hronk@seznam.cz.

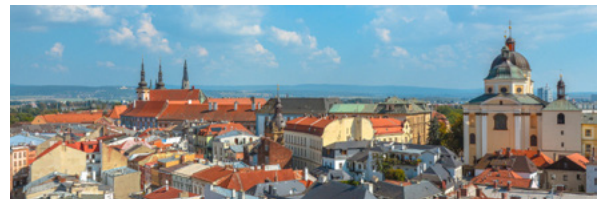
Yet another aim of the Conference will be the stirring of social life: as we all know, networking is an important aspect of any conference. Therefore, we plan to convene the meeting in a conference hotel (Clarion Congress Hotel, <http://www.clarioncongresshotelolomouc.com/en/>) and encourage participants to stay there rather than to be scattered throughout the city, although Olomouc is not big. Considering that rooms in the Clarion may not be sufficient, we also have reserved rooms in two slightly cheaper hotels nearby one tram stop away. Moreover, we will do our best to present our beautiful historical city in a varied cultural program and to organize geological field trip(s) at low cost so everyone can consider joining them. Last, but not least, we will organize a social trip to Prague, the beautiful capital of the Czech Republic where IAMG was established during the tumultuous summer of 1968.



We plan to launch a web page of IAMG 2018 at the beginning 2017; until then please check <https://www.iamg.org/> for further information.

Looking forward to welcome you in Olomouc in September 2018!

*Karel Hron, Ondřej Bábek
IAMG 2018 organizers*



Handbook on Mathematical Geosciences: Fifty Years of IAMG

A special volume to celebrate the Golden Anniversary of IAMG will be published by the Springer Publishing Company. This book gives readers including professional geomathematicians, undergraduate and post-graduate students a chance to learn about fifty years of contributions by the IAMG. This book comprises chapters written by the award-winning mathematical geoscientists who were instrumental in shaping the International Association of Mathematical Geosciences. About 48 IAMG award winners and founding members have agreed to contribute to this Handbook. The three editors handling this task are B. S. Daya Sagar (Indian Statistical Institute), Qiuming Cheng (York University) and Frits Agterberg (Geological Survey of Canada). This book is planned to be released in time for IAMG 2018 in Olomouc.

B. S. Daya Sagar



Upcoming Meetings

2017 IEEE International Conference on Big Data Analysis (ICBDA 2017). Beijing, China, **10 - 12 March, 2017**. <http://www.icbda.org>
email: icbda2016@vip.163.com

AAPG 2017 Annual Convention & Exhibition, Houston, Texas, **2-5 April 2017**.
<http://ace.aapg.org/2017>

European Geosciences Union (EGU) General Assembly 2017, Vienna, Austria, **23 - 28 April 2017**.
<http://www.egu2017.eu>

GISTAM 2017: 3rd International Conference on Geographical Information Systems Theory, Applications and Management, Porto, Portugal, **27-28 April 2017**. <http://www.gistam.org>

XVIth International Conference Geoinformatics, Theoretical and Applied Aspects, Kyiv, Ukraine, **15 - 17 May 2017**.

<http://www.eage.org/event/index.php?eventid=1502>

79th EAGE Conference & Exhibition 2017, Energy, Technology, Sustainability - Time to open a new Chapter, Paris, France, **12 - 15 June 2017**.

<http://www.eage.org/event/index.php?eventid=1488>

CoDaWork 2017 - 7th international Workshop on Compositional Data analysis, Abbadia San Salvatore, Siena, Italy, **5-8 June 2017**.

<http://www.compositionaldata.com/codawork2017>

WSC 2017 International Statistical Institute, 61st ISI World Statistics Congress, Includes meetings of the Bernoulli Society, etc., Marrakesh, Morocco, **16 - 21 July 2017**. Information: ISI Permanent Office, P.O. Box 24070, 2490 AB The Hague, The Netherlands. Phone: +31-70-3375737, www.isi2017.org

2017 Joint Statistical Meetings, Baltimore, MD, USA, **29 July - 3 August 2017**.

<http://www.amstat.org/meetings/jsm.cfm>
or phone toll-free (888) 231- 3473

SIAM Conference Mathematical and Computational Issues in the Geosciences (GS17) Erlangen, Bavaria, Germany, **11-14 September 2017**.
<http://www.siam.org/meetings/gsl7/> - IAMG Ex.VP Tolosana-Delgado will organize a special session.

