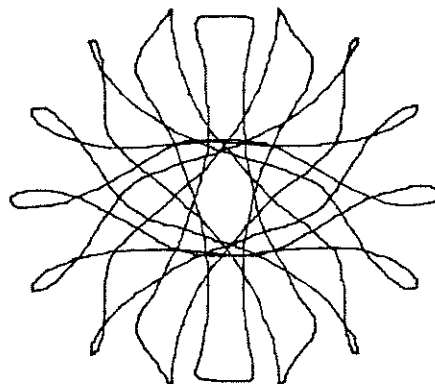


I.A.M.G. NEWS LETTER



UNESCO coupons

The IAMG can now accept UNESCO coupons for payment of dues and other orders. However, because of the various charges levied by UNESCO for redeeming the coupons in US dollars, it will be necessary for the Association to add 10% to all payments made in coupons. Dues for 1976 will remain at their present low rate, \$15.00 US or \$16.50 in UNESCO coupons.



COGEODATA meeting:

A Symposium on "Capture, Management, and Display of Geological Data, with Special Emphasis on Energy and Mineral Resources," will be held in Paris, November 24-26, 1975. The meeting is sponsored by COGEODATA in collaboration with UNESCO. It is intended to complement a workshop designed expressly for the needs of developing countries, on the same topic, to be held at the 25th International Geologic Congress. Persons interested in the Symposium should contact the Secretary,

Dr. C.F. Burk, Jr.
Canada Centre for Geoscience Data
580 Booth Street
Ottawa, Ontario, Canada
K1A 0E4



"Quantitative Methods for Exploration"

Members wishing to present papers in Session 116.3 of the 3rd General Assembly (to be held in Sydney, Australia, during the 25th International Geological Congress) should submit titles and abstracts to the Chairman,

John C. Davis
Kansas Geological Survey
1930 Avenue A, Campus West
Lawrence, Kansas, USA 66044

Appropriate topics for the session include target distributions and search patterns, probabilistic assessment of exploration outcomes, conditional relationships between geologic variables and economic deposits, simulation of exploration strategies, and econometric decision models. Applications to both petroleum and mineral exploration will be considered. Abstract should be submitted before September 1, 1975, for review prior to final selection of papers for the session.

Canadian Regional Organization

Canadian Regional Organization

The Canadian Society of Petroleum Geologists has established a Geomathematics and Computer Applications Division, which has been designated a Regional Affiliate of the IAMG. This new Division will hold technical meetings for the presentation and discussion of papers on geomathematics and computer applications in petroleum geology. Its function will also be the dissemination of information on computer applications to the geological community at large and to assume responsibility for reports and submissions on geomathematics and computer applications that may involve the C.S.P.G. or affect the general state of Canadian petroleum geology.

The Division already contains sixty members; Executive officers include J.E. Robinson, Chairman; R.P. Chapman, Vice-Chairman; E.B. Montgomery, Secretary; and R. Bugry, Program Director.

This new group expects to play a significant role in the development and application of geomathematics in Canada. Technical meetings are held monthly; visiting IAMG members are invited to attend. Contact

J.E. Robinson
Union Oil Co. of Canada Ltd.
P.O. Box 999
Calgary 2, Alberta, Canada



About People

Dr. Dan Gill of the Israel Geological Survey has been appointed Visiting Research Scientist at the Kansas Geological Survey for 1975-76. Dr. Gill will work on automated log interpretation and problems in choroplethic mapping. He replaces Ing. Ricardo Olea of Empresa Nacional del Petroleo, Chile, who completed projects in log analysis and regionalized variable theory while at Kansas. Ing. Olea has returned to his regular post in Santiago.

Dr. John Cubitt will be an Assistant Professor in the Department of Geology at Syracuse University, New York, beginning in the fall

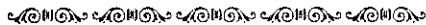
About People (continued)

semester. Dr. Cubitt is presently a member of the Institute of Geological Sciences in London and Chairman of the U.K. Working Group on Mathematical Geology.

