



IAMG

No. 57 November 1998

Newsletter

Official Newsletter of the International Association for Mathematical Geology

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CALL FOR AWARD NOMINATIONS

The Association invites all members to submit nominations for the **1999 Vistelius Award** and the **1999 Chayes Prize**. According to the decision of the IAMG Council, in the future every award will be presented during its nomination year instead of the following year as it has been the practice recently.

• **Deadline: January 15, 1999.**

Documents which should accompany the proposal:

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

The Awards Committee is working through electronic mail. Therefore, please use e-mail or diskette to submit documentation in rtf format or as simple text files (ascii code).

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Guidelines see p. 18

The IAMG meeting in Ischia brought together geomathematicians from all over the globe: old friends, former or present colleagues, newcomers, young and old. Some even brought their families along, adding another, pleasant side to the meeting. What a wonderful opportunity to get together with people of similar scientific interest to compare notes, look at interesting problems or just reminisce in pleasant and scenic surroundings. The IAMG conferences have a very important function: to provide a means of connecting for

people who do not usually have that possibility in the normal working environment. This reminded me of the special interest group I saw listed at the JSM Meeting in Dallas (see Conference reports p. 19). At the time it struck me as odd if not funny to have a meeting of "Isolated Statisticians". Yet, after seeing the geomathematicians get together I suspect that we have a problem of isolation for many of our members as well. If you are not in an institution dealing specifically with quantitative geology or geomathematics you probably won't have someone next door to chat with about specific geomathematical problems. There may be the telephone or the e-mail but that is still not the same as discussing a problem face to face over a cup of coffee. So, that's one of the important functions of our annual meetings: to provide a place for meeting like-minded scientists and to give a feeling of connectedness, at least for the folks who are "isolated geomathematicians". Let me know if you feel that isolation is in fact an issue in mathematical geology.

The IAMG meeting is apparently not just a place where members of the Association gather. This is borne out by the fact that only ca. 30% of the attendees in Ischia belong to the IAMG. Even if one discounts the large number of Italians who took advantage of the meeting being in their own country that still leaves 50% of the registrants not being affiliated with IAMG. This is good news - we don't want to be a closed society. The more people we can attract the better for the diversity of presentations, and the more opportunities we have to increase the number of memberships. The level of membership has been stagnant and in fact slightly decreasing which has given rise to concern among the IAMG leadership. They are actively looking for ways to reverse this trend through more advertising, more visibility at conferences, and backtracking of elapsed memberships. If you have good suggestions send them along or ask your fellow scientists to join (application blank on p. 15).

Harald S. Poelchau

International Association for Mathematical Geology

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Letter to the Editor

The August Issue of Computers & Geosciences is - again - a special issue on multimedia/internet applications. Although I endorse the use of these "new medias" I think, that Computers & Geosciences is on the verge of over-promoting these topics. The use of multimedia and internet applications is as common for many people as the use of other medias, but there are many useless applications. These are solely considered justified by the use of these "new media". The multimedia issues of C&G are - in my opinion - already moving dangerously in this direction. I would like to see C&G more to be a counterpart to Mathematical Geology, by addressing computational issues in the geoscience, instead of jumping to every "hype".

Ulrich Zier
RWTH Aachen

Note from the Editor:

We think that this issue may be something that other members of IAMG have opinions on and welcome comments and suggestions on this topic. We will forward any communications to Frits Agterberg, the chairman of the Publications Committee. Also, Graeme Bonham-Carter, editor of C&G is very interested in this issue and will publish an editorial in the next C&G to address the question of C&G content. (see p.5)

**CALL FOR PROPOSAL TO ORGANIZE
IAMG2001 CONFERENCE**

The Association is looking for groups of entrepreneurial and enthusiastic members willing to organize the sixth IAMG conference during the Summer or Fall of 2001.

The Association does not have a conference in years in multiples of four. Instead the Association organizes a symposium in mathematical geology in conjunction with the International Geological Congress. The XXXI International Geological Congress will be held in Rio de Janeiro, Brazil, in the year 2000. Thus, following IAMG'99 in Norway, the next IAMG conference will be IAMG2001.

The deadline to receive proposals is April 15, 1999. Individuals who are interested in organizing IAMG'99 should obtain a copy of the Guidelines to Prepare IAMG Conferences from any of the Council members. Bids should be sent to the President.

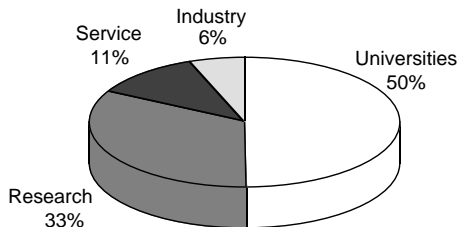
PRESIDENT'S FORUM

Have you ever wondered where our members work?

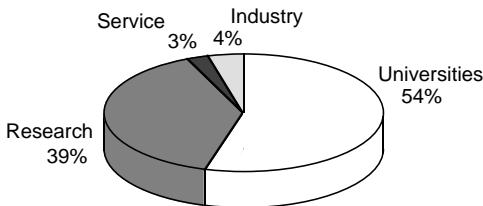
The Association has not run a survey to answer the question properly, but, after discarding about 33% of the members' mailing addresses without any clue of the name or nature of the employer—such as plain home addresses—a quick look at the remaining 351 postal addresses gave the answer summarized in the first pie chart:

Research includes academies, centers, geological surveys, institutes, and laboratories; service comprises consulting and service companies. Considering that our activities are not restricted to our members, a different but related group of people is that consisting of individuals who participate in our activities, forming what may be regarded as a virtual membership, partly made up by true members. The following is the place of employment for the authors of the papers presented at the last IAMG'98 conference:

IAMG Members

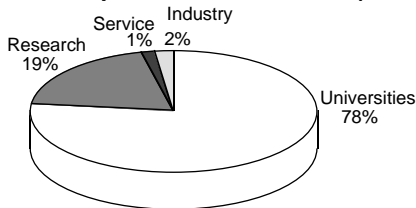


Presenters and coauthors at IAMG'98

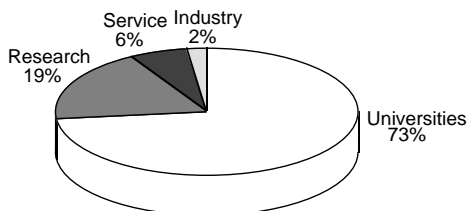


and for the authors of the most recent papers in our journals,

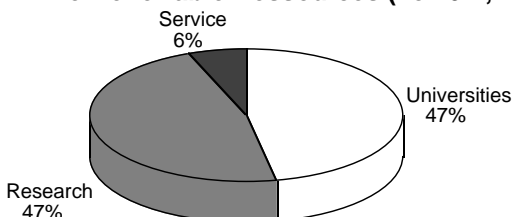
Computers & Geosciences (vol. 24, 1998)



Mathematical Geology (vol. 30, 1998)



Nonrenewable Resources (vol. 6-7, 1997-1998)



The obvious conclusion from the examination of these statistics is that industry is almost completely absent from all aspects of the life of our organization. People working in industry do not belong to IAMG, they do not present papers at our conferences, nor do they send contributions to our journals, limiting our reach and membership. Our basic constituency is made up primarily of professors and their students, followed by research scientists. A distant third are members in service companies including consultants. Ironically, none of the members of the IAMG Executive Committee—President, Vice President, Secretary General and Treasurer—works at a university.

Low industrial membership at IAMG is not new. This has been the case since the foundation of the Association in 1968 when it was more understandable that the new field of mathematical geology was mostly the interest of curious minds at research centers and universities. Today this reality is more difficult to accept. Although the annual number of graduating students with a background in mathematical geology has never been high, the cumulative number of those going to work to industry over the last three decades does amount to several times our current membership of about 500 individuals, let alone additional thousands of individuals who have received in-house training, at a time when computers are taking over the world. It is not that quantitative methods in geology are not used in industry. It is only that people in industry do not care about IAMG.

To attract the participation of people from industry, it is necessary to break out of a vicious circle. People join the Association mostly to enroll at our conferences at a discount rate or to read our journals. Lack of involvement of people from industry in our activities results in that our journals and conference proceedings do not have enough papers of interest for people in industry, and people in industry do not join our organization because they feel that our organization has nothing to offer to them.

There are already two major initiatives in progress that directly or indirectly should result in an increase of participation in our Association's activities by people from industry:

(a) The new Editor-in-Chief of Natural Resources Research (formerly Nonrenewable Resources), the Publications Committee, and the Council have decided that to increase readership of our newest journal and minimize overlapping with the traditional coverage by the other two journals, Natural Resources Research should focus on the application of mathematical geology to the solution of practical problems, such as successful case studies demonstrating how quantitative methods—not necessarily novel—can make a positive difference in addressing geological problems.

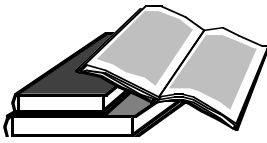
(b) Encouraged by Council, the organizers of the coming conference in Trondheim have decided, for the first time in our annual meetings, to offer a program strongly oriented toward problems in the petroleum industry, the largest industrial employer likely to be interested in mathematical geology. About half the papers and sessions will be dedicated to petroleum mathematical geology, with a strong presence of conveners, participants, and sponsors from industry.

It is the hope of Council that this reorientation of activities will result in an expanded base and fulfillment of our primary mission to promote mathematical geology more equally balanced between science and technology, without abandoning the traditional interest of IAMG for research on cutting edge methodology.

Your comments and ideas are welcome!

Ricardo Olea

Recent Books of Interest



J. Roche, Linacre College (Oxford),
The Mathematics of Measurement,
Athlone Press, England, 1998.

Approx. 422 pp. 15 figs., Hardcover \$79.00 (tent.), ISBN 0-387-91581-8

The Mathematics of Measurement is a historical survey of the introduction of mathematics to physics and of the branches of mathematics that were developed specifically for handling measurements, including dimensional analysis, error analysis, and the calculus of quantities.

Using an interdisciplinary approach and the insights provided by historical studies, Roche clarifies well-known difficulties in the mathematics of measurement, some of which have plagued scientists for over a century.

The book is primarily intended for physicists and scientists from related disciplines such as mathematicians or meteorologists; however, the level and breadth of the treatment should also make it interesting for advanced undergraduates in these fields, as well as for historians and philosophers of science.

Dynamics and methods of study of sedimentary basins, Association of French Sedimentologists, Editions Technip, 1998 hardb. 408 p., ISBN 2-7108-0739-4, 440 FF

This book contains 21 contributions, each written by an expert in the area of sedimentary basins. The first part is devoted to the methodology used for these studies, in particular physical measurements (well logging and seismic) and synthesis of subsurface data. The second part presents specific case histories, each corresponding to a particular type of basin.

H.J. Schellnhuber, V. Wenzel, Eds., (Potsdam Institute for Climate Impact Research, Potsdam, Germany), **Earth System Analysis — Integrating Science for Sustainability**, Springer-Verlag, 1998. Approx. XXVIII, 560 pp. 92 figs. 44 in color, 16 tabs. Hardcover \$89.00 (tent.), ISBN 3-540-58017-4

Earth System Analysis is a science in statu nascendi, the nature of which is transdisciplinary to a degree never seen before. Thus, the book describes not only the initial state of this new science, but also delivers a multifaceted integration of these. The resulting master paradigm, namely, the coevolution of nature and anthroposphere within a geo-cybernetic continuum of processes, is based on a structured manifold of partial paradigms with their specific ranges. The didactic quality of this book has been improved by many allegoric illustrations. Most importantly, all this has to serve the scientific foundation of a meaningful, safe, and efficient environment and development management for solving the most burning questions concerning humankind and its natural environment.

