IAMG Newsletter

No. 73 December 2006

Official Newsletter of the International Association for Mathematical Geology

Contents

Call for Award Nominations 2007

The Association invites all members to submit nominations for the

Felix Chayes Prize and

Andrei Borisovich Vistelius Award

Deadline: January 31st 2007

For details about prerequisites for nominations see the IAMG web site:

http://www.iamg.org/ and choose "Awards / byAwards Committee."

There is also a list of past recipients and their laudatios on the web site. Please have a look at it before sending your proposal!

The (informal) documents which should accompany each proposal are:

- a short statement summarizing the relevant qualifications of the nominee
- a curriculum vitae of the nominee

The proponent may also get additional information or support for his proposal from other members of IAMG and from successful examples published on our website.

Please submit documentation (preferable in electronic format) to:

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

From the Editor

"What's in a name? That which we call a rose by any other name would smell as sweet." *International Association for Mathematical Geology* is still a nice name but as a label it needs to reflect what the Association stands for. And over time it has added more flavors. So, do we need a new name? That was a discussion topic at the Annual Meeting in Liège.

Over the 38 years of IAMG's existence mathematical geology has evolved and changed and many new areas of interest have been born and merged into the activities and publications of IAMG. As President Frits Agterberg discusses in his "Forum" (p. 3), one rather large and important area is GIS which contributes a significant number of papers both to our journal C&G as well as to the Annual Meetings. However, the label "geology" does not clearly include the area of GIS. It turns out that few of the authors of these GIS papers are members of IAMG — perhaps because of a disconnect between these labels.

Our journal *Mathematical Geology* is strongly considering to change its name from "geology" to "geosciences" in order to reflect and include the other geological sciences, such as geophysics, geostatistics, geography and geologic engineering.

Important in these considerations for changing a name is the desire to keep a recognizable tie to the past. Thus, *Mathematical Geosciences* would still have the same abbreviation (MG) as *Mathematical Geology* and would stay in the same place in alphabetical journal listings. The same principle has to apply to the name of the Association. The final G of IAMG could well stand for "geosciences", and the full new name would still be recognized as similar to the old one. Taking the renaming one step further, it was proposed to add the word "Geoinformatics" and another "G", in order to welcome the large group of geological GIS scientists who are presently without a professional association. This might also help to increase the membership rolls of IAMG which have been declining over the last several years despite various efforts to recruit more colleagues.

So, what should happen to name of our Association? Stay with the traditional, familiar label? Adopt a completely new one? Or make some minor or major modifications to adapt to the changing times and make it clear to newcomers what the organization is about? Frits Agterberg lists some of the possibilities on page 3. Perhaps you have some ideas and opinions. We would definitely like to hear proposals from you. Send them to the editor or to the president, please.

Harald S. Poelchau

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: **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

Vice President: **Nick Fisher**, ValueMetrics, Suite 251,
184 Blues Point Road, McMahons Point, NSW 2060, Australia,
Tel: +61 2 9922 1623 / +61 407 017 016, Fax: +61 2 9922 1635,
E-mail: nif@valuemetrics.com.au,

Secretary General: **Clayton V. Deutsch**, University of Alberta,
204C Civil/Electrical Eng. Bldg, Edmonton, Alberta T6G 2G7, Canada,
Tel: +1 780 492 9916, Fax: +1 780 492 0249,
E-mail: cdeutsch@ualberta.ca

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: **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

Antonella Buccianti, Dipartimento di Scienze della Terra,
Università di Firenze, Via La Pira 4 - 50121, Firenze, Italy,
Tel: +39 055 2757496, Fax: +39 055 284571, E-mail: buccianti@unifi.it

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

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

Brigitte Doligez, Institut Français du Pétrole, 1 et 4 avenue de Bois Preau,
92506 Rueil-Malmaison, Cedex, France, Tel: +33 1 4752 7211,
Fax: +33 1 4752 7067, E-mail: Brigitte.Doligez@ifp.fr

Ian Jackson, British Geological Survey, Kingsley Dunham Centre,
Keyworth, Nottingham, U.K. NG12 5GG, Tel: +44 115 936 3214,
Fax: +44 115 936 3269, E-mail: ij@bgs.ac.uk,

Maria João Pereira, Instituto Superior Técnico - CMRP,
Av. Rovisco Pais, 1049-001 Lisboa, Portugal, Tel: +351 2184 17831,
Fax: +351 2184 17389, E-mail: maria.pereira@ist.utl.pt

Special IGC Councilor: **Felix Gradstein**,
Geological and Paleontological Museum, University of Oslo, Sars'gate 1,
N-0562 Oslo, Norway, Tel: +47 22 851 663, Fax: +47 22 851 832,
E-mail: felix.gradstein@nhm.uio.no

Committee Chairs

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

Distinguished Lecture 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

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

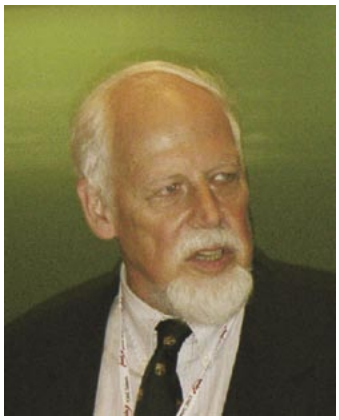
Natural Resources Research: **Jerry Jensen**
Texas A&M University, College Station, TX 77843-3115, USA,
Tel.: 979-845-2206, E-mail: jensen@pe.tamu.edu

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 **Harald S. Poelchau**
10773 Lanett Circle, Dallas, TX 75238, USA, Tel: 214-221-1080,
E-mail: hsp.IAMG [put @ here] inbox.com

PRESIDENT'S FORUM

This forum contains remarks about some rather contentious issues. The purpose of this is to stimulate discussion. At the recent General Assembly held during IAMG'06 in Liège, the IAMG membership overwhelmingly adopted the 2007-2010 Strategic Plan. Nobody was against it, although a few members abstained from voting. We have reached the stage of implementing the nine mutually interrelated strategic objectives, which range from increasing the number of our members to improvement of governance arrangements. During the past few months, several members have expressed widely different points of view on how we should go about this. We are still quite far from having reached a consensus. Your comments will be appreciated.



Currently (October 31st), we have 518 members. As you know from Harald Poelchau's editorial in the last newsletter, our membership first went to about 300 in 1970 and then to 800 in 1984. In 1985 there was a relatively sharp drop and, during the past 10 years, number of members has been zigzagging between 450 and 600. Some members feel that this is not something to worry about and an abrupt increase might adversely change the nature of our society. However, most members believe that we should expand by actively recruiting new members.

During the past year, four new student chapters have been created, but will it be possible to acquire e.g. 1000 new members during the next 4 years? The strategic plan allows for formation of subdiscipline-based sections such as "Geostatistics" and "Multivariate Analysis in Geoscience". These are two fields where we continue to make significant scientific contributions that also account for much of the contents of *Mathematical Geology*. Although there have been significant delays in production and delivery during the past two years, a loyal group of 215 (on October 31st) members subscribe to our flagship journal that will probably be renamed *Mathematical Geosciences* in the future. The publisher (Springer) is taking steps to improve the production schedule for *Mathematical Geology* as well as for *Natural Resources Research*. Both journals would benefit from an increase in numbers of manuscripts submitted for publication.

Computers & Geosciences (published by Elsevier) is exceedingly successful in number of manuscripts received. Eric Grunsky told me that, on November 5th, the 2006 total already was 384. Most papers in *C&G* are authored by scientists who are not IAMG members. One popular feature is that the code of many *C&G* papers can be downloaded from the Editor's web page that was recently moved to the IAMG website. Recently, Eric was bombarded by e-mails from distraught users when our website was down for a week, because it had been hacked into.

An increasingly large number of *C&G* papers are in the field of "Geoinformatics". At the Council meeting in Liège, Councilor Ian Jackson proposed that our society should change its name to give special recognition to geoinformatics. This proposal was favorably received. At the IAMG'06 General Assembly two days later, we discussed the possibility that the new name becomes International Association for Mathematical Geosciences and Geoinformatics. Suggestions received for the corresponding acronym were IAMG (no change), IAMGG (possible drawbacks: in some countries GG could be read as Governor General; there also is an Ottawa University Gee-Gees football team), and IAMG^2 (G-square).

It would indeed be good for our society if we can broaden our membership by making geoinformatics our second pillar. A duality of this type would be analogous to the twofold purpose of the International Statistical Institute that provides a home to mathematical statisticians as well as to members involved in official statistics resulting from national or international surveys.

Another, potentially even more contentious objective in our Strategic Plan is concerned with IAMG governance. The days of significant institutional support for our activities seem to belong to the past when institutions such as geological surveys were proud and happy to provide professional and secretarial support. The trend became that organizations are increasingly reluctant to let their staff work for us. Already during the late 1990s, it had become too difficult for the IAMG Treasurer to look single-handedly after all membership related issues in addition to taking care of our finances. For this reason, we went to having the IAMG Office, which is housed in Kingston, Ontario, since 2001. Services provided by the Office have been increasing annually.

Especially during the last 10 years, IAMG income markedly exceeded expenses so that we have accumulated a significant "endowment" of which the annual return is increasingly used for financial support of quantitative geoscience students. Member dues currently amount to less than 5% of total income, which mainly comes from royalties. Our range of activities has been expanding gradually during the past 10 years. The other side of this coin is that amount of administration also has increased. It poses a problem because the number of volunteers is decreasing. Many members are so busy with other things that IAMG affairs are being moved way down on their lists of priorities.