Dr. Alfredo Prelat is now with the Geological Survey of Norway in Trondheim. Dr. Harald S. Poelchau is with Atlantic Richfield Co. in Dallas, Texas. Prof. Frank G. Ethridge is in the Department of Earth Resources of Colorado State University, Fort Collins. Prof. Sam Upchurch is now in the Department of Geology at the University of South Florida, Tampa. Mr. Malcolm W. Clark is now with the London School of Economics.

Mr. Dennis Goldman of Leggette, Brashears & Graham has transferred to their Tampa, Florida, office. Dr. Leons Kovisars is now at the Stanford Research Institute in Menlo Park, California. Dr. Fredrich-Wilhelm Wellmer has transferred to the Canadian affiliate of Metallgesellschaft AG in Toronto, Canada. Dr. Haus-Friedrich Krausse is temporarily with the Illinois State Geological Survey in Urbana, Illinois.

Dr. Ove Stephansson is now at the University of Lulea, Sweden. Dr. Khattab M. Khattab has transferred to the Copper Cliff, Ontario, office of International Nickel Co. of Canada. Dr. Alberto C. Riccardi is now in the Department of Geology at McMaster University, Hamilton, Ontario. Mr. Dennis R. McConnell is now with AMOCO International Oil Co. in Downers Grove, Illinois.



More about Eigen...

The interest prompted by the announcement of the Eigen centennial has encouraged the publication of more details of the life of this sadly neglected genius. As a young man, Eigen was an ardent, if highly unorthodox, chess player. His interest in the game stemmed partly from a belief that chess could be approached as an 8 x 8 matrix problem and positional play mathematically analyzed in terms of *Kernvektoren*. Eigen's greatest moment in chess occurred when he met Paul Morphy (considered by some to be the greatest chess player of all time) in Paris in 1858. A casual game between the two men at the Cafe Royal resulted in a draw following an aggressive, if bizarre, opening by Eigen:

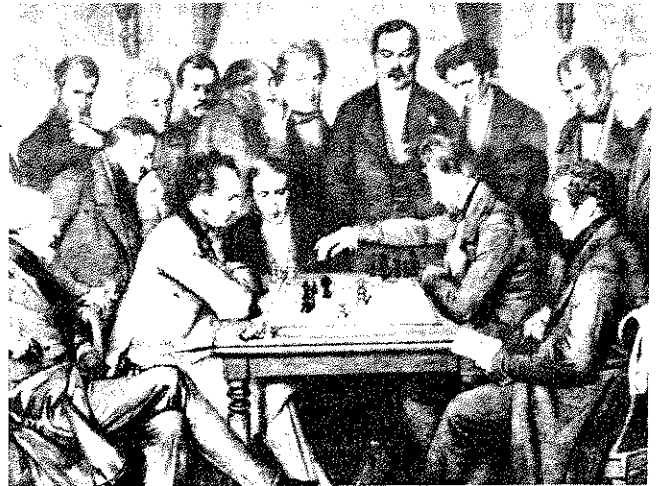
WHITE: R.G.V. EIGEN BLACK: P. MORPHY

- | | |
|-------------|--------|
| 1. Kt - QB3 | P - K4 |
| 2. P - B4 | P x P |
| 3. Kt - Q5! | |



Our logo is a plot of one member of a family of mathematical functions which formerly occupied a central place in geological theory. The first member to correctly identify the family of functions will receive a free year's subscription to the Journal of Mathematical Geology.

Although the opening was appropriately christened the "Eigen Gambit," Eigen himself invariably referred to it as "*die Primzahlen im Reigen*" (dance of the prime numbers). During his brief acquaintance with Morphy, the young New Orleans lawyer introduced Eigen to the mint julep which became one of Eigen's enduring passions and one which he found difficult to satisfy in his native Austria. The Eigen Gambit remains a chess oddity and is rarely, if ever, used in grandmaster play. However, it acquired a mild notoriety in the chess world when it was selected as a central case-study in Sigmund Freud's "*Die Psychopathologie des Schachspieles*" (Vienna, 1925). It would seem that Freud mistook Eigen's matrix approach to chess as symptomatic of an advanced patricidal-anal rejection syndrome.



