IAMG Newsletter

Official Newsletter of the International Association for Mathematical Geosciences

Contents

2010 IAMG AWARDS
PLEASE RESPOND !!!
The Association invites nominations for the following awards:
John Cedric Griffiths Teaching Award

The John Cedric Griffiths Teaching Award shall be presented to honor outstanding teaching, with preference for teaching that involves application of mathematics or informatics to the Earth's nonrenewable natural resources or to sedimentary geology. Age or academic status are not conditions for the award. (IAMG By-Law 14)

William Christian Krumbein Medal

The William Christian Krumbein Medal is the highest award given by the Association and the recipient shall be so honored and acknowledged. The Krumbein Medal is awarded to senior scientists for career achievement, which includes (a) distinction in application of mathematics or informatics in the earth sciences, (b) service to the IAMG, and (c) support to professions involved in the earth sciences. There is no stipulated preference for fields of application within the earth sciences. (IAMG By-Law 12)

Membership in IAMG is not a requirement for nomination. For further information on both awards, please visit http://iamg.org

The deadline for nominations is **31st January 2010 -** but please don't wait until the last minute !

Please send nominations and supporting documents to:
  Dr Stephen Henley - Chairman, IAMG Awards Committee
    Resources Computing International Ltd
    185 Starkholmes Road, Matlock DE4 5JA, Derbyshire, UK

E-mail: stephen.henley@btconnect.com

From the Editor

Changing Communications! At the beginning of this year we unveiled the new IAMG website designed by Dragonfly, an IT consulting firm in Kingston, Ontario, that had already done work for the IAMG office on the membership data base. The old website originally designed in Alberta was no longer supported by the design firm and was too difficult to maintain, which was reflected in its appearance and content.

The new design of the website was originally based on the structure of the old website. In the process of redesign it was adapted and reoriented to our new needs. After the migration of the data we did a lot of work regrouping information in more logical ways, eliminating duplicate or unneeded pages and information, and bringing in missing data and updates. At this point most of the improvements are finished but some areas need more work. You can help us by pointing out errors, inconsistencies and missing features or data (and supplying data if you have them). The membership data base has been updated and is now functioning properly to look up information on individual members.

We have also attempted to renew a Forum in which members can communicate observations, questions and concerns. It's not quite Twitter or Facebook but could help to tie together the community of mathematical geoscientists. The last Forum never got of the ground - so let us know how you feel about this feature. A separate Forum has been established for communication among the Board members and for documentation and archiving of official correspondence.

Many people have helped with the new website. I would like to specifically thank Frits Agterberg for getting the project going and moving along, Ricardo Olea, Eric Grunsky and Eric Pirard for advice and suggestions, and Roussos Dimitrakopoulos for access to data.

As Vera describes in the President's Forum (p. 3) the Board has decided on a change of Newsletter distribution. Due to financial constraints in the economic recession that has also affected the budget of IAMG, the Newsletter will not be sent out as hardcopy by mail, except to those members who specifically request it. Instead it will be available as download from the IAMG website (iamg.org) and all members will be notified by e-mail. This takes us back to a period from 2002 to 2004 when we first went to electronic distribution of the Newsletter. Frits Agterberg reinstituted hardcopy mail-outs in December 2004, and we started printing in color. We hope that with our improved website and with faster internet download speeds, electronic distribution will be easier and more successful this time around than it was six years ago. Let us know what you think.

Harald S. Poelchau

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

International Association for Mathematical Geology

IAMG Office
4 Cataraqui St., Suite 310
Kingston ON K7K 1Z7
CANADA
E-mail: office@iamg.org
FAX: (613) 531-0626
Tel: (613) 544-6878

Officers

President: **Vera Pawlowsky Glahn**,
Universitat de Girona, Dpt. D'Informatica i Matematica Aplicada,
Campus Montilivi P4, E-17071 Girona, Spain, Tel: +34 972 418 170,
fax +34 972 418 792, E-mail: vera.pawlowsky[at]udg.edu

Executive Vice President: **Qiuming Cheng**,
Dept. of Earth and Space Science and Engineering,
York University, 4700 Keele Street, Toronto, Ontario M3J 1P3,
Canada, Tel: +1 416 736 2100 (Ext: 22842), Fax: +1 416 736 5817,
E-mail: qiuming@yorku.ca

Secretary General: **Daniel M. Tetzlaff,**
Schlumberger-Information Solutions, 5599 San Felipe, Ste 1700,
Houston, TX 77056, USA, 713-513-2182,
E-mail: dtetzlaff@aol.com

Treasurer: **Gina A. Ross**,
IAMG, c/o Gina Ross, PO Box 442504,
Lawrence, KS 66044-8939, USA, Tel: +1 785 842 6092,
E-mail: gr_iamg@hotmail.com

Past President: **Frits P. Agterberg**,
Geological Survey of Canada, 601 Booth St., Ottawa,
Ontario K1A 0E8, Canada, Tel:+1 613 996-2374,
Fax: +1 613 996-3726, E-mail: agterber@nrcan.gc.ca

Committee Chairs

Awards Committee: **Stephen Henley**
Resources Computing International Ltd, 185 Starkholmes Road,
Matlock, Derbyshire, United Kingdom DE4 5JA,
E-mail: stephen.henley@btconnect.com

Distinguished Lecturer Committee: **Sean McKenna**
Technical Staff, Geohydrology Department, Sandia National Laboratories, P.O. Box 5800 MS0735, Albuquerque,
NM 87185-0735, USA,
Tel: 505-844-2450, Fax: 505-844-7354,
E-mail: samcken@sandia.gov

Publications Committee: **Michael Ed. Hohn**
West Virginia Geological Survey, Mont Chateau Research Center,
P. O. Box 879, Morgantown, WV 26507-0879, USA,
E-mail: hohn@geosrv.wvnet.edu

Students Affairs Committee: **Helmut Schaeben**
Technische Universität Bergakademie Freiberg,
09596 Freiberg, Germany
E-mail: schaeben@geo.tu-freiberg.de

Historian

Dan F. Merriam, Kansas Geological Survey, University of Kansas,
1930 Constant Avenue, Lawrence, KS 66047, U.S.A., Tel: (785) 864-2127, Fax: (785) 864-5317, E-mail: dmerriam[at]kgs.ukans.edu

Archivist

Graeme F. Bonham-Carter,
Geological Survey of Canada, 601 Booth St., Ottawa, Ontario K1A
0E8, Canada, Tel: +1 613 996 3387, Fax: +1 613 996 3726,
E-mail: bonham-carter@nrcan.gc.ca

Councilors

George Bárdossy, (Hungarian Academy of Sciences), 1055.Budapest,
V. Kossuth-tér 18, Hungary,
Tel: +36-1-3117-993, E-mail: bar4750[at]iif.hu

Jef Caers, Stanford University, Dept. of Energy Resources
Engineering, Green Earth Sciences Bldg., Stanford, CA 94305- 2220,
USA, Tel: 650-723-1774, fax: 650-725-2099,
E-mail: jcaers[at]stanford.edu

Angela Diblasi, Universidad Nacional de Cuyo, Mathematics
Sarmiento 240, depto. 6, 5500 Mendoza, Argentina, Tel: 54261-4295-814, E-mail: angelad[at]uncu.edu.ar

Eric Pirard, Université de Liège, Département GeomaC-MICA
Géoressources Minérales, Sart Tilman B52/3, B-4000 Liège, Belgium,
Tel: 32 41 66 95 28, fax:+32 41 66 95 20,
E-mail: eric.pirard[at]ulg.ac.be

Christien Thiart, University of Cape Town, Department of Statistical
Sciences, Privatebag Rondebogch 7700, South Africa, Tel: 27-21-650-3223, fax: 27-21-650-4773, E-mail: christien.thiart[at]uct.ac.za

Richard Webster, BAB Rothamsted Research, Harpenden,
Hertfordshire AL5 2JQ, United Kingdom,
Email: richard.webster@bbsrc.ac.uk
Tel: + 44 (0) 1582 763 133 Ext. 2404, Fax: + 44 (0) 1582 760 981

Special IGC Councilor: **Simon Cox**,
CSIRO Exploration & Mining, ARRC, PO Box 1130, Bentley. WA
Australia 6102, Tel: +61 8 6436 8639, fax: +61 8 6436 8555,
E-mail: simon.cox[at]csiro.au

Editors

Computers & Geosciences: **Eric Grunsky**
Geological Survey of Canada, Natural Resources Canada,
601 Booth St., Ottawa, Ontario K1A 0E8, CANADA,
Tel: +1 613 992 7258, E-mail: egrunsky@iamg.org

Mathematical Geosciences: **Roussos Dimitrakopoulos**
Department of Mining, Metals and Materials Engineering,
McGill University, Montreal H3A 2A7, Canada,
Tel: +1 514 398-4986, E-mail: roussos.di@mcgill.ca

Natural Resources Research: **Jerry Jensen**
Department of Chemical and Petroleum Engineering,
University of Calgary, 2500 University Dr. NW, Calgary, AB T2N
1NT, CANADA, E-mail: jjensen@ucalgary.ca

IAMG Monograph Series **Jo Anne DeGraffenreid**
P.O. Box 353, Baldwin City, KS 66006-0353, USA,
Tel: +1 785 594 6624, E-mail: msdeg@mchsi.com

IAMG Newsletter and Website **Harald S. Poelchau**
10773 Lanett Circle, Dallas, TX 75238, USA, Tel: 214-221-1080,
E-mail: hsp.iamg@inbox.com

PRESIDENT'S FORUM

Last August, during the 33rd International Geological Congress, the new Council took over. For health reasons I was not able to attend. It was a difficult time and I would like to use this opportunity to acknowledge the work done by all the Executive and Council members and the support I have received, especially from the Executive Vice-President, Qiuming Cheng, who served as acting president until I had recovered enough in December to assume my duties, and from our Past President, Frits Agterberg, who has been always there when there was a need.