One option being considered now is to hire a business manager or executive director who would deal with IAMG affairs on a daily basis. His/her duties would consist of coordinating activities between President, Executive, Council, IAMG Office, Committee Chairs, publishers and annual conference organizers, and promoting our image by advertising (brochures; IAMG booths at major conferences), recruitment of institutional members and organization of revenue-generating short courses. Is our organization/income sufficiently large to adopt this strategy? Would the manager or director hold a part-time or a full-time job? Should the candidate be one of our senior members who know the IAMG very well, or a professional manager formally trained in business administration?

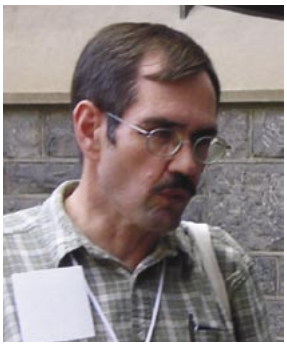
These are some of the issues being debated at present. The current Council has fewer than two years at the helm. At our 40th Anniversary (IAMG'08) during the next IGC in Oslo, a new Council will be installed and most committees will be replaced at the same time. We have to prepare ourselves for the future, changing governance arrangements as needed, in order to remain a vigorous and effective organization.

Frits Agterberg

IAMG Journal Report

Jerry Jensen - new editor of NRR

Jerry L. Jensen has been appointed new editor-in-chief of our Journal *Natural Resources Research*, to follow Dan Merriam who has done a great job since 1999. He is an Associate Professor at Texas A&M University in the Departments of Geology and Geophysics, and Petroleum Engineering. Jerry has a BSc in Electronic & Electrical Eng. from the Univ. of Birmingham, UK (1973), and an MS from the Univ. of Houston (1980) and a PhD from the Univ. of Texas at Austin (1986) in Petroleum Engineering, He has worked as a field engineer for Schlumberger in Europe and Africa, and did research for Gearhart in Texas. His academic past includes posts as lecturer at Heriot Watt University, Scotland, and Associate Professor, at U. of Alaska, Fairbanks. His main areas of expertise are well logging, geostatistics, geological modeling, and petrophysics. Jensen is the author of over 70 publications including a book on statistics. During the last year he has been an associate editor for Mathematical Geology. In 2007 Jerry will change to a new academic position at the University of Calgary.



We welcome Jerry to his new task and wish him success in running and improving NRR. Jerry sent the following letter to address our readers:

Dear fellow mathematical geoscientists: I will be taking over the editorial duties for NRR early next year from Dan Merriam. This change of editorial stewardship gives us an opportunity to make adjustments to the journal and I am asking for your help in this process. I'd like to hear your responses to a few questions about NRR…

1. Is NRR a journal you read? If so, what do you like about it? What would you like to see more of?

2. If you don't read or use NRR, why not? Have you looked at some recent articles? Do you have access to NRR?

3. Does your employer have a library? Does it include NRR? If not, do you know why it does not have NRR?

NRR is our journal. Please send me an email (jensen@pe.tamu.edu), telephone (979-845-2206), or drop me a letter (3116 TAMU, College Station, TX 77843) with your thoughts. They can be short.

Many thanks

Jerry Jensen

Best Paper Awards

The *Mathematical Geology* Best Paper award for 2005 was given to:

Georges Verly, Senior Geostatistician with Placer Dome in Vancouver, Canada, for his paper entitled "Grade control classification of ore and waste: A critical review of estimation and simulation based procedures" in Math. Geol. v. 37, no. 5, 451-475. Georges obtained his PhD from Stanford University in 1985 and has held positions with both Geomines Ltd. and BP Research (UK). George was the 1985 recipient of the Andrei Borisovich Vistelius Research Award and has been a Councilor on the Board of IAMG.

Computers & Geosciences awarded the distinction of Best Paper for 2005 jointly to:

P. Kaltwasser (Ecole Polytechnique, Paris) and **F. Boschetti and P. Hornby** (CSIRO, Exploration and Mining, Australia), for the paper "Measure of similarity between geological sections accounting for subjective criteria" Vol. 31, Issue 1, February 2005, Pages 29-34, and

Nick Martin and Steven M. Gorelick from the Department of Geological and Environmental Sciences, Stanford University, for their paper entitled "MOD_FreeSurf2D: A MATLAB surface fluid flow model for rivers and streams" in Computers and Geosciences, Vol. 31, Issue 7, August 2005, Pages 929-946.

Publications Committee Report 2006

The past year has been busy and challenging for the editors of our journals. We now have three new editors of our journals, at varying stages of transition. **Jerry Jensen**, the new editor for *Natural Resources Research* has been approved recently. Our journals and the IAMG depend a lot on the hard work of our editors and their boards, and we owe a large thank you to **Dan Merriam, Graeme Bonham-Carter**, and **Ed Sharp**.

One of the biggest problems this year has been the serious slip in paper publication of *Mathematical Geology*, and the problems that Ed Sharp has faced in making sure final, published manuscripts reflect all changes made by him and the authors. All this has been in the middle of trying to set up a smooth transition between Ed and his successor, **Roussos Dimitrakopoulos**. The problems appear to stem from Springer's takeover of Kluwer and changes in their production process with more emphasis on publication on-line. Ed, Roussos, and I continue to monitor this situation, with Ed taking the lead still.

A proposal has been put forth that the name of our flagship journal be changed, specifically to *"Mathematical Geosciences."* As of this writing, I am putting together a summary of responses to this idea from Publications Committee members. I can write at this point that feelings run high on this issue and the response has not been unanimous for or against the proposed change.

I am working to hold a meeting of our editors some time in the spring of 2007. By that time all our new editors will be in place, although some degree of transition will be taking place for NRR. The meeting will probably be held in Canada because Roussos is now in Montreal, Eric in Ottawa, and Jerry will have settled down in Calgary by then..

Michael Hohn, Chair
IAMG Publications Committee

IAMG Studies in Mathematical Geology

P.J. Lee's Monograph (no. 8) is complete and a review copy has been sent to Tom Jones (SMG associate editor). Prof. Gordon Kaufman has kindly agreed to go over the manuscript and Dr. Geoff Bohling of the Kansas Geological Survey/KU will give the equations an arduous going-over, which is critical. Prof. John Davis has read it, of course, and in fact personally "re-drafted" all the illustrations (many!). I'm not sure how Oxford will proceed or what the turnaround will be. I believe that Michael Penn, OUP Editor, will also arrange for one or more reviews. Of the five monographs I have prepared, this will be the first "manuscript" that I have submitted--the others were all camera-ready copy.

Jo Anne DeGraffenreid, Editor

Mathematical Geology

Submissions during 2006 are running behind those in 2005. While the web is encouraging submissions, the late production of the journal is discouraging them. An additional 10 articles were submitted as part of a special issue on IGC-2004. As in previous years, time from receipt of a manuscript to time of publication is about one year if minimal revision is required. The number of papers to be published in 2006 is similar to that of previous years ranging between 44 and 50, with 47 for 2006.

The scientific content of the journal is determined entirely by the nature of the manuscripts submitted. For example, no teacher's aides have been published because there were no submissions. At the present time the editor is publishing all manuscripts that pass review. For the editor to exercise any direction over the scientific content of the journal under the current page agreement, annual submissions would need to reach at least 90 per year. Submissions did increase from 54 in 2001 to 81 in 2005.

At the beginning of 2005, the journal was running nearly on schedule, but by mid year it began to run about 3 months behind as the duties performed by Kluwer were taken over by Springer. There was a marked deterioration in the receipt of proofs and in the production of the print version. This was the result of a drastic turnover in staff in New York along with the implementation of Springer's system of online first. The biggest problem the editor had, other than huge delays, is that many corrections to the proofs made by the editor were ignored between the time the editor returned proofs and the articles were posted to online first. Once placed on SpringerLink, Springer will not consider any changes whatsoever. To resolve this difficulty, there is now a provisional arrangement that the editor will review each article before it is posted to online first. However, based on past performance, it will be necessary to wait and see if they bother to actually keep that agreement.

As a consequence, the January issue of 2006 did not appear in print until the 13th of July even though Springer had the complete set of manuscripts in their possession by early June of 2005; a lapse of 13 months. The usual production turn around from submission to print in the past has been 6 months. It is not yet clear what the lag time will be between SpringerLink and the print version.

W. Edwin Sharp, Editor-in-Chief

...more... see p. 13

Association Business

IAMG Distinguished Lecturer for 2007

The IAMG council voted in 2000 to establish a Distinguished Lecture series. The purpose of the IAMG Distinguished Lecture series is to demonstrate to the broader geological community the power of mathematical geology to address routine geological interpretation and to deliver this knowledge to audiences in selected parts the world. For 2007, the Distinguished Lecture Series Committee nominated

Prof. Dr. Vera Pawlowsky-Glahn

Vera Pawlowsky-Glahn is a professor of the Department of Computer Science and Applied Mathematics at the University of Girona. She studied Mathematics at the University of Barcelona in Spain and obtained her PhD *(Dr rer. nat.)* from the Freie Universität Berlin in Germany. Before going to Girona, she was professor at the School of Civil Engineering at the Technical University of Catalonia (UPC) in Barcelona. Her main research topic since 1982 has been the statistical analysis of compositional data. The results obtained over the years have been published in multiple articles, proceedings and a book in the Oxford University Press series *Studies in Mathematical Geology*. She has been guest editor for a special issue on this topic for Mathematical Geology in 2005 and has acted, together with A. Buccianti and G. Mateu-Figueras, as editor of a book on compositional data analysis published by the Geological Society, London, as Special Publication 264. She is the leader of a research group on this topic involving professors from different Spanish universities located in Girona, Barcelona, Murcia and Cáceres. The group organises every two years a workshop on compositional data analysis, known as CoDaWork, and their research has received regularly financial support from the Spanish Ministry for Education and Science and from the University Department of the Catalan Government. Vera Pawlowsky-Glahn has been vice-chancellor at UPC from 1990 to 1994, head of the Department of Computer Science and Applied Mathematics at the University of Girona in 2004-05, and dean of the Graduate School of the University of Girona in 2005-06. She received in 2006 the William Christian Krumbein Medal of IAMG.