Eigen (right) moves against Morphy.



3rd General Assembly

IAMG members wishing to attend the 3rd IAMG General Assembly are urged to write at once to

The Secretary-General
25th International Geologic Congress
P.O. Box 1892
Canberra City, A.C.T. 2601
Australia

requesting the necessary Circulars and Registration forms, if they have not already received them. Synopses of papers for the open sessions must be received by the Secretary-General September 30, 1975; field trips must be reserved by October 1, 1975; abstracts are due by February 29, 1976; and fees must be paid by March 1, 1976. The Congress will be held from August 16-25, 1976, in the Carslaw Building and adjacent buildings of the University of Sydney.





SPECIAL OFFER!

Programs From

■ STATISTICS AND DATA ANALYSIS IN GEOLOGY ■

SPECIAL



OFFER!

The complete, revised set of FORTRAN IV programs written by Robert J. Sampson for the book *Statistics and Data Analysis in Geology* by John C. Davis is available in MAGNETIC TAPE FORM.

The tape contains 5470 card images, comprising 46 FORTRAN IV programs and subroutines and 24 test data sets. The programs and subroutines are keyed to chapters in *Statistics and Data Analysis in Geology* and cover the following areas:

- Chapter 3. *Elementary Statistics*..... 7 programs
- Chapter 4. *Matrix Algebra*.....10 programs
- Chapter 5. *Sequences of Data*.....11 programs
- Chapter 6. *Map Analysis*..... 4 programs
- Chapter 7. *Multivariate Analysis*.....14 programs

The programs are written in a subset of ANSI standard FORTRAN IV appropriate for use on a computer equivalent to or larger than an IBM 360/40 with an OS monitor. Machine-dependent features are not utilized, so the programs should run with little or no modification on most modern computers. Any necessary changes probably will involve only the redesignating of I/O devices. Programs are sent on a non-return mailer tape.

COMPLETE LIST OF PROGRAMS ON TAPE

Mean of N samples ■ Variance of N samples ■ Variance mean and covariance between variables ■ Variance mean covariance and correlation between variables ■ One way analysis of variance ■ Two way analysis of variance ■ Standardize a set of data ■ Read a matrix having N rows and M columns ■ Print a matrix having N rows and M columns ■ Add two matrices ■ Subtract two matrices ■ Multiply matrix by a constant ■ Divide matrix by a constant ■ Multiply two matrices ■ Inverse of a matrix ■ Solution of N simultaneous equations ■ Eigenvalues and eigenvectors of a symmetric matrix ■ Equal spacing of data by linear interpolation ■ Equal spacing of data by rectangular integration ■ Linear regression ■ Plot two variables ■ Curvilinear polynomial regression ■ M term smoothing ■ Plot one-dimensional data on line printer ■ Autocorrelation function of a data sequence ■ Cross correlation between two sequences of data ■ Cross correlation between two sequences of nominal data ■ Single Fourier series ■ Compute rectangular grid ■ Plot contour map ■ Polynomial trend surface ■ Double Fourier series of a data matrix ■ Multiple regression ■ Standardized multiple regression with increased precision ■ Calculate matrix of correlations between columns of a matrix ■ Standardize columns of a matrix ■ Linear discriminant function between two groups ■ Cluster analysis ■ Weighted pair-group average clustering ■ Print a dendrogram ■ Calculate matrix of distance coefficients between columns of a matrix ■ Principal component analysis ■ Calculate matrix of variance and covariances between columns of a matrix ■ Factor analysis varimax rotation on a factor loading matrix ■ Calculate matrix of cosine theta similarity coefficients between columns of a matrix ■