One of the first steps taken after my comeback was to begin implementing the new structure of the Council as ratified during the General Assembly in Oslo. Articles 4 and 10 of our Statutes now state the following:

Article 4. ... The President or a Council Member designated by the President shall be a non-voting member ex officio of any commission or committee.

Article 10. The Council consists of not more than sixteen (16) members: the President, three (3) Vice Presidents, the Secretary General, the Treasurer, the immediate Past President, four (4) Ordinary Members, one (1) representative from the host country for the next International Geological Congress, three (3) Editors-in-Chief appointed by the Council - one (1) per journal, and one (1) Website Editor appointed by the Council. The three (3) Vice Presidents shall be assigned duties by the President in consultation with the Council. The Vice President who will be selected to be a member of the Executive Committee is hereafter referred to as the Executive Vice President.

Following these articles, I designated as members ex officio of the existing IAMG committees the following members of the Executive: Vice-President Qiuming Cheng of the Distinguished Lecturer and Matheron Lecturer committees, Secretary General Dan Tetzlaff of the Student Affairs and the Awards committees; Past President Frits Agterberg is an ex officio member of the Publications committee. The specific duties they were assigned were to establish a direct link between the corresponding committees and the Council, and to proceed with the renovation of the committees whenever necessary.

During the General Assembly the annual budget for August 2008 – August 2009 was also approved. Since then, a worldwide financial crisis has become evident. Due to it, the value of most shares has collapsed and, on paper, IAMG has lost a large amount of money. This created a situation characterized by a lack of cash. To avoid realisation of this loss the following measures, suggested by our Treasurer, were adopted:

1. Chayes account: stop reinvesting new dividends back into the Franklin Templeton Income Fund and set them aside in a money market account to start building cash with the idea to have money to pay for the Chayes award in 2011. The amount of the award will be determined by the amount accumulated. In the meantime, the shares will not be touched. A money market account pays some interest which fluctuates with the market. This implies that the Chayes Prize could only have been awarded with no or less money in 2009.
2. IAMG General account: stop reinvesting new dividends back into the Franklin Templeton Income Fund. Set them aside in a money market account to start building a cash contingency fund in the event that the sale of journals, and therefore our revenue from royalties, declines. This allows us to continue to operate without selling any of the shares.
3. Extend the Distinguished Lecturer period over two years (2009 and 2010) instead of one year, with reduced funding.
4. Publish the next two issues of the Newsletter electronically. Members without connection to the internet will still receive it on paper.

In addition to the aforementioned measures, we planned to cut down expenditures and to prepare the next budget accordingly. But at the same time I would like to call the attention of all our members to the donations account IAMG has. IAMG is one of the existing international associations with smallest annual dues, as these are only 10 US$ per year. I think this amount is so small that I invite all our members to donate a small additional amount to help us overcome the present situation.

But my major concern is not our financial situation, but the lack of nominations for our awards. This year we ended up cancelling the Chayes award because there were no new nominations. Awards are important for the recipients, because their work is recognised publicly, but they are also important for the Association, as they illustrate its concern for the active lines of research which are covered under its umbrella, and also for the research groups involved, as they mean recognition and support. I know from experience that nominations require work: to collect the CV of each potential nominee, to write a nomination, and to write a laudatio if the candidate is selected. But this work is worthwhile if you realize that a committee of scientists will be aware of the work done by your candidate, that the scientific society will become aware that the research your candidate has performed is worth the award. It is similar to the importance of the recognition our journals have. We need our journals to enhance visibility of Mathematical Geosciences, to enhance visibility of new trends, like right now the impact of mathematical methods in the environmental sciences, to enhance visibility of scientists working in our field through high citation rates. The higher our activities — awards, journals, meetings — are ranked, the higher the field of Mathematical Geosciences will be regarded.

To finish, one word about a project initiated by the previous Council which has been completed now: the new IAMG website. It is taking its first steps right now, and still needs some polishing, but we want to continue with the purpose for which it was initiated. The new website should be a communication tool, a communication of IAMG with the rest of the scientific community, a communication within the IAMG, and between the members of the association. I hope you use it and you enjoy it!

Vera Pawlowsky-Glahn

Association Business

Distinguished Lecturer 2009-2010 adds remote lectures

Roussos Dimitrakopoulos has started up his 2009-2010 Distinguished Lecture tour with a lecture at the University of Chile in Santiago on "An Extended View of Mining Geostatistics: Integrating short- and long-term mine production forecasting under uncertainty and application in a major gold mine", and continued with a 'remote' lecture at the University of Athens on "Stochastic simulation: Environmental applications". Roussos has confirmed lectures in August at Stanford, September in Germany and Spain, and Vancouver in October. Other plans in the fall of this year include talks at University of Ottawa and possibly at University of Florida. For 2010, in addition to invitations from China, Roussos has plans for Brazil, Australia, Saudi Arabia, and Hungary in connection with IAMG'10.

NEW:

In addition to the traditional visits for lectures on site discussed above, the 2009-2010 Distinguished Lecturer has successfully tried a 'remote lecture' and would like to increase lecturing opportunities 'remotely'. These require suitable teleconferencing facilities and started with the first lecture earlier this month, given from Montreal (McGill University) to Athens (University of Athens, graduate program in Environmental Geosciences).

Roussos Dimitrakopoulos on the screen from Montreal and the grad students in environmental geosciences at the University of Athens, after his recent lecture. On the top right, the second screen used for the presentation.

Roussos is happy to do more lectures, particularly in North America, and could use help in finding suitable places. Interested parties can contact him at roussos.dimitrakopoulos@mcgill.ca or the Chairman of the DL Committee at samcken@sandia.gov.

<>
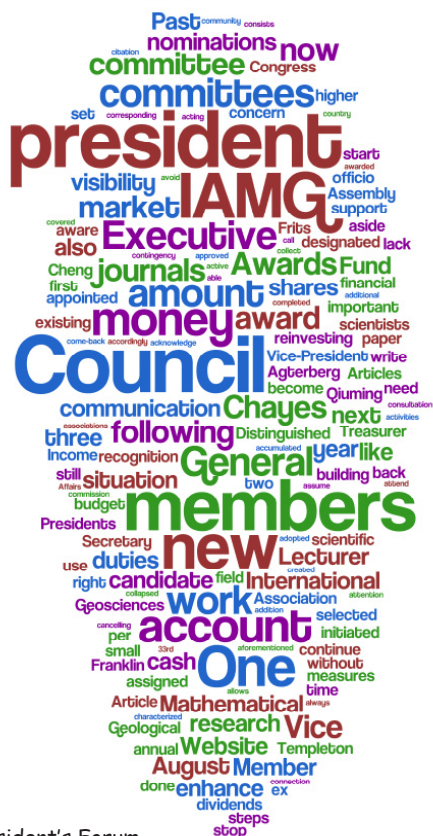
Wordle of President's Forum

Member News

Jan Harff has moved to the University of Szczecin (NW Poland): "I am at Warnemünde only 1 day every 2nd week. I have started to teach - this semester a course on Marine Geology of Continental Margins. In the summer semester I will give a course on Modeling of Sedimentary Systems. Right now we are working on a new BSc program in Oceanography and a MSc program in Marine Geosciences. I am experiencing the "second unification" with great optimism: after the German one 20 years ago, now the European one. We enjoy Szczecin and its cultural and geological (coastal) environment."

Don Singer has retired from the USGS in Menlo Park. He was Project Chief of the USGS Advanced Mineral Assessment Methods Project.

<>

News from Freiberg

Christoph Ehrler (christoph.ehrler@dlr.de) completed his Diploma Thesis "Development of JAVA Tools for RockFlow Mesh and Parameter File Generation tailored to Coal Seam Fire Models" in partial fulfilment to obtain the degree "Diplom-Geoinformatiker" supervised by Dr. Irmgard Niemeyer (TU Bergakademie Freiberg), Dr. Andreas Hirner (Deutsches Zentrum für Luft- und Raumfahrt - DLR).