Dr. Pawlowsky-Glahn has prepared lectures and a short course on the following topics:

1. Hypotheses underlying statistical data analysis

Hypotheses underlying standard mathematical models for the statistical analysis of real-life data rely on the Euclidean geometry of real space. They are universally accepted (with the exception of some particular cases, such as directional data) despite the fact that they don't always comply with intuition. The aim of this talk is to show — based on her research in the field of compositional data analysis — how she learned that it is possible to obtain models where both common sense and hypotheses agree. Examples using real geological data are used for illustration.

2. The Aitchison geometry of the simplex and the statistical analysis of compositional data

Since John Aitchison introduced in 1982 the log-ratio approach for compositional data analysis, much work has been done to analyse the algebraic-geometric structure of their sample space, the D-part simplex. In this talk, the real Euclidean space structure of the simplex is presented, and the implications for the statistical analysis of compositional data are illustrated with case studies in the field of the geosciences.

3. Geostatistical analysis of compositional data

Like compositional data in general, spatially dependent compositional data present problems, like spurious spatial correlation. In this talk, compositional co-kriging is presented, which is based on the Aitchison geometry of the simplex, the sample space of compositional data. Also, simplicial indicator kriging (IK) is discussed as a particular case of compositional co-kriging. This approach avoids all the standard drawbacks of IK, like estimates outside the (0,1) interval or order-relation problems. The potential is illustrated with real case studies.

4. The statistical analysis on coordinates in constrained sample spaces

Phenomena with a *constrained* sample space and *relative measure of difference* are frequent in practice: rain fall within a certain period in meteorology is always positive; relative humidity in a soil sample lies in the (0,1) interval; composition of sediments (sand,silt,clay) lies in the 3-part simplex. In this talk it is shown how these facts can be taken into account to perform a proper statistical analysis which produces *meaningful* results using easy-to-apply techniques.

Short course (12 hours, 2-3 days): The statistical analysis of compositional data

1. Hypothesis underlying statistical data analysis
2. The Aitchison geometry of the simplex
3. Exploratory analysis (biplot, balances-dendrogram)
4. Distributions on the simplex
5. Parameter estimation and hypothesis testing (optional)
6. Linear models
7. Geostatistical analysis of compositional data (optional)
8. Discussion of case studies

So far, Vera Pawlowsky-Glahn has agreed to give lectures in Neuchatel (Swiss Confederation) in December 2006; in Firenze (Italy) in January 2007; in Toronto and Ottawa (Canada) in February 2007; and in Bogotá (Colombia) in March 2007. Further plans include a second visit to Canada, a European Tour, and a visit to China. IAMG provides for travelling expenses within a reasonable amount. Inviting institutions are expected to provide for local expenses.

Prof. Pawlowsky-Glahn can be reached at the
Department of Computer Science and Applied Mathematics
University of Girona, Spain
e-mail: vera.pawlowsky@udg.es

2006 IAMG Distinguished Lecturer: Larry Lake

Prof.. Larry Lake of the University of Texas at Austin has given 11 presentations to a combined audience of approximately 375 people. These presentations have been in the southern and southwestern United States and at five locations in Canada. He he has been arranging for several more presentations this fall in Brazil.

Titles of Presentations:

1) Inferring Interwell Connectivity From Production and Injection Rate Fluctuations - presented in Miami, Tallahassee, Midland

2) Scales, Scaling and Scaleup - presented in Socorro, Sandia and UBC

3) Enhanced Petroleum Recovery - presented in Socorrro, Newfoundland, Calgary and Edmonton

4) A Personal Assessment of Uncertainty - presented in Ottawa

<>

2005 IAMG Distinguished Lecturer: Larry Drew

Dr. Lawrence J. Drew of the United States Geological Survey was the 2005 DL and completed a successful tour of several locations in eastern Europe between May 2nd and May 22nd, 2005. Larry gave nine talks in The Czech Republic, Bulgaria, Serbia and Hungary. The fall leg of Larry's tour took him to Ottawa, Canada where he gave two lectures, one at the University of Ottawa and the other at the Canadian Geological Survey. He then went to the University of Southern Illinois and gave two lectures there. The total number of lectures presented by Dr. Drew in his tenure as DL was 13. The total expenditures for his tour were approximately $5100: $3,600 on the spring tour and about $1,500 on the fall tour. Local support ran about $5,100 in the spring and $950 for the fall tour.

<>

The IAMG Distinguished Lecturer Series committee currently consists of **Sean McKenna** (Sandia National Laboratories), **Alexandre Desbarats** (Geological Survey of Canada), **Qiuming Chen** (York University), **Tim Coburn** (Abilene Christian University), **Jaime Gomez-Hernandez** (Universidad Politechnia Valencia), **Maria-Theresa Schafmeister** (Ernst Moritz Arndt University of Greifswald), **Sanjay Srinivasan** (University of Texas), **Lawrence Drew** (USGS) and **Frits Agterberg** (ex-officio).

Member News

News from **John Davis**:

As you know, the Kansas Geological Survey disbanded its Mathematical Geology Section in 2002, resulting in the early retirement of several staff members (myself included) in 2003. Although friends and colleagues threw a memorable retirement party for us, I felt that I was not quite ready to join the ranks of the idle retired. I spent a year as adjunct professor of mathematics at Baker University, a small liberal-arts school in my home town of Baldwin, Kansas, then was offered a position as Universitäts-Professor of Geostatistics and Reservoir Characterization in the Petroleum Engineering Department of the Montanuniversität–Leoben in Austria. The Montanuniversität was founded by Emperor Franz Josef as the Austrian Imperial School of Mines and today is a high-level technical and engineering university. The department is especially noted for its "International Program in Petroleum Engineering" in which all lectures are given in English, since it is the language of the oil patch, and all course work is done in English. As a consequence, the department has attracted students from all over the world, especially from the Middle East and North Africa, and also has a vigorous exchange program with the Colorado School of Mines.

Unfortunately, Austria has strict laws governing retirement ages for those in government service, so I now find that I must retire for the second time! As of November 1, my university title is now Univ.-Prof. (ret.). Two retirements probably define the end of my academic career, but I'm still not ready to take up bird watching. I continue as Chief Geologist for Heinemann Oil GmbH -- Austrian compulsory retirement laws do not apply to private corporations

Ricardo Olea has a new position with the USGS Eastern Energy Resources Team, Geologic Division, located in Reston, Va., starting November 1, 2006. (It's the job advertized in IAMG Newsletter 71, a year ago.!)

Gina Ross has been reinstated at the University of Kansas, Lawrence. Instead of working for the Geological Survey she is now employed at the Kansas Biological Survey.

Abani Ranjan Samal, PhD Candidate at Southern Illinois University, Carbondale, and founder of the first IAMG student chapter there, is currently Geologist/ Geostatistician at PINCOCK, ALLEN and HOLT, Denver, Colorado (http://www.pincock.com).

Michael Daniilovich Belonin

29.08.1937 - 12.09.2006

IN MEMORIAM

The Russian and the International Mathematical Geology community lost one of its pioneers and prominent supporters- **Dr. Michael Belonin**, director of the All-Russian Petroleum Research Institute in St. Petersburg, Russia, member of the Russian Academy of Sciences. He passed away on September 12, 2006 of natural causes.

Michael Belonin was born in 1937 in St. Petersburg (former Leningrad). He graduated with honors in 1959 with a degree in Geosciences from the prestigious Mining Institute in St. Petersburg., one of the oldest mining schools in Europe. Immediately after graduation he was hired by the Northwestern Geological Survey, and a year later he was transferred to VNIGRI - a leading organization of great significance in the Russian petroleum geology community. That is where Belonin built up his career, rising from a junior geoscientist to director, which position he assumed in 1986.

Very early on in his career, Michael understood the importance of mathematical methods and their applications in geosciences. He was influenced by the highly energized scientific environment in St. Petersburg, which had rich mathematical traditions. St. Petersburg was also home of the world's first Laboratory for Mathematical Geology which was created in the late 1940s by Kolmogoroff and Vistelius.

Driven by the demand for quantitative analysis in the petroleum industry in Russia in the 1960s, Michael Belonin wanted to deepen his knowledge of math and enrolled in the math department of Leningrad University, where he obtained his math degree in 1969. In the meantime Michael took the initiative for the creation of a mathematical geology group within his institute (VNIGRI) in 1965. Armed with geosciences and mathematical knowledge, as well as experience in mathematical geology, Michael Belonin began working towards a doctoral degree on the issues of mathematical modeling in petroleum geology, which he finished in the early 1970s.

For the next 30 years Michael Belonin was an avid promoter of mathematical methods in geosciences in Russia.

In the mid-1970s the Russian government tasked VNIGRI with the development of an Information Management System for the oil and gas exploration called "Neftegasrazvedka" and Belonin led the effort on that project. It was a success and VNIGRI and Belonin became recognized experts in that area.

Michael published a series of monographs and books on that topic: in 1977 " MIS- Neftegasrazvedka", in 1979- " Geomathematical Methods for Evaluation of Oil Prospects", and in 1982 "Factor Analysis in Geology", which became a popular reference book in Russia.

As he rose in the ranks of management at VNIGRI, he continued to expand the number of projects with mathematical modeling and computerization in forecasting of the reserves and producibility of oil fields in Russia. Under Belonin's supervision a number of detailed computerized maps of the oil provinces in Russia were created.

The importance of his work as a director of VNIGRI became highly appreciated by the Ministry of Natural Resources. Belonin and his associates were awarded a governmental prize of achievement in 1996 for their "Atlas of Oil and Gas Provinces in Ruissia".