J. Boardman, D. Favis-Mortlock, Eds. (University of Oxford, UK), **Modelling Soil Erosion by Water**, (NATO ASI Series. Series I: Global Environmental Change. Vol. 55), Springer-Verlag, 1998. Approx. 542 pp. 118 figs. 84 tabs., Hardcover \$199.00, ISBN 3-540-64034-7

G.A. Wagner (Heidelberg, Germany), **Dating of Young Rocks and Artifacts — Physical and Chemical Clocks in Quaternary Geology and Archaeology**, Translated by S. Schiegl, Springer-Verlag, 1998. Approx. 350 pp. 177 figs. 9 tabs., Hardcover \$89.95, ISBN 3-540-63436-3, (Original German edition published by Ferdinand Enke Verlag, 1995)

The Quaternary, which spans approximately the last 2 million years, is characterized by dramatic environmental changes, commonly known as the "ice age". During this period, man with his manifold

cultures evolved. Attempts to date these events as accurately as possible have been improved by modern technology. The broad spectrum of physical and chemical dating methods now available for dating human artifacts and Quaternary rocks are becoming increasingly difficult to grasp. In this book the various chronometric techniques are comprehensively and intelligibly treated. Through the use of numerous case studies, taken from archaeology and geology, the possibilities and limitations of these techniques are demonstrated.

J. Parnell (Queen's University of Belfast, UK), ed., **Dating & Duration of Fluid Flow Events**, Geological Society Special Publication No. 144, 300 pp., hardback, £69/US\$115, ISBN 1-86239-019-3

Fluid flow is fundamental to many geological processes, including the development of natural resources of hydrocarbons, ore deposits and water. Modelling of these processes requires information on the timing of fluid flow events and the interaction of fluids with surrounding rocks. In addition to isotopic methods, a diversity of approaches has been developed to assess the timing of events, including palaeomagnetism, fission track analysis and fluid inclusion studies. Many techniques also provide information on the duration of fluid flow events. The papers in this volume represent the range of approaches to determine the dating and duration of fluid flow events and fluid-rock interaction. The first overview of methods of dating fluid flow; examples of commercial application of dating methods; explanations of methodology; suitable for advanced teaching and with extensive bibliographies. This volume will be of interest to geologists in the hydrocarbon and minerals industries and in academia, and to geochemists and hydrogeologists.



IAMG financially supported the NATO Advanced Studies Institute:

DEPOSIT AND GEOENVIRONMENTAL MODELS FOR RESOURCE EXPLOITATION AND ENVIRONMENTAL SECURITY
6 -19 September, 1998, Hungary

Director: Prof. Andrea G. Fabbri (ITC, Geological Survey Division, Enschede, The Netherlands)

Co-Directors: Dr. Gabor Gaal (MAFI, Geological Institute of Hungary), Dr. Richard B. McCammon (U.S. Geological Survey, Reston, VA)

The Advanced Study Institute (NATO ASI 971295) provided an unique opportunity for internationally-recognized researchers from the disciplines of geology, geophysics, geochemistry, remote sensing, economics, biology, mining engineering, resource analysis, mathematics and statistics to join together to present the most up-to-date contributions in geoenvironmental modeling as it relates to resource exploitation and environmental security in the developed and developing countries worldwide. The presentations were made to 65 participants from 32 different countries. The participants were selected based on their interests and qualifications in the general area of the geoenvironmental sciences.

The presentations centered around 4 major themes, geoenvironmental models, GIS methods and techniques, assessment and resource management, and resource policy and East-West relationships. Under each theme, presentations were made to introduce the topic and these were followed by specific applications in which the researcher had expert knowledge.

Geoenvironmental models describe, predict or simulate processes related to the anthropogenic flow of bulk materials to and from the earth. The discovery of new mineral deposits is not a problem. The problem will be to obtain proper environmental permits to mine. The art of mineral deposit modeling is far ahead of environmental modeling. To move ahead in this field, several areas of research were identified, namely, investigating the long-term persistence of environmental impacts by studying very old mines in ancient mining regions around the world, comparing environmental impacts arising from the exploitation of polymetallic ore deposits in different environmental settings, and standardizing the formats of geoenvironmental models needed to convey the message to multiple levels of interests to those involved in geoenvironmental issues.

To be published by Kluwer Academic Publishers, Dordrecht, The Netherlands, in Summer 1999

IAMG Journal Report

Copyright Alert !

Authors and referees of articles are asked to bring cases of possible copyright violation and plagiarism in IAMG publications to the attention of the IAMG Publications Committee (c/o agterberg@gsc.nrcan.gc.ca). During 1998, the Committee has been dealing with the following two cases.



Recently, one of our editors received a notice from one of the two referees asked to review an article submitted for publication in his journal that this referee already had received and reviewed this same article, but for another journal. Text and illustrations were identical, only the title was different. Obviously, this was a case of "shingling" or attempting to publish the same article twice, without knowledge of the editors. It is in violation of guidelines to authors and copyright laws. Fortunately, this case was discovered before it was too late. It is remarkable that, afterwards, one of the authors attempted to justify double submission by stating that this is allowed when the readerships of two journals are very different. Both editors disagreed and concluded the affair by rejecting the article from publication in their journals.

Earlier this year, an IAMG member documented a case of alleged plagiarism which was handed to the Publications Committee for consideration. This author had read an article in one of our journals in which a method previously developed by him and colleagues was not only used without proper references, but parts of sentences were repeated verbatim without any acknowledgment of the sources. We responded to this case by appointing a 3-person subcommittee to study the evidence. It was concluded that the IAMG member was correct in his assessment. With the help of the editor, it was found out that the authors of the "new" article admitted to using the earlier work extensively during their research and report preparation, but had omitted to include the corresponding references. The Publications Committee decided that lack of experience was the probable cause underlying this unfortunate incident. The case is being resolved by the publication of an apology in the journal concerned, in order to set the record straight.

It is possible that there are instances of copyright violations which have not been detected. We would like to be informed of these in order to help safeguard the integrity of our publications.

Frits Agterberg

Chairman, Publications Committee

ANNOUNCEMENT AND REQUEST: Silver Anniversary CD-ROM

The International Association for Mathematical Geology and Elsevier Science Ltd. are jointly sponsoring the release of all code published in *Computers & Geosciences* since its inception in 1975 on a CD-ROM. The release of the CD — the Silver Anniversary CD — will be in the Millennium year, following the completion of volume 25 (after the end of 1999).

Starting in 1995, all code associated with published papers has been made publicly available from an FTP site on the server IAMG.ORG, and is also available via the Editor's Home Page on the World Wide Web. Code published in the years 1975-1995 appeared in print in the journal only, and with a few exceptions the code has not been available in digital format. The Silver Anniversary CD will make this code more readily accessible and useful to readers of *Computers & Geosciences* and to the general public. The CD will be a permanent archive of this unique collection of software.

This notice asks authors of papers in *Computers & Geosciences* prior to 1995 to send program code so it can be included on the CD. Otherwise the code will be scanned from the published Journal and converted to ASCII. However, clean conversion by automatic character recognition is problematic, particularly for code printed on older dot matrix machines, and the time available for editing will be limited. In addition, if anyone else has code from pre-1995 issues converted to digital format, and would be willing to contribute the code to the CD in ASCII form, please send it in.

The CD will be supplied free to current subscribers of C&G. Those contributing code in digital ASCII format will also receive a copy of the CD free, whether or not they are current subscribers.

Code (source code and test data only) may be sent as a file attached to an e-mail to **Eric Grunsky** at egrunsky@iamg.org. Please include in the e-mail (and on the file for safety) the Volume, Issue and Page numbers, and

optionally the title of the paper and the name of the authors. Alternatively the code can be sent on diskette to

Dr. **Graeme Bonham-Carter**, Editor-in-Chief *Computers & Geosciences*
Geological Survey of Canada, 601 Booth St., Ottawa, Ontario,
CANADA, K1A 0E8
Email: bonham-carter@gsc.nrcan.gc.ca

PLEASE make the effort to supply this material, if possible before December 1, 1998, and not later than April 1, 1999.



Computers & Geosciences 1997 Best Paper Award

The Associate Editors have voted the Best Paper Award for 1997 to **Terry Smith** (Department of Geography, University of California Santa Barbara) and coauthors **B Birnir**, **G E Merchant** for a two part paper:

Towards an elementary theory of drainage basin evolution: I. The theoretical basis; II. A computational evaluation. *Computers & Geosciences*, vol.23, no.8 pp. 811-849

This years evaluation was conducted by Associate Editor **John Butler**.

Editorial (excerpted from a draft for C&G vol. 25, no 1)

In a recent letter to the IAMG Newsletter, Zier (1998) has questioned whether the recent profusion of special issues of *Computers & Geosciences* dealing with Internet-related topics may not be diverting the journal from its principal focus. This is, perhaps, a point of view that may be shared by others, so this may be a good opportunity to invite debate amongst our readers about the current editorial direction of the journal. Basically, the message of the editorial is that special issues are not affecting the number of "regular" papers, so the net result is that the journal still serves the traditional core readership, yet provides some papers that will appeal to a larger audience.

The focus of the journal is stated on the inside front cover as "... (a journal) devoted to the publication of papers on all aspects of geocomputation and to the distribution of computer programs and test datasets". From the start, the journal was always considered to be much more than simply a place to publish code, and with the development of computing technology, papers in the journal have reflected a diverse and developing body of theory, methodology and practical application of computation to a host of geoscientific problems. The general focus of the journal has not deviated over the years, but the needs of the software developer and user have changed drastically with the evolution of information technology. The content of the journal has evolved naturally to reflect these changes, with development of computing languages, operating systems, computer graphics, hardware and digital communication.

The practice of providing digital instead of printed code was started in 1995, using a server under the control of IAMG. The programs on the server are accessible to the general public, not simply to journal subscribers. The success of this change is now evident in the number of downloads of individual programs per month (as monitored by our Webmaster Eric Grunsky), currently between 1,000 and 1,500, or about 15,000 per year. About half the published papers have associated code on the server, and we now publish about 100 papers per year.

In order to counter the reduction in pages, and maintain the present 10 issues per year, we decided to expand the range and scope of our traditional papers by increasing the number of special issues. Some of our recent (and forthcoming) special issues contain papers dealing with thematic, but highly technical topics (neural networks, geophysics, visualization, multifractals, system integration), whereas others contain papers of more general interest, particularly those related to the Internet. Two other areas where the editorial board is planning an expansion are computational aspects of GIS, and petroleum applications. It must be emphasized that this expansion of subject matter by using special issues is occurring without any detrimental effect on the acceptance or turnaround of papers in our normal copyflow.

Overall, I believe that the journal benefits considerably from these changes. The specialist code developer gets to read as many papers as before, but we attract a new circle of readers and subscribers with expansion into new areas and with papers for a more general audience. At a time when journals are losing subscriptions because of smaller library budgets, a broadening of the reader base seems to be prudent. However, I and my fellow editors welcome constructive comments and suggestions from readers about this policy.