As of May 1, 2009, Christoph Ehrler has joined the Department. of Environment and Security of the German Remote Sensing Data Center in the German Aerospace Center (DLR) at Wessling.

Abstract

The uncontrolled burning of underground coal seams triggered by spontaneous combustion is not merely destroying natural resources but also a risk for climate and environment of global impact.

The joint "Sino-German Coal Fire Research Initiative" attempts to make the extinction of coal seam fires tradeable in terms of the Clean Development Mechanism of the Kyoto Protocol. Therefore, a comprehensive understanding of the relevant physical and chemical processes of coal combustion is necessary, from which a baseline estimation of carbondioxide emission is possible.

One major topic, various German partners of the research initiative work on, is to numerically simulate the coal fire with its coupled thermal, chemical and hydraulic processes.

The goal of this diploma thesis is to develop a web application that allows the user to rapidly create customised coal seam fire models, trigger their calculation by the finite element software RockFlow and give access to result analysis/visualisation tools. Furthermore, the quality of the simulation result is to be evaluated by investigating its stability and sensitivity.

Special emphasis has been laid on the implementation of a flexible mesh generator capable of creating a wide variety of coal fire models and a powerful simulation result analysis tool collection.

The outcome is a user-friendly all-in-one solution, that brings the coal fire simulation from the limited scientific project member area to the public of non-professional users in applied research and industry.

As a result of the sensitivity investigation, numerical stability issues were revealed that need to be resolved in the future.

Starting Oct 1, 2009, Technische Universität Bergakademie Freiberg will offer two new Master programmes leading to a "Master of Geoscience Informatics" or a "Master of Geophysics". The curricula are designed as consecutive with respect to the joint Bachelor programme "Geoscience Informatics and Geophysics". The English versions of the contents of both curricula will soon be published on Bergakademie's web page. The programmes replace the traditional Diploma programmes for Geophysics or Geoscience Informatics.

Helmut Schaeben

Student Affairs

New Student Affairs Guidelines

The preliminary guidelines for Student Affairs (research and travel grants, starting a student chapter) have now been replaced with new guidelines developed by Dan Tetzlaff in consultation with the Executive Committee and the Chair of the Student Affairs Committee and approved by the IAMG Council. See the website iamg.org.

New IAMG Student Chapters

Two new student chapters have been approved, one at the Ecole Nationale Supérieure de Géologie (ENSG), Nancy, France, and the other one at University of Colorado, Boulder, USA.

University of Colorado at Boulder

The chapter is comprised of students from the engineering, applied mathematics, and geography departments, and is chaired by Dr. Ute Herzfeld. The foremost mission of the chapter is to unify and engage undergraduate and graduate students who have an interest in geosciences. Regularly scheduled seminars will provide a forum for students from different disciplines to discuss their ongoing research efforts and to learn from each other's specific area of study. Group activities and outings will capitalize on Colorado's spectacular setting to study an array of geologic phenomena while enjoying each other's company.

Thus far, the CU chapter has held several meetings to discuss events and seminars. Ongoing and future activities include a seminar series, where students and senior scientist present topics relevant to their research, and visits to companies who are generally involved in the field of geomathematics. There are also plans for a number of field outings, such as geologic excursions, data collection experiments with UA, and snow geophysical data collection. Of course, these events will include hiking, camping, skiing and snowshoeing "on the side" to promote group camaraderie while reveling in the beauty of the natural world.
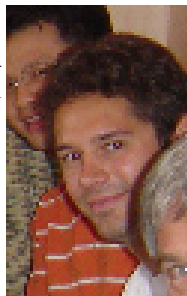
CU IAMG chapter officers:
Ian Crocker, president (crockerr@colorado.edu)
Bruce Wallin, secretary (broose33@gmail.com)
Ling Shen, treasurer (lingbnu@gmail.com)

Ute Herzfeld, faculty advisor (herzfeld@tryfan.colorado.edu)

Crocker

Ian Crocker
CCAR, Eng. Cnt., ECNT 323
Boulder, CO 80309 USA
303.374.4691

Ute Herzfeld
CIRES
University of Colorado Boulder
Boulder, Colorado 80309-0449

ENSG-Nancy University

The Gocad Research Group IAMG Student Chapter (aka ENSG - Nancy Université Student Chapter; aka Numerical Geology of Nancy Student Chapter) currently consists of eleven MS and PhD students, plus three faculty members. The student chapter is based in Nancy, France, at the CRPG and the ENSG (National School of Geology). All the members are currently working in the Gocad Research Group, in different fields, such as software development for geological applications, visualization, geomodeling, and geostatistics.

The purpose of the Student Chapter is to foster the members' interest to widen their scope and enrich their creative thinking in geosciences, especially in mathematical geology, quantitative modeling of geological processes, and geoinformatics; to disseminate the latest progress in geological mathematics research; to carry out the academic communication and activities with researchers working in the same field both at the national and international scales. Several activities are envisaged in the frame of this Student Chapter: hold academic seminars, either informal brainstorming or more formal short courses; invite IAMG distinguished lecturers to give lectures at Nancy-University; develop and maintain a website to disseminate news; promote participation in IAMG annual conferences among members and the local geoscience community; promote the IAMG among other students of the ENSG.

Durand-Riard

Organization: President is **Pauline Durand-Riard**; - Treasurer and Webmaster is **Thomas Viard**; - Secretary is **Vincent Henrion**.

Three faculty members are co-supervising the different projects: - **Guillaume Caumon** is a "maitre de conférence" (associate professor) at the Institut National Polytechnique de Lorraine, Ecole Nationale Supérieure de Géologi and heads the Gocad Research Group. - **Pauline Collon-Drouaillet** is also a "maitre de conférence" at the lNpL, ENSG. - **Jean-Jacques Royer** is a CNRS researcher, who teaches geostatistics at the ENSG as well and supervises several PhD students in the Gocad Research Group
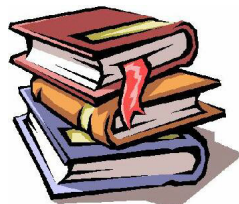
http://www.gocad.org/www/studentchapter

ENSG - Nancy Université - IAMG Student Chapter
ENSG - Office G206
rue du Doyen Marcel Roubault
54500 Vandoeuvre-les-Nancy, BP 40, FRANCE
Phone +333.83.59.64.50 or +333.83.59.64.37 or +333.83.59.64.51 (Board members)

New Book(s)

Fundamentals of Basin and Petroleum Systems Modeling

by Thomas Hantschel & Armin I.Kauerauf

2009, 476 p. 347 illus., 30 in color., Hardcover;
ISBN: 978-3-540-72317-2, $169.00

http://www.springer.com/earth+sciences/book/978-3-540-72317-2

This book written by members of the team that developed the IES system of basin modeling under D. H. Welte contains a comprehensive presentation of methods and algorithms used in basin modeling. It provides geoscientists with an extensive in-depth view of the theory behind the models. Heat flow analysis, chemical kinetics of petroleum generation, pressure analysis, PVT modeling and several fluid flow models are discussed in detail. Advanced topics such as probabilistic methods for risk assessment or new approaches such as modeling of migration with invasion percolation are also included. Comprehensive lists of rock and fluid properties and parameters of geochemical kinetics make the book a unique reference in geological process modeling.

<>

Conference Reports

Successful International Geostatistics Congress held in Santiago, Chile

The Eighth International Geostatistics Congress was held in Santiago, Chile, December 1st to 5th, 2008. Throughout its 33 year history, this was the first time that an international Geostatistics Congress took place in Latin America. The event was organized by the Mining Engineering Department at the University of Chile and chaired by Profs. Julián Ortiz and Xavier Emery. Chile has a longstanding tradition in geostatistics and pioneered applications in the mining industry at the end of the 1960s and beginning of the '70s, when a Center of Geostatistics was created at the University of Chile under the guidance of Prof. Alain Maréchal.

A total of 255 abstracts were submitted in early 2008 and reviewed by a local committee, who selected the works accepted for oral presentations (102) or posters (60). All oral presentations and about half of the posters were accompanied by a paper that was peer-reviewed prior to acceptance and publication in the congress proceedings. They provide an overview of the state-of-the-art, tendencies and challenges in geostatistical research and practice, and covered a variety of fields, including geology, mining, petroleum reservoir modeling, hydrology, environment, soil science, fishery and forestry, as well as theoretical contributions.

The congress gathered 320 delegates, over 50% more than in the previous venues (Banff, Cape Town, Wollongong, Tróia, Avignon, Lake Tahoe and Rome). Chile, USA, France, Canada, Australia and Brazil concentrated more than two thirds of the delegates, although we had the pleasure to welcome people from all the continents.