In the post Soviet era, when western oil companies began placing bids on various Russian oil plays, VNIGRI under Belonin's management focused on providing quantitative characterization of the petroleum fields in Russia in order to meet the demand of the Russian and foreign oil companies.

Michael's geomathematical expertise had a broad range, including statistical methods and stochastic processes, Monte Carlo modeling, numerical analysis, methods for evaluation of reserves, time series analysis, etc. He also put a lot of emphasis on the development information management systems, and has been credited with the modernization of the computer base in his institute.

Belonin has authored over 300 scientific articles published in Russian and foreign magazines, including 30 monographs and books.

He elevated the prestige of his Institute and raised its profile internationally.

Michael Belonin was an avid organizer of conferences- local and international, many of which were focused on mathematical methods in geosciences. He personally worked tirelessly to publicize Russian geosciences achievements internationally. He also worked towards international professional cooperation on many levels. He was a member of number of international professional organizations, including IAMG, AAPG, SEG, etc. He was instrumental in the joint project "CoGeoData".

On a personal level he was a very modest man, always putting the well- being of the others above his own. He was polite, mild mannered and well liked by colleagues and subordinates. He is survived by his loving wife, two daughters and two grandchildren.

Michael Belonin will be remembered by many whose lives were touched by him and his work.

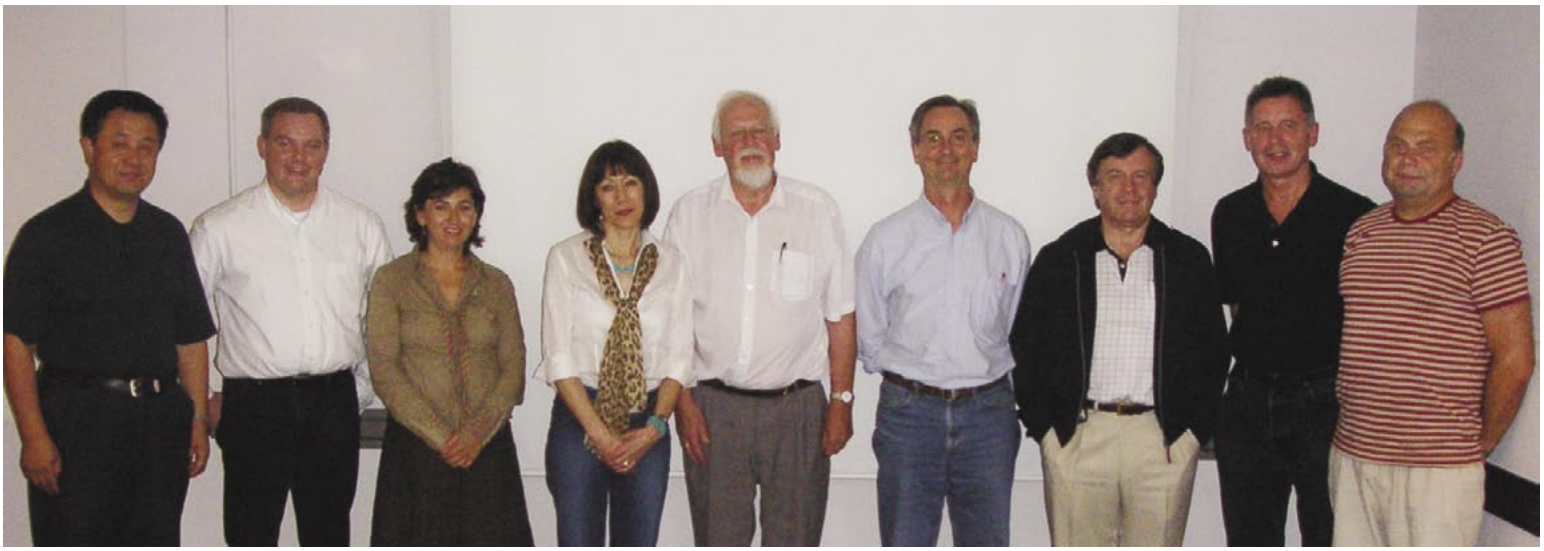
Dr. Valentin Shimansky and Dr. Sergey Smirnov, VNIGRI, 39 Liteiny Pr., St. Petersburg, Russia

English article by Dr. Elaine Kleiner, MMS, US DOI, 381 Elden St., Herndon VA 20170

IAMG'06

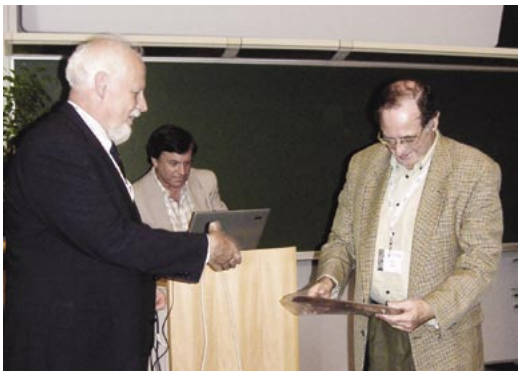
Liège, Belgium, 3-9 September 2006

Chairman Eric Pirard opening the Meeting



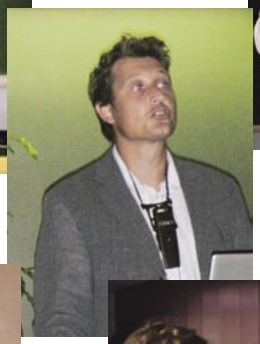
Attending the board meeting were (l. to r.): Qiuming Cheng, Clayton Deutsch, Maria Pereira, Gina Ross, Frits Agterberg, Eric Grunsky, Nick Fisher, Ian Jackson, Helmut Schaeben.

IAMG Awards and talks

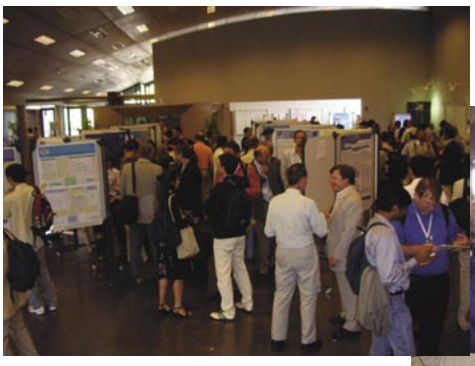


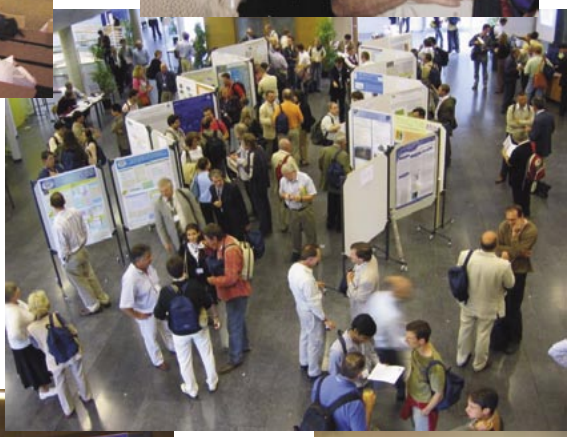
Matheron Lecturer Jean Serra

Krumbein Medal for Vera Pawlowsky-Glahn

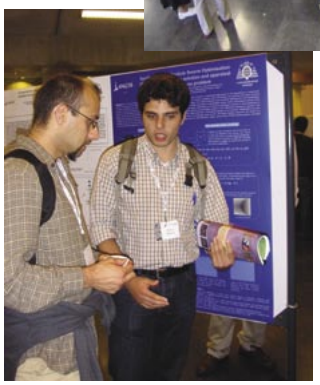


Griffiths Award for Paul Switzer (Laudatio by Harry Parker)





...and posters and discussions



Lord Mayor's reception at the Governor's Palace

†

†

†

Conference Banquet at the Château de Colonster

Conference Fieldtrips

Historical Coal Mine at Blegny


*


*


*


*


*

Spa and Thermal Springs


*


*

Photo credits: * Université de Liège
† Larry Drew

StudentAffairs

News from IAMG Student Chapter at China University of Geosciences

To attract hundreds of students from different universities to participate in the IAMG2007 Conference in Beijing next summer. IAMG Student Chapter at China University of Geosciences (IAMG-SCC) has implemented a new management mode and has made significant development.

On October 9, 2006, a regional group of IAMG-SCC was established during a workshop held in the Academy Exchange Center at China University of Geosciences (Beijing)(CUGB). More than 60 attendees in Beijing were invited including Prof. Chen Jianping (CUGB), Dr. Ge Yong (Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Science), Mr. Qiu Yubao (Institute of Remote Sensing Appications, Chinese Academy of Sciences), Dr. Xing Xuewen (CUGB). Mr. Zhu Pengfei, a Ph. D candidate at CUGB and the host of the meeting was appointed as the vice chairman of IAMG-SCC who is in charge of the affairs in Beijing. Mr. Chen Zhijun, the former chairman of IAMG-SCC introduced the past and future of the IAMG-SCC. Prof. Chen Jianping delivered a lecture on "review and prospect of mathematical geology", Mr. Chen Zhijun, Mr. Zhu Pengfei and Mr. Lu Peng also presented their works at the workshop. IAMG-SCC plans to set up more regional groups in other places of China. IAMG2007 will provide opportunity for IAMG-SCC members from Wuhan, Beijing and other places to exchange experiences in academic researches, managements and activities.