Geomodel 2017: 19th Science and Applied Research Conference on Oil and Gas Geological Exploration and Development, Gelendzhik, Russia, **11 - 14 September 2017**. <http://www.eage.org/event/index.php?eventid=1512&Opends=s3>

IAMG2017 Annual Meeting, Perth, Australia, **2 - 9 September 2017**. <http://www.iamg2017.com>

AAPG/SEG International Conference, London, **15-18 Oct. 2017**. <http://london2017.iceevent.org>

GSA 2017 - Seattle, Washington, USA, **22-25 October 2017**

2018

RFG 2018 Resources for Future Generations by International Union of Geological Sciences (IUGS), Vancouver, Canada, **16-21 June 2018**. Info at <http://RFG2018.org>. IAMG is one of a dozen Partners supporting this conference.

GeoENV2018, Belfast, U.K., **3-7 July 2018**.
<http://geoenvia.org/2016/08/geoenv-2018-in-belfast>

IAMG2018 50th Anniversary Meeting, Olomouc and Prague, Czech Republic, **2 - 8 Sept. 2018**



INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOSCIENCES



18th ANNUAL CONFERENCE
IAMG2017
2-9 SEPTEMBER - PERTH, AUSTRALIA

Save the Date
IAMG 2017
2-9 September 2017, Western Australia

The Organising Committee is pleased to announce the International Association for Mathematical Geosciences 2017 Conference will be held at the Esplanade Hotel, Fremantle, Western Australia from 2 - 9 September 2017. Welcoming all mathematical geoscientists, including researchers, students and industry professionals from all over the world, to participate in scientific sessions and short courses to promote the advancement of mathematics, statistics and informatics in the geosciences.

Key Dates
Abstract Submissions Open: NOW
Abstracts Close: 1 February 2017
Registration Opens: 1 March 2017
Author/Early Registration Deadline: 2 June 2017
Conference Dates: 2 - 9 September 2017

www.iamg2017.com

On behalf of the International Association for Mathematical Geosciences (IAMG), we invite you to participate in our 18th Annual Conference, IAMG2017. The conference will be held in the historic port city of Fremantle in Western Australia, 2-9 September 2017.

The aim of the conference is to promote the advancement of mathematics, statistics and informatics in the geosciences. Areas of geoscience application include studies of the Earth, its natural resources and the environment.

IAMG2017 will provide a venue for the presentation of new research in the form of oral and poster presentations at the Esplanade Hotel. We invite researchers to submit abstracts via our abstract submission portal. We also welcome proposals for short courses and workshops associated with the conference. The IAMG2017 Scientific Committee, composed of distinguished experts, will ensure an outstanding technical level for the presentations at the conference. There will be exhibition space available for geoscience related industries to showcase recent technological developments, including software. The economy of Western Australia relies heavily on its mineral and energy resources, and we particularly urge related industries to participate in this conference and support research.

We welcome students and young scientists to the conference. In order to attract their participation we will be offering short courses targeted specifically at early career researchers as well as prizes for outstanding student presentations.

When not attending scientific sessions, there is always plenty to do in Fremantle: it hosts markets, an arts centre and art galleries as well as museums and the historic prison. It is also a popular location for eating out, offering a plentiful choice of restaurants and cafes. There is a wide variety of accommodations to suit all budgets from luxury hotels to backpacker style. Fremantle, the port of Perth, is approximately one hour drive from Perth International Airport.

Our Organising Committee represents major teaching and research institutions: Oktay Erten (Conference Chair), Western Australian School of Mines, Curtin University
Ute Mueller, Edith Cowan University
June Hill, Commonwealth Scientific and Industrial Research Organization (CSIRO)
Mark Jessell, University of Western Australia
Eric Grunsky, University of Waterloo, Canada
Erkan Topal, Nazarbayev University, Kazakhstan; Western Australian School of Mines, Curtin University

Oktay Erten - Chair

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Looking for an IAMG "Communications Director"

Your Newsletter and Website Editor would like to retire after more than 20 years and is looking to find a successor to take over.

This job is great because it keeps you in touch with all the interesting activities going on in IAMG and with the wonderful people running this organization.

The Newsletter carries news of the Association to its members on a regular basis (twice a year). The Newsletter also serves as a depository and archive of IAMG history.

As editor you have independence in how to layout the NL - each of the five past editors had their own format.

The IAMG website is the second medium of IAMG. It is important as the face and internet presence of the Association. It serves to present the latest news and thus can be more up to date compared to the Newsletter. The website is also a depository of information about IAMG, such as Statutes and Bylaws, the Council, various guidelines and minutes of past meetings, etc.

IAMG will support your attendance at the annual conference and reimburse expenses for software and hardware needed to produce the NL and to keep up the website.

If you are interested, like to find out more, and want to discuss this position please contact Harald Poelchau at newsletter@iamg.org or Eric Grunsky at egrunsky@gmail.com