Two candidates were willing to host the next venue: the Spanish group led by Jaime Gómez-Hernández, and the Norwegian group led by Petter Abrahamsen and Henning Omre. Voting took place during the general assembly held on Thursday, December 4, in which each delegate had the opportunity to take part in the ballot. The result was 89 votes for Spain and 123 for Norway.

Our thanks are due to the delegates, authors, reviewers, industry sponsors, committees, and also to the Gecamin team for their impeccable planning, professionalism and commitment to making the Congress a success.

See you in Oslo 2012!

Julián Ortiz and Xavier Emery,
Geostats 2008 chairmen

Letter to the Editor

Sometimes I think broadly about the role of the IAMG, and reflect on the opportunities in which it might serve society. Mind you, the IAMG does serve society as a professional organization; its role up to now has been mostly focused on applications of mathematical methodology in the geological sciences. This is a useful role, and I don't question its merit. On the other hand, there may be opportunities to serve society more broadly.

Some of these ideas became more crystalline when I attended a discussion recently at which Kenneth Arrow, an economist at Stanford with a distinguished career, touched on his work on the economic aspects of providing health care in Third World countries. After all, there are economic aspects in virtually any undertaking that serves society, whether charitable or commercial.

That leads to the issue of the IAMG's broader societal role. Consider the myriad interdependencies between the Earth's resources, both renewable and non-renewable, that affect society and the quality of life. For example, deficiencies versus abundances in the chemical and mineral properties of soils are partly geological matters that have large societal influences. Geostatistical tools have demonstrated usefulness in this context. What I am leading up to is the suggestion that perhaps the IAMG should consider a formal role in providing tools that are more or less directly applicable to societal issues.

John Harbaugh
Emeritus Professor, Stanford University

IAMG Booth at American Geophysical Union Fall Meeting 2008

Our association was present at the American Geophysical Union (AGU) Fall Meeting 2008 with an exhibit booth. The AGU Fall Meeting is the largest international meeting (though nominally a national meeting) in the field, with about 15000 meeting attendants and many hundreds of sessions in all areas of geophysics. Through the exhibit booth, we increase visibility of IAMG, introduce our three journals Mathematical Geosciences, Computers & Geosciences and Natural Resources Research to the AGU community, discuss the work of IAMG and its opportunities for members, in particular student members, renew memberships, ... For 2008, we had a great new display, designed by Ian Jackson and Gina Ross, and already presented in Oslo at the IGC, and a good spot in the large exhibit hall (thanks to our good relationship with AGU), which is important for attracting lots of visitors to the booth. Topics most frequently discussed were software published by IAMG, how to submit a paper to our journals, publishing in color, and, of course, membership. We had several new members join on the spot and

Matthias Urs drawing the winner of the free subscription

a couple renewals. The Silver CD remains a good feature which increases membership interest. The number of scientists who actually submit their work to C&G after talking to me at the booth is a bit harder to track for certain, with the current continuing increase in publications and an increase of interdisciplinary work in mathematical geosciences and computation, people are looking for advice on journals and their orientation, and we shall see a continuation of increase in paper submissions. Thanks are due Ian Jackson and his staff at the British Geological Survey and to IAMG Treasurer Gina Ross for designing and creating the new exhibit display and to Helmut Mayer for helping me transport and set up the booth and spending many hours at the booth for the sake of IAMG.

Ute Herzfeld
CIRES and Dept. of Applied Mathematics
University of Colorado Boulder
*ute.herzfeld@colorado.edu*

IAMG past-Presidents - Where are they now?

Daniel F. Merriam

The International Association for Mathematical Geology has had a short but distinguished history. Founded during the ill-fated IGC meeting in Prague in 1968 the 10th Anniversary was celebrated in 1978 by a special publication (Merriam, 1978). The 25th celebration was held in 1993, again in but this time a peaceful Prague. The Association can look back with a pride on four decades of progress and at least part of the accomplishments can be attributed to the pioneers in the subject (Merriam, and Howarth, 2004) and the presidents for success of the IAMG.

Ten presidents of the Association have served during the first four decades of IAMG. Each have contributed their expertise to the programs of the Association. Several were founding members of the IAMG having attended the organizational meeting at the ill-fated IGC in Prague and several have been awarded the highest honor the Association can confer, the William Christian Krumbein Medal, and two now have been made honorary members. Where are they now and what are they doing since their term in office as president?

(*founding member; +Krumbein Medal recipient; #honorary member)
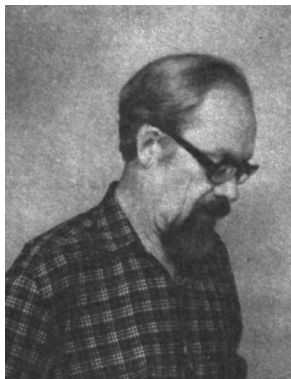
*+**Andrew Boris Vistelius** (USSR) - 1968-1972 - 23rd IGC Prague - Andrei Borisovich Vistelius was Richard Reyment's choice for first President of IAMG. He had met and worked on mathematical problems with Vistelius in Leningrad and was impressed with his knowledge and abilities. Because of the Iron Curtain at the time, Vistelius was isolated from the rest of the world, and Reyment as first secretary of the IAMG did most of the Association's work. Vistelius died in 1995 (Merriam, 2001; Whitten, 2004).

*+#**Richard Arthur Reyment** (Sweden) - 1972-1976 - 24th IGC Montreal - Richard was the driving force behind organizing the IAMG and was the Association's first Secretary (1968-72). An Australian with Swedish roots, he became Professor of Geology and Paleontology at the Paleontological Institute at Uppsala University. He retired in 1991 from Uppsala University where he lives with his wife Eva, but remains active in research (Whitten, 1979; Merriam, 2004). Richard is a prolific international scientist (some 350 publications) and author of numerous books (eleven),

working in Australia, Afric, Europe, and North America; he now spends much of his time on biometry and quantitative genetics of living and fossil invertebrates. His list of publications shows that he has worked in many fields - hardrock geology, palaeontology, stochastic processes, history of geology, and molecular biology. One of his special interests is in language and he continues that interest analyzing dialects, origin of words, and the relation of languages. His address is: eva.reyment@telia.com
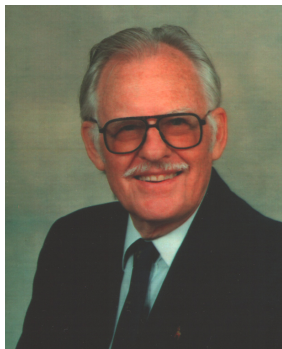
*+#**Daniel Francis Merriam** (USA) - 1976-1980 - 25th IGC Sidney - He retired from the Kansas Geological Survey and Wichita State University with emeritus status in 1997 but continues to be active (Davis, 1982). He founded two of the Association's journals, *Journal Mathematical Geology* and *Computers & Geosciences,* and enlarged the subject matter as reflected in the title change for a third, *Natural Resources Research.* He currently is Historian for the Association, the KU Department of Geology and the KGS. He recently authored two books - a biography of his mentor Raymond C. Moore, the

geogiant stratigrapher/paleontologist of the 20th Century, and the KU Department of Geology; he now is working on a history of the KGS. He maintains an office at the KGS and his research has been concerned with meteor impact structures in Kansas, geothermal history of cratonic basins, and using Zipf's Law to understand of future geological events. His address is: dmerriam@kgs.ku.edu

*+**Eric Harold Timothy Whitten** (USA) - 1980-1984 - 26th IGC Paris   Tim was born and raised in England. He was educated in London and was on the academic staff of the university there for ten years. He immigrated to the U.S. in 1958 and was on the geology faculty for 23 years and chairman of the department for nine at Northwestern University along with Bill Krumbein, Larry Sloss, and Ed Dapples, a formidable quantitative-oriented, internationally known group. He joined the faculty at Michigan Tech in Houghton, Michigan and retired as Provost and Vice President of Academic Affairs. On retirement he moved back to England and is enjoying his retirement but active in local affairs and currently is the immediate past Commodore of the Royal Western Yacht Club of England (Harbaugh, 1990). He still rejoices in the amities of his homeland on Lower Bonehill Farm where he lives with his wife, Cleo. His address is: ehtwhitten@ehtw.demon.co.uk.