A tea party on June 25, 2006 discussing the new development mode of IAMG-SCC. Special invited guests from left to right in the front row: Dr. Zhao Laishi, Dr. Liu Gang, Prof. Hu Guangdao (IAMG-SCC advisor), Prof. Hong Feng, Ms. Guo Xiurong and Prof. Liu Xiaoya

An interesting tea party was held on June 25, 2006 in the main building at China University of Geosciences (CUG). Mr. Chen Zhijun introduced IAMG and IAMG-SCC to the participants and put forward an inspiring developing idea "IAMG-SCC: the students' green channel leading to the stage of international mathematical geology". IAMG-SCC will devote itself to become an open and active student group, provide selflessly help by various ways to young students who are graduates, undergraduates or post doctoral fellows anticipating to understand mathematical geology and IAMG. IAMG-SCC will carry out a new the development mode of recruiting members from various universities and various educational levels in the next few years. Prof. Hu Guangdao, Dr. Zhao Laishi, Dr. Liu Gang, Prof. Hong Feng, Ms. Guo Xiurong, Prof. Liu Xiaoya and other attendees from different departments of CUG including GPMR State Key Laboratory, Faculty of Earth Resources, Faculty of Earth sciences, College of Foreign Language, Maths and Physics Department, Faculty of Engineering, School of Environmental Studies etc. had a brisk and constructive discussion on the subject and agreed to its feasibility.

Ms. Wang Kun and Mr. Ma Xiaogang participating in IAMG2006 in Liège

Ms. Wang Kun, a third year Ph.D student under the supervision of Prof. Qiuming Cheng, was elected as the current Chairman of IAMG-SCC after Mr. Chen Zhijun in June, this year. Wang Kun and another member of IAMG-SCC and a Ph.D. student of CUG Mr. Ma Xiaogang presented posters at the IAMG2006 held on September 3-8, 2006, in Liège, Belgium. This is the third time for IAMG-SCC members to participate in the IAMG annual conference after IGC2004 in Florence and IAMG2005 in Toronto.

The rapid development of IAMG-SCC is mainly owing to the wide and active participation of the students as well as the continuous and deep concern of many professors such as academician Zhao Pengda, Prof. Qiuming Cheng, Prof. Hu Guangdao and Prof. Chen Jianping, etc. Prof. Qiuming Cheng told IAMG-SCC members to be constant in devoting themselves to scientific study and establish confidence in building the IAMG-SCC to be one of the most vibrant IAMG student chapters on a karaoke party on September 23rd, 2006.

Chen Zhijun and Huang Rui

Prof. Qiuming Cheng on a karaoke party on September 23rd sparking IAMG-SCC members to further scientific study and professional work

University of Alberta Student Chapter

The newly established Student Chapter in Edmonton, under the guidance of Clayton Deutsch, has already published a newsletter which can be viewed on the website http://www.uofaweb.ualberta.ca/ccg/. Editor Jason McLennan and president Jeff Boisvert have done a nice job putting together a short but informative first bulletin (see page 1 on right). It includes a roster of the eight students making up the Executive of the chapter and a puff piece on chapter adviser Clayton Deutsch, even showing an example of his handwritten lecture notes!

Newsletter 1
Number One
August2006

IAMG Student Chapter
University of Alberta

WEBSITE (Under Construction): www.ualberta.ca/iamg/

Special points of interest:
- See contact information for the coordinates of our next meeting
- Tell your friends and colleagues about the newest IAMG UofA Student Chapter!
- IAMG membership is required for Student Chapter membership
- The UofA IAMG Student Chapter receives $2000 US annually for operation
- "Brown Bag" Seminar topics – any ideas?
- Personal profiles – any ideas?
- Research profiles – any ideas?
- Distinguished Lecturer series – any ideas?

Inside this issue:
Message from the President and Editor / Vice President 1
IAMG Student Membership Information and Recruitment 1
IAMG Student Chapter Geography 2
Current Executive Committee 2
Brown Bag Seminars 3
Distinguished Lecturer Series 3
Personal Profile: Professor Clayton V. Deutsch, U of A 3

Message from the President

I am proud to announce and preside the fourth and newest International Association of Mathematical Geology (IAMG) Student Chapter here at the University of Alberta, Edmonton, Canada.

The aim of the IAMG is to promote international cooperation and use of mathematics in geological research and technology. The IAMG Student Chapters quickly forming throughout the world show the significant investment in students towards this goal.

The UofA IAMG Student Chapter would like to hear from you – your input at these early stages will surely have a significant impact on our path in the future.

Jeff Boisvert
President

Message from the Editor

So here is a first IAMG newsletter. The idea: a bi-annual newsletters to provide a quick snapshot of some interesting news and happenings at the U of A Chapter.

An important component of our mandate this early on is building a solid base of members and ides for sustainable development in the future. Recruitment is key. Tell your colleagues and friends.

This newsletter in particular gives an overall perspective of membership benefits, international affiliated chapters so far, and the executive. In this issue, some U of A Chapter routines, a personal profile, and a research group profile are also here.

Jason McLennan
Editor and Vice President

Calling all Earth Sciences Students

The newest IAMG Student Chapter at the U of A may be of interest to students in the disciplines of:
- Mining and Petroleum Engineering
- Geology
- Hydrogeology
- Geophysics
- GIS
- Applied Statistics
- Mathematics

Student Membership in the IAMG is only $5 per year and has many benefits:
- Network with other students who may be researching a similar topic
- Reduced rates on IAMG publications
- Potential research grants, scholarships, bursaries, and travel grants to conferences and meetings
- Access to distinguished lecturer sessions and brown-bag seminars on various topics
- It's a new Chapter--join and help make your own benefits

For further information contact:
Jeff Boisvert (President) - jtb@ualberta.ca
Jason McLennan (Vice President) - jam12@ualberta.ca
Steven Lyster (Recruiter) - lyster@ualberta.ca

IAMG Publications

Student Grant Awards for 2006

The Student Affairs Committee (SAC) consisting of **Helmut Schaeben** (Chairman), **Zhijun Chen** (China), **Angela Diblasi** (Argentina), **Juan José Egozcue** (Spain), **Sergey Kotov** (Russia), **Abani Samal** (USA), **Maria Theresa Schafmeister** (Germany), **Jack Schuenemeyer** (USA), and **Christien Thiart** (South Africa) has chosen the following students to be awarded grants for 2006:

Olena Babak - Ph.D. student at University of Alberta

Ipsita Gupta - PhD student at University of South Carolina, Columbia

Haithem Minas - PhD student, Al Marqab University, Libya

John Keller - PhD student, Southern Illinois Univ., Carbondale

Jonathan Remo - PhD student at Southern Illinois Univ., Carbondale

The Student Grant Program is intended to supporting graduate students enrolled in a formal university department related to mathematical geology. A grant is a cash amount up to the equivalent of US$2,000 plus a one-year subscription to one of the IAMG journals.

Congratulations to all of our new awardees!

JOURNAL CONTENTS

Computers & Geosciences

C&G Volume 32, Issue 6 (2006)

An automated GIS procedure for comparing GPS and proximal LIDAR elevations — Tim L. Webster and George Dias

Three-dimensional forward and inverse models for gravity fields based on the Fast Fourier Transform — Young Hong Shin, Kwang Sun Choi and Houze Xu

Heuristics for cartographic label placement problems — Glaydston Mattos Ribeiro and Luiz Antonio Nogueira Lorena

A simple algorithm for the mapping of TIN data onto a static grid: Applied to the stratigraphic simulation of river meander deposits — Quintijn Clevis, Gregory E. Tucker, Stephen T. Lancaster, Arnaud Desitter, Nicole Gasparini and Gary Lock

Integrated software framework for processing of geophysical data — Glenn Chubak and Igor Morozov

On Latin Hypercube sampling for efficient uncertainty estimation of satellite rainfall observations in flood prediction — Faisal Hossain, Emmanouil N. Anagnostou and Amvrossios C. Bagtzoglou

Earth Science Digital Museum (ESDM): Toward a new paradigm for museums — Shaochun Dong, Shijin Xu and Gangshan Wu

Variance-based sensitivity analysis of the probability of hydrologically induced slope instability — N.A.S. Hamm, J.W. Hall and M.G. Anderson

An open source implementation of the Modern Analog Technique (MAT) within the R computing environment — Michael Sawada

Automatic computation of hierarchical biquadratic smoothing splines with minimum GCV — P.A. Hancock and M.F. Hutchinson

Exploring and visualizing sea ice chart data using Java-based GIS tools — Yingqi Tang and David W. Wong

C&G Volume 32, Issue 7 (2006)

Computer simulation of natural phenomena for hazard assessment — G. Iovine, M. Sheridan and S. Di Gregorio

Parallel genetic algorithms for optimising cellular automata models of natural complex phenomena: An application to debris flows — D. D'Ambrosio, W. Spataro and G. Iovine

SCIARA É¡2: An improved cellular automata model for lava flows and applications to the 2002 Etnean crisis — Maria Vittoria Avolio, Gino Mirocle Crisci, Salvatore Di Gregorio, Rocco Rongo, William Spataro and Giuseppe A. Trunfio

A new model for polluted soil risk assessment — M. Andretta, R. Serra and M. Villani

Pyroclastic flows modelling using cellular automata — Maria Vittoria Avolio, Gino Mirocle Crisci, Salvatore Di Gregorio, Rocco Rongo, William Spataro and Donato D' Ambrosio

Parallel adaptive discontinuous Galerkin approximation for thin layer avalanche modeling — A.K. Patra, C.C. Nichita, A.C. Bauer, E.B. Pitman, M. Bursik and M.F. Sheridan

Numerical modeling of submarine mass-movement generated waves using RANS model — D. Yuk, S.C. Yim and P.L.-F. Liu

Regular papers

Texture discrimination of volcanic ashes from different fragmentation mechanisms: A case study, Mount Nemrut stratovolcano, eastern Turkey — Orkun Ersoy, Gary Chinga, Erkan Aydar, Alain Gourgaud, H. Evren Cubukcu and Inan Ulusoy

Neural network prediction of carbonate lithofacies from well logs, Big Bow and Sand Arroyo Creek fields, Southwest Kansas — Lianshuang Qi and Timothy R. Carr

A disjunctive kriging program for assessing point-support conditional distributions — Xavier Emery

Interpreting potential field data using continuous wavelet transforms of their horizontal derivatives — G.R.J. Cooper

CLEO: Common lead evaluation using Octave — A.S. Gaab, W. Todt and U. Poller

C&G Volume 32, Issue 8 (2006)

Spatial Modeling for Environmental and Hazard Management

Guest Editorial — Tetsuya Shoji and Chang-Jo Chung

Statistical and geostatistical analysis of rainfall in central Japan — Tetsuya Shoji and Hisashi Kitaura

Statistical and geostatistical analysis of wind: A case study of direction statistics — Tetsuya Shoji

An empirical evaluation of spatial regression models — Xiaolu Gao, Yasushi Asami and Chang-Jo F. Chung

Using likelihood ratio functions for modeling the conditional probability of occurrence of future landslides for risk assessment — Chang-Jo Chung

An inverse analysis of unobserved trigger factor for slope stability evaluation — Hirohito Kojima and Shigeyuki Obayashi

Spatial correlation structures of fracture systems for deriving a scaling law and modeling fracture distributions — Katsuaki Koike and Yuichi Ichikawa

Examining the impact of the precision of address geocoding on estimated density of crime locations — Yutaka Harada and Takahito Shimada

GIS modeling for predicting river runoff volume in ungauged drainages in the Greater Toronto Area, Canada — Qiuming Cheng, Connie Ko, Yinhuan Yuan, Yong Ge and Shengyuan Zhang

Two models for evaluating landslide hazards — John C. Davis, Chang-Jo Chung and Gregory C. Ohlmacher

Optimal systems of geoscience surveying – A preliminary discussion — Tetsuya Shoji

Regular papers

Application of parallel computing to stochastic parameter estimation in environmental models — Jasper A. Vrugt, Breanndán Ó Nualláin, Bruce A. Robinson, Willem Bouten, Stefan C. Dekker and Peter M.A. Sloot

WinClastour—a Visual Basic program for tourmaline formula calculation and classification — Fuat Yavuz, Vural Yavuz and Ahmet Sasmaz

Modeling small watersheds in Brazilian Amazonia with shuttle radar topographic mission - 90 m data — Márcio M. Valeriano, Tatiana M. Kuplich, Moisés Storino, Benedito D. Amaral, Jaime N. Mendes, Jr. and Dayson J. Lima

Parallel implementation of a velocity-stress staggered-grid finite-difference method for 2-D poroelastic wave propagation — Dong-Hoon Sheen, Kagan Tuncay, Chang-Eob Baag and Peter J. Ortoleva

Distinguishing actual and artefact depressions in digital elevation data — John B. Lindsay and Irena F. Creed

ModDRE: A program to model deepwater-reservoir elements using geomorphic and stratigraphic constraints — Zulfiquar A. Reza, Matthew J. Pranter and Paul Weimer

Improved resolution of the multiple inverse method by eliminating erroneous solutions — Makoto Otsubo and Atsushi Yamaji

Geological symbol set for Manifold® Geographic Information System — Mitchell G. Mihalynuk, Shannon M.S. Mallory and Brian Grant

C&G Volume 32, Issue 9 (2006)

Estimating coordinates of a 2D-point from multiple observations — Wenbao Liu and Wanhong Yang

Numerical modeling of ground-penetrating radar in 2-D using MATLAB — James Irving and Rosemary Knight

Coral Point Count with Excel extensions (CPCe): A Visual Basic program for the determination of coral and substrate coverage using random point count methodology — Kevin E. Kohler and Shaun M. Gill

Enhanced NURBS modeling and visualization for large 3D geoengineering applications: An example from the Jinping first-level hydropower engineering project, China — Deng-Hua Zhong, Ming-Chao Li, Ling-Guang Song and Gang Wang

Finding the right pixel size — Tomislav Hengl

A combined approach for estimating vegetation cover in urban/suburban environments from remotely sensed data — Chen Yunhao, Shi Peijun, Li Xiaobing, Chen Jin and Li Jing

Reconstructing domain boundaries within a given set of points, using Delaunay triangulation — Ivana Kolingerová and Borut Ialik

Estimating the spatial scales of regionalized variables by nested sampling, hierarchical analysis of variance and residual maximum likelihood — R. Webster, S.J. Welham, J.M. Potts and M.A. Oliver

Combining spectral signals and spatial patterns using multiple Hough transforms: An application for detection of natural gas seepages — H.M.A. van der Werff, W.H. Bakker, F.D. van der Meer and W. Siderius

Protofit: A program for determining surface protonation constants from titration data — Benjamin F. Turner and Jeremy B. Fein

Determining the saliency of feature measurements obtained from images of sedimentary organic matter for use in its classification — Andrew F. Weller, Anthony J. Harris, J. Andrew Ware and Paul S. Jarvis

The problem of missing data in geoscience databases — Stephen Henley

A conditioned Latin hypercube method for sampling in the presence of ancillary information — Budiman Minasny and Alex B. McBratney

A generic database and spatial interface for the application of hydrological and water resource models — D.A. Hughes and D.A. Forsyth

A generalized web service model for geophysical data processing and modeling — Igor Morozov, Brian Reilkoff and Glenn Chubak

CR1Dmod: A Matlab program to model 1D complex resistivity effects in electrical and electromagnetic surveys — Thomas Ingeman-Nielsen and François Baumgartner

Analyzing rock magnetic measurements: The RockMagAnalyzer 1.0 software — R. Leonhardt

Quasi-conformal mapping with genetic algorithms applied to coordinate transformations — F.J. González-Matesanz and J.A. Malpica

An icosahedron-based method for even binning of globally distributed remote sensing data — N.A. Teanby

Calculating the effect of natural attenuation during bank filtration — Ekkehard Holzbecher

Mathematical modeling of talus development — Hiroyuki Obanawa and Yukinori Matsukura

CONCH: A Visual Basic program for interactive processing of ion-microprobe analytical data — David R. Nelson

EMOD2D—a program in C++ for finite difference modelling of magnetotelluric TM mode responses over 2D earth — K. Prabhakar Rao and G. Ashok Babu

Incorporating nonlinear rules in a web-based interactive landform simulation model (WILSIM) — Wei Luo, Edit Peronja, Kirk Duffin and Jay A. Stravers

A FORTRAN program to introduce field-measured sedimentary logs into reservoir modelling packages — O. Falivene, P. Arbués, J. Howell, O. Fernández, P. Cabello, J.A. Muñoz and L. Cabrera

GEOISO—A Windows™ program to calculate and

plot mass balances and volume changes occurring in a wide variety of geologic processes — João Coelho

Rubin H. Landau (Ed.), A first course in scientific computing: symbolic, graphic, and numeric modeling using Maple, Java, Mathematica, and Fortran 90, Princeton University Press, Princeton and Oxford, ISBN 0-691-12183-4, 2005 (481pp. +CD-ROM, price $49.50 (US) cloth.). — Frits Agterberg

G. Bárdossy and J. Fodor, Evaluation of Uncertainties and Risks in Geology, Springer, Berlin (2004) ISBN 3-540-206221 (222p, price US$129 hardcover). — Marek Kacewicz

C&G Volume 32, Issue 10 (2006)

Study of stress waves in geomedia and effect of a soil cover layer on wave attenuation using a 1-D finite-difference method — Zhi-Liang Wang, Yong-Chi Li and J.G. Wang

Using the Snesim program for multiple-point statistical simulation — Yuhong Liu

Use of neural networks and decision fusion for lithostratigraphic correlation with sparse data, Mono-Inyo Craters, California — M. Bursik and G. Rogova

Data reduction in scalar airborne gravimetry: Theory, software and case study in Taiwan — Cheinway Hwang, Yu-Shen Hsiao and Hsuan-Chang Shih

Enhancing potential field data using filters based on the local phase — G.R.J. Cooper and D.R. Cowan

Obtaining dip and susceptibility information from Euler deconvolution using the Hough transform — G.R.J. Cooper

Coupled model of surface water flow, sediment transport and morphological evolution — Guy Simpson and Sébastien Castelltort

TBSIM: A computer program for conditional simulation of three-dimensional Gaussian random fields via the turning bands method — Xavier Emery and Christian Lantuéjoul

A flexible true plurigaussian code for spatial facies simulations — Chaoshui Xu, Peter Alan Dowd, Kanti V. Mardia and Robert J. Fowell

Using XML to improve the productivity and robustness in application development in geosciences — Ulisses T. Mello and Liqing Xu

An approach for spherical harmonic analysis of non-smooth data — Hansheng Wang, Patrick Wu and Zhiyong Wang

A sequential indicator simulation program for categorical variables with point and block data: BlockSIS — Clayton V. Deutsch

Digital geological mapping with tablet PC and PDA: A comparison — P. Clegg, L. Bruciatelli, F. Domingos, R.R. Jones, M. De Donatis and R.W. Wilson

A GIS-based borehole data management and 3D visualization system — James D. McCarthy and Phil A. Graniero

dsm.f90: A computer code for the solution of an inverse problem of ground water hydrology by the differential system method — Mauro Giudici and Chiara Vassena

Towards an open architecture for vector GIS — Robert I. Dunfey, Bruce M. Gittings and James K. Batcheller

A procedure for modelling the differences between the gravimetric geoid model and GPS/levelling data with an example in the north part of Algeria — S.A. Benahmed Daho, S. Kahlouche and J.D. Fairhead

Business logic for geoprocessing of distributed geodata — Christian Kiehle

Addition of simultaneous heat and solute transport and variable fluid viscosity to SEAWAT — Danny Thorne, Christian D. Langevin and Michael C. Sukop

Ellipsis 3D: A particle-in-cell finite-element hybrid code for modelling mantle convection and lithospheric deformation — Craig O'Neill, Louis Moresi, Dietmar Müller, Rich Albert and Frédéric Dufour

West Antarctic balance calculations: Impact of flux-routing algorithm, smoothing algorithm and topography — Anne M Le Brocq, Antony J Payne and Martin J Siegert

A C++ program for retrieving land surface temperature from the data of Landsat TM/ETM+ band6 — Jinqu Zhang, Yunpeng Wang and Yan Li

VLFPROS—A Matlab code for processing of VLF-EM data — N. Sundararajan, V. Ramesh Babu, N. Shiva Prasad and Y. Srinivas

Z. Sisi and P. David, Editors, Large-Scale 3D Data Integration, CRC, Boca Raton, FL (2006) ISBN 0-8493-9898-3 (245pp., US$129.95/ Euro74.99). — Aidan Slingsby

Erratum to: "Computation of deformation induced by earthquakes in a multi-layered elastic crust—FORTRAN programs EDGRN/ EDCMP": [Computers & Geosciences, 29(2) (2003) 195–207] — Rongjiang Wang, Franciso Lorenzo-Martín and Frank Roth

Mathematical Geology

Volume 38, Number 7, October 2006

Graphical biostratigraphic correlation using genetic algorithms — T. Zhang & R.E. Plotnick

Two ordinary kriging approaches to predicting block grade distributions — X. Emery

T-distributed random fields: A parametric model for heavy-tailed well log data — J. Roeislien & H. Omre

Statistical classification of different petrographic varieties of aggregates by means of near- and mid-infrared spectra — V. Hofer, J.Pilz & T.S. Helgason

Computational methods for determination of roundness of sedimentary particles — G.R. Drevin

Spectral corrected semivariogram models — M.J. Pyrcz & C.V. Deutsch

BOOK REVIEW — Environmental Soil-Landscape Modeling: Geographic Information Technologies and Pedometrics edited by S. Grunwald — Reviewed by T.C. Coburn

Volume 38, Number 8, November 2006

Editorial — W.E. Sharp

On the use of non-Euclidean distance measures in geostatistics — F.C. Curriero

Forward and inverse transformations between Cartesian and channel-fitted coordinate systems for meandering rivers — C.J. Legleiter & P.C. Kyriakidis

Conditional simulation of multi-type non stationary Markov object models respecting specified proportions — D. Allard, R. Froidevaux & P. Biver

Understanding geological data distribution and orientation via correspondence analysis, a case study - Evora high-grade metamorphic terranes, Portugal — P.S. Lucio & M.F. Pereira

Analytical solutions for pore-fluid flow around and within inclined elliptical inclusions in pore-fluid-saturated porous rocks — C. Zhao, B.E. Hobbs, A. Ord, S. Peng, L. Liu & H.B. Mühlhaus

SHORT NOTES:

The effect of spatial heterogeneity in soil properties on erosion pattern - a conceptual model and computer simulations — A. Smith and V. Nikora

Application of the multivariate runs test to compositional data — W.E. Sharp

CALL FOR PAPERS

Computers & Geosciences Special Issue:

Geoscience Knowledge Representation for Cyberinfrastructure

Please contact one of the Guest Editors:

Boyan Brodaric, Geological Survey of Canada, brodaric@nrcan.gc.ca

Peter Fox, National Center for Atmospheric Research, pfox@ucar.edu

Deborah L. McGuinness, McGuinness Associates and Stanford University, dlm@cs.stanford.edu

Computers & Geosciences (Journal Report)

At the end of June, **Graeme Bonham-Carter** retired as Editor-in- Chief of *Computers & Geosciences*, replaced by the Deputy Editor, **Eric Grunsky**. Graeme had been at the helm since 1996, and felt that it was time for a change.

Over the past 10 years, the number of submissions to the journal has increased markedly from about 150 papers per year to over 400. As a consequence, the rejection rate has increased dramatically. For 2006 it was as high as 77%. Once papers have been accepted for publication and been through the proof stage, they are made available in an online list, waiting for the next available issue. Recently, this list has contained as many as 85 papers, or about 4 issues-worth. Elsevier has decided to increase the number of issues/year from 10 to 12, and this will help to reduce the backlog, although the rejection rate will still be high.

The editorial workload has also increased markedly in recent years, and despite the improvements and efficiencies introduced by the online Elsevier Editorial System (ESS), the ability to manage over 400 papers per year has become too large for the Editor-in-Chief alone. Changes have been made to the list of Associate Editors, and Associates will now have a greater executive role in the handling of papers than before. Incoming papers will be assigned to the 'handling editor'--one of the five Associate Editors or retained by the Editor-in-Chief himself. The handling editor will select reviewers and make the editorial decisions for that paper. The Managing Editor, **Jean Hubay**, will continue to have the vital role of dealing with reviewers, keeping track of the whole manuscript database to make sure that nothing falls between the cracks, and will also do the technical editing to make sure that the journal style (particularly the references) is maintained.

The Associate Editors are now **Ute Herzfeld** (general geomathematics, USA), **Qiuming Cheng** (general geomathematics, China), **Gordon Cooper** (geophysics, South Africa), **Boyan Brodaric** (information science, Canada) and **Carlos Roberto de Sousa Filho** (remote sensing, Brazil). Ute has been an Associate Editor for about the past 10 years already, whereas the others have all served on the Editorial Board for several years. **Frits Agterberg** has agreed to serve as Consulting Editor, providing special advice to the Editor-in-Chief, and **Roussos Dimitrakopoulos**, previously an Associate Editor with Frits, will stay on the Editorial Board. Roussos is, of course, the new Editor-in-Chief of *Mathematical Geology*, and his inclusion on the Editorial Board will help to provide a real editorial link between the two journals.

Some recent additions to the Editorial Board include **Richard Lisle** (structural geology, UK), **Clayton Deutsch** (geostatistics, Canada), **Nam Tran** (petroleum engineering, Australia) and **Simon Cox** (information science, Australia). Some recent retirements from the Editorial Board include **John Whalley, Berndt Milkreit, Declan DePaor, Mark Jessell, G.S. Yadav** and **Paul Curran**.

Graeme Bonham-Carter and Eric Grunsky

Upcoming Meetings

RESERVOIR SIMULATION Symposium . Society of Petroleum Engineers. Houston, TX, USA, **26 - 28 February 2007**. Tel. 972-952-9393 or 800-456-6863, fax: 972-952-9435, email: tech-prog@spe.org, www.spe.org/spe/jsp/meeting/0,2460,1104_1535_5169758,00.html

SIAM Conference on Mathematical and Computational Issues in the GEOSCIENCES, Santa Fe, New Mexico, **19-22 March 2007.** http://siam.org/meetings/calendar.php

10th International Conference on SQUEEZED STATES and UNCERTAINTY Relations. Bradford, England, UK, **31 March - 4 April 2007**. Email: conf@comp.brad.ac.uk, Website: conf.inf.brad.ac.uk

AAPG and SEPM (Joint Annual Meeting), Long Beach, California, USA, **1–4 April 2007**. AAPG Conventions Department, P O Box 979, 1444 S. Boulder Ave., Tulsa, OK 74101-0979, USA. Phone: +1 918 560 2679; Fax: +1 918 560 2684; E-mail: convene@aapg.org, www.aapg.org

COMPUTATIONAL INTELLIGENCE, STATISTICS AND DATA MINING in Earth Science, Honolulu, Hawaii, **1-5 April 2007**. Amy Braverman, Email: Amy.Braverman@jpl.nasa.gov, Website: ieee-ssci.org/cidm2007/SSCISDME

69th EAGE Conference & Exhibition incorporating SPE EUROPEC 2007, London, UK, **11 - 14 June 2007**. http://www.eage.nl/events/

LANDSLIDES AND SOCIETY (1st North American Conference), Vail, Colorado, USA, **3–8 June 2007**. Dr. Keith Turner, E-mail: kturner@mines.edu; Web Site: http://www.mines.edu/academic/geology/landslidevail2007/

ESRI International User Conference, San Diego, CA, USA, **18 - 22 June 2007**. Tel. 909-793-2853, email: uc@esri.com, Website: www.esri.com/events/uc/index.html

4th International Conference on EARTHQUAKE GEOTECHNICAL ENGINEERING. ISSMGE, DCE, AUT, Faculty of Engineering, HSSMF. Thessaloniki, Greece, **25 - 28 June 2007**. Tel. 30 2310-433099, fax: 30 2310-433599, email: 4icege@symvoli.gr, Website: www.4icege.org/home.htm

IUGG (24th General Assembly), Perugia, Italy, **2–13 July 2007**. E-mail: Secretary@IUGG2007Perugia.it, Web Site: http://www.iugg2007perugia.it/

2007 JOINT STATISTICAL MEETINGS, Salt Lake City, Utah, **29 July - 2 August 2007**. http://www.amstat.org/meetings/

ISI International Statistical Institute, 56th Biennial Session: Includes meetings of the Bernoulli Society, the International Association for Statistical Computing, the International Association of Survey Statisticians, the International Association for Official Statistics and the International Association for Statistical Education, Lisboa, Portugal, **22 - 29 August 2007**. ISI Permanent Office, 428 Prinses Beatrixlaan, P.O. Box 950, 2270 AZ Voorburg, The Netherlands, Phone: +31–70–3375737, Fax: +31–70–3860025, E-mail: isi @cbs.nl, http://www.isi2007.com.pt/

Society of Exploration Geophysicists SEG (77th Annual Meeting and International Exposition), San Antonio, Texas, USA, **23–28 September 2007**. PO Box 702740, Tulsa, OK 74170-2740, USA, Phone: +1 918 497 5500; Fax 918-497-5557; E-mail: meetings@seg.org; Website: meeting.seg.org

IAMG 2007 Beijing, China, **26-31 August 2007**. Zhao Pengda, China University of Geosciences, Wuhan, & Qiuming Cheng, York University, Toronto, Canada, E-mail: qiuming@yorku.ca. qiuming@cug.edu.cn, Website: www.iamg2007.org. See also backpage of this issue.

GSA Geological Society of America (Annual Meeting), Denver, Colorado, USA. GSA Meetings Dept., P.O. Box 9140, Boulder, CO 80301-9140, USA, **28–31 October 2007**. Phone: +1 303 447 2020; Fax: +1 303 447 1133; E-mail: meetings@geosociety.org; Web Site: www.geosociety.org/meetings/index.htm

SPE Annual Technical Conference and Exhibition, Anaheim, California USA, **11 - 14 Nov 2007.** www.spe.org/atce/2006/index.html

American Geophysical Union (Fall Meeting), San Francisco, California, **10–14 December 2007**. E. Terry, AGU Meetings Department, 2000 Florida Avenue, NW, Washington, DC 20009 USAPhone: +1 202 777 7335; Fax: +1 202 328 0566; E-mail: meetinginfo@agu.org; Website: http://www.agu.org/meetings

2008 Joint Statistical Meetings, Denver, Colorado, **3-7 August 2008**. Carmen Batanero, Phone: 34 958243950 Fax: 34 958 246359 Email: batanero@ugr.es, www.ugr.es/~icmi/iase_study/

ICG2008 33rd International Geological Congress, Oslo, Norway, **5-14 August 2008.** Congress Conference AS, Thomas Heftyesgt. 2, P O Box 2694 Solli, No 0204 Oslo, Phone: +47-2256 1930, Fax: +47-2256 0541, www.33igc.org. Includes IAMG sponsored sessions and IAMG General Assembly.

Geological Society of America (Annual Meeting), Chicago, Illinois, **26–30 October 2008**. 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; www.geosociety.org/meetings/index.htm)

American Geophysical Union (Fall Meeting), San Francisco, California, USA. (Contact: E. Terry, AGU Meetings Department, 2000 Florida Avenue, NW, Washington, DC 20009 USA, **15–19 December 2008**. Phone: +1 202 777 7335; Fax: +1 202 328 0566; E-mail: meetinginfo@agu.org; Website: http://www.agu.org/meetings

Geoscience World Congress 2008 (incl. IAMG Annual Meeting)

"Earth System Science: Foundation for Sustainable Development"

In collaboration with the International Union of Geological Sciences (IUGS) and many other international and national organisations, the National IUGS Committees in the five Nordic Countries (Norden): Norway, Denmark, Finland, Iceland and Sweden, hereby invite you to join the 2008 Congress.

During the period 5–14th August 2008, the 33rd International Geological Congress will be held in Oslo as a joint venture between the Nordic countries. Excursions will take place both before and after the Congress and cover a wide region, including Greenland, the Faroes, Svalbard, Western Russia, and possibly the UK, in addition to the Nordic countries.

The main Congress activities, including the pre- and post congress excursions, will last for almost a month, between July 26th and August 21st 2008.

IGC33 is also the venue for the annual IAMG meeting. There will be several IAMG sponsored sessions, symposia, short courses, and other contributions. Proposals for topics are still being solicited.

As 2008 will mark the 40th anniversary of the founding of IAMG we will consider a special session for a sweeping analysis of where the IAMG has gone as an organization in the 40 years, and more broadly where the whole arena of mathematical geology has gone over this period, as well as the future of mathematical geosciences. Ideas for topics and papers are welcome. Please, contact ICG Councilor Felix Gradstein (see p.2) or Richard Sinding-Larsen (richard.sinding-larsen@geo.ntnu.no) with suggestions and proposals.

For detailed information on the Congress and downloadable circulars go to http://www.33igc.org

The Organising Committee of the 33rd International Geological Congress will observe the principle of the Universality of Science in accordance with the Statutes of the International Council of Scientific Unions: "The principle of the Universality of Science is fundamental to scientific progress. This principle embodies freedom of movement, association, expression and communication for scientists as well as equitable access to data, information and research materials."

INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY
YEAR 2007 MEMBERSHIP APPLICATION

Name_____ ❑ Dr. ❑ Prof. ❑Mr. ❑Ms.

Institution_____ Email_____

Department_____ Website_____

Address_____ Phone_____

City/State/Zip_____Country_____ Fax_____

❑ Check this box to exclude your name from the IAMG web site electronic directory.

IAMG DUES (for membership benefits, see the IAMG web page at www.iamg.org)

❑	Ordinary member – 1 year	US$	10.00
❑	Ordinary member – 4 years	US$	40.00
❑	Ordinary member – Lifetime	US$	120.00
❑	Student member (proof of enrollment required)	US$	5.00
❑	Institutional member (includes library subscriptions to all 3 journals, etc)	US$	3,500.00

OPTIONAL: Discounted rates on our journals

❑	Mathematical Geology	US$	45.00
❑	Computers & Geosciences, regular	US$	83.00
❑	Computers & Geosciences, student (proof of enrollment required)	US$	41.00
❑	Computers & Geosciences, electronic subscription, regular or student*	US$	41.00
❑	Natural Resources Research	US$	55.00

* Password and instructions will be assigned by IAMG Office

OPTIONAL: IAMG Monograph Series

❑	#3: “Geostatistical Glossary and Multilingual Dictionary" edited by Ricardo A. Olea	US$	99.50
❑	#5: “Computers in Geology: 25 Years of Progress” edited by J.C. Davis and U.C. Herzfeld	US$	99.00
❑	#6: “Modern Spatiotemporal Geostatistics” by George Christakos	US$	64.00
❑	#7: “Geostatistical Analysis of Compositional Data” by V. Pawlowsky-Glahn and R.A. Olea	US$	99.00

OPTIONAL: CD’s

❑	Computers & Geosciences Silver CD: 25 years of computer code	US$	25.00
❑	Proceedings IAMG'2001 in Cancun	US$	10.00
❑	Proceedings IAMG'2002 in Berlin	US$	10.00
❑	Proceedings IAMG'2003 in Portsmouth	US$	10.00
❑	Proceedings IAMG'2005 in Toronto	US$	10.00
❑	Proceedings IAMG'2006 in Liège	US$	10.00

OPTIONAL: Donation to IAMG (please fill in amount) ..... US$_____

TOTAL ..... US$_____

I wish to pay by: ❑ Check payable in U.S. currency drawn on a U. S. bank, to:
International Association for Mathematical Geology

❑ Credit Card: ❑MasterCard ❑Visa ❑American Express
If payment is made by credit card, your credit card statement will quote “Events & Management Plus Inc.” as the vendor.

Card Number_____

Card Expiration Date_____Card Security Code _____

Signature_____

Send this form to:
IAMG Office
4 Cataraqui St., Suite 310
Kingston, ON K7K 1Z7
Canada

E-mail: office@iamg.org
FAX: +1 613 531 0626
Tel: +1 613 544 6878

PROOF OF STUDENT ENROLLMENT

Student Name _____

Degree Objective_____

University Name _____

University Address _____

_____

_____Country_____

I hereby certify that the student named on this form is currently enrolled at this University, where I am a professor.

Professor’s Name_____

Professor’s Signature_____

Date_____

August 26-31, 2007
Beijing, China

Geomathematics and GIS Analysis of Resources Environment

IAMG

Annual Conference of the International Association for Mathematical Geology

First Announcement and Call for Papers

visit our website

http://www.iamg2007.org

The Annual Conference of the International Association for Mathematical Geology, IAMG'2007, will be held August 26-31, 2007, in Beijing, China. The conference location is the Academy Exchange Center at the China University of Geosciences. The principal theme of the conference is "Geomathematics and GIS Analysis of Resources, Environment, and Hazards". It will highlight development and application of Geomathematics and GIS for modelling, simulation, and mapping natural resources, environment and hazards whilst also providing a programme of symposia of sufficient breadth to attract state-of-the-art contributions from across the full range of mathematical geology and geoinformatics. Interdisciplinary development and application of geomathematical modelling theory and GIS has brought IAMG into a brand new era providing significant contribution on handling geoinformation and modelling complex problems in geosciences. The application areas include but are not limited to:

mineral resource assessment,
energy resources assessment,
geological hazards and
environmental impact prediction.

Short courses within the framework of the conference will be offered. Space for commercial presentations will be available. Suggestions for sessions, workshops, and short courses are welcome. Co-sponsored events can be organized as well. Both oral and poster presentations are encouraged. Invited speakers and the Chayes Prize and Vistelius Award winners will deliver keynote lectures. Four Field Trips will be organized, as well as a number of social events.

Important Dates:

January 15, 2007	Abstracts Due
March 31, 2007	Author Notification
May 31, 2007	Early Registration
	Workshop Registration
	Short Course Registration
June 15, 2007	Camera-Ready Paper Due

Conference Organizers

China University of Geosciences (CUG, CUGB)

State Key Lab of Geological Processes and Mineral Resources (GPMR)

York University (YorkU, Canada)

Int. Association for Mathematical Geology (IAMG)

Chinese Association for Mathematical Geology and Geoinformatics (CAMG)

Geological Survey of China (GSC)

Conference Chairs

Zhao Pengda and Frits Agterberg

Conference Secretary-General

Cheng Qiuming

Contacts:

State Key Lab of Geological Processes and Mineral Resources,China University of Geosciences,

Dr. Hu GuangDao
Dr. Zhao Laishi
388 Lumo Road, Hongshan District, Wuhan, Hubei China, 430074
Tel: 86-27-67885096
Fax: 86-27-67885096
Email: iamg2007@cug.edu.cn

Dr. Chen Jianping
Dr. Yang Liqiang
29 Xueyuan Road, Haidian District, Beijing, China 100083
Tel: 86-10-82322176
Fax: 86-10-82322176
Email: iamg2007@cugb.edu.cn