Graeme F. Bonham-Carter
Geological Survey of Canada

IAMG Newsletter No. 57
JOURNAL CONTENTS

Computers & Geosciences

Volume 24 number 4 (1998)

- Editorial: Computers, geoscience and geocomputation — D Unwin
- Interactions between model predictions, parameters and DTM scales for topmodel — J Brasington, K Richards
- A comparison of algorithms used to compute hill slope as a property of the DEM — KH Jones
- Estimating the fractal dimension of synthetic topographic surfaces — NJ Tate
- Visual exploration of uncertainty in remote-sensing classification — FJM Van Der Wel, LC Van Der Gaag, BGH Gorte
- The "Loughborough loess" Monte Carlo model of soil structure — SC Dibben, IF Jefferson, IJ Smalley
- A self-organising dynamic systems approach to the simulation of rill initiation and development on hill slopes — D Favis-Mortlock
- Generalised linear modelling of susceptibility to land sliding in the Central Appennines, Ital — PM Atkinson, R Massari
- The incidence of glacier surging in Svalbard: evidence from multivariate statistics — H Jiskoot, P Boyle, T Murray
- Another node on the internet — JC Butler
- Book Review: A practical guide to groundwater and solute transport modeling — JJ Butler

C&G Volume 24 number 5 (1998)

- CYCOPATH 2D - a two dimensional, forward-model of cyclic sedimentation on carbonate platforms — RV Demicco
- MODAN - an interactive computer program for estimating mineral quantities based on bulk composition — AD Paktunc
- TURBO: a dynamic-probabilistic simulation to study the effects of bioturbation on paleoceanographic time-series — MH Trauth
- Tools for atmospheric radiative transfer: streamer and fluxnet — JR Key, AJ Schweiger
- Inference of spatial indicator parameters by maximum likelihood using MLREML — E Pardo-Iguzquiza
- TEMLOPI: a thermal simulator for estimation of drilling mud and formation temperatures during drilling of geothermal wells — A Garcia, I Hernandez, G Espinosa, E Santoyo
- An algorithm for the construction of spatial coverage designs with implementation in SPLUS — JA Royle, D Nychka
- A flow chart for the classification of igneous rocks in html - is a web browser another way for teaching earth sciences? — I Thum
- Spreadsheet reductions of gravity data — CJS Fourie
- GATAGRASS: a graphical user interface for using with GRASS GIS — J Estalrich, J Trilla
- Another node on the internet — JC Butler

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- POLF: two-dimensional finite-element model for predicting the areal flow of pollutant in confined and unconfined aquifers — G Gottardi
- LEEGRAM: a program for normalized Stiff diagrams and quantification of grouping hydrochemical data — T-C Lee
- Visual Basic programs for one, two, or three-dimensional geostatistical analysis — JR Carr, K Mela
- MLREML4: a program for the inference of the power variogram model by maximum likelihood and restricted maximum likelihood — E Pardo-Iguzquiza
- EULDEP: a program for the Euler deconvolution of magnetic and gravity data — RJ Durrheim, GRJ Cooper
- Cleaning variable (lithofacies) realization with maximum a-posteriori selection — CV Deutsch
- Construction and analysis of interpreted fracture planes through combination of satellite-image derived lineaments and digital elevation model data — K Koike, S Nagano, K Kawaba
- Datacon: A Quickbasic program to reformat orientation data from faults — C Shorrock, RJ Lisle
- Processing soil survey information with Perl — RA White, DA Miller

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- ANON Another node on the internet — JC Butler
- Book review: Environmental studies: mathematical, computational, and statistical analysis — C Rusu
- Software Review: Environmental stats for S-PLUS version 1.0 — G Bohling

C&G Volume 24 number 7 (1998)

- Note from the Editor-in-Chief — G Bonham-Carter
- Teaching with multimedia — JC Butler
- Visualization for learners: A framework for adapting virtual posters and virtual essays in geoscience courses — RJ Suthren
- Links, lecturing and learning some issues for geoscience education — J Castleford
- Designing a web site for high school geoscience teaching in Iceland — GR Douglas
- Using Internet resources in an introductory geology course — WD Huff
- Teaching on the web — CJ Mann
- Riding a tsunami in ocean science education — DL Reed
- Distance learning: Moving toward online geoscience classes in Georgia — PJW Gore
- What it means to teach online — A Hubbard
- Experiences delivering a multi-site course using interactive video and the Internet — GM Dipple, MN Lamberson, TM Gordon
- Book review: Environmental studies: mathematical, computational, and statistical analysis — C Rusu

C&G Volume 24 number 8 (1998)

- GRACNET: stochastic simulation of fractures in layered systems — E Gringarten
- ArcGMT: a suite of tools for conversion between Arc/INFO and generic mapping tools (GMT) — D Wright, R Wood, B Sylvander
- Edge detection in petrographic images using the rotating polarizer stage — JS Goodchild, F Fueten
- CRACKER - a program coupling inhomogenous chemistry and transport — AT Emren
- Generating spatially correlated fields with a genetic algorithm — YA Pachepsky, D Timlin
- Detection of geological lineations on aerial photographs using two-dimensional spectral analysis — MA Mugglestone, E Renshaw
- Fractal image error analysis — J Kolibal, J Monde
- Retrieval and processing of atmospheric parameters from satellite data — PV Sathe, PM Muraleedharan
- Petromap: MS-DOS software package for quantitative processing of X-ray maps of zoned minerals. — R Cossio, A Borghi
- Hyposemtric analysis with a geographic information system — W Luo
- A program to compute the area of an irregular polygon on a spheroidal surface — KM Sivakholundu, N Prabaharan

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- A stepwise discrete Fourier transform approach to 1-D thermal modelling of exhumation by erosion and stretching — NS Mancktelow
- Passiphic: a program for solubility calculations involving complex solids — S Borjesson, A Emren
- Spectral prediction of magnetic source depths from simple numerical models. — PO Nwogbo
- Geosurf: a computer program for modeling adsorption on mineral surfaces from aqueous solution — N Sahai, DA Sverjensky
- A method for three-dimensional reconstruction of macroscopic features in geological materials — R Marschallinger
- BIOAPAG-PC : program for an apatite and biotite geothermometer — F Yavuz
- Utilities to calculate Cohen's coefficient of agreement in two proprietary software systems — J Brainard
- A FORTRAN 77 program for outline detection — MW Knappertsbusch
- Contact2: a Macintosh program for calculating heat conduction in a contact aureole — Y Park, C Oh
- Book review: The Geosearch database, including geoarchive on CD-ROM — GC Wilson

continued on p. 16

Interview: Dr. Irene H. Chayes

At first sight she appears to be a small, unassuming, elderly lady, friendly, who talks in a small voice. This is the widow of famous (among mathematical geologists, petrologists and statisticians), widely known and beloved Felix Chayes. She looks frail but has amazing physical endurance for someone her age. Having the opportunity, she insisted on hiking up to the crater of Vesuvius during the second field trip of the 4th Annual Meeting of the IAMG in Ischia (Italy) and, on the same day in the afternoon, following the fleet-footed Italian guide through the entire length of the ancient, excavated city of Pompeii.

Over lunch at the nice hotel in Ischia where the IAMG'98 conference was held, we talked with Irene to get to know the better half of Felix Chayes and to find out what moved her to donate a substantial amount of money for an award named in honor of



her husband. In her simple and direct way she said that the idea came to her out of the blue some morning after breakfast, perhaps because Felix had been honored in 1986 by IAMG with the award of the Krumbein medal.

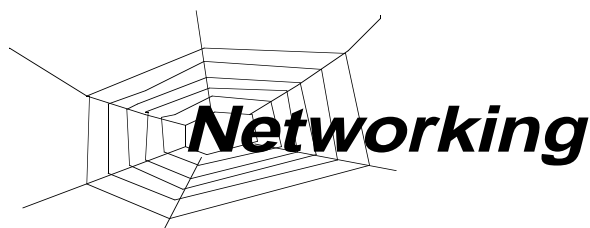
How had Felix gotten into petrology? He actually started in law school, urged by his mother, but after taking a course in

geology he changed his goals. As a student Felix had received an AEC scholarship together with Dr. H. S. Yoder of the Geophysical Lab in Washington. They got to know Dr. Ernest S. Shepherd at the GL. Shepherd was a role model for both. He practically lived in his lab and he had a cot there to spend the night. Felix had always aspired to have a job at the GL some day which in fact happened finally after World War II.

So, how did she meet Felix, her future husband? Both studied at CUNY (City University of New York). She had been assigned a review of essays on D. H. Lawrence and published the result in an undergraduate journal. Felix had written an essay on D. H. Lawrence and was shown her article which piqued his interest in the young author.

She told us that her interest in literature and reading goes back all the way to elementary school: she couldn't wait to get into high school because only then could she get a readers card for the library where all the good books could be found.

Did Irene work with Felix? No, the surprising answer was that they kept their careers quite separate and individual. Irene was an English major and specialized in English literature of the romantic period. She took three degrees in English literature, separated by varying times due to the war and career moves by Felix. Proudly she mentions that for all her college work she



Starting with IAMG Newsletter 56, Webmaster **Eric Grunsky** has loaded a copy of the Association Newsletter on the IAMG web site (www.iamg.org). We are planning to do the same with this Newsletter (#57). This pdf file can be downloaded and viewed or printed with Adobe Acrobat Reader (available free from the Adobe website: <http://www.adobe.com/acrobat/readstep.html>).

We are considering whether some time in the future this method of distribution could or should replace mailing the Newsletter as hardcopy. We are therefore interested in hearing your opinion or preference. Contact us at h.poelchau@fz-juelich.de (Newsletter Editor) or grunsky@enr.gov.ab.ca (webmaster).



never paid a penny; she always had scholarships. She taught at Roanoke, SUNY Binghamton and U. of Maryland, usually trying to stay not too far from Washington, but still having to commute. Her major interest is still William Blake on which she has written at various times of her long career in literary criticism. Some of her pieces on Blake - art history and his visions - were published in the short-lived „Blake Journal“. Traveling with her husband allowed her to work on that aspect of her research: seeing the works of Michelangelo and understanding Blake's imagery. She is still working and writing essays on Blake and on James Joyce, another of her subjects.

Did Felix share her interest in literature? As a scientist he didn't have much time to read, but he enjoyed music of all kinds. He played recorder and was a member of the American Recorder Society in Washington and liked to go to concerts rather than listen to the radio.

Irene traveled with Felix frequently; the trips were always a combination of geological work or meetings for him and cultural interest for her in combination with her literary interests. They went to England, France, and from Nice by boat to Florence. At other times they journeyed behind the iron curtain - from Vienna to the CSR where they met a dissident colleague. And several times they visited Italy including Naples and the Amalfi coast - the last time in 1978. So her visit to Ischia, where she was invited to by IAMG to attend the annual conference and present the Chayes price to Jose Brändle representing the Subcommittee on Data Bases in Petrology, revived many old memories.

H.S.Poelchau, V.Pawlowsky, T.Jones

Member News

Where are they now? Past and present in the 30th year of the Association

Three of the 20 original members of the IAMG Organizing Committee that met at the 23rd International Geological Congress (IGC) in Prague in 1968 were seen at the Annual Meeting of the IAMG on the Island of Ischia (Italy). The photo below shows: (left to right) **Dan Merriam** [USA], **Richard Reymont** [Sweden], and **Hannes Thiergärtner** [Germany, then the DDR]. The Committee met on the 22nd of August, 1968 and formally ratified the stat-



utes and bylaws submitted by an ad hoc committee, which had been organized and chaired by Reymont. The IAMG was constituted as an affiliated Association of both the International Union of Geological Sciences (IUGS) and the International Statistical Institute (ISI). Reymont wrote the articles patterned after other affiliated societies of the IUGS and ISI and because of his foresight and leadership is considered the 'father of the IAMG.' He served as the first Secretary General and the second President. The first president, nominated by Reymont, was Andrew Vistelius, now deceased, of the former USSR. Merriam was charged with establishing a journal and was the first editor of the new journal founded in the Association's name. It was to be known as the Journal of the IAMG (later Jour. Math. Geology and now just Mathematical Geology). Merriam then served as the second Secretary General and the third President. Thiergärtner is currently editor of the new journal *Mathematische Geologie* published by CPress in Dresden (Germany).