+**John Clements Davis** (USA) - 1984-1989 - 27th IGC Moscow   John is a KU graduate with a PhD from the University of Wyoming, Prior to joining the Kansas Geological Survey in 1966 he taught at the University of Idaho. He retired from Kansas Geological Survey with emeritus status in 2003 after a long and distinguished career at KU and then joined the faculty at the University of Leoben in Austria. Concurrently, he was chief geologist for the Austrian Heinemann Oil GmbH, where he is now active in evaluating petroleum prospects in Libya among other places. His recent work has been involved with description, evaluation, and prediction of geologic features using mathematical and statistical approaches (Merriam, 1988). He lives in Baldwin, Kansas just south of Lawrence with his wife JoAnn deGraffenreid, who is editor of the Association's Monograph series. His address is: john.davis5@mchsi.com
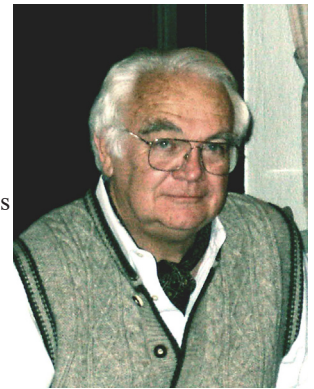
*+**Richard B. McCammon** (USA) - 1989-1992 - 28th IGC Washington DC - Dick was Treasurer of IAMG (1980-1984) and responsible for getting the Association's tax exempt status. He was founder of *Nonrenewable Resources (Natural Resources Research)* in 1992, initiated the Griffiths teaching award, and under his leadership started the annual meetings. He retired from the U.S. Geological Survey in 1998 and moved to the West Coast where he and wife Helen enjoy year-round

moderate weather. Dick now has ample time for his love of stamp collecting and travel to the more remote parts of the planet. This travel has included trips to the High Arctic, Antarctica, the Sahara, and Western Australia, and the Kingdom of Bhutan to name a few. With his colleagues at the USGS, he developed methods for quantitative resource estimation and mineral resource assessments. His address is: mccammon@olypen.com

+**Michael Edward Hohn** (USA) - 1992-1996 - 29th IGC Kyoto - Mike has been busy since his presidency (Olea, 2003). He says: "About three years ago I was appointed Acting Director, and then Director and State Geologist for the West Virginia Geological Survey. Much of my time is spent working with budgets, setting goals and priorities, finding new outside funding, working with the state bureaucracy, writing legislation, and generally trying to look after the employees here. My service with the IAMG has served me well in this position." His address is: hohn@geosrv.wvnet.edu

+**Ricardo Antonio Olea** - (USA) 1996-2000 - 30th IGC Bejing Ricardo is a native Chilean who immigrated to the U.S. in 1985. He came to the U.S. as a visiting scientist with the Kansas Geological Survey and later was employed full-time by the Survey in the Mathematical Geology Section until he retired in 2003 with emeritus status. At the Survey he was responsible among other things for the creation of CORRELATOR, an automatic system for correlating wireline logs. For 3 1/2 years he was in temporary positions with the Germany Geological Survey, School of Public Health at the University of North Carolina, Baltic Sea Research Institute, and the Petroleum Engineering Department at Stanford University. In 2006 he joined the U.S. Geological Survey in Reston, Virginia as a Research Mathematical Statistician for the Eastern Energy Resources Team where he lives with his wife Lucila. His address is: ricardo@oleageostats.com

+**Graeme F. Bonham-Carter** (Canada) - 2000-2004 - 31st IGC Rio - Graeme is an Englishman who immigrated to Canada for a PhD at Toronto after an undergraduate degree at Cambridge University. After a post-doc with John Harbaugh at Stanford, he joined the faculty at the University of Rochester in 1969. He returned to England to try his hand at farming before returning to Canada and a permanent position with the Geological Survey of Canada in Ottawa in 1980 where he retired in 2007 with emeritus status. He has made significant contributions to the design and implementation of major multidisciplinary projects particularly in development of geographic information systems for mineral-potential mapping. He also pioneered the "weights of evidence" technology for pattern analysis and prediction (Harbaugh, 1999). He edited a Festschrift for Frits Agterberg published in 2008

by Springer and currently is the archivist for IAMG. . Graeme and his wife Gwendy live in a house they built in Merrickville, Ontario south of Ottawa. His address is: gbonhamc@NRCan.gc.ca

*+**Frederik Pieter Agterberg** (Canada) - 2004-2008 - 32nd IGC Florence - Frits Agterberg (Whitten, 1978) remains as an Emeritus Scientist at the Geological Survey of Canada after his retirement from that organization in 1996. He continues as Adjunct Professor at University of Ottawa and supervises or co-supervises graduate students at Chinese University of Geosciences in Wuhan and Beijing. From 1996 to 2004 he was active as a consultant to resource companies. In 2008 he was honored with the publication of the Festschrift "Progress in Geomathematics" edited by Graeme Bonham-Carter and Qiuming Cheng, celebrating his half-century of publication activity with contributions by 55 of his friends and colleagues. He has commenced writing a new Springer book tentatively entitled "Geomathematics -- Foundations and Future Developments." With his wife Codien he lives in Ottawa. During the past two years he goes on daily hikes in the forest with his dog Natasha. His address is: Frits.Agterberg@NRCan-RNCan.gc.ca

————————————————

For Further Reading

Davis, J.C., 1982, Sixth William Christian Krumbein Medalist: Daniel F. Merriam: Jour. Math. Geology, v. 14, no. 6, p. 679-681

Harbaugh, J.W., 1990, E.H.T. Whitten - 1989 Krumbein Medalist: Math. Geology, v. 22, no. 5, p. 635-636.

Harbaugh, J.W., 1999, 1999 William Christian Krumbein Medal (Graeme Bonham-Carter): Math. Geology, v. 31, no. 8, p. 1013-1018.

Merriam, D.F., 1978, The International Association for Mathematical Geology - a brief history and record of accomplishments: Syracuse Univ. Geology Contr. 5, p. 1-6.

Merriam, D.F., 1988, Eleventh William Christian Krumbein Medalist: John Clements Davis: Math. Geology, v. 20, no. 1, p. 69-71.

Merriam, D.F., 2001, Andrei Borisovich Vistelius: a dominant figure in 20th Century mathematical geology: Natural Resources Research, v. 10, no. 4, p. 297-304.

Merriam, D.F., 2004, Richard Arthur Reyment:: Father of the International Association for Mathematical Geology: Earth Science History Jour., v. 23, no. 2, p. 365-373.

Merriam, D.F., and Howarth, R.J., 2004, Pioneers in mathematical geology: Earth Science History Jour., v. 23, no. 2, p. 314-324.

Olea, R.A., 1995, Richard B. McCammon: Krumbein Medalist: Math. Geology, v. 27, no. 3, p. 463-466.

Olea, R.A., 2003, 2002 William Christian Krumbein Medal: Math. Geology, v. 35, no. 4, p. 493-497.

Whitten, E.H.T., 1978, Third William Christian Krumbein Medalist: Frederik Pieter Agterberg: Jour. Math. Geology, v. 10, no. 6, p. 699-700.

Whitten, E.H.T., 1979, Fourth William Christian Krumbein Medalist: Richard A. Reyment: Jour. Math. Geology, v. 11, no. 4, p. 443-444.

Whitten, E.H.T., 2004, A.B. Vistelius: first IAMG president and visionary mathematical geologist: Earth Science History Jour., v. 23, no. 2, p. 384-389.

<>

IAMG Journal Report
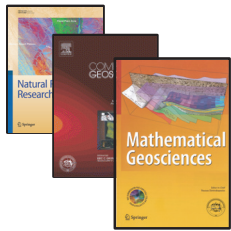
Report on Natural Resources Research

NRR has a new look! The cover for this year's four issues is a spiffy figure from Yousef's 2008 article on aggregate mapping in the desert. The cover for each year will be drawn from articles published during the preceding year. The June issue is already out, so you only have the September and December issues to get your paper published so that next year's cover might show one of your figures!

NRR is continuing to receive about three manuscripts a month. Since I started in July 2007, NRR has processed 51 manuscripts to completion and there are a further 8 currently in review. The final acceptance rate has decreased from around 90% last year to 79% this year, and typical review time is holding steady at about 3 to 4 months. So far, four articles are in process for September.

We are seeing a healthy range of topics for NRR. There is a good balance between hydrocarbon and non-hydrocarbon resource assessments and modelling. If you don't see your favorite topic in recent issues, however, just look in the mirror for the solution to that problem!