Address Order: COMPUTER GRAPHICS FUND, KANSAS GEOLOGICAL SURVEY
1930 AVE. "A" CAMPUS WEST, LAWRENCE, KANSAS 66044 USA

Please send a magnetic tape containing FORTRAN IV programs and data sets from *Statistics and Data Analysis in Geology*. THE TAPE FORMAT SHOULD BE:

- 9 track 800 bpi EBCDIC
 - IBMF or IBMEL
- 7 track 800 bpi
- 7 track 556 bpi
 - IBMF or IBMEL or HW 635

Enclosed is \$105 US (plus \$8.50 US for foreign air postage and handling of all orders outside the US). Checks should be made payable to Computer Graphics Fund. UNESCO coupons in the amount of \$125 will be accepted as payment, including postage.

SHIP TO: _____

SPECIAL OFFER!



SPECIAL OFFER!



USSR Regional Organization

The National Committee of Geologists of the Soviet Union, a division of the Soviet Academy of Sciences, has established the Section of Mathematical Methods and Information Systems in Geology. The new Section has been established to facilitate the progress of mathematical geology and geologic information systems in the Soviet Union, and to coordinate action and cooperative efforts with national and international scientific organizations.

The Section has been divided into several commissions, including one concerned with mathematical geology (D. Rodionov, Chairman), with documentation and data systems (A. Oleynikov, Chairman), and an information survey (E. Zacharov, Chairman). Officers of the new Section include D. Rodionov, Chairman; A. Vistelius, Deputy Chairman; and the chairmen and deputy chairmen of the various commissions.

The Section of Mathematical Methods and Information Systems in Geology will serve as Regional Organization of the I.A.M.G. Cooperative projects and the coordination of meetings will be done through the Chairman,

Prof. D. Rodionov
National Committee of Geologists
Pyzhevsky 7
Moscow G-17, USSR

New GIPSY release

GIPSY, the General Information Processing System developed by the University of Oklahoma and widely used to manipulate geologic data files, has been updated. A new release of the GIPSY User's Guide has been released and may be obtained from

ORA Information Systems Programs
Attn: Mrs. Diana Hill
1808 Newton Drive, Room 116
University of Oklahoma
Norman, Oklahoma, USA 73069

IAMG Meeting at GSA

An informal session of the IAMG will be held at the annual meeting of the Geological Society of America in Salt Lake City this October. The session will be 3-5 pm, Sunday, October 19th. Discussions will concentrate on formation of a US Regional Organization of IAMG, and whether to affiliate with the GSA. Two possible modes of association are as an Affiliated Society (such as the Mineralogical Society of America) or as a Division of GSA (such as the Coal Geology Division). Questions concerning relationships to other American societies such as AAPG will also be explored. D.F. Merriam will present a report on the IAMG Council Meeting at Nice and discuss plans for the next General Assembly at the IGC.

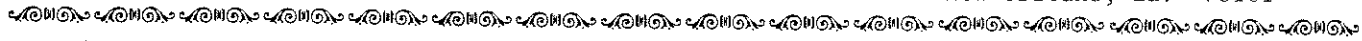
A half-day technical session on mathematical geology will also be held at the GSA meeting, although time and place are not yet fixed. An announcement will appear in the GSA Newsletter prior to the Salt Lake meeting. For further information, contact the Chairman,

C. John Mann
Department of Geology
University of Illinois
254 Natural History Building
Urbana, Illinois 61801

Call for AAPG Papers

The AAPG Computer Applications Committee will again sponsor a technical session at the AAPG Annual Meeting in New Orleans. Papers should illustrate the practical use of computers for solution of problems in exploration or development. Tentative titles should be submitted before August 1, 1975, to the Chairman,

M.N. McElroy
Exxon Company USA
P.O. Box 61812
New Orleans, La. 70161



The I.A.M.G. News Letter is made possible by a grant from the Kansas Geological Survey

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