

GOSSIP ANNOTATED LIST
OF SOME GEOLOGISTS
WHO USE A COMPUTER



compiled by
T. VICTOR LOUDON
and
Mrs. E. P. ADAMS

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Geologically Oriented Scheme for Sharing Information on Programming

GOSSIP annotated list of some geologists who use a computer

Table of Contents

Preface

The National Computer Program Index

Some other sources of information about earth science computer programs

List of Institutions represented in the list

Annotated List

Tabulation by subject

Names and addresses of contributors

Previous issues: For the first time, the GOSSIP list is included in the Reading University Geological Reports Series. This list replaces earlier versions which were issued separately. It is the last time that the GOSSIP list will appear in its present form.

GOSSIP: Having, I hope, served its initial purpose, the Geologically Oriented Scheme for Sharing Information on Programming may evolve in two directions. First, thanks to the cooperation of the National Computing Centre, an index of geological programs will be included in a file that can be searched by computer to answer specific enquiries. Second, I hope to be able to circulate to interested earth scientists news of programming developments in geology abstracted from the National Computer Programs Index.

NCC: Information from the present GOSSIP list is being added to the National Computer Program Index. The National Computing Centre would, however, appreciate more detailed information if you are willing to supply it, and would welcome abstracts of new programs that you have developed or are using.
(see next page).

IF YOU ARE WILLING TO MAKE INFORMATION ABOUT THE PROGRAMS YOU USE MORE WIDELY AVAILABLE, SEND IT TO THE NCC (SEE NEXT PAGE)

IF YOU WOULD LIKE DETAILS OF PROGRAMS MENTIONED IN THE GOSSIP LIST, WRITE TO THE USER OF THE PROGRAM (HIS NAME AND ADDRESS ARE IN THE LIST)

THE NATIONAL COMPUTER PROGRAM INDEX.

The National Computer Program Index is an information retrieval service run by the Information Services Department of the National Computing Centre to provide information on computer programs in all fields to both members and non-members.

We need the co-operation of specialists and specialist bodies in all fields in order to keep the service comprehensive.

We need as much information about each program as is available to ensure that -

1. The inquirer to the index receives enough information to enable him to ascertain the usefulness of the program to his particular problem.
2. We have sufficient data to provide an effective set of descriptor terms for efficient retrieval.

INFORMATION REQUIRED FOR PROGRAM ABSTRACTS TO BE PLACED ON N.C.P.I.

- | | | |
|--|---|--|
| 1. <u>Title of Program.</u> | - | including any special number, govt. approvals, etc. |
| 2. <u>Configuration used.</u> | - | i.e. computer, core size, peripherals. |
| 3. <u>Source of Further Information.</u> | - | i.e. firm and department to contact including address and tel. No. |
| 4. <u>Language(s).</u> | - | e.g. Fortran, Cobol, etc. |
| 5. <u>Purpose of Program.</u> | - | summary (one sentence only needed) |
| 6. <u>Summary of work done by programme.</u> | - | approximately 60 words. |
| 7. <u>Scope and Accuracy.</u> | - | e.g. job size, and guide to accuracy. |
| 8. <u>Input and Output Formats.</u> | - | input and output media and amount of input data required. |
| 9. <u>Availability.</u> | - | documentation, program. |
| 10. <u>Completion Data and Running Experience.</u> | - | |
| 11. <u>Charges.</u> | - | where possible. |

SOME OTHER SOURCES OF INFORMATION ABOUT EARTH SCIENCE COMPUTER PROGRAMS

General: Information Services Department, National Computing Centre, Computer Laboratory, Duckworth Street, off Oxford Road, Manchester M1 7HA, England.

Geography: Dr.J.R. Tarrant, School of Environmental Science, University of East Anglia, University Village, Norwich NOR 88C, England.

'Computers in Geography' J.R. Tarrant. Institute of British Geographers Newsletter, no. 6, September 1968.

Geology: Geocom Bulletin. Editor Graham Lea,
P.O. Box 1024, Westminster, London, S.W.1, England or
P.O. Box 1024, Calgary 2, Alberta, Canada.

Geological Survey of Canada

Report on a National System for Storage and Retrieval of Geological Data in Canada.
Prepared by National Advisory Committee on Research in the Geological Sciences.
Also several Papers dealing with specific computer programs.

Kansas Geological Survey Computer Publications. Editor Dr. D.F. Merriam,
Kansas Geological Survey, The University of Kansas, Lawrence, Kansas 66044,
United States of America.

Oceanography: Computer programs in Oceanography, Publication C-5.
Compiled by C. Dinger, 1967. National Oceanographic Data Center, Washington D.C.
20390, United States of America.

LIST OF INSTITUTIONS

=====

BROKEN HILL PTY CO LTD	MELBOURNE	AUSTRALIA
WESTERN AUSTRALIA, UNIVERSITY OF	PERTH	AUSTRALIA
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NATIONAL OCEANOGRAPHIC DATA CENTRE	WASHINGTON	U.S.A.
SMITHSONIAN INSTITUTION	WASHINGTON	U.S.A.
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ANNOTATED LIST

ABERDEEN, UNIVERSITY OF

DR F E TOCHER

ALGOL

ABERDEEN

SCOTLAND

ICL SYSTEM 4-50
(ABERDEEN)

PROGRAMS BY F E TOCHER

CALCULATING TWIN OBLIQUITY. ELECTRON MICROPROBE CORRECTIONS. CONTOURING
PETROFABRIC DIAGRAMS. STRUCTURE FACTOR CALCULATIONS. FOURIER SYNTHESIS.

DR W WELSH

ELLIOTT AUTOCODE
ALGOL

ELLIOTT 803

PROGRAMS BY W WELSH

ANALYSIS OF VARIANCE

STATISTICAL TESTS IN GENERAL. TREND SURFACE ANALYSIS OF CHEMICAL
COMPOSITIONS OF SEDIMENTARY ROCKS.

DR J B WILSON

ATLAS AUTOCODE

ICL SYSTEM 4-50
ICT ATLAS (MANCHESTER)

PROGRAMS BY T V LOUDON

TOTAL AND PARTIAL REGRESSION ANALYSIS OF WEIGHT, LENGTH, BREADTH AND
WIDTH IN A POPULATION OF MYA ARENARIA.

PALAEONTOLOGICAL POPULATION STUDIES. ANALYSIS OF SIZE-FREQUENCY
DISTRIBUTIONS ETC. ANALYSIS OF VARIANCE IN GRAIN-SIZE DISTRIBUTIONS ETC.

ALBERTA, UNIVERSITY OF

EDMONTON CANADA

DR H BAADSGAARD

FORTRAN IV

IBM 360-67

PROGRAMS BY D C GREEN AND MCINTYRE ET AL (J.GEOPHYS.RES.1966,71,5459)
MODIFIED BY D C GREEN, W COMPSTON AND P ARRIENS.

CALCULATE $87\text{RB}/86\text{SR}$ AND $87\text{SR}/86\text{SR}$ RATIOS FROM RAW MASS SPECTROMETER
DATA. FIT A REGRESSION LINE TO RB/SR DATA INCORPORATING PRIOR ESTIMATES
OF BOTH X AND Y VARIANCE TO PERMIT EVALUATION OF GEOLOGICAL VARIATION
OVER AND ABOVE EXPERIMENTAL VARIATION.

PROGRAM BY DR H BAADSGAARD APL (FOR REMOTE TERMINAL)

REGRESSION.

DR H A K CHARLESWORTH

FORTRAN IV

IBM 360-67

PROGRAMS WRITTEN IN FORTRAN IV LOCALLY AND BY GENTLEMAN AND SANDE
(FALL JOINT COMPUTER CONF., 1966, 29, 563, SPARTAN BOOKS-MODIFIED BY
J E ROBINSON).

PREPARE AN EQUAL-AREA ORIENTATION DIAGRAM. DETERMINE THE ORIENTATION OF
THE MEAN VECTOR. DETERMINE WHETHER OR NOT A POPULATION HAS A FISHER
DISTRIBUTION. DETERMINE THE PRECISION PARAMETER, AND THE RADIUS OF THE
CONFIDENCE CIRCLE FOR A POPULATION WITH A FISHER DISTRIBUTION. DISTINGUISH
BETWEEN LOW-ANGLE UNCONFORMITIES AND DISCONFORMITIES. DETERMINE THE
BEST-FIT FOLD-AXIS USING EIGENVECTORS? DETERMINE EIGENVALUES. DETERMINE
ONE- AND TWO-DIMENSIONAL FOURIER TRANSFORMS. PREPARE AND PRINT CORRELATED,
ISOPACH AND FILTERED CONTOUR MAPS.

PROF R D MORTON

FORTRAN IV

IBM 360/67

PROGRAMS BY R K O,NIONS AND M C TOMLINSON

C I P W NORM CALCULATION.

POWDER DIFFRACTION PATTERN TO SEARCH AND IDENTIFY SIX COMPONENT MIXTURES,
CALCOMP PLOTTING OF GEOCHEMICAL SURVEY DATA.

STUDIES ON SPILITES AND KERATOPHYRES. STUDIES ON SILVER DEPOSITS IN YUKON
AND NORTHWEST TERRITORIES. GEOCHEMICAL SURVEYING FOR PB-AG DEPOSITS,
YUKON TERRITORY.

DR D G W SMITH

FORTRAN IV

IBM 360-67

PROGRAM BY J RUCKLIDGE

CORRECT X-RAY INTENSITY DATA OF ELEMENTS BEING ANALYSED BY ARL EMX
MICROPROBE FOR ABSORPTION, FLUORESCENCE, ATOMIC NUMBER EFFECT, BACKGROUND
AND DEAD TIME, AND PRINT OUT CONCENTRATIONS.

PROGRAM BY D G W SMITH AND M C TOMLINSON APL

AS ABOVE FOR USE FROM REMOTE TERMINAL.

A P C M LTD
A.P.C.M. LTD.
PROGRAMS BY A.DE FLEURY

GREENHITHE ENGLAND
IBM 360/40 LONDON

RESISTIVITY CURVE ANALYSIS, SEISMIC INTERPRETATION EMPLOYING +/- METHOD
AND CRITICAL DISTANCE WITH STATISTICAL ANALYSIS OF DATA.

INTERPRETATION OF GEOPHYSICAL FIELD DATA.

ATLAS COMPUTER LABORATORY
MR T N GOVER (SRC)
MISS B I HARVEY (IGS)
MR G TURNBULL (IGS)
PROGRAMS BY T N GOVER, B I HARVEY AND G TURNBULL

CHILTON ENGLAND
ICT ATLAS (CHILTON)

STORE, EDIT AND RETRIEVE INFORMATION COLLECTED FROM GRAVITY STATIONS,
CARBONIFEROUS BOREHOLES AND WELLS.

BARRY M MCVICAR
MR B M MCVICAR

FORTRAN II AND IV

CALGARY CANADA
IBM 7044 IBM 1130
UNIVAC 1108 CDC 3300
IBM 1360-65

PROGRAMS BY SCHLUMBERGER, KANSAS CONTRIBUTORS, COMPUTREX

MANIPULATION OF CORE ANALYSIS DATA, MAPPING, INTERACTION OF WELL LOG DATA
FOR LITHOLOGY, POROSITY, SATURATION ESTIMATES ETC.

FACTOR ANALYSIS OF LOG DERIVED PARAMETERS VERSUS LITHOLOGY,
PERMEABILITY ETC. CORRELATION FROM WELL TO WELL BY POWER SPECTRAL
ANALYSIS ETC OF VARIOUS PARAMETERS.

BEDFORD INSTITUTE
G DRAPEAU
PROGRAMS BY W T WILLIAMS AND G VILKS

FORTRAN

DARTMOUTH CANADA
CDC 3100(DARTMOUTH)

ASSOCIATION ANALYSIS OF STATION LOCATIONS VERSUS SPECIES.

STUDIES OF FORAMINIFERA ECOLOGY.

PROGRAMS BY A O L MARINE GEOLOGY, OCEANOGRAPHIC AND COMPUTER PROGRAMMING
STAFF AND WOODS HOLE OCEANOGRAPHIC INSTITUTION

STATISTICAL ANALYSIS OF GRAIN SIZE DISTRIBUTION OF SEDIMENTS.

SEDIMENT STUDIES WITH A VIEW TO DETERMINING THEIR HYDRAULIC ENVIRONMENT.

BELFAST, QUEENS UNIVERSITY
DR W SCHWARZACHER
PROGRAMS BY W SCHWARZACHER

FORTRAN

BELFAST N. IRELAND
ICT 1907

FOURIER ANALYSIS. SIMULATION OF TIME TRENDS. SPECTRAL ANALYSIS.

ANALYSIS OF STRATIGRAPHIC RECORD. SIMULATION OF SEDIMENTATION.

BERNARD PRICE INSTITUTE OF GEOPHYSICAL RESEARCH JO BURG
DR N C GAY
PROGRAMS BY N C GAY

FORTRAN IV
FORTRAN II

S. AFRICA
IBM 7090
IBM 1620 II
IBM 360

TO DETERMINE THE MOTION OF NON-RIGID ELLIPTICAL PARTICLES EMBEDDED IN A
VISCOUS FLUID DURING SIMPLE AND PURE SHEAR DEFORMATIONS OF THE
PARTICLE-FLUID SYSTEM.

STRUCTURAL GEOLOGY PROBLEMS - IMMEDIATE ONES BEING DETERMINATION OF
FINITE STRAIN IN DEFORMED ROCKS USING DEFORMED PEBBLES. PROGRAMS
DETERMINE MEAN PEBBLE SHAPES AND ORIENTATIONS AND THEN CALCULATE
INITIAL PEBBLE SHAPE AND STRAIN ELLIPSOID FOR PEBBLE DEFORMATION,
HENCE TOTAL FINITE STRAIN IN THE ROCK CAN BE FOUND. ANALYSIS OF THE TOTAL
FINITE STRAIN EXPERIENCED BY ROCKS IN THE BARBERTON MOUNTAIN LAND,
SOUTH AFRICA.

BIRMINGHAM, UNIVERSITY OF
DR R F KING
PROGRAM BY P A VINGOE
SYNTHETIC SEISMOGRAM

BIRMINGHAM ENGLAND
EEC KDF9
EGTRAN (NEAR TO FORTRAN IV)

PROGRAM BY D J BLUNDELL EGTRAN
STATISTICAL ANALYSIS OF PRIMARY DATA IN RADIOCARBON DATING

PROGRAM BY P A GARRETT EGTRAN
GRAIN SIZE ANALYSIS FROM SEDIMENTOLOGICAL BALANCE DATA

PROGRAM BY P K HARRINGTON EGTRAN
OCEAN BOTTOM SEDIMENT VELOCITY TABLES

PROGRAM BY T S MUHMOOD EGTRAN
REGIONAL-RESIDUAL SEPARATION, SURFACE DENSITY DETERMINATION AND LOCATION
AND INTERPRETATION OF GRAVITY ANOMALIES OF FAULT TYPE

PROGRAM BY W H OWENS AND R F KING EGTRAN
ANALYSIS OF MAGNETIC FABRIC OF ROCKS FROM TORQUE-CURVE TYPE ANISOTROPY
MEASUREMENTS

PROGRAM BY I PICKUP AND C J SWAIN EGTRAN
CALCULATION AND PLOTTING OF APPARENT RESISTIVITY CURVES FOR HORIZONTALLY
ISOTROPIC EARTH

PROGRAMS BY A SKINNER EGTRAN
ANALYSIS OF X-RAY FLUORESCENCE DATA. TREND SURFACE ANALYSIS

PROGRAM BY J TARNEY EGTRAN
REDUCTION OF CHEMICAL ANALYSES TO NORMS AND MINERAL COMPOSITIONS

PROGRAM BY D G WATTERS EGTRAN
SEISMIC REFRACTION INTERPRETATION WITH HIDDEN LAYER

PROGRAM BY P F BARKER AND L E PARKINSON MERCURY C
PROCESSING AND INTERPRETATION OF MARINE MAGNETIC DATA, INCLUDING REMOVAL
OF POLYNOMIAL REGIONAL FIELD

PROGRAM BY F J DAVEY MERCURY K
PROCESSING AND INTERPRETATION OF MARINE GRAVITY DATA

PROGRAM BY M J FASHAM MERCURY K
CLUSTER AND FACTOR ANALYSIS APPLIED TO MAGNETIC PROFILES

PROGRAM BY P K HARRINGTON MERCURY K
SEISMIC REFRACTION INTERPRETATION (PLANE LAYER)

PROGRAM BY J MANSFIELD AND R G RENNER MERCURY K
INTERPRETATION OF MAGNETIC ANOMALIES

BRISTOL, UNIVERSITY OF
MR G L HENDRY ALGOL 60
PROGRAMS BY G L HENDRY AND OTHER MEMBERS OF THE DEPARTMENT

BRISTOL ENGLAND
ELLIOTT 503

C.I.P.W. NORM CALCULATION (WITH A G PLANT AND P K HARVEY). CALCULATION OF
VARIOUS ELEMENT RATIOS FROM ANALYTICAL DATA. CLASSIFICATION OF VOLCANIC
ROCKS FROM CHEMICAL ANALYSES ON RITTMANN SYSTEM (IN PREPARATION). X-RAY
FLUORESCENCE MASS ABSORPTION CORRECTIONS FOR DATA FROM P.W. 1212
SPECTROMETER (IN PREPARATION). STORAGE AND RETRIEVAL OF CHEMICAL DATA
WITH P K HARVEY (IN PREPARATION).
THE MAIN USE TO WHICH THE COMPUTER IS PUT IS IN THE PROCESSING OF
X.R.F. DATA TO CHEMICAL CONCENTRATIONS AND THE PETROCHEMICAL USE OF THESE
ANALYSES.

MR T LUNEL
PROGRAMS BY T LUNEL AND P K HARVEY

ALGOL 60

ELLIOTT 503

CALCULATION OF STANDARD KATANORM, CALCITE-, BIOTITE-, HORNBLLENDE-,
BIOTITE-HORNBLLENDE-VARIANTS. CALCULATION OF STANDARD EPINORM.
GLPH-CHL-TIT-EP, GLPH-CHL-TIT-LAWSONITE VARIANTS. BARTHS CELL. CATION
PERCENTAGE.

EVALUATION OF RAW DATA FROM PHILIPS 1212 X-RAY FLUORESCENCE SPECTROMETER.
METASOMATIC PROBLEMS. COMPARISON OF MODAL ANALYSES. CHECKING CHEMICAL
ANALYSES.

DR H A OSMASTON

MERCURY AUTOCODE

MERCURY (OXFORD)

ELLIOTT 503 (BRISTOL)

PROGRAMS BY H A OSMASTON AND STANDARD OXFORD PROCEDURES

DETERMINATION OF FIRMLINE OF GLACIERS, EITHER FROM THEIR PRESENT
DIMENSIONS OR FROM FORMER DIMENSIONS INFERRED FROM MORAINES ETC.

STUDY OF PLEISTOCENE GLACIATIONS OF EAST AFRICAN MOUNTAINS.

A G PLANT

ALGOL AND FORTRAN

ELLIOTT 503

IBM 1620

PROGRAMS BY OTHER RESEARCH WORKERS IN GEOLOGY DEPARTMENT

SORTING AND CLASSIFICATION OF GEOCHEMICAL DATA
PETROGRAPHIC CALCULATIONS

BRITISH MUSEUM (NATURAL HISTORY)

LONDON ENGLAND

DR D R C KEMPE

CHLF OR EMA

ICT ATLAS (LONDON)

PROGRAMS BY P J WOODROW, M H HEY, R W LE MAITRE, AND B C M BUTLER

CELL DIMENSIONS BY LEAST SQUARES. RECALCULATION OF ROCK AND MINERAL
ANALYSES. DETERMINATION OF CELL DIMENSIONS OF ROCK FORMING MINERALS.
DETERMINATION OF STRUCTURAL FORMULAE OF MINERALS, CIPW NORMS AND CERTAIN
NORMATIVE RATIOS OF ROCKS, AND ATOMIC OR MOLECULAR PERCENTAGES OF MINERALS
AND ROCKS.

DR S J B REED

FORTAN IV

IBM 7094 (I.C.)

PROGRAMS BY MRS P K MASON

CORRECTION CALCULATIONS FOR QUANTITATIVE ELECTRON-PROBE MICROANALYSIS
ANALYSIS OF MINERALS AND METEORITES.

DR C T SCRUTTON

NO COMPUTER USED AT PRESENT

NUMERICAL TAXONOMY

INFORMATION STORAGE AND RETRIEVAL FOR MUSEUM PALAEONTOLOGICAL COLLECTION.

BRITISH PETROLEUM CO LTD

SUNBURY ENGLAND

MR T B H HALL

ALGOL, BASIC AND FORTRAN

DE LA RUE BULL GE 265

(REMOTE ACCESS TERMINALS TO TIME-SHARED SYSTEM)

ICT 1905/7 BP LONDON

ELLIOTT 4120, BP, SUNBURY

PROGRAMS BY MRS G R ADAMS, MRS M H A FOWLER AND T B H HALL

STORAGE, RETRIEVAL AND PROCESSING OF FIELD DATA. SOME LABORATORY
PETROLOGICAL CALCULATIONS.

MR A H SMOUT

ELLIOTT 4120 (BP, SUNBURY)

WIDE INTEREST IN GEOLOGICAL WORK ON THE COMPUTER, EXCLUDING GEOPHYSICAL
APPLICATIONS.

DR G V WOOD

ELLIOTT AUTOCODE AND ALGOL ELLIOTT 4120

NEAT AND FORTRAN

PROGRAMS BY DR F M O, CARROLL

MOMENT CALCULATIONS

MULTIPLE REGRESSION AND DISCRIMINANT FUNCTION

FACTOR ANALYSIS

BROKEN HILL PTY CO LTD

MELBOURNE AUSTRALIA

DR E BUMSTEAD

FORTRAN IV

PROGRAMS BY E BUMSTEAD, A PARKER AND T V LOUDON

RECALCULATION OF GEOCHEMICAL DATA, DESCRIPTIVE STATISTICS,
COMPONENT AND FACTOR ANALYSIS.

GEOCHEMISTRY OF OLIGOCENE SEDIMENT IN THE ISLE OF WIGHT. APPLICATION TO
GEOCHEMICAL EXPLORATION PLANNED.

CAMBRIDGE, UNIVERSITY OF

CAMBRIDGE ENGLAND

DR J L CUTBILL

TITAN AUTOCODE

ICT TITAN ATLAS

SYSTEM 4 USER CODE

EEC 4/50

FORTRAN

PROGRAMS BY J L CUTBILL

CLASSIFICATION, CURVE FITTING, SIMPLE STATISTICS.

PALAEONTOLOGICAL CLASSIFICATION

STRATIGRAPHICAL CORRELATION

INFORMATION AND DATA RETRIEVAL FOR MUSEUMS AND LIBRARIES

MR T A DAVIES

TITAN AUTOCODE

ICT TITAN

PROGRAM BY T A DAVIES WITH J L CUTBILL.

PROGRAM IS SPECIFICALLY DESIGNED FOR USE IN CONJUNCTION WITH THE EEL
PHOTOELECTRIC SEDIMENTOMETER TO DETERMINE GRAIN SIZE FREQUENCY DISTRIBUTIONS
IN THE SILT-CLAY RANGE.

SEDIMENTOLOGICAL DATA PROCESSING.

DR C H KELSEY

TITAN AUTOCODE

ICT TITAN-ATLAS

PROGRAMS BY C H KELSEY

CALCULATION OF CIPW NORMS, UNIT CELL CONTENTS, CELL DIMENSIONS FROM 20
VALUES AND D SPACINGS FROM UNIT CELL DIMENSIONS.

MINERALOGICAL AND PETROLOGICAL INVESTIGATIONS

DR A G SMITH

ICT TITAN ATLAS
(MATHS LAB CAMBRIDGE)

PROGRAMS BY A G SMITH

FORTRAN

IBM 7090

GRAVITY PROGRAM- TO COMPUTE THE GRAVITATIONAL ATTRACTION OF POLYGONAL
ARBITRARY 2-D CROSS-SECTIONS AND TO FIND A 2-D SHAPE THAT FITS AN
OBSERVED ANOMALY.

INVESTIGATION OF GEOLOGICAL STRUCTURES.

EDSAC AUTOCODE (NOW EXTINCT)

AGE-DATING PROGRAMS TO CALCULATE ISOTOPIC AGES FROM AR/K, SR/RB AND OTHER
RATIOS, TO CALCULATE AGE TABLES AND RECALCULATE AGES USING OLD DECAY
CONSTANTS.

CHECKING AGES IN THE LITERATURE, PRODUCING AGE TABLES.

PROGRAM BY DR EVERETT

TITAN AUTOCODE

CURVE FITTING ON A SPHERE- TO FIND THE BEST FIT OF SIMILAR CURVES ON A
SPHERE.

FITTING CONTINENTAL MARGINS TOGETHER

DR D B WILLIAMS

TITAN AUTOCODE

ICT TITAN-ATLAS

PROGRAMS BY D B WILLIAMS

PRINCIPAL COMPONENTS ANALYSIS OF MANY KINDS OF SIMILARITY AND DISTANCE
MATRICES.

TREND SURFACES (POLYNOMIAL) AND REGRESSION ANALYSIS. WORK IN PROGRESS ON
OTHER MATRIX OPERATIONS WITH RELEVANCE TO GEOLOGY.

PALAEOECOLOGY AND STRATIGRAPHY

CENTRE DE RECHERCHES PETROGRAPHIQUES ET GEOCHIM NANCY FRANCE
M P ISNARD IBM 1130 ECOLE DES MINES
PROGRAMS BY P ISNARD AND CENTRE NATIONAL DE RECHERCHE FORESTIERE.

PETROCHEMISTRY AND STATISTICS.

STUDY OF SYSTEMATIC SAMPLINGS OF GEOLOGICAL BODIES (ERUPTIVE ROCKS)

M P LEYMARIE FORTRAN IV IBM 1130 ECOLE DES MINES
PROGRAMS BY M F LHOE AND P LEYMARIE

CORRECTION OF FABRIC PATTERNS DONE BY A TEXTURE DIFFRACTOMETER. MAPPING
OF GEOPHYSICAL AND GEOCHEMICAL DATA. AUTOCORRELATION OF TEXTURE
PHOTOGRAPH. CLUSTER ANALYSIS, GROUPING ANALYSIS. ALL KIND OF GEOMETRICAL
EXPLOITATION OF DATA.

STRUCTUROLOGY, METHODOLOGY OF GEOLOGICAL PROSPECTING. (SPACING,
ORIENTATION OF PROFILES.) ROBUST ESTIMATION OF MEAN CONCENTRATIONS.

M H DE LA ROCHE COBOL IBM 360/40
M PH GRANDCLAUDE (ECOLE DES MINES)
PROGRAMS BY G DODE

STORAGE AND RETRIEVAL OF GEOLOGICAL AND GEOCHEMICAL DATA.

COLUMBIA UNIVERSITY NEW YORK U.S.A.
DR J IMBRIE FORTRAN IBM 7094
PROGRAMS BY J IMBRIE, VINCE MANSON AND SUNDRY UNSUNG IBM PEOPLE.

MATRIX MANIPULATION OF GEOLOGIC DATA, WITH EMPHASIS ON FACTOR ANALYSIS

SIZE-FREQUENCY DATA ON SEDIMENTS
FOSSIL AND MODERN COMMUNITY DATA
CHEMICAL ANALYSIS OF ROCKS, ETC.

DIRECTORATE OF OVERSEAS SURVEYS SURBITON ENGLAND
LAND RESOURCES DIVISION
MR M G BAWDEN ICT ATLAS (CHILTON)
PROGRAMS BY A COLIN M V C

FOR INTERGRATED SURVEYS IN LAND RESOURCE APPRAISAL, AREAL MEASUREMENT
OF LAND SYSTEMS AND LAND FACETS AND THEIR RELATIONSHIP WITH LAND USE
VEGETATION AND SOIL.

ANALYSIS OF SLOPE, ASPECT AND DRAINAGE PATTERN.

DUBLIN, UNIVERSITY COLLEGE DUBLIN IRELAND
MR P STROGEN FORTRAN II IBM 1620 (PHYSICS DEPT)
PROGRAMS BY P STROGEN

CALCULATION OF NORMS (C.I.P.W. AND NIGGLI) AND VARIOUS CATION RATIOS OF
IGNEOUS AND METAMORPHIC INTEREST.
CALCULATION OF UNIT CELL CONSTANTS OF CUBIC SUBSTANCES FROM BASIC X-RAY
DATA, AND THEIR IMPROVEMENT USING THE NELSON-RILEY FUNCTION.
CALCULATION OF STRUCTURAL FORMULAE OF MINERALS FROM THE CHEMICAL ANALYSIS.

ESSENTIALLY USED AS A TIME-ERROR SAVER IN THE GENERAL FIELDS OF
PETROCHEMISTRY AND PETROLOGY.

EAST AFRICA, UNIVERSITY OF NAIROBI KENYA
DR L A J WILLIAMS ICL 1900 (NAIROBI)
PROGRAMS BY DR HEY ET AL., AND BY MR H LOWE

CALCULATION OF NORMS AND VARIOUS RATIOS FROM CHEMICAL ANALYSES

AN INVESTIGATION OF VOLCANIC ROCKS ASSOCIATED WITH THE RIFT SYSTEM IN
KENYA.

EDINBURGH, UNIVERSITY OF EDINBURGH SCOTLAND
PROF G Y CRAIG FORTRAN IV IBM 7094
PROGRAMS BY G OERTEL

GENERATION OF MODELS OF ANIMAL POPULATIONS

DR P MCL D DUFF ATLAS AUTOCODE ICT ATLAS
EEC KDF 9

PROGRAMS BY M OSBORNE
LINEAR, QUADRATIC AND CUBIC TREND SURFACE ANALYSIS

PROGRAMS BY D RHIND

STORAGE, SORTING AND RETRIEVAL OF DRIFT BOREHOLE RECORDS AND MAPPING OF DISTRIBUTION PATTERNS, USING THE LINEPRINTER. NUMERICAL DESCRIPTION AND CLASSIFICATION OF LANDFORMS.

CLASSIFICATION OF LANDFORMS.
KANSAS GEOL SURV COMPUTER CONTRIBUTIONS NUMBERS 1,3,6,11 AND 14 (IN FORTRAN)
HAVE BEEN OR ARE BEING IMPLEMENTED BY STAFF OF THE REGIONAL COMPUTING
CENTRE, TO RUN ON THE NATIONAL ENGINEERING LABORATORY (E.KILBRIDE)
UNIVAC 1108 AND ON THE NEWCASTLE UNIVERSITY IBM 360/67

GEOLOGICAL SURVEY OF CANADA

OTTAWA CANADA

SEE ALSO NATIONAL ADVISORY COMMITTEE ON RESEARCH IN THE GEOLOGICAL SCIENCES

PROGRAM LIBRARY, REVISED TO MARCH 1967

FORTRAN

1 IBM 1620 MODEL 1
2 IBM 1620 MODEL 2
3 CD 3100
4 IBM 360/65

THE COMPUTER USED IS INDICATED AT END OF LINE

REGIONAL GEOLOGY

c20101 R F EMSLIE NORM COMPUTATION

.

FUELS AND STRATIGRAPHY DIVISION

c30101	R A PRICE	DENSITY DIAGRAM
c30102	R A PRICE	FISHER DISTRIBUTION
c30103	R A PRICE	MEAN PLANE
c30104	R A PRICE	FOLD AXIS U
c30105	R A PRICE	COPLANARITY
c30106	R A PRICE	FOLD AXIS V
c30107	R A PRICE	FOLD AXIS W
c30108	R A PRICE	SCHEIDEGGERS MEAN PLANE
c30109	R A PRICE	CONVERSION OF PITCH TO TREND, PLUNGE

—

ECONOMIC GEOLOGY

c40101	R H C HOLMAN	ROCK ANALYSIS
c40102	R H C HOLMAN	GEOCHEMICAL DATA - NOVA SCOTIA
c40103	R H C HOLMAN	1958 GEOCHEMICAL SURVEY OF NOVA SCOTIA
c40201	J A CHAMBERLAIN	ANALYSIS - GEOLOGICAL DATA, PORT RADIUM
c40301	E M CAMERON	TREND SURFACE ANALYSIS
c40302	E M CAMERON	NORM CALCULATIONS AND PLOTTING
c40303	E M CAMERON	NORM CALCULATIONS
c40304	E M CAMERON	COVAP
c40401	LEO BRANDON	RIVER DISCHARGE AND CONDUCTIVITY
c40501	C GLEESON	MINERAL WEIGHT PERCENTAGES
c40502	C GLEESON	YUKON FIELD TRIP 1964
c40503	C GLEESON	REGIONAL GEOLOGICAL PLOT
c40601	S M ROSCOE	LEAD ISOTOPE RATIOS
c40602	S M ROSCOE	RADIOGENIC LEAD
c40603	S M ROSCOE	CALCULATION OF LEAD ISOTOPE AGE FN.
c40604	S M ROSCOE	CALCULATION OF T AND TH/U
c40605	S M ROSCOE	LEAD CALCULATIONS IN URANINITES
c40606	S M ROSCOE	AGE DETERMINATION TABLE
c40701	J BACHINSKI	STATISTICAL CALCULATIONS
c40801	R O VAN EVERDINGEN	MINIMIZED SUM OF SQUARES FOR $Y = CX$
c40901	J A FORTESCUE	STATISTICS OF SPECTROGRAPHIC LAB RESULTS
c40902	J A FORTESCUE	GEOPLOTOLOGY
c41001	R HORTON	SPECTROGRAPHIC CALCULATION
c41101	J A GILLILAND	GROUND WATER OBSERVATION WELL PROGRAM
c41102	J A GILLILAND	PENMAN EVAPORATION CALCULATIONS
c41103	J A GILLILAND	CORRELATION MATRICES
c41104	J A GILLILAND	REGRESSION ANALYSIS
c41107	J A GILLILAND	CORRELATION MATRICES (MISSING OBS)
c41108	J A GILLILAND	RAINFALL OVER SMALL AREA
c41201	R A FREEZE	GROUNDWATER FLOW PATTERNS

7090

90

PETROLOGICAL SCIENCE

c60101	R K WANLESS	POTASSIUM-ARGON AGE CALCULATION	3
c60102	R K WANLESS	LEAD ISOTOPE ANALYSIS	3
c60103	R K WANLESS	RB-SR ISOCHRON CALCULATIONS	3
c60105	W D LOVERIDGE	PROGRAM TO CALCULATE SIMPLE RATIOS	3
c60201	T N IRVINE	PETROGRAPHIC NORM COMPUTATION	3
c60202	T N IRVINE	COMPUTATION OF BIAxIAL MINERALS	3
c60203	T N IRVINE	NORM COMPUTATION-PYROXENES	3
c60204	T N IRVINE	NORM COMPUTATION-SPINEL	3
c60205	T N IRVINE	EVALUATION OF DETERMINANTS	3
c60206	T N IRVINE	NORM CALCULATIONS (CONT)	3
c60207	T N IRVINE	MUSKOX MAGMA	3
c60208	T N IRVINE	OLIVINE PROJECTIONS	3
c60301	K R DAWSON	TREND SURFACE ANALYSIS	3
c60302	K R DAWSON	GEOLOGICAL ROCK LIBRARY	1
c60303	K R DAWSON	PETROGRAPHIC DESCRIPTION	1
c60304	K R DAWSON	ANSTRUTHER BATHOLITH, BANCROFT ONTARIO	1
c60305	K R DAWSON	NORM CALCULATION	3
c60306	K R DAWSON	TEST OF NORMALITY	3
c60307	K R DAWSON	PETROLOGICAL SCIENCES	2
c60308	K R DAWSON	ROCK NAME CODES	2
c60309	K R DAWSON	LAT LONG CONVERSIONS	3
c60310	K R DAWSON	CHI SQUARED CALCULATIONS	3
c60311	K R DAWSON	WELL CALCULATIONS FOR C F BURK (EDIT)	3
c60335	K R DAWSON	MEASUREMENT OF SECTIONS	3
c60350	K R DAWSON	GEODAT-CARD TO TAPE AND EDIT	1401
c60351	K R DAWSON	GEODAT-FIRST EDIT	3
c60352	K R DAWSON	GEODAT-SORT DETAILS	SORT
c60353	K R DAWSON	GEODAT-SECOND EDIT	3
c60354	K R DAWSON	GEODAT-UPDATE	3
c60355	K R DAWSON	GEODAT-CATALOGUE	3
c60356	K R DAWSON	GEODAT-DICTIONARY	3
c60357	K R DAWSON	GEODAT-PRODUCTION STATISTICS	3
c60358	K R DAWSON	GEODAT-LISTING DECODED DETAILS	3
c60359	K R DAWSON	GEODAT- DECODE CATALOG TAPE	3
c60360	K R DAWSON	GEODAT-LISTING DECODED CAT TAPE	3
c60391	K R DAWSON	BURK WELL CALCULATIONS TO TAPE	3
c60392	K R DAWSON	SORT OF BURK TAPE	SORT
c60393	K R DAWSON	LISTING TO BURK TAPE	3
c60401	F P AGTERBERG	REGRESSION ANALYSIS	3
c60402	F P AGTERBERG	SERIAL CORRELATION	3
c60403	F P AGTERBERG	REGRESSION ANALYSIS	3
c60404	F P AGTERBERG	CORRELATION COEFFICIENTS	1
c60405	F P AGTERBERG	CONFIDENCE LEVELS	1
c60406	F P AGTERBERG	COMPUTATION OF STATISTICS	2
c60407	F P AGTERBERG	CORRELATION MATRIX	SPS
c60408	F P AGTERBERG	EIGENVALUES AND EIGENVECTORS	3
c60409	F P AGTERBERG	REGRESSION EQUATIONS	3
c60410	F P AGTERBERG	ELEMENT DISTRIBUTION SIMULATION	2
c60411	F P AGTERBERG	PROB DISIRIBUTIONS FOR MAXIMUM ENTROPY	2
c60412	F P AGTERBERG	ANALYSIS OF VARIANCE AND X2 TEST	1
c60413	F P AGTERBERG	RANDOM NUMBER GENERATOR	1
c60414	F P AGTERBERG	GENERALIZED ELEMENT DIST SIMULATION	2
c60415	F P AGTERBERG	MUSKOX ANOMALY MAPS	2
c60416	F P AGTERBERG	BARTLETTS X2 TEST	2
c60417	F P AGTERBERG	EXTENDED STATISTICAL CALCULATIONS	2
c60418	F P AGTERBERG	SMIRIG METHOD FOR NON-NORMAL DIST	2
c60419	F P AGTERBERG	REGRESSION ANALYSIS (STUFF MPR-44)	2
c60420	F P AGTERBERG	TREND SURFACE ANALYSIS	2
c60421	F P AGTERBERG	TREND MAP	3
c60422	F P AGTERBERG	POWER SPECTRUM ANALYSIS	3
c60422	F P AGTERBERG	DIRECTIONAL FEATURES	3
c60424	F P AGTERBERG	NON-SYMMETRIC MATRIX INVERSION	3
c60425	F P AGTERBERG	MATRIX MULTIPLICATION	3
c60426	F P AGTERBERG	DOMINANT ROOTS-HIGH POWER METHOD	3
c60427	F P AGTERBERG	VARIMAX MATRIX ROTATION	3
c60428	F P AGTERBERG	SURFACE FITTING	3
c60429	F P AGTERBERG	STATISTICAL CALCULATIONS	3
c60430	F P AGTERBERG	TAPE PROJECT	3
c60431	F P AGTERBERG	MULTIVARIATE SERIES AND EIGENVALUES	3
c60432	F P AGTERBERG	AUTOCOVARIENCE AND POWER SPECTRUM	3

C60433	F P AGTERBERG	BEST SLOPES AND INTERCEPTS	3
C60434	F P AGTERBERG	FAST FOURIER TRANSFORM	3
C60435	F P AGTERBERG	APPLICATION OF FLUFF TO MINING ASSAYS	3
C60501	J L JAMBOR	INDEX RAY	3
C60502	J L JAMBOR	MONOCLINIC COMPUTAION	1
C60503	J L JAMBOR	MONOCLINIC COMPUTATION	1
C60504	J L JAMBOR	REGRESSION ANALYSIS	1
C60505	J L JAMBOR	TRICLINIC COMPUTATION	1
C60506	J L JAMBOR	LATTICE	3
C60601	J E REESOR	REGRESSION ANALYSIS ON NOCKOLD NUMBERS	1
C60701	DOIG	REGRESSION ANALYSIS	1
C60801	W DYKE	CARBON 14 AGE CALCULATION	3
C60901	W R BARAGAR	NORM CALCULATIONS	3
C60902	W R BARAGAR	ADDITIONAL NORM CALCULATIONS	3
C60903	W R BARAGAR	FREQUENCY DISTRIBUTIONS	3
C61001	G LACHANCE	SOLUTION OF N SIMULTANEOUS LINEAR EQNS	3
C61002	G LACHANCE	INTENSITY TO CONCENTRATION	3
C61101	G MURSKY	NORM CALCULATIONS	3
C61102	G MURSKY	ADDITIONAL NORM CALCULATIONS	3
C61103	G MURSKY	MINERAL RATIOS	3
C61201	L S COLLETT	CALCULATION OF TIME CONSTANTS	2
C61301	I F ERMANOVICS	CALCULATION OF ACF AND AKF RATIOS	2
C61302	I F ERMANOVICS	FLUFF REGRESSION ANALYSIS	3
C61401	D T A SYMONS	REMMAG READING RESOL	3
C61402	D T A SYMONS	REMMAG POLE ANALYSIS	3
C60310	D K NORRIS	STATISTICAL CALCULATION	3
C61501	D K NORRIS	DENSITY DIAGRAMS	3
C61601	J A DOUGLAS	FIREBALL TRAJECTORY	3
C61701	R J TRAILL	EMX2	3
C60346	W W HUTCHISON	NORMALIZE AND PLOT 3 COMPONENTS ON	3
C61702	W W HUTCHISON	TRIANGULAR PLOTS (CONT)	3

GEOPHYSICS

C70101	B K BHATTACHARYYA	PROPAGATION OF RECT. EMW. THROUGH EARTH	1
C70102	B K BHATTACHARYYA	RADIATION RESISTANCE ELEC. DIPOLE ANT.	1
C70103	B K BHATTACHARYYA	RADIATION RESISTANCE MAG DIPOLE. ANT.	1
C70104	B K BHATTACHARYYA	PROP OF HALF-LIVE EMW. THROUGH EARTH	1
C70105	B K BHATTACHARYYA	TRANSIENT WAVE PROPAGATION	1
C70106	B K BHATTACHARYYA	MAGNETIC DATA INTERPRETATION	1
C70107	B K BHATTACHARYYA	SURFACE FITTING AND MATRIX INVERSION	1
C71311	B K BHATTACHARYYA	LAMBERT CONFORMAL PROJECTION PLOT	3
C70201	A LAROCHELLE	SIGNAL-NOISE RATIO OF A PICK-UP COIL	3
C70202	A LAROCHELLE	ASTATIC MAGNETOMETER	1
C70203	A LAROCHELLE	FISHERIAN AND VGP CALCULATIONS	2
C70204	A LAROCHELLE	D O MAGNETOMETER CALCULATIONS	3
C70205	A LAROCHELLE	ASTATIC MAGNETOMETER-VERSION 2	2
C70301	A S MACLAREN	TREND SURFACE ANALYSIS	1
C70302	A S MACLAREN	STATISTICAL ANALYSIS	1
C70303	A S MACLAREN	STATISTICAL ANALYSIS OF SP GRAVITY	1
C70401	D J MCCLURE	DISCRETE DATA AUTO-CORRELATION	1
C70402	D J MCCLURE	FOURIER AUTO CORRELATION	1
C70403	D J MCCLURE	FIRST VERTICAL DERIVATIVE FOR PT. POLE	1
C70404	D J MCCLURE	VERT. GRAD. FOR TOT. FIELD, DIPPING POLE	1
C70405	D J MCCLURE	FIRST VERTICAL DERIVATIVE FINITE POLE	1
C70406	D J MCCLURE	TOTAL FIELD FOR A DIPPING DYKE	1
C70407	D J MCCLURE	TOTAL FIELD AND GRADIENT FOR 90 SILL	1
C70408	D J MCCLURE	GRADIENT OF TOT. FIELD FOR DIPPING DYKE	2
C70409	D J MCCLURE	TOT. FIELD, GRADIENT FOR SLOPING SILL	2
C70410	D J MCCLURE	TOT. FIELD, GRADIENT FOR INCLINED POLE	2
C70411	D J MCCLURE	GRADIENT FOR DIPPING DYKE	2
C70412	D J MCCLURE	CAREY FOSTER K METER PROGRAMME	2
C70501	E GAUCHER	MUTUAL INDUCTANCE	2
C70502	E GAUCHER	ANOMALY CALCULATION AND CONTOURING	3
C70503	E GAUCHER	ROCK STATISTICS	3
C70601	A OVERTON	SHOT ANALYSIS	3
C70602	A OVERTON	TIME TERM SOLUTION	3
C70701	L W MORLEY	MAGNETIC SUSCEPTIBILITY PLOT	3
C71303		DOUBLE FOURIER SERIES EXPANSION PART 1	4
C71304		DOUBLE FOURIER SERIES EXPANSION PART 2	4

C F BURK JR
PROGRAMS BY G D CAMERON AND C F BURK JR

FORTRAN IV

CDC 3100 (OTTAWA)

CALCULATING ISOPACH AND STRUCTURE VALUES FROM SUBSURFACE WELL DATA
GEOGRAPHIC SORTING OF WELLS, PREPARATION OF DATA TABLES.

PLOTTING OF SUBSURFACE WELL DATA, MAP ANALYSIS.

DR R G GARRETT

FORTRAN IV
(CENTRAL DATA PROCESSING SERVICES BUREAU, OTTAWA)

IBM 360/65

CDC 3100

(DEPARTMENT OF ENERGY MINES AND RESOURCES)

PROGRAMS BY R G GARRETT AND SOME MODIFIED FROM PREVIOUSLY WRITTEN
PROGRAMS.

STATISTICAL ANALYSIS OF GEOCHEMICAL DATA RELATED TO MINERAL EXPLORATION
PROBLEMS.

UNIVARIATE AND MULTIVARIATE METHODS (FACTOR AND DISCRIMINANT ANALYSIS)
ARE CURRENTLY IN USE FOR INTERPRETING REGIONAL GEOCHEMICAL RECONNAISSANCE
DATA. IN ADDITION AUTOMATED MAPPING PROGRAMS ARE NOW IN USE.

GEOLOGICAL SURVEY OF CANADA

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

VANCOUVER CANADA

DRS J A RODDICK AND W W HUTCHISON

CDC 3100

CALCOMP 563 PLOTTER

INFORMATION SORTING AND RETRIEVAL IN A VARIETY OF FORMS. MACHINE PLOTTING
OF LITHOLOGIC AND STRUCTURAL DATA. COMPUTATION OF MEANS AND STANDARD
DEVIATION OF SPECIFIC GRAVITY DATA ON PLUTONIC ROCKS. TRIANGULAR PLOTS OF
PETROGRAPHIC DATA. LOCATION COORDINATES ARE DIGITIZED BY MACHINE.

TO FURTHER THE AIMS OF THE COAST MOUNTAINS PROJECT WHICH IS A GEOLOGICAL
INVESTIGATION OF THE COAST CRYSTALLINE BELT OF BRITISH COLUMBIA, ON A
REGIONAL SCALE OF 1 INCH = 4 MILES. DATA IS RECORDED ON PRINTED SHEETS
(IN FIELD) DESIGNED FOR CONVENIENT KEY-PUNCHING TO STANDARD IBM CARDS.
PETROGRAPHIC DATA IS LATER RECORDED ON IBM CARDS. SOME OF THE FIELD
PETROGRAPHIC DATA IS SUBSEQUENTLY TRANSFERRED TO MAGNETIC TAPE.

GEOLOGISCH INSTITUUT DER RIJKSUNIVERSITEIT
W S KOLDIJK

PL/1

LEIDEN

NETHERLANDS

IBM 360/50

TEXTURAL PARAMETERS (GRAPHIC AND MOMENT MEASURES FROM GRAIN-SIZE
DATA, ROUNDNESS), FOR DESCRIPTION OF ENVIRONMENT.

SEDIMENT-PETROLOGICAL DATA-PROCESSING.

MR J R MOCKEL

FORTRAN IV

IBM 360/50 (LEIDEN)

PROGRAMS BY J R MOCKEL

MANIPULATIONS WITH PETROFABRIC DIAGRAMS.

TRANSFORMATION OF DATA FROM 5-AXIS UNIVERSAL STAGE INTO SPHERICAL
COORDINATES. ROTATION OF FABRIC DATA. PLOTTING OF FABRIC DATA. COUNTING
OUT OF FABRIC DIAGRAMS WITH CIRCULAR COUNTERS OF VARIOUS SIZES ETC.

MR J F SAVAGE

SIMPLON

ZEBRA (DELFT)

PROGRAMS BY J W J COLLET

CALCULATION OF DELTA LINEATIONS FROM FIELD MEASUREMENTS OF BEDDING AND
CLEAVAGE. PLOTTING AND COUNTING OF POLE AND LINEATION DIAGRAMS.

STRUCTURAL ANALYSIS. SEQUENTIAL SAMPLING.

ELECTROLOGICA X1 (LFIDEN)
IBM 1620 (ARNHEM)

PROGRAMS BY A J BYWAARD, M DAVIS, W BROWN AND D A ZEILMAKER

CORRELATION COEFFICIENTS OF GROUND WATER LEVELS DURING LONG PERIOD PUMPING. RUN OFF CALCULATIONS FROM RAINFALL RECORDS.

HYDROLOGY, SURFACE AND SUBSURFACE.

CROYDON ENGLAND

TEXAS INSTRUMENTS AUTOMATIC COMPUTER

MR R COTTON

IBM 7094 (SERVICES BUREAU)

PROGRAMS BY COMPANY PROGRAMMERS AND R COTTON

PROCESSING OF EXPLORATION SEISMIC DATA. INTERPRETATION OF SEISMIC DATA

STRUCTURAL AND SEDIMENTATION STUDIES IN SEDIMENTARY BASINS WITH PARTICULAR REFERENCE TO SEISMIC VELOCITIES.

GLASGOW SCOTLAND

EEC KDF9

PROGRAMS BY J G MACDONALD

CALCULATION OF MINERAL UNIT CELL ATOMIC PROPORTIONS, CATION PERCENTAGES, CIPW NORMS AND NORMS IN MOLECULAR PROPORTIONS FROM CHEMICAL ANALYSES OF ROCKS AND MINERALS. CALCULATION OF BASIS COMPONENTS (BURRI 1964). CALCULATION OF COORDINATES OF POINTS IN PLANES WITHIN TETRAHEDRAL PLOTS OF EXPERIMENTAL DATA.

THE INVESTIGATION OF TRENDS AND AFFINITIES OF THE CHEMICAL VARIATION
WITHIN THE SCOTTISH CARBONIFEROUS-PERMIAN IGNEOUS PROVINCE.
INTERPRETATION OF EXPERIMENTAL DATA (IN COLLABORATION WITH DR C D GRIBBLE
OF THE DEPT OF GEOLOGY, UNIVERSITY OF GLASGOW)

EEC KDF9, GLASGOW

PROGRAMS BY I E PENN

OUTPUTS REPERTOIRE OF UNIVARIATE AND BIVARIATE STATISTICS USED IN
PALAEONTOLOGICAL DESCRIPTION

STATISTICAL DESCRIPTION OF PALAEONTOLOGICAL DATA (BRACHIOPOD BIOMETRY).

PROGRAMS BY B E COOPER FORTRAN ASCOP STATISTICAL PACKAGE ICT ATLAS
(CHILTON)

EMENDATION OF THIS PACKAGE TO MAKE IT SUITABLE FOR PALAEOONTOLOGICAL
STATISTICAL PROCEDURES.

PROGRAMS BY DR J PARKS, LEHIGH UNIVERSITY

CLUSTER AND FACTOR ANALYSIS OF BRACHIOPOD DATA AND LUDLOVIAN BRACHIOPOD DISTRIBUTIONS.

DISTRIBUTIONS.

PROGRAM BY J W HARBAUGH, 1963, KANSAS GEOL SURV SP DIST PUBLS 3, 1-17
TRANSLATED FROM BALGOL TO ALGOL 60 BY L ROBERTSON.

TREND SURFACE ANALYSIS

EEC KDF9

REDUCTION OF MAGNETIC AND GRAVITY DATA AND INTERPRETATION BY COMPARISON
WITH THEORETICAL MODELS.

EEC KDF9

TO CALCULATE THE HORIZONTAL, VERTICAL OR TOTAL FIELD MAGNETIC ANOMALY DUE
TO A TWO-DIMENSIONAL POLYGON (MAXIMUM NUMBER OF SIDES IS 9) ALONG A
PROFILE PERPENDICULAR TO THE STRIKE. TRANSLATED INTO K-ALGOL

PROGRAM BY R JEFFREYES K-ALGOL

POLYNOMIAL CURVE FITTING. FOR APPLICATION TO PROFILES OR GRAPHICAL PLOTS.

PROGRAM BY M GIBSON K-ALGOL

SURFACE FITTING PROGRAM. UP TO HIGH ORDERS (EG DEGREE 12 FOR 650 POINTS)
THIS IS A TRANSLITERATION OF ELLIOTT AUTOCODE PROGRAM OF J CADWELL
R A E FARNBOROUGH.

PROGRAMS BY D W POWELL K-ALGOL

A SET OF PROGRAMS FOR THE CALCULATION OF THE HORIZONTAL, VERTICAL OR TOTAL
FIELD ANOMALIES DUE TO A SERIES OF TRAPEZOID PRISMS- THESE PRISMS MAY BE
COMBINED AS BRICKS IN SIMULATION OF THE MAGNETIC ANOMALY DUE TO A
VARIETY OF GEOLOGICAL MODELS.

PROGRAMS BY D D INAMDAR ALGOL 60 EEC KDF9

TO EVALUATE TERRAIN CORRECTIONS TO A GRAVITY-STATION. THE PROGRAM
CONSIDERS TERRAIN EFFECT OF THE AREA WITHIN 22 KM. RADIUS FROM THE GRAVITY-
STATION.

TO ASSIST IN PRELIMINARY REDUCTIONS OF GRAVITY DATA FOR INTERPRETATION.

GRAHAM LEA AND ASSOCIATES CALGARY CANADA
MR G LEA FORTRAN IV, V, ASSEMBLER
UNIVAC 1108, 1050, IBM 7044, HONEYWELL 1200 ETC
PROGRAMS BY G LEA

PETROLEUM EXPLORATION AND PRODUCTION PROGRAMS, INFORMATION RETRIEVAL
PROGRAMS, DATA COMPRESSION ALGORITHMS, ETC.

SIMULATION OF THE WESTERN CANADA SEDIMENTARY BASIN. ON-LINE REAL-TIME
INFORMATION RETRIEVAL SYSTEM FOR EXPLORATION (PETROLEUM) DATA, USING
CATHODE-RAY TUBE DISPLAYS AND TYPEWRITERS.

GULF RESEARCH AND DEVELOPMENT COMPANY PITTSBURGH U.S.A.
MR E L COUCH FORTRAN II IBM 7094
PROGRAMS BY E.L. COUCH AND J. LACY

MOSTLY STATISTICAL, ONE DIMENSIONAL FOURIER SYNTHESIS FOR CLAY MINERAL
STRUCTURES, MISCELLANEOUS DATA ANALYSES.

STATISTICAL ANALYSIS OF GRAIN SIZE DATA, STATISTICAL ANALYSIS OF LAB.
CHEMICAL DATA (ANALYSIS OF VARIANCE, FACTOR ANALYSIS, MULTIPLE
REGRESSION ANALYSIS, ETC.)

HIMEJI INSTITUTE OF TECHNOLOGY HIMEJI JAPAN
DR K WADATSUMI NEAC AUTOCODE NEAC 2230 (HIMEJI)
FORTRAN IV, COBOL, ALGOL FACOM 270-20 (HIMEJI)
PROGRAMS BY WADATSUMI, HIROMURA, MIYAWAKI

NORMS ANALYSIS OF ANALYSED CHEMICAL DATA

CLASSIFICATION OF VOLCANIC ROCKS COLLECTED IN JAPAN.

HUNTING GEOLOGY AND GEOPHYSICS LTD BOREHAM WD ENGLAND
MR D B MORRIS ELLIOTT AUTOCODE AND ALGOL ELLIOTT 803

SPECIALIST GEOPHYSICAL PROGRAMMES

MR W A WILLOX ELLIOTT 803
IBM 360

TREND ANALYSIS OF PHOTO GEOLOGICAL FRACTURE DATA.

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR INDIA
DR S V L N RAO FORTRAN II IBM 1620 MARK I
PROGRAMS BY DR S V L N RAO AND FROM KANSAS GEOL. SURVEY AND OTHER SOURCES.

GEOSTATISTICAL PROBLEMS. LP AND SIMULATION PROGRAMS.
APPLICATION OF INFORMATION THEORY AND SIMULATION SURFACES AND THEIR
REPRESENTATION. GUIDING WORK BASED ON DETERMINATION OF SPECTRAL
CHARACTERISTICS OF SOME MINERAL DISTRIBUTIONS. FORMERLY CRYSTAL STRUCTURE
WORK AND DETERMINED SULPHOSALT STRUCTURES.

INDIANA GEOLOGICAL SURVEY
MR R F BLAKELY

BLOOMINGTON U.S.A.
ALGO, INTERCOM AND MACHINE LANGUAGE
CDC G15
FORTRAN CDC 3400-3600

GEOPHYSICAL DATA PROCESSING, CHEMICAL DATA PROCESSING, GEOLOGICAL MODELLING,
WELL INFORMATION RETRIEVAL, PALEONTOLOGICAL STATISTICS.

GEOLOGICAL AND ECONOMIC RESEARCH IN INDIANA.

DR P E POTTER ALGO AND FORTRAN CDC G15 AND CDC 3400-3600
PROGRAMS BY R BLAKELY

PERMEABILITY, TRACE ELEMENTS, HEAVY MINERAL MAPPING AND SYNTHETIC
GENERATION OF VERTICAL PROFILES.

INSTITUTE OF GEOLOGICAL SCIENCES
MR J M DEAN

EDINBURGH SCOTLAND
ATLAS (CHILTON)
IBM 1620 (ST ANDREWS)
IBM 7040 (KANSAS)

FORTRAN II
FORTRAN IV
PROGRAMS BY D F MERRIAM, A J COLE, T V LOUDON

TREND SURFACE ANALYSIS, PRINCIPAL COMPONENT ANALYSIS, CLUSTER ANALYSIS,
CROSS ASSOCIATION, ETC., OF STRATIGRAPHICAL DATA FROM CYCLICALLY-DEPOSITED
CARBONIFEROUS SEDIMENTS IN THE MIDLAND VALLEY OF SCOTLAND.
ALSO INTERESTED IN MARKOV CHAINS AND ANY APPLICATION OF COMPUTERS TO
PALAEOCURRENT ORIENTATION WORK.

INSTITUTE OF GEOLOGICAL SCIENCES
A J WADGE

LEEDS ENGLAND
EEC KDF 9 (LEEDS UNIVERSITY)

PROGRAMS ADAPTED BY A J WADGE FROM PROGRAMS OF KANSAS GEOLOGICAL SURVEY.

TREND SURFACE ANALYSIS.

DETERMINATION OF THICKNESS AND FACIES VARIATIONS IN THE PERMO-TRIAS
EVAPORITE SEQUENCE OF THE VALE OF EDEN. CLOSELY ALLIED WITH THE SIX-
INCH FIELD MAPPING OF THE PENRITH AREA (GS SHEET 24)

INSTITUTE OF GEOLOGICAL SCIENCES
DR J W AUCOTT PL1

LONDON ENGLAND
IBM 360/67

THE FOLLOWING PROGRAMS ARE AVAILABLE IN CONJUNCTION WITH THE UNIVERSITY
OF DURHAM FOR THE NUMAC COMPUTER.

MICROPROBE RAW DATA PROCESSOR FOR A TWIN CHANNEL MICROPROBE (GEOSCAN).
CORRECTS FOR DEAD TIME, BACKGROUND, DRIFT. OUTPUT IS UNCORRECTED ANALYSES
WHICH MAY BE DIVIDED INTO GROUPS FOR AVERAGING. WORKS IN CONJUNCTION
WITH PROGRAM 2.

CORRECTS FIRST APPROXIMATION ANSWERS FROM THE MICROPROBE FOR ABSORPTION,
FLUORESCENCE AND ATOMIC NUMBER BY AN ITERATIVE PROCEDURE.

MISCELLANEOUS CALCULATIONS FOR MINERAL UNIT CELLS AND END MEMBER
COMPOSITIONS OF OLIVINES, PLAGIOCLASE, ALKALI FELDSPARS, AND PYROXENES.
USED IN CONJUNCTION WITH MICROPROBE PROGRAMS.

ROTATION OF STEREOGRAMS AND DIRECT X-RAY TEXTURE CAMERA PLOTTING PROGRAM-
WRITTEN IN CONJUNCTION WITH A BURGESS, UNIVERSITY OF DURHAM.

DR T V LOUDON FORTRAN IV ICT ATLAS (CHILTON)
PROGRAMS BY T V LOUDON AND FROM IBM, BIMD, COOLEY AND LOHNES,
NORTHWESTERN UNIVERSITY, KANSAS GEOLOGICAL SURVEY AND ATLAS COMPUTER
LABORATORY

ORGANISATION AND INTERROGATION BY COMPUTER OF LARGE GEOLOGICAL DATA FILES.
QUANTITATIVE DESCRIPTION OF GEOLOGICAL SURFACES. PACKAGE OF PROGRAMS FOR
GEOLOGICAL DATA ANALYSIS.

MR P E R LOVELOCK
PROGRAMS BY P E R LOVELOCK

FORTRAN IV

ICT ATLAS

COMPUTATION OF RESULTS OF LABORATORY TESTS OF AQUIFER PROPERTIES COMPRISING FLUID PERMEABILITY, DENSITY AND POROSITY. SECOND STAGE OF PROJECT WILL INVOLVE LENGTHY CORRELATION OF THESE PARAMETERS WITH PARTICLE AND PORE-SIZE ANALYSIS.

CORRELATION OF LITHOLOGY WITH AQUIFER PROPERTIES.

DR P A SABINE

ALGOL, FORTRAN

EEC KDF 9(N.P.L.)
ICL ATLAS

PROGRAMS BY NATIONAL PHYSICAL LABORATORY AND T GOVER, CHILTON LAB.

NORMS (AT PRESENT). INVESTIGATION IN PROGRESS OF APPLICATION OF COMPUTERS TO SEVERAL SURVEY PROBLEMS E.G. INFORMATION STORAGE AND RETRIEVAL. GEOCHEMISTRY (GEOSCAN, X-RAY FLUORESCENCE) PETROLOGY GENERALLY, STATISTICAL ANALYSIS.

GEOPHYSICS DEPARTMENT

W BULLERWELL