Jerry L. Jensen

JOURNAL CONTENTS

Mathematical Geosciences

Computers & Geosciences

Volume 35, No. 1, January 2009

Special Volume: 3D Modeling in Geology — Edited by Andrea Zanchi, Mauro de Donatis, Alan Gibbs and Jean-Lauren Mallet

Reprint of 3D geological modelling from boreholes, cross-sections and geological maps, application over former natural gas storages in coal mines [Comput. Geosci. 34 (2008) 278 290] — Olivier Kaufmann, Thierry Martin

3D model of a sector of the South Scotia Ridge (Antarctica) — Sara Susini, Mauro De Donatis

Sheet 280—Fossombrone 3D: A study project for a new geological map of Italy in three dimensions — Mauro De Donatis, Francesco Borraccini, Sara Susini

Three-dimensional reconstruction of the Carrara Syncline (Apuane Alps, Italy): An approach to reconstruct and control a geological model using only field survey data — Andrea Tonini, Enrico Guastaldi, Marco Meccheri

3D reconstruction of complex geological bodies: Examples from the Alps — Andrea Zanchi, Salvi Francesca, Zanchetta Stefano, Sterlacchini Simone, Guerra Graziano

Reprint of "3D geological modelling from boreholes, cross-sections and geological maps, application over former natural gas storages in coal mines" [Comput. Geosci. 34 (2008) 278–290] — Olivier Kaufmann, Thierry Martin

3D model of a sector of the South Scotia Ridge (Antarctica) — Sara Susini, Mauro De Donatis

3D modeling of uranium-bearing solution-collapse breccias in Proterozoic sandstones (Athabasca Basin, Canada) Metallogenic interpretations — Christian Le Carlier de Veslud, Michel Cuney, Guillaume Lorilleux, Jean-Jacques Royer, Michel Jébrak

Modelling the giant, Zn Pb Ag Century deposit, Queensland, Australia — L. Feltrin, J.G. McLellan, N.H.S. Oliver

Database development and 3D modeling of textural variations in heterogeneous, unconsolidated aquifer media: Application to the Milan plain — Tullia Bonomi

3D modeling using geognostic data: The case of the low valley of Foglia River (Italy) — G. Gallerini, M. De Donatis

High-resolution 3D spatial modelling of complex geological structures for an environmental risk assessment of abundant mining and industrial megasites — P. Wycisk, T. Hubert, W. Gossel, Ch. Neumann

C&G Volume 35, No. 2, February 2009

Research Articles

A semi-automatic method for burn scar delineation using a modified Chan Vese model — Yaxin Peng, Ling Pi, Chaomin Shen

Model dissection from earthquake time series: A comparative analysis using modern non-linear forecasting and artificial neural network approaches — S. Sri Lakshmi, R.K. Tiwari

The MarineGrid project in Ireland with Webcom — Martin Kenirons, Oisín Curran, John Cunniffe, Jenny Ryan, Paul Ryan, Andrew Shearer

Spatial analysis and delineation of ecological landtype phases for the Hoosier National Forest, Indiana, USA — Andriy V. Zhalnin, George R. Parker

Efficient gravity data inversion for 3D topography of a contact surface with application to the Hellenic subduction zone — I. Prutkin, U. Casten

Singularity analysis of ore-mineral and toxic trace elements in stream sediments — Qiuming Cheng, Frederik P. Agterberg

Heuristic advances in identifying aftershocks in seismic sequences — Sebastiano D Amico, Matteo Cacciola, Francesco Parrillo, Francesco Carlo Morabito, Mario Versaci, Vincenzo Barrile

CR1Dinv: A Matlab program to invert 1D spectral induced polarization data for the Cole Cole model including electromagnetic effects — Ahmad Ghorbani, Christian Camerlynck, Nicolas Florsch

Automated grain boundary detection using the level set method — Bibo Lu, Min Cui, Qiang liu, Yangang Wang

A plot drainage network as a conceptual tool for the spatial representation of surface flow pathways in agricultural catchments — Pierre Aurousseau, Chantal Gascuel-Odoux, Hervé Squividant, Ronan Trepos, Florent Tortrat, Marie Odile Cordier

Evaluating error associated with lidar-derived DEM interpolation — Christopher W. Bater, Nicholas C. Coops

Towards a semantics-based approach in the development of geographic portals — Nikolaos Athanasis, Kostas Kalabokidis, Michail Vaitis, Nikolaos Soulakellis

Mining geophysical parameters through decision-tree analysis to determine correlation with tropical cyclone development — Wenwen Li, Chaowei Yang, Donglian Sun

GenLab: A MATLAB®-based program for structural analysis of folds mapped by GPS or seismic methods — J.L. Fernández-Martínez, Richard J. Lisle

Using NDVI to define thermal south in several mountainous landscapes of California — Yongxin Deng, Michael F. Goodchild, Xianfeng Chen

Extraction of drainage networks from large terrain datasets using high throughput computing — Jianya Gong, Jibo Xie

An ImageJ plugin for the rapid morphological characterization of separated particles and an initial application to placer gold analysis — Evan C. Crawford, James K. Mortensen

A semi-automatic method for analysis of landscape elements using Shuttle Radar Topography Mission and Landsat ETM+ data — Amir Houshang Ehsani, Friedrich Quiel

Bed evolution numerical model for rapidly varying flow in natural streams — Leonardo Schippa, Sara Pavan

Recursive evaluation of time convolution integrals in the spectral boundary integral method for mode III dynamic fracture problems — Hamid Zafarani, Asadollah Noorzad, Khosro Bargi, Anooshirvan Ansari

Method for rapid high-frequency seismogram calculation — Tony Alfredo Stabile, Raffaella De Matteis, Aldo Zollo

Application Article : Visualization of A-Train vertical profiles using Google Earth — Aijun Chen, Gregory Leptoukh, Steven Kempler, Christopher Lynnes, Andery Savtchenko, Denis Nadeau, John Farley

C&G Volume 35, No. 3, March 2009

Research Articles

2D conditional simulation of channels on wells using a random walk approach — Jiahua Wang, Xiangbo Wang, Changlin Ren

A combined finite and infinite element approach for modeling spherically symmetric transient subsurface flow — Wenjun Dong, A.P.S. Selvadurai

Modelling climate change in a Dutch polder system using the FutureViewR modelling suite — W.W. Immerzeel, C.C. van Heerwaarden, P. Droogers

A committee machine with intelligent systems for estimation of total organic carbon content from petrophysical data: An example from Kangan and Dalan reservoirs in South Pars Gas Field, Iran — Ali Kadkhodaie-Ilkhchi, Hossain Rahimpour-Bonab, Mohammadreza Rezaee

Clustering analysis of the seismic catalog of Iran — Anooshiravan Ansari, Assadollah Noorzad, Hamid Zafarani

FWT2D: A massively parallel program for frequency-domain full-waveform tomography of wide-aperture seismic data Part 1: Algorithm — Florent Sourbier, Stéphane Operto, Jean Virieux, Patrick Amestoy, Jean-Yves L Excellent

FWT2D: A massively parallel program for frequency-domain full-waveform tomography of wide-aperture seismic data Part 2: Numerical examples and scalability analysis — Florent Sourbier, Stéphane Operto, Jean Virieux, Patrick Amestoy, Jean-Yves L Excellent

Degasification system selection for US longwall mines using an expert classification system — C. Özgen Karacan

A package for geostatistical integration of coarse and fine scale data — Yongshe Liu, André G Journel

Tailored least-squares solvers implementation for high-performance gravity field research — Oliver Baur

The spectral database SPECCHIO for improved long-term usability and data sharing — A. Hueni, J. Nieke, J. Schopfer, M. Kneubühler, K.I. Itten

Intersection between spacecraft viewing vectors and digital elevation models — N.A. Teanby

Estimating water infiltration and retention characteristics using a computer program in R — C.T. Omuto, L.O. Gumbe

The anti-aliased textural analysis of aeromagnetic data — G.R.J. Cooper

Spatial statistical properties and scale transform analyses on the topographic index derived from DEMs in China — Bin Yong, Wan-Chang Zhang, Guo-Yue Niu, Li-Liang Ren, Cheng-Zhi Qin

An intrinsic model of coregionalization that solves variance inflation in collocated cokriging — Olena Babak, Clayton V. Deutsch

Statistical consensus methods for improving predictive geomorphology maps — Mathieu Marmion, Jan Hjort, Wilfried Thuiller, Miska Luoto

Spatial data analysis of finite strain data across a thrust sheet using R — N. Iranpanah, M. Mohammadzadeh, M.Q. Vahidi Asl, A. Yassaghi

ACE - a FORTRAN subroutine for analytical computation of effective grid parameters for finite-difference seismic waveform modeling with standard Earth models — Genti Toyokuni, Hiroshi Takenaka

A workflow to facilitate three-dimensional geometrical modelling of complex poly-deformed geological units — Michael Maxelon, Philippe Renard, Gabriel Courrioux, Martin Brändli, Neil Mancktelow

New statistical methods for detecting point alignments — Ø. Hammer

Application Articles

twodee-2: A shallow layer model for dense gas dispersion on complex topography — A. Folch, A. Costa, R.K.S. Hankin

Probabilistic neural networks applied to mineral potential mapping for platinum group elements in the Serra Leste region, Carajás Mineral Province, Brazil — Emilson Pereira Leite, Carlos Roberto de Souza Filho

Coding of watershed and river hierarchy to support GIS-based hydrological analyses at different scales — Josef Fürst, Thomas Hörhan

C&G Volume 35, No. 4, April 2009

Special Issue: Geoscience Knowledge Representation in Cyberinfrastructure — Edited by Boyan Brodaric, Peter Fox and Deborah McGuinness

Geoscience knowledge representation in cyberinfrastructure — Boyan Brodaric, Peter Fox, Deborah L. McGuinness

Four interacting aspects of a geological survey knowledge system — T.V. Loudon

Semantics, ontologies and eScience for the geosciences — Femke Reitsma, John Laxton, Stuart Ballard, Werner Kuhn, Alia Abdelmoty