*Dan Merriam
IAMG Archivist*

In August, **Olivier Dubrule**, IAMG Councilor, took on a new position at Elf Exploration Production in Pau, as Manager of "Shared Technologies for Geosciences". His successor at the Elf Geoscience Research Centre in London is Dominique Marion. Olivier's new address is:

Olivier Dubrule
Elf Exploration Production
Avenue Larribau
64000 Pau, France
Phone: 33 (0)559836728, Fax: 33 (0)559835743
email: olivier.dubrule@elf-p.fr

New Geomathematician!?

Ute Herzfeld (IAMG Councilor and 1992 President's prize recipient) and **Helmut Mayer** report the birth of a little girl - Almut Dana Walburga - on June 28, 1998 in Boulder, Colorado. Congratulations!

IAMG Annual Meeting in Ischia, Italy

In October the Annual meeting of the IAMG was held on the beautiful Isola d'Ischia in the Gulf of Naples. Some 220 people from all around the world attended the meeting, about 3/4 from Europe and 1/6 from North America. The setting was the luxury hotel Continental Terme on the outside of the town of Ischia Porto (see photos on pp. 9-12).

The meeting was opened on Monday morning by IAMG president **Ricardo Olea** and **Roberto Potenza** and **Guiseppe Nardi**, the Italian conference chairmen, welcoming the audience to Italy and the 4th annual IAMG meeting. Olea then introduced the first of the five keynote speakers, **George Christakos** from the University of North Carolina, who presented a talk on BME (Bayesian maximum entropy). Other keynote lectures were given by the recipients of the four IAMG awards, distributed over the three days of the conference. **Jose Brändle** (Universidad Complutense de Madrid) gave a talk on the Subcommission on Data Bases in Petrology, founded by Felix Chayes, which is being honored this year with the 1997 Chayes award for excellence in research in mathematical petrology. **Gert Jan Weltje** (Delft University), recipient of the Vistelius award spoke on heterogeneities of detrital sediments. The Griffiths Award winner, **John Doveton** (Kansas Geological Survey), showed with the example of mixing the perfect martini how quantitative concepts in log analysis can be taught to geologists. **Jan Harff** (Warnemünde), who received the Krumbein Medal, addressed data and models for the Baltic Sea.

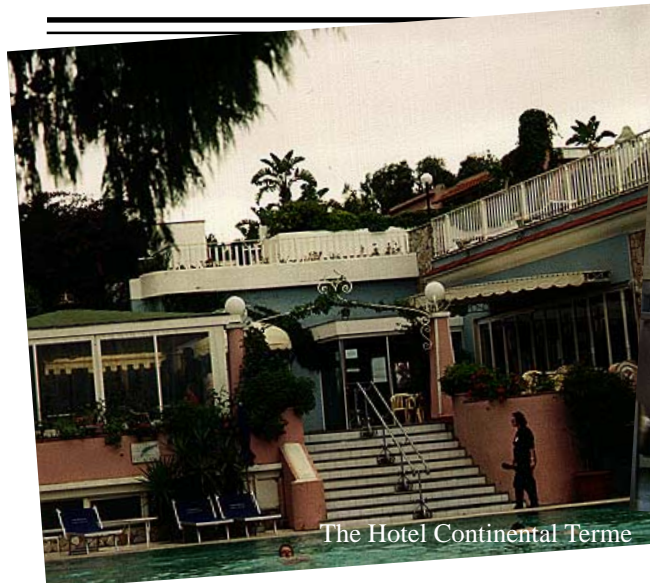
In four parallel sessions 118 papers were given and, in addition, 35 posters were presented during the three days of the conference. At the same time there were excursions for the accompanying guests to Naples and on the Island itself.

The four awards were presented in a ceremony before the conference banquet (see photos on p. 10 and 11). The festivities were preceded by colorful folklore dances and music traditional in this area of Italy. The banquet included a cake cutting for the 30th birthday of the Association (see photo). Entertainment was provided by a small combo of strolling musicians with a wonderful Italian operatic tenor singing all kinds of favorites. At some point he was joined by two tenors from the audience.

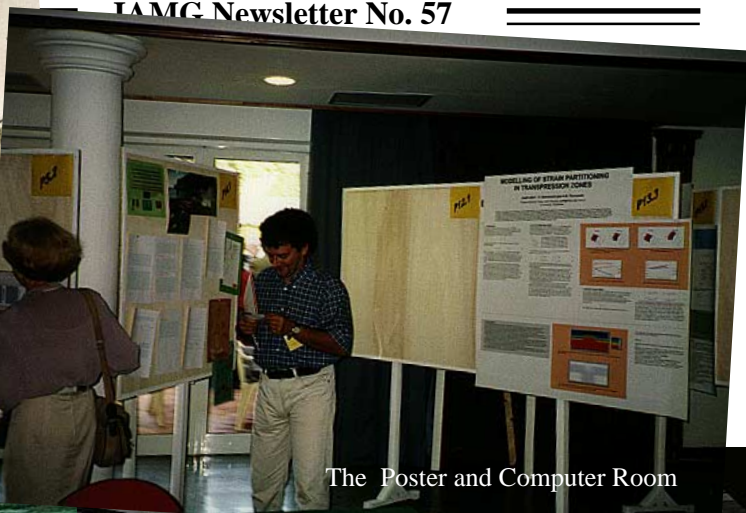
As in Barcelona, the organizing committee under the able direction of **Antonella Buccianti** produced an impressive two volume set of Proceedings handed out during registration and packaged in a very modern, plastic, see-through briefcase (a design like an iMac).

At the closing session on Wednesday evening **Richard Sinding-Larson** announced the venue for next year's meeting in Trondheim. Details are printed on pages 13-15 of this Newsletter.

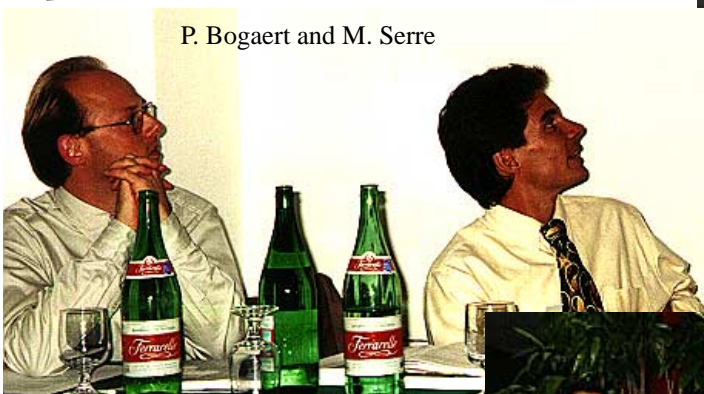
On the day after the meeting three workshops were held: "Spatio-temporal analysis of natural systems" by **George Christakos** with eight participants; "New methods and concepts in mathematical geology" by **Frits P. Agterberg** and **Qiuming Cheng** with five participants; and "Geostatistical simulation in geology" by **Margaret Armstrong** and **Alain Galli** with eight participants. At the same time other, more venturesome geologists went on fieldtrips to Capri and to Sarno (see p. 12).



The Hotel Continental Terme



The Poster and Computer Room



P. Bogaert and M. Serre



The main lecture hall



N. Gorelikova and R. Potenza



The Council meeting: Jan Harff, John Tipper, Dan Tetzlaff, Vera Pawlowsky, Tom Jones, Ricardo Olea, John Davis, Carol Gotway Crawford, Frits Agterberg, Tetsuya Shoji (left to right)



Coffee time for S. Rehder, J. Zier and G. Weltje



Education Committee: Tom Jones, John Tipper (Chairman), Margaret Armstrong

The Ischia Chairpersons: G. Nardi, A. Buccianti, R. Potenza



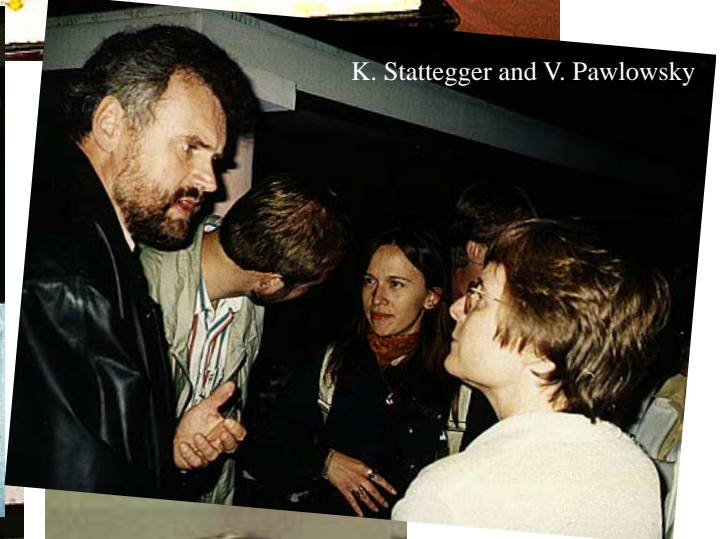
Folklore presentation at the awards banquet



Cake cutting (Mrs. Harff) for the 30th Anniversary of the founding of IAMG. L to R: A. Buccianti, R. Olea, J. Harff.



K. Stattegger and V. Pawlowsky



M. T. Schafmeister with son David and R. Ondrak



E. N. Tsheremissina



Andrea Fabbri



Jose Brändle shows the Chayes Prize presented to him and the SDBP by Mrs Chayes



John Doveton being given the Griffiths Award by Secretary General Tom Jones



The great awards ceremony



Gerd Jan Weltje is given the Vistelius Award by Vicepresident Carol Gotway Crawford



Jan Harff receives the Krumbein Medal from President Ricardo Olea

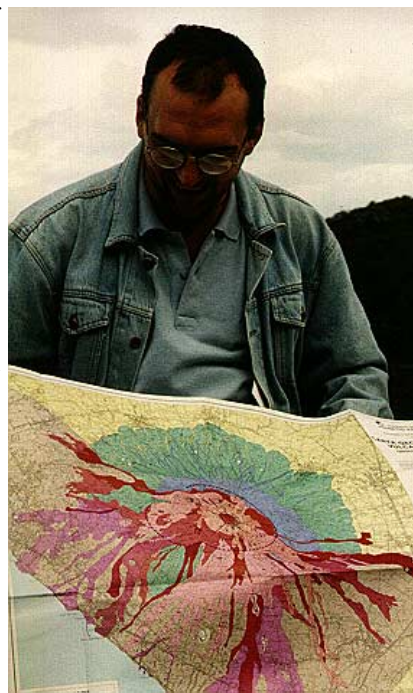
Post-Conference Field Trips

On the two days following the meeting, our Italian hosts offered four fieldtrips of general and geological interest.

The first day included a visit of Ischia Island (morning) and underground of Naples (afternoon) which attracted 19 persons. A second excursion with 23 participants (see photo below) went to Capri to circumnavigate the island in a small skiff and marvel at the well exposed cliffs of the Jurassic and

of steam. The view of the surrounding country across Naples bay and over to the Sorrento peninsula was enchanting. Our guide, **Leo Melluso** (photo on right), gave us an extensive explanation of the history of the volcanic activities and the various rock types to be found here (see photo). The walk around the crater path culminated in a box lunch by the buses.

In the afternoon the group was taken to the famous, ancient, excavated city of Pompeii located just below the looming Vesuvius mountain. After some initial confusion we ended up with two guides, one explaining



Boat trip around Capri (June and Walter Schwarzacher)



the ubiquitous phallic symbols, the other, Prof. Pescatore, the volcanic geology under and around the place showing us the lapilli and ashes that fell on Pompeii in August of 79 AD. They took us on a three hour whirlwind tour through this amazingly large and interesting historic monument over cobble stone streets through beautiful villas (even a house of ill repute) and to the necropolis outside the city walls where some of the plaster casts of the perished inhabitants of Pompeii were displayed.

The Capri fieldtrip group after lunch



Cretaceous carbonate sequence. The geological setting was explained in detail by our able field guides **Filippo Baratello** (third from left in front) and **Marzio Piscitello**. The blue grotto couldn't be visited but most of us survived the rough seas and enjoyed the great views. The excursion continued with a landfall for lunch with wine from Capri in blue bottles in the ancient 13th century museum Centro Caprese, followed by a walk to fossiliferous outcrops overlooking the scenic bay of Marina Piccolo.

A third excursion went to the Sarno landslide area south of Naples which was the topic of several talks and digital image presentations. The landslides in this area are so recent that on the day before the trip police made it off limits to all traffic because of imminent danger due to heavy rainfalls. Seven unafraid geologists took part in this venture.

On the last day (Friday) a general field trip to visit the Vesuvius crater and the archeological site of Pompeii attracted a total number of 72 persons. The buses took us from the Naples harbor to the end of the serpentinous road near the top of the volcano. From there it was a 20 minute walk to edge of the crater with its many colors and even some plumes

Vesuvius crater



IAMG'99 Trondheim

Annual Meeting of the International Association for Mathematical Geology

The Annual Conference of the International Association for Mathematical Geology, IAMG'99, will be held at Royal Garden Hotel, Trondheim, Norway, August 6-11, 1999.

CONFERENCE CHAIRS

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Arve Næss, Statoil Research Center.
Richard Sinding-Larsen, Dept. of Geology and Mineral Resources Engineering, NTNU.
Ole Torsæther, Dept. of Petroleum Engineering, NTNU.

INTERNATIONAL SCIENTIFIC COMMITTEE

Eivind Damsleth, Saga Petroleum, Norway.
Pierre Goovaerts, University of Michigan, Ann Arbor, USA
Ricardo Olea, Kansas Geological Survey, USA
Jean Jacques Royer, Centre de Recherches Péetrographiques et Géochimiques, Nancy, France
Richard Sinding-Larsen, NTNU, Norway

CONFERENCE SECRETARIAT AND OFFICIAL ADDRESS

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<http://www.geo.ntnu.no/igb/iamg99/text.html#program>

CONFERENCE LOCATION

The conference site will be the Radisson, Royal Garden Hotel, a first-class hotel located along the Nidelv river, with 297 rooms and 9 suites. The hotel is located within a short walking distance of the city centre and the Nidaros Cathedral.

The conference has been scheduled in a period which is convenient for the long nordic nights and favourable weather conditions (15-20°C). The Royal Garden Hotel is equipped with the most advanced facilities for conferences, seminars and conventions. The following special price has been negotiated: 795 NOK per night for a single room and 850 NOK per night for a double room (including breakfast).

CONNECTIONS

Værnes airport is served by both domestic and international (direct from Copenhagen) flights. There is a connection by bus from the airport to the hotel. Trondheim is also connected to Stavanger and Bergen by means of a coastal steamer (Hurtigruten).

OBJECTIVES OF THE CONFERENCE

Previous Conferences of the same series have been held at Mount Tremblant, Canada (1994), Osaka, Japan (1995), Beijing, China (1996), Barcelona,

Spain (1997), and Isola d'Ischia, Napoli, Italy (1998).

This international conference will focus primarily on quantitative analysis related to the petroleum industry. Other topics relevant to mathematical geology (see below) will also be included.

The conference is sponsored by the International Association for Mathematical Geology (IAMG) and by the International Union of Geological Sciences Commission on Fossil Fuels (IUGS-CFF) and the Department of Geology and Mineral Resources Engineering at the Norwegian University of Science and Technology (NTNU). It will consist of 3 days devoted to technical sessions, preceded by 2 days of tutorial workshops and excursions to areas of scientific and tourist interest. A full program for accompanying guests and a conference banquet is also planned.

TECHNICAL PROGRAM

The IAMG'99 will start with workshops on Friday, 6 August and the subsequent technical program will start Sunday, 8 August, at 6 p.m. with an official reception, followed by three days of plenary and parallel technical sessions. The conference will be divided into plenary sessions Monday morning and Wednesday afternoon, opened by keynote lectures given by invited speakers. Monday afternoon to Wednesday lunch will comprise four parallel morning and afternoon sessions.

TECHNICAL SESSIONS (and Convenors)

Topics related to petroleum industry

- P1.0 Mathematical and statistical data analysis in the appraisal of fossil fuels (Richard Sinding-Larsen)
 - P1.1 Remote sensing (satellite, seismic, gravimetric and magnetic)
 - P1.2 Bayesian and multivariate methods in exploration and resource assessment
- P2.0 Petroleum Geostatistics (André Journel)
 - P3.0 Numerical modelling of basin formation and development (Stephen Lippard and Cedric Griffiths)
 - P3.1 Thermal models: Prediction of maturation-migration and accumulation of hydrocarbons
 - P3.2 Quantitative stratigraphic modelling (forward/inverse)
 - P3.3 Tectonostratigraphic modelling
 - P3.4 Paleotopography and bathymetry
 - P3.5 Seismic modelling- application of outcrop analogues
- P4.0 Modelling of petroleum reservoir architecture (Arve Næss and Oddvar Lia)
 - P4.1 Data integration in stochastic reservoir modelling
 - P4.2 Modelling sedimentary and diagenetic heterogeneities in hydrocarbon reservoirs
 - P4.3 Modelling faults and fractures
 - P4.4 Assessing uncertainty in reservoir studies - Bayesian updating of modelling parameters
 - P4.5 Pixel- and object-based techniques in modelling of reservoir heterogeneities- a controversy?
- P5.0 Image analysis-techniques in reservoir studies (Ole Torsæter)
 - P5.1 Image analysis of thin sections
 - P5.2 Understanding pore scale models
 - P5.3 Extending 2D pore scale image analysis techniques into 3D
 - P5.4 Analysis of 3D reservoir parameters applying image analysis technology
 - P5.5 Image analysis of reservoir scale seismic data (coherence cube technology)
 - P5.6 Application of image analysis techniques in the use and characterisation of outcrop analogue data
- P6.0 Methods for evaluating the scale-dependence of permeability (upscaling) (Philip Ringrose and Jerry Jensen)
 - P6.1 From core to full field model. Multistep upscaling - what really matters
 - P6.2 Cores and minipermeameter data in upscaling studies
 - P6.3 Interrelations between small-scale variograms and variograms of large-scale data
 - P6.4 History matching and production data in upscaling studies.

General topics - methodology

- G1.0 Time-space systems in the earth sciences (George Christakos)
 - G1.1 Three-dimensional geological environment simulation

continued on next page

- G1.2 Multidisciplinary and new avenues in data integration
- G1.3 Geographic Information Systems and their use
- G1.4 Prediction and prevention of geological hazard
- G1.5 Mathematical characterisation, modelling and visualisation of geological bodies

- G1.6 Statistical analysis of 3-dimensionally oriented data
- G1.7 Geostatistical techniques for interpreting multivariate spatial information

- G1.8 Noise removal from space-time data
- G1.9 How to tackle the problems of spurious correlation
- G1.10 Spectral estimation in space and time domain
- G1.11 Robust regional-residual separation of data

- G2.0 Statistical Methods for earth science data analysis (John C. Davis)

- G2.1 Neural networks and fuzzy set theory
- G2.2 Multivariate analysis
- G2.3 Point processes
- G2.4 Artificial intelligence
- G2.5 Bayesian and other probabilistic methods
- G2.6 Fractals and non-linear dynamics
- G2.7 Model selection and parameter inference in geological prediction

- G2.8 Image analysis
- G2.9 Compositional data analysis
- G2.10 Geostatistics, including robust methods and closed form solutions
- G2.11 Methods for determining the significance of spatial dependence
- G2.12 Numerical modelling and conditional simulation

- G 3.0 General mathematical geology (Carol Gotway)
- G 3.1 Engineering geology
- G 3.2 Environmental geology
- G 3.3 Marine geology
- G 3.4 Sedimentary geology
- G 3.5 Exploration geophysics
- G 3.6 Solid earth geophysics

WORKSHOPS

The first two days of the conference will be devoted to one day tutorial workshops and excursions.

The topics of the tutorial workshops will be:

- W1 Exploration decision support and decision support systems
- W2 Quantification of hydrocarbon reserves and resources
- W3 Current problems and future developments in multivariate analysis
- W4 Current problems and future developments in remote sensing
- W5 Simulating lithotypes and facies using the Plurigaussian method*
- W6 Critical factors for reducing time in reservoir modelling
- W7 Uncertainty assessment for reservoir heterogeneity and recovery
- W8 Modelling of sequence stratigraphical stacking patterns
- W9 Exploiting global image and map internet resources for knowledge gathering and decision support*

* These workshops are described in more detail on the conference website

CALL FOR PAPERS

Submitted contributions will be accepted for oral, poster or software presentation after revision by at least two referees. The Organising Committee considers the posters and software presentations as important as oral presentations, and no distinction will be made in the publication of both types of contribution in the proceedings volume (see below). Poster exhibitors will attend their posters/demo for one hour from 13.30 to 14.30 to discuss their findings in detail with interested parties. Posters will remain on display for one day. We expect that this format will allow the maximum interaction between participants.

Interested contributors should submit a one-page abstract of 200 to 400

words in English without figures or references before 18 December 1998. Notification of acceptance together with the instructions for the camera-ready manuscript (maximum 6 pages) will be mailed on 15 February 1999. The final camera ready copy of the extended abstract is due before 15 April 1999. Participants at the conference will receive the extended abstracts volume. Only papers of participants registered before 15 April 1999 will be included in the final program. Authors of accepted papers selected by peer review will be invited to present their contribution in a special proceedings volume.

Please note:

- Each registered participant will be allowed to present a maximum of two papers.
- Only papers of participants registered before 15 April 1999 will be included in the extended abstracts volume.
- Only contributions with at least one author or co-author registered before 1 June 1999 will be included in the final programme.
- The official language of the conference will be English: no facilities for translation will be available.

Submissions

by website form or by e-mail using RTF-format or ASCII text. Do not submit to more than one address.

Electronic submissions:

E-mail: iamg99@geo.ntnu.no

Website: http://www.geo.ntnu.no/igb/iamg99/abstract_form.html

To fill out the submission form, you need access to an internet mail account.

Written and faxed summaries and inquiries:
IAMG '99

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INSTRUCTIONS TO AUTHORS OF MANUSCRIPTS

can be found on the IAMG'99 web site:

<http://www.geo.ntnu.no/igb/iamg99/instructions.html>

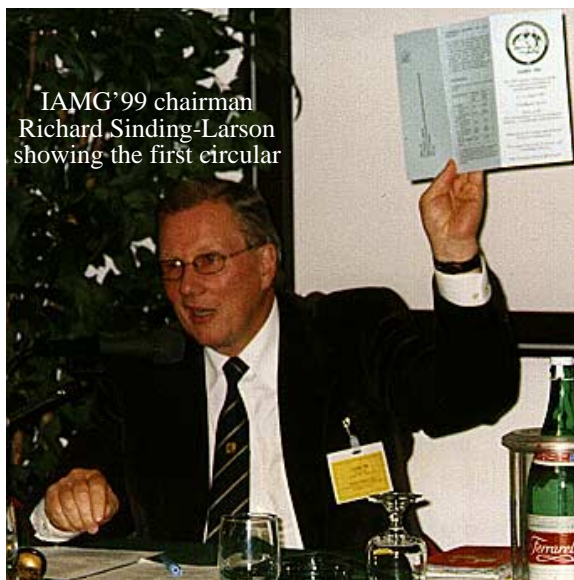
Instructions for the preparation of camera-ready manuscripts at <http://www.geo.ntnu.no/igb/iamg99/instructions.html>

SCHEDULE

18 December 1998 Deadline for one-page abstract

15 February 1999 Notification of acceptance

15 April 1999 Deadline for camera-ready copy



IAMG'99 chairman
Richard Sinding-Larson
showing the first circular

REGISTRATION

To register, print out and send a paper-copy Pre-registration form (available from the secretariat), fill out a Pre-registration form in Word and attach the Word-file to an e-mail, or fill out an e-mail Pre-registration form (both available from the website). To fill out an e-mail Pre-registration form, you need access to an internet mail account.

Registration fees are as follows (in Norwegian kroner):

Payment received	on/before March 1, 1999	after March 1, 1999
Participants		
a) IAMG & CFF members	2700	3400
b) Non-members	3400	4200
Students* and Retired Scientists**		
a) IAMG & CFF members	1700	2100
b) Non-members	2100	2800
Accompanying persons	1000	1200
One-day workshops*** (each)	1600	1600

* Evidenced through a certificate or student ID card for 1998/99 of an educational institution.

** Born before 5 October 1934.

*** Maximum 15 persons per course.

Membership Committee Report

- Non-members are cordially invited to join IAMG before registration to the conference.
- Fees will include technical program and final proceedings distributed at the conference. Also included are the official reception and the banquet, as well as coffee-breaks.
- Fees for accompanying persons include the official reception and banquet.
- Workshops, excursions and the program for accompanying persons will be charged separately.
- Fees will be non-refundable and will be charged in the local currency (Norwegian kroner). An exception will be made if a workshop is cancelled due to organisational reasons. In this case the total amount of the registration fee will be refunded.

IMPORTANT:

Information will be sent only to those who have sent the pre-registration form to the Conference Secretariat:

IAMG '99 Conference Secretariat
 c/o Dr. Stephen Lippard
 Department of Geology and Mineral Resource Engineering
 7034 Trondheim, Norway
 Phone: 47 73 594828
 Fax: 47 73 594814
 e-mail: iamg99@geo.ntnu.no

For information about accommodations, please visit the hotel's homepage: http://www.radisson.com/trondheimno_royalgarden/
 Radisson SAS Royal Garden Hotel Trondheim
 Kjøpmannsgt. 73
 N-7001 Trondheim, Norway
 Telephone +47 73 52 11 00
 Fax +47 73 52 11 75
 email: mli@trdzh.rdsas.com

If you contact them, do remember to mention our conference reservation number **71/8470**.
 Booking of hotel rooms shall be done through the IAMG '99 conference secretariat on the preregistration form.



During the Committee's meeting held in Ischia, Italy on 6 October 1998 the participants agreed to focus the work in 1998/2000 on activities to attract the scientific youth to the IAMG more than it has been done before. The Committee will promote:

- The organization of special sessions during the annual conferences where particularly young participants can discuss their professional problems and questions of general interest for the youth. The first meeting will be organized during the IAMG'99 conference at Trondheim.
- Special low cost conferences for young scientists giving the opportunity to present first scientific results, for instance from Diploma (Masters) and Doctoral theses. A first conference is under discussion to be held in 2000 in Italy.

G. J. Weltje (The Netherlands) has volunteered to assist the organizers of the conferences to prepare these meetings and to represent the interests of the scientific youth within the Membership Committee.

A second activity in 1999 will be directed to France where the IAMG shall offer an organizational home to geostatisticians who were organized before in a special association which has been dissolved recently. **M. Armstrong** will start to build up an IAMG organizational network in France.

New national representatives within the Membership Committee are:

- Gert Jan Weltje**, Netherlands
- Margaret Armstrong**, France
- Nina Gorelikova**, Russia.

J. Harff
 Membership Committee Chairman

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**INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY
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IAMG Newsletter No. 57

Journal Contents - cont'd from p. 6

MATHEMATICAL GEOLOGY

Volume 30, Number 8 (1998)

Editorial — Michael Ed. Hohn

Upscaling of Hooke's Law for Imperfectly Layered Rocks — G. Rijpsma and W. Zijl

Quantification of Natural Fracture Surfaces Using Fractal Geometry — K. Develi and T. Babadagli

Is Lognormal Kriging Suitable for Local Estimation? — C. Roth

A Comparison of the Sequential Gaussian and Markov-Bayes Simulation Methods for Small Samples — A. K. Fredericks and K. B. Newman

LETTER TO THE EDITOR Comment on a paper by T. D. Pham — Z. Sen
Reply to Comments by Z. Sen — T. D. Pham

MG Volume 31, Number 1 (1999)

Design and Analysis for Modeling and Predicting Spatial Contamination — M. Abt, W. J. Welch, and J. Sacks

Scale Matching with Factorial Kriging for Improved Porosity Estimation from Seismic Data — T. Yao, T. Mukerji, A. Journel, and G. Mavko

Bayesian Inference of Spatial Covariance Parameters — E. Pardo-Igúzquiza

Bayesian Modeling and Inference for Geometrically Anisotropic Spatial Data — M.D. Ecker and A. E. Gelfand

Multivariate Correlation in the Framework of Support and Spatial Scales of

Variability — J. A. Vargas-Guzmán, A. W. Warrick, and D. E. Myers

The Characterization Problem for Isotropic Covariance Functions — T. Gneiting and Z. Sasvári

On the Ergodicity Hypothesis in Heterogeneous Formations — H. Zhan

Book Review: 3D Geoscience Modeling: Computer Techniques for Geological Characterization by Simon W. Houlding — Reviewed by Christopher Kendall

Association Announcement: John Aitchison: Krumbein Medalist — Vera Pawlowsky Glahn

MG Volume 31, Number 2 (1999)

Do Skeletal Networks Derived from Water Bodies Follow Horton's Laws? — B. S. Daya Sager, M. Venu, and K. S. R. Murthy

Importance of Orthogonalization Algorithm in Modeling Conditional Distributions by Orthogonal Transformed Indicator Methods — A. E. Tercan

Analytical and Numerical Modeling of a Double Well Capture Zone — Hongbin Zhan

The Correlation Bias for Two-Dimensional Simulations by Turning Bands — T. Gneiting

On the Optimal Estimation of the Cumulative Distribution Function in Presence of Spatial Dependence — P. Bogaert

Book Review — Time Effects in Rock Mechanics by N. D. Cristescu and U. Hunsche — Reviewed by J. J. K. Daemen

Association Announcement: Jan Eduard Harff: Krumbein Medalist — John C. Davis



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Mathematical Geology.....	US\$ 32.00
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Nonrenewable Resources.....	\$ 45.00

OPTIONAL: IAMG Monograph Series. Circle Prices of desired monographs.

#2: "Oil and Gas Forecasting – Reflections of a Petroleum Geologist" by Lawrence J. Drew.....	US\$ 42.00
#3: "Geostatistical Glossary and Multilingual Dictionary" edited by Ricardo Olea.....	\$ 31.50
#4: "Techniques for Determining Probabilities of Geologic Events and Processes – A Review" edited by R. L. Hunter and C. J. Mann.....	\$ 42.00
#5: "Computers in Geology – 25 Years of Progress" edited by John J. Davis and Ute Herzfeld.....	\$ 38.50

NOTE: Monograph #1 is no longer available

TOTAL.....



Upcoming Meetings

AMERICAN GEOPHYSICAL UNION, ann. mtg., San Francisco, Calif., **6-10 Dec. 1998**. AGU, Meetings Dept., 2000 Florida Ave., Washington, D.C. Phone: 202/462-6900. Fax: 202/328-0566. E-mail: meetinginfo@kosmos.agu.org. WWW: <http://www.agu.org>

Institute for Energy Technology's 50th Anniversary Symposium on **ADVANCES IN UNDERSTANDING AND MODELLING HYDRO-CARBON MIGRATION**, Oslo, Norway, **7-8 December 1998**.

Institute for Energy Technology, Attn. Else-Brit Jørgensen, Box 40, N-2007 Kjeller, Norway, Phone +47 63 80 61 54, Fax +47 63 81 09 20, e-mail: elsebj@ife.no, <http://www.ife.no/departments/reservoir/migsymp.html>

The 2nd International **NON-RENEWABLE ENERGY SOURCES** Congress, Tehran, Iran, **12-17 Dec. 1998**. Contact: Dr. G.A. Mansoori. Phone: (312) 996-5592. Fax: (312) 996-0808. Mansoori@UIC.edu, http://www.uic.edu/~mansoori/INRESC.98_html

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE Ann. Meeting and Science Innovation Exposition, Anaheim, CA, USA, **21-26 Jan. 1999**. 1200 New York Ave., NW, Washington, D.C. 20005, Tel.: 202-326-6400, <http://www.aaas.org>

AVIRIS (Airborne Visible InfraRed Imaging Spectrometer) Earth Science and Applications Workshop, Von Karman Auditorium, Jet Propulsion Laboratory, Pasadena, California, **8 to 11 February 1999**. Ms. Deborah Deming, Mail-Stop 306-336, 4800 Oak Grove Drive, Jet Propulsion Laboratory, Pasadena, California 91109, Tel (818) 354-5615, Fax (818) 393-4406, Email: debbi@gomez.jpl.nasa.gov, <http://makalu.jpl.nasa.gov/>

DYNAMICS OF FLUIDS IN FRACTURED ROCKS, int'l symposium, Berkeley, Calif., **10-12 Feb. 1999**. <http://www-esd.lbl.gov/witherspoon/>

Glacial-Interglacial Sealevel Changes in Four Dimensions: QUATERNARY SEA LEVEL, Climate Change and Crustal Dynamics, Albufeira, Portugal, **13 - 18 February 1999**. Conv. Alastair Dawson (Coventry). Josip Hendekovic, European Conf., Telephone +33 3 88 76 71 35; fax +33 3 88 36 69 87, E-mail: ahermans@esf.org

Organism-Environment Feedbacks in CARBONATE PLATFORMS AND REEFS, int'l mtg., London, United Kingdom, **1-2 Mar. 1999**. Enzo Insalaco, School of Earth Sciences, The University of Birmingham, Edgbaston, B15 2TT, United Kingdom. E-mail: e.insalaco@bham.ac.uk

Society for MINING, METALLURGY, AND EXPLORATION, ann. mtg., Denver, Colo., **1-4 Mar. 1999**. SME, 8307 Shaffer Parkway, P.O. Box 625002, Littleton, CO 80162-5002. Phone: 303/973-9550. E-mail: smenet@aol.com

Annual Meeting & Technical Exhibition, DEUTSCHE GEOPHYSIKALISCHE GESELLSCHAFT (DGG), Braunschweig, Germany, **8. bis 12. März 1999**. DGG-Tagung, Institut für Geophysik und Meteorologie, Mendelssohnstraße 3, 38106 Braunschweig, (0531) 391-5214 Fax (0531) 391-5220, <http://www.geophys.nat.tu-bs.de/dgg-99>

Workshop "PAST CLIMATE CHANGE inferred from the analyses of the underground temperature field" (IGCP Project No. 428), Sinaia (Romania), **14-17 March 1999**. Serban Veliciu, Geological Institute of Romania, Caransebes 1, 78344 Bucharest, Romania, Fax: +40 1 2240404, E-mail: veliciu@igr.sfos.ro59th

Fifth SIAM Conference on Mathematical and Computational Issues in the Geosciences (GS99) San Antonio, Texas, **24-27 March 1999**. Clint N. Dawson, Chair, University of Texas, Austin. E-mail: meetings@siam.org, <http://www.siam.org/meetings/gs99/index.htm>

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, ann. mtg., San Antonio, Texas, **10-14 Apr. 1999**. AAPG Conventions Dept., P.O. Box 979, Tulsa, Okla. 74101-0979, Phone: 918/560-2679. Fax: 918/560-2684, <http://www.geobyte.com/meetings.html>

SPE / EAGE International Symposium on Petroleum Geostatistics, Toulouse, France, **20-23 April 1999**. Society of Petroleum Engineers, 4th Floor, Empire House, 175 Piccadilly, London W1V 9DB, Tel: (44) 171 408 4466, Fax: (44) 171 408 2299 or +44 171 487 4229, E-mail: cmills@london.spe.org, <http://www.spe.org/events/eage/>

GEOVISION 99, Symp. on IMAGING APPLICATIONS IN GEOLOGY, Liège, Belgium, **6-7 MAY 1999**. Campus du Sart Tilman, Université de Liège, Géologie de l'Ingénieur - Bât. B19, B-4000 Liège - BELGIUM, Tel : +32-4-366 22 16, Fax : +32-4-366 28 17, Email : fcheslet@ulg.ac.be, <http://www.lgih.ulg.ac.be/geovision>

Palaeoclimate Modelling and Analysis: QUATERNARY EARTH SYSTEM Interactions and Modelling, I.C. Prentice (Lund), Albufeira, Portugal, **21 - 27 May 1999**. Dr Josip Hendekovic, Telephone +33 3 88 76 71 35; fax +33 3 88 36 69 87, email: euresco@esf.org.

6th FUZZY DAYS - International Conference on Computational Intelligence. Dortmund, Germany, **25-27 May 1999**. Ms Ulrike Lippe (Conference Secretariat). Phone: +49 231 755 6223. Fax: +49 231 755 6555. <http://lrp.cs.uni-dortmund.de/fd6/>

VAIL ROCK '99, Symposium Rock Mechanics for Industry, Vail, Colo., American Rock Mechanics Assoc., **6-9 June 1999**. Expomasters, Phone: 303/771-2000. Fax: 303/843-6212. E-mail: mcramer@expomasters.com)

EAGE 61st Annual Meeting and Exhibition (European Association of Geoscientists & Engineers), Helsinki, Finland, **7-11 June 1999**. EAGE Business Office, Standerdmolen 10, PO Box 59, 3990 DB Houten, The Netherlands +31 30 6354066 Fax: +31 30 6343534, E-mail: eage99@hut.fi or eage@eage.nl <http://www.eage.nl/eage5.html>

4th LIQUID MATTER Conference. Granada, Spain, **3-7 July 1999**. +34 58 24 32 13 / +34 58 24 32 14, email: liquid99@ugr.es, <http://www.ugr.es/~liquid99/>

GAS HYDRATES and Challenges for the Future. Park City, Utah, USA, **18-22 July 1999**. United Engineering Foundation, Three Park Avenue, 27th Floor, New York, NY 10016-5902 Tel: 1-212-591-7836; F: 1-212-591-7444; E-mail: engfnd@aol.com <http://www.engfnd.org/engfnd/9ag.html>

JOINT STATISTICAL MEETINGS, Baltimore, Maryland, **8 - 12 August 1999**. Sponsored by ASA, ENAR, IMS and WNAR, ASA, 1429 Duke St., Alexandria, VA 22314-3402, USA, Tel: 703 6841221; Fax:703 6842037; E-mail: meetings@asa.mhs.compuserve.com

IAMG'99, Trondheim, Norway, **August 6-11, 1999**. Stephen Lippard, Conference Secretariat IAMG '99, Department of Geology and Mineral Resource Engineering, 7034 Trondheim, Norway, Phone: 47 73 594837, Fax: 47 73 594814, e-mail: iamg99@geo.ntnu.no <http://www.geo.ntnu.no/igb/iamg99/text.html#program>

International STATISTICAL Institute, 52nd Biennial Session, Helsinki, Finland, **11 - 18 August 1999**. ISI Office, Prinses Beatrixlaan 428, P.O. Box 950, 2270 AZ Voorburg, The Netherlands. Tel: 31 70 3375737; Fax: 31 70 3860025; E-mail: isi@cs.vu.nl

19th International Meeting on ORGANIC GEOCHEMISTRY, Istanbul, Turkey, **6-10 September 1999**. Conference Chairman Prof. Dr. M. Namik Yalçın, Tübitak MAM. Conference Secretary Mr. Cengiz Soyulu, TPAO Arastirma Merkezi, Mustafa Kemal Mah. 06520 Esentepe, Ankara, Turkey, Tel: (+90-312) 284 34 90, Fax: (+ 90-312) 284 34 91, E-mail: oge99@petrol.tpao.gov.tr, <http://www.nemrut.mam.gov.tr/eaog99/eaog99.html>

BioGeo IMAGES 99, int'l conf., Dijon, France, by SEPM, Association de Paleontologie Française, and sponsored and supported by IAMG, **6-9 Sept. 1999**. BGI 99, Biogeosciences - Dijon, UMR 5561 CNRS, 6 blvd Gabriel, 21000 Dijon, France. E-mail: BGI99@u-bourgogne.fr, <http://www.u-bourgogne.fr/BIOGEOSCIENCE/BGI99.html>

The DEEP EARTH: Theory, Experiment and Observation: Large Scale Processes and Properties, George Helffrich (Bristol) and John P. Brodholt (London), Acquafredda di Maratea, Italy, **11 - 16 September 1999**. Dr Josip Hendekovic, Telephone +33 3 88 76 71 35; fax +33 3 88 36 69 87, or send an email: euresco@esf.org (Please quote 99-125 in any correspondence)

Awards from p. 1

IAMG Award Guidelines

as approved by the Council, November 11, 1997 and modified on May 22, and July 28, 1998

The International Association for Mathematical Geology has four awards to recognize outstanding contributions to mathematical geology.

The following guidelines have been prepared to help finding individuals worthy of recognition, to describe the purpose of the awards, to establish some basic rules to assist in the selection procedure, and to give consistency to the process through time.

FELIX CHAYES PRIZE FOR EXCELLENCE IN RESEARCH IN MATHEMATICAL PETROLOGY

A. Description

The Chayes Prize is a US\$5,000 cash award that may be used to support research in progress or provide support for new research. The prize was endowed by gifts provided in 1996 by Chayes's widow, Dr. Irene Hendry Chayes, and his sister, Mrs. Natalie C. Tenney in 1997. At the meeting of the IAMG's General Assembly during the XXX International Geological Congress in Beijing in 1996, a memorial in honor of Felix Chayes was approved. Each recipient is to receive an engraved plaque bearing the recipient's name.

B. Guidelines

1. Search for nominees shall be done internationally through the IAMG Newsletter and other appropriate publications with sufficient anticipation to allow presentation of the prize during the nomination year.
2. Nominations for the Chayes Prize should be submitted to the Chairman of the Awards Committee and accompanied by descriptions of research in progress, or research that might be undertaken or extended following receipt of the prize. While an individual recipient may receive the prize, a research team also may be a recipient.
3. The recipient or senior team member must be at least five years past the doctorate and have publications relevant to the field of the Chayes Prize as evidence of achievement up to the time of the award.
4. For the fair and proper selection of the recipients, the Awards Committee members shall evaluate all nominees based on the information reached to the Committee, which shall be condensed in the form of numerical scores.
5. The recipient or senior team member must be between the ages of 35 and 60. IAMG membership is expected but is not a requirement.
6. Each recipient is expected to attend the meeting where the prize is presented, with reasonable travel expenses provided by IAMG, thereby making the cash prize available in its entirety to the recipient. If awarded

to a team, the Association shall pay travel expenses for one team member who serves as the representative of the team.

7. The recipient is expected to present a paper at the meeting that is concerned with the research cited in presentation of the prize.

8. Uses of funds supplied by the prize are left to the judgment of recipients, who need not account to the Association for uses of the funds. Funds attached to the prize may be paid directly to an individual recipient. If awarded to a team, the funds may be presented to the team's institution for use by the team. Funds for the prize are derived from earnings of the Chayes endowment.

9. The Chayes Prize is presented on an alternate-year basis with the Krumbein Medal.

ANDREI BORISOVICH VISTELIUS RESEARCH AWARD

A. Description

Recipients receive a plaque bearing the recipient's name and a copy of an inscribed book relevant to his or her research interests for a value not to exceed the equivalent of US\$350 in 1998. The award was established in 1980 during the XXVI International Geological Congress in Paris following the announcement that Vistelius was the fifth Krumbein medalist. Because of difficulties to honor Vistelius while still alive, the General Assembly named the award the President's Prize as a temporary solution. After his death in 1995 the General Assembly, meeting this time in 1996 during the XXX Geological Congress in Beijing, renamed the award as originally intended. Before this change the prize was presented annually.

B. Guidelines

1. The Awards Committee will invite nominations in the IAMG Newsletter and other appropriate places with proper anticipation to provide for presentation of the award before the nomination year is over.
2. Nominations shall include both a resume and a short statement summarizing the most relevant qualifications of the nominee. They should be submitted to the Chairman of the Awards Committee.
3. The recipient should be born after 1 January 1964; he or she need not be a member of the IAMG.
4. Awards Committee members shall evaluate the merits of all nominees based on the information accompanying each nomination, which shall be summarized as numerical scores.
5. Each recipient shall be invited to present a paper at the meeting where the award is presented, with reasonable travel expenses provided by the Association.
6. The Vistelius Award is presented in the same year as the Chayes Prize, and on an alternate-year basis with the Krumbein Medal and the Griffiths Award.



Meetings - cont'd from p. 17

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, int'l. mtg., Birmingham, England, **12-15 Sept. 1999**. AAPG Conventions Dept., P.O. Box 979, Tulsa, Okla. 74101-0979, Phone: 918/560-2679. Fax: 918/560-2684, <http://www.geobyte.com/meetings.html>

SPE Annual Technical Conference and Exhibition, Houston, Texas, U.S.A., **3-6 October 1999**. SPE Continuing Education, P.O. Box 833836, Richardson, TX 75083-3836, U.S.A., Phone: 01-972-952-9316, Fax: 01-972-952-9435, E-mail: cladowski@spelink.spe.org

The Mining Příbram Symp. 1999 - International section on MATHEMATICAL METHODS IN GEOLOGY and also on GEOETHICS, Prague, Czech Republic, **4-9 October 1999**. Co-organized by the Regional Center of the IAMG in Prague. The Mining Příbram Symposium, PO Box 41, 261 02 Příbram, Czech Republic, Fax +420306 23169, or Václav Nemeč, K rybníckum 17, 100 00 Praha 10 - Stranice, Czech Republic. Phone: +4202 7811801, E-mail: nemcoval@vse.cz

Int'l Conference on TEXTURES AND PHYSICAL PROPERTIES OF ROCKS, Goettingen, Germany, **13-15 October 1999**. Dr. Bernd Leiss, Institute of Geology and Dynamics of the Lithosphere, Goldschmidtstr. 3, D-37077 Göttingen, E-mail: bleiss1@gwdg.de, <http://www.gwdg.de/~bleiss1/tppr.html>

GEOLOGICAL SOCIETY OF AMERICA, ann. mtg., Denver, Colo., **25-28 Oct. 1999**. Becky Martin, GSA Meetings Department, Box 9140, Boulder, Colo. 80301-9140. Phone: 303/447-2020, ext. 164. Fax: 303/447-1133

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, ann. mtg., New Orleans, La., **16-19 Apr. 2000**. AAPG, 1444 So. Boulder Ave., P.O. Box 979, Tulsa, OK 74101-0979. Phone: 918/560-2639. Fax: 918/560-2626

SALT SYMPOSIUM, The Hague, The Netherlands, **7-11 May 2000**. Secretariat Organizing Committee 8th World Salt Symposium, PO Box 25, 7550 GC Hengelo Ov, The Netherlands. Phone: 31 74 2443908. Fax: 31 74 2443272. E-mail: Salt.2000@inter.NL.net

GEOLOGY AND ORE DEPOSITS 2000: The Great Basin and Beyond, symposium, Reno and Sparks, Nev., **15-18 May 2000**. Geological Society of Nevada, Nevada Bureau of Mines and Geology, et al. Geological Society of Nevada, P.O. Box 12021, Reno, Nev. 89510-2021. Phone: 702/323-3500. Fax: 702/323-3599

EAGE 62nd Conference and Technical Exhibition, Glasgow, UK, **29 May - 2 June 2000**. 31-30-696-2655, e-mail: eage@eage.nl

31st Int'l GEOLOGICAL CONGRESS - Geology and Sustainable Development: challenges for the Third Millennium, Rio de Janeiro, Brazil, **6-17 August 2000**. IGC Secretariat Bureau, Av. Pasteur, 404, Anexo 31 ICG, Urca, Rio de Janeiro - RJ - CEP 22.290-240, Brazil, Tel. (0055-21) 295-5847, Fax: (0055-21) 295-8094, E-mail: 31igc@cristal.cprm.gov.br

GEOLOGICAL SOCIETY OF AMERICA, ann. mtg., Reno, Nev., **13-16 Nov. 2000**. GSA Meetings, Box 9140, Boulder, CO 80301-9140. Phone: 303/447- 2020, ext. 164. Fax: 303/447-1133



Conference Reports

The Fourth International Symposium "Application of Mathematical Methods and Computer Technologies in Geochemistry and Environmental Protection" in Kiev, Ukraine, September 22 - 25, 1998

The series of these Symposia started in 1992 in Lviv where also the 2nd and 3rd Symposium were organized in 1994 and 1996. The 4th meeting was organized in the capital of Ukraine and its principal orientation was focused on the Environmental Protection conditioned by Emergencies.

The presentations were classified in three groups: 1. Environmental and economic models for damage evaluation and forecasting for risk of technogene accidents and natural catastrophes (14 abstracts published, 8 oral presentations). 2. Simulation of interaction between ecological and geochemical factors in the "technosphere-lithosphere-hydrosphere" system and distribution of technogene contaminants in different types of geochemical landscapes (19 abstracts published, 5 oral presentations). 3. Mathematical and computer technologies for information maintenance for non-traditional problems in geochemistry and environmental protection (16 abstracts published, 9 oral presentations).

The IAMG was on the first place in the list of organizing institutions followed by the Commission on Nuclear Policy and Technogenic Safety under the President of Ukraine, National Academy of Sciences of Ukraine, the Ministry of Emergencies and Affairs of Population Protection from the Consequences of Chernobyl catastrophe, the Ministry of Environmental Protection and Nuclear Safety of Ukraine, and Kiev State Scientific Center for Environmental Radiogeochemistry.

Among the six inauguration speeches were those presented by the Deputy Minister of Emergencies O.V.Hyiduk, the chairman of the Organizing Committee B.A.Gorlitsky and the representative of the IAMG Regional Center in Prague V.Nemec. The traditional financial support of the IAMG for this Symposium was highly appreciated.

About 50 people took part in the conference, mostly from Ukraine (especially from Kiev and Lviv), with a few participants from abroad (2 from Poland, one each from the Czech Republic, Lithuania and Russia). Altogether 13 abstracts from Russian authors were published but the actual economic crisis made it impossible for many Russian colleagues to attend the meeting (unlike at previous 3 symposia in Lviv with a broader participation of Russian specialists). Several authors of published abstracts from Kazakhstan and Yugoslavia did not appear as well.

Ukraine - the country of Chernobyl tragedy - has been suffering very much. The participants of the symposium had the possibility to visit also the Ministry of Emergencies and to receive information concerning actual problems of monitoring and solving emergency cases in the country - this presentation was arranged just in the Central Emergency Hall of the Ministry.

The topic of the Fourth Symposium - applied perhaps for the first time in the history of meetings on mathematical geology - was very actual. Despite numerous economic problems of the country it appeared as very useful to continue in the series of symposia and to give a chance to the specialists of the country and to some authors from abroad to exchange ideas and to have an important possibility of a scientific conference.

I am afraid that many colleagues abroad are unable to imagine the difficult actual conditions for any scientific work in such countries as Ukraine or Russia. It would be very useful for the IAMG to continue in the support of the Fifth Symposium which will be held in the year 2000 very probably in Kiev again. This will be not only a merit from the purely ethical view but it can result - in case of a broader participation from abroad - also in an intensified development of progressive ideas in mathematical geology.

Vaclav Nemec

Joint Statistical Meetings in Dallas

The Joint Statistical Meetings of the American Statistical Association, the Institute of Mathematical Statistics, the International Biometric Society and the Statistical Society of Canada were held in the summer heat of Dallas, Texas, from August 9 to 13. As a first, the IAMG sponsored a session on "Advancements in Geostatistics" on Tuesday morning, chaired by IAMG vice-president Carol Gotway Crawford with speakers Isobel Clark, UK, Christian Lantuéjoul, France, and Peter Dowd, UK. The papers were summarized by discussant Michael Ed. Hohn, past president of IAMG.



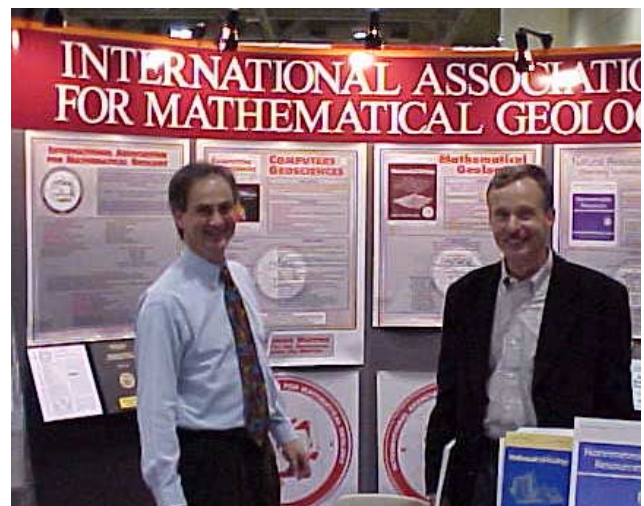
Although this session was just one of almost 300 events with twenty to 25 parallel sessions distributed over four days, it attracted a good number of listeners as well as discussions on each of the papers.

Some 4000 statisticians from all fields of science, government, sports, medicine and sociology attended the meeting in the huge Anatole Hotel near downtown Dallas. Most of the meeting rooms were relatively small, while the IAMG session was held in one of the larger halls. The exposition of commercial companies was located together with the poster sessions in another part of the hotel complex accessible only by walking in the heat through a very nice park. Most of the stands showed statistical software or books. Relatively few displays were of interest to geoscientists - and most of those were related to environmental research problems.

There were also large number of meetings for special interest groups such as medical statistics, caucus for women in statistics, biometrics, Christian statisticians, Korean statisticians, Gay and Lesbian statisticians etc. But my favorite label was the Isolated Statisticians meeting.

Harald S. Poelchau

GSA Toronto



Eric Grunsky and John Broome at the new IAMG stand

Photo G. Bonham-Carter

GEOVISION 99

International Symposium on Imaging Applications in Geology Liège (BELGIUM), 6-7 May 1999

The second circular for GEOVISION 99 is now available for download:
<http://www.lgih.ulg.ac.be/geovision/circular2/circular2.htm>

Geovision is the very first congress of its kind. The idea of organising this meeting came from the striking evidence that more and more imaging techniques are developed or used in the earth sciences. Video microscopy, electrical tomography or airborne and space infrared imaging are only but a few of these emerging techniques requiring a thorough understanding of imaging principles and a good mastership of the processing algorithms.

We strongly believe that bringing together earth scientists involved in digital imaging, whatever their field of applications, is the best way to help people tighten new relationships and discover new potentials for geo-imaging. The leading researchers and major scientific societies supporting Geovision '99 give us the feeling that this will be a great event.

Looking forward to welcoming you in Liège,

The Organizers

KEYNOTE LECTURES

Richard Bedell, Homestake Mining Company, NEVADA, UNITED STATES: "Geological Imaging: Principles and applications"

Serge Beucher, Ecole des Mines de Paris, FRANCE: "Mathematical Morphology and Geology: when image analysis uses the vocabulary of earth science. A review of some applications"

Torleif Dahlin, Lund University, SWEDEN: "Development of resistivity imaging techniques "

Wim Spakman, University of Utrecht, NETHERLANDS: "Tomography of the Earth's interior with seismic travel times"

**Weiterbildendes Studium:
Mathematische Methoden und Modelle in den Geowissenschaften**

Ein interdisziplinäres Studium aus Teilbereichen der Geowissenschaften, Angewandten Mathematik und Informatik.

Der nächste Kurs findet vom 22. Februar - 12. März 1999 in Berlin statt:

Geostatistik Dr. Heinz Burger, 22. - 26. 2. 1999

- Variogramm - Analyse
- Krigingverfahren: Ordinary Kriging, Universal Kriging, Indicator Kriging, Disjunctive Kriging, Cokriging
- Geostatistische Simulationsmethoden
- Fallstudien: Umweltschutz (Kontaminationen, Grenzwertprobleme), Probenahmeoptimierung, Vorratsberechnung

3D-Modellierung und Visualisierung in den Geowissenschaften

René Prissang, Andreas Thomsen 1. - 5. 3. 1999

- 3D-Modellierung: Repräsentations-Schemata, Datenstrukturen, Anwendersysteme
- Fallbeispiele: Modellierung in Geologie und Geomorphologie
- Visualisierung (VRML)
- Gravimetrisch-Magnetische 3D-Modellierung mit Integration von geologischen / geophysikalischen Zusatzinformationen (IGMAS)
- Freiflächenmodellierung mit Discrete Smooth Interpolation
- Einführung und Beispiele in GOCAD
- Ausblick: Raum-Zeitliche 3D-Modellierung

Grundlagen der Prozeßmodellierung

Prof. U. Bayer, Christoph Riestler, 8.- 12. 3. 1999

- Prozeßmodelle
- Grundlagen der Analysis und Lösung linearer Gleichungssysteme (direkte und iterative Verfahren)
- Numerische Behandlung von gewöhnlichen und partiellen Differentialgleichungen
- Beckenmodellierung
- Strömungs- und Transportmodelle

Unsere Internet Adresse für ausführliche Informationen (auf deutsch):
<http://userpage.fu-berlin.de/~riester/wbs.html>

Kontaktadresse für Bewerbungen bzw. Anfragen :
Prof. Dr. Wolfdietrich Skala, Freie Universität Berlin
FB Geowissenschaften, FR Geoinformatik
- Kennwort Weiterbildendes Studium -
Malteserstr. 74-100, Haus D, 12249 Berlin

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