Ontology-driven geographic information integration: A survey of current approaches — Agustina Buccella, Alejandra Cechich, Pablo Fillottrani

Ontology-supported scientific data frameworks: The Virtual Solar-Terrestrial Observatory experience — Peter Fox, Deborah L. McGuinness, Luca Cinquini, Patrick West, Jose Garcia, James L. Benedict, Don Middleton

Overcoming semantic heterogeneity in spatial data infrastructures — M. Lutz, J. Sprado, E. Klien, C. Schubert, I. Christ

Engineering new paths to water data — Bora Beran, Michael Piasecki

A framework for semantic reconciliation of disparate earth observation thematic data — S.S. Durbha, R.L. King, V.P. Shah, N.H. Younan

CHRONOS architecture: Experiences with an open-source services-oriented architecture for geoinformatics — D. Fils, C. Cervato, J. Reed, P. Diver, X. Tang, G. Bohling, D. Greer

A taxonomy of geospatial services for global service discovery and interoperability — Yuqi Bai, Liping Di, Yaxing Wei

Using semantics to extend the space physics data environment — T.W. Narock, A. Szabo, J. Merka

Semantic Web-based geospatial knowledge transformation — Peisheng Zhao, Liping Di, Genong Yu, Peng Yue, Yaxing Wei, Wenli Yang

A knowledge-oriented meta-framework for integrating sensor network infrastructures — Nafaâ Jabeur, James D. McCarthy, Xitao Xing, Phil A. Graniero

Developing a geoscience knowledge framework for a national geological survey organisation — Andrew S. Howard, Bill Hatton, Femke Reitsma, Ken I.G. Lawrie

Connecting GEON: Making sense of the myriad resources, researchers and concepts that comprise a geoscience cyberinfrastructure — Mark Gahegan, Junyan Luo, Stephen D. Weaver, William Pike, Tawan Banchuen

Annotation modeling with formal ontologies: Implications for informal ontologies — L.I. Lumb, J.R. Freemantle, J.I. Lederman, K.D. Aldridge

Charting taxonomic knowledge through ontologies and ranking algorithms — Robert Huber, Jens Klump

C&G Volume 35, No. 5, May 2009

Special Issue: Modelling and Simulation of Dangerous Phenomena for Hazard Mapping — Edited by Giulio G.R. Iovine and Michael F. Sheridan

Special Issue 2006 in Computers and Geosciences on Modelling and simulation of dangerous phenomena, and innovative techniques for hazard mapping and mitigation — Giulio G.R. Iovine, Michael F. Sheridan

An intelligent simulation system for earthquake disaster assessment — Aiping Tang, Aihua Wen

MOIRA-PLUS: A decision support system for the management of complex fresh water ecosystems contaminated by radionuclides and heavy metals — Luigi Monte, John E. Brittain, Eduardo Gallego, Lars Håkanson, Dmitry Hofman, Antonio Jiménez

European rain rate modulation enhanced by changes in the NAO and atmospheric circulation regimes — Oleg M. Pokrovsky

Influence of dike breaches on flood frequency estimation — H. Apel, B. Merz, A.H. Thieken

A distributed framework for multi-risk assessment of natural hazards used to model the effects of forest fire on hydrology and sediment yield

— C. Isabella Bovolo, Simon J. Abele, James C. Bathurst, David Caballero, Marek Ciglan, George Eftichidis, Branislav Simo

Incorporating the effects of topographic amplification and sliding areas in the modeling of earthquake-induced landslide hazards, using the cumulative displacement method — Wen-Fei Peng, Chein-Lee Wang, Shih-Tsu Chen, Shing-Tsz Lee

A real-world application of Monte Carlo procedure for debris flow risk assessment — B. Calvo, F. Savi

Two numerical models for landslide dynamic analysis — Oldrich Hungr, Scott McDougall

Two-dimensional simulation of debris flows in erodible channels — Aronne Armanini, Luigi Fraccarollo, Giorgio Rosatti

Logisnet: A tool for multimethod, multiple soil layers slope stability analysis — G. Legorreta Paulin, M. Bursik

The event bush as a semantic-based numerical approach to natural hazard assessment (exemplified by volcanology) — C.A. Pshenichny, S.I. Nikolenko, R. Carniel, P.A. Vaganov, Z.V. Khrabrykh, V.P. Moukhachov, V.L. Akimova-Shterkhun, A.A. Rezyapkin

Applications of the PUFF model to forecasts of volcanic clouds dispersal from Etna and Vesuvio — P. Daniele, L. Lirer, P. Petrosino, N. Spinelli, R. Peterson

Forecasting lava flow hazards during the 2006 Etna eruption: Using the MAGFLOW cellular automata model — Alexis Herault, Annamaria Vicari, Alessia Ciraudo, Ciro del Negro

C&G Volume 35, No. 6, June 2009

Research Articles

Fast trend extraction and identification of spikes in bathymetric data — Jan T. Bjørke, Stein Nilsen

An efficient algorithm to plot flooded intertidal areas — Lihua Zhang, Qing Zhu, Li Zhang, Deqing Liang, Yixiang Tian

Statistical denoising of signals in the S-transform domain — Man Weishi, Gao Jinghuai

Towards automated pattern quantification: Time-efficient assessment of anisotropy of 2D patterns with AMOCADO — Axel Gerik, Jörn H. Kruhl

CHEPROO: A Fortran 90 object-oriented module to solve chemical processes in Earth Science models — S.A. Bea, J. Carrera, C. Ayora, F. Batlle, M.W. Saaltink

A web-based package for ray tracing the neutral atmosphere radiometric path delay — Reza Ghoddousi-Fard, Peter Dare, Richard B. Langley

Landslide susceptibility mapping using frequency ratio, logistic regression, artificial neural networks and their comparison: A case study from Kat landslides (Tokat Turkey) — Isık Yilmaz

MLMATERN: A computer program for maximum likelihood inference with the spatial Matérn covariance model — Eulogio Pardo-Igúzquiza, Kanti V. Mardia, Mario Chica-Olmo

Considering complex training images with search tree partitioning — Alexandre Boucher

Fractal characterization of seepage-pores of coals from China: An investigation on permeability of coals — Yanbin Yao, Dameng Liu, Dazhen Tang, Shuheng Tang, Wenhui Huang, Zhihua Liu, Yao Che

Stretched Eulerian coordinate model of coastal sediment transport — N. Margvelashvili

A new algorithm for computing Boolean operations on polygons — Francisco Martínez, Antonio Jesús Rueda, Francisco Ramón Feito

A new partial-bounceback lattice-Boltzmann method for fluid flow through heterogeneous media — Stuart D.C. Walsh, Holly Burwinkle, Martin O. Saar

Morphological segmentation and classification of marble textures at macroscopical scale — Nuno Benavente, Pedro Pina

GraphClus, a MATLAB program for cluster analysis using graph theory — Clifford S. Todd, Tivadar M Toth, Róbert Busa-Fekete

An improved algorithm for computing local fractal dimension using the triangular prism method — Wenxue Ju, Nina S.-N. Lam

Conditional co-simulation of continuous and categorical variables for geostatistical applications — Xavier Emery, Daniel A. Silva

A general-purpose Green's function-based interpolator — Paul Wessel

AUTO-IK: A 2D indicator kriging program for the automated non-parametric modeling of local uncertainty in earth sciences — P. Goovaerts

Boosting a fast neural network for supervised land cover classification — Morton J. Canty

Remote monitoring of electromagnetic signals and seismic events using smart mobile devices — Pantelis Georgiadis, Dionisis Cavouras, Konstantinos Sidiropoulos, Konstantinos Ninos, Constantine Nomicos

CMAS 3D, a new program to visualize and project major elements compositions in the CMAS system — L. France, N. Ouillon, G. Chazot, J. Kornprobst, P. Boivin

Tunneling Analyst: A 3D GIS extension for rock mass classification and fault zone analysis in tunneling — Yosoon Choi, Seo-Youn Yoon, Hyeong-Dong Park

FALL3D: A computational model for transport and deposition of volcanic ash — A. Folch, A. Costa, G. Macedonio

SSPX: A program to compute strain from displacement/velocity data — N. Cardozo, R.W. Allmendinger

WinDICOM: A program for determining inclusion shape and orientation — Aonghus O Connor, Kieran F. Mulchrone, Patrick A. Meere

Natural Resources Research

Volume 18, Number 1   March 2009

An Empirical Method to Make Oil Production Models Tolerant to Anomalies — S. H. Mohr and G. M. Evans

Accounting for Parameter Uncertainty in Reservoir Uncertainty Assessment: The Conditional Finite-Domain Approach — Olena Babak and Clayton V. Deutsch

Insights from a Simple Hotelling Model of the World Oil Market — C.-Y. Cynthia Lin

Hotelling Revisited: Oil Prices and Endogenous Technological Progress — C.-Y. Cynthia Lin, Haoying Meng, Tsz Yan Ngai, Valeria Oscherov and Yan Hong Zhu

The Evolution of Giant Oil Field Production Behavior — Mikael Höök, Bengt Söderbergh, Kristofer Jakobsson and Kjell Aleklett

A Test and Re-Estimation of Taylor's Empirical Capacity–Reserve Relationship — Keith R. Long

NRR Volume 18, Number 2   June 2009

Unconventional Energy Resources: 2007–2008 Review — American Association of Petroleum Geologists, Energy Minerals Division

Coal-to-Liquids: Potential Impact on U.S. Coal Reserves — Robert C. Milici

Estimation of Shallow Geothermal Energy Resource in Canada: Heat Gain and Heat Sink — Jacek Majorowicz, Stephen E. Grasby and Walter R. Skinner

Stable Isotopes (O, H, and S) in the Muteh Gold Deposit, Golpaygan Area, Iran — M. J. Abdollahi, M. H. Karimpour, A. Kheradmand and A. R. Zarasvandi

<>

Upcoming Meetings

Meeting of the Association of European Geological Societies, Geology for society: education and cultural heritage. Cluj-Napoca, Romania, **9-13 July 2009**. http://bioge.ubbcluj.ro/maegs16/

IEEE 2009 International Geoscience and Remote Sensing Symposium (IGARSS 2009). IEEE. Cape Town, South Africa, **13 - 17 July 2009**. email: publicity@igarss09.org, www.igarss09.org/default.asp

2009 JOINT STATISTICAL MEETINGS, Washington, DC, USA, **01 - 06 August 2009**. Elaine Powell, Phone: 703-684-1221, Fax: 703-684-8069, Email: elaine@amstat.org, www.amstat.org/meetings/

18th USENIX Security Symposium (USENIX Security '09). USENIX. Montreal, Canada, **12 - 14 August 2009**. phone 510-528-8649, fax: 510-548-5738, email: conference@usenix.org, www.usenix.org/events/sec09/

INTERNATIONAL STATISTICAL INSTITUTE 57th Biennial Session Durban, South Africa, **16 - 22 August 2009**. Shabani Mehta Phone: +31-70-3375737, Fax: +31-70-3860025, Email: isi@cbs.nl, www.cbs.nl/isi/. Includes the Invited Paper Session IPM98: "Issues in the analysis of multivariate data in the spatial domain" sponsored by IAMG

IAMG2009, International Association for Mathematical Geology Annual Conference, Stanford University, California, **23-28 August 2009**. Jef Caers, chairman. http://iamg09.stanford.edu/

Geomodel 2009, Gelendzhik, Russia, **7-10 September 2009**. www.eage.ru/ru/conferences/detail.php?id=22

Geoanalysis 2009. International Association of Geoanalysts. Drakensburg Region, South Africa, **7 - 11 September 2009**. phone +27 11 463 5085, fax: +27 11 463 3265, email: jo@soafrica.com, www.geoanalysis2009.org.za

AEG•2009, Lake Tahoe, CA, USA, **21-26 Sep 2009**. Association of Environmental & Engineering Geologists. Becky Roland, PO Box 460518, Denver, CO 80246, Phone: 303-757-2926, FAX: 303-757-2969, Email: aeg@aegweb.org, Web: http://www.aegweb.org

SPE Annual Technical Conference and Exhibition, New Orleans, Louisiana, USA, **4 - 7 Oct 2009**. http://www.spe.org/atce/2009/

2nd International Symposium on the Geology of the Black Sea. Ankara, Turkey, **5 - 9 October 2009**. ISGB Secretary General Directorate of Mineral Research & Exploration, 06520 Ankara, Telephone: 90-312-287 91 93, Fax: 90-312-287 91 93, Email: isgb@mta.gov.tr

The Mining Pribram Symposium 2009 - Geoethics, Conveners: Václav Nemec, Lidmila Nemcová, Pribram, Czech Republic, **12-16 October 2009**. Dr. Vaclav Nemec, K rybnickum 17, 100 00 Praha 10 - Strasnice, Czech Republic, or/and The Mining Pribram Symposium, P.O. Box 41, 261 92 Pribram, Czech Republic, fax: (++420) 318623169, e-mail: lidmila.nemcova@quick.cz (conveners) and marcinikova@diamo.cz (secretary).

Geological Society of America (Annual Meeting), Portland, Oregon, USA, **18–21 October 2009.** GSA Meetings Dept., P.O. Box 9140, Boulder, CO, 80301-9140, USA, Phone: +1 303 447 2020, Fax: +1 303 447 1133, E-mail: meetings@geosociety.org, http://www.geosociety.org/meetings/index.htm

Geological Society of America 2009 Annual Meeting,"From Volcanoes to Vineyards: Living with Dynamic Landscape", Portland, Oregon, **18-21 Oct 2009**. Pamela Fistell, 3300 Penrose Place, Phone: 3033571044, FAX: 3033571070, EMail: pfistell@geosociety.org, www.geosociety.org/meetings/2009/

Society of Exploration Geophysicists (SEG) Annual Meeting, Houston, TX, USA, **25 -30 October 2009**. E-mail: meetings@seg.org, http://www.seg.org/

AAPG Annual Convention and Exhibition, New Orleans, LA, USA. **18-21 April 2010.**

European Association of Geoscientists and Engineers (EAGE), Barcelona, Spain, **14-17 June 2010**.

JOINT STATISTICAL MEETING, American Statistical Association, Vancouver, British Columbia, Canada, **1 - 5 August 2010**. www.amstat.org/meetings

IAMG 2010, Eötvös Lóránd University, Budapest, Hungary, **29 August - 2 September 2010**

SPE Annual Technical Conference and Exhibition, Florence, Italy, **19 - 22 Sep 2010**.

SEG 2010 Conference, Keystone, Colorado, **2-5 Oct 2010**. Society of Economic Geologists, 7811 Shaffer Parkway, Littleton, CO 80127-3732, Phone: 720.981.7882, ext. 210, FAX: 720.981.7874, EMail: seg@segweb.org, www.seg2010.org

Geological Society of America (GSA), Denver, CO, USA, **31 October - 3 November 2010**. www.geosociety.org/meetings/2010/

<>

China Mathematical Geosciences and Geoinformatics Conference 2009

June 27-30, 2009

Guangzhou, China

This China National Conference on Mathematical Geosciences (MG) and Geoinformatics will be held on Campus of Sun Yat-Sen University, Guangzhou, China from June 27 to 30, 2009. It will be another significant event for the Chinese Community of MG after the 12th IAMG Conference held in Beijing, 2007. For the past several years, the Chinese MG community not only actively participated in IAMG activities worldwide but also reactivated the momentum of MG in China. This year's conference will give testimony to the spirit of the Chinese Community especially from the young people. Theories, methods and techniques developed in mathematical geosciences and geoinformatics have been playing significant roles in solving problems of geo-resources, environment and hazards facing Chinese society, requiring effective solutions and approaches to efficiently and reliably estimate and predict mineral/energy resources, geological environment, and geological disasters. The state of the art of Mathematical Geosciences (MG) and Geoinformatics provide an unprecedented opportunity to solve these issues. This conference will serve as a platform for mathematical geoscientists and geoinformatics researchers to present their novel approaches and to share academic ideas. One of the objectives of the conference is to identify potential challenges in the development of MG in China and the collaboration with other communities of geosciences.

This meeting will focus on the new ideas and disciplines of Mathematical Geosciences and Geoinformatics. Invited presentations covers non-linear processes in geosciences, quantitative remote sensing, simulation in GIS, current geostatistics for mining and mineral exploration, computational geochemistry, quantitative mineral resources assessment etc.

Invited plenary lecturers include:

Dr. Frits Agterberg, Geological Survey of Canada
Dr. Katsuaki Koike, Kumamoto University of Japan
Dr. Pengda Zhao, China University of Geosciences
Dr. Guocheng Pan, Hanking Group, China
Dr. Li Xia, Sun Yat-Sen University, China
Dr. Duan Zhenhao, Chinese Academy of Sciences, China
Wang Shicheng, Jilin University
Dr. Yan Guangsheng, China Geological Survey

Organization Committee

Scientific Committee Chair: **Pengda Zhao**, China University of Geosciences
Conference Chair: **Qiuming Cheng**, China University of Geosciences, China, York University, Canada
Secretary-General: **Yongchang Zhou**, Sun Yat-Sen University, China

Contact information:

Dr. Weisheng Hou
Tel: 86-13570431645
Office: 86-20-84111255
E-mail: houwsh@mail.sysu.edu.cn
Address: Department of Earth Sciences, Sun Yat-sen University

Dr. Zhijun Chen
Tel: 86-13135670378
Office: 86-27-67885096
E-mail: geo_zjchen@163.com
Address: State Key Laboratory of Geological Processes and Mineral Resources (GPMR), China University of Geosciences, Wuhan, China, 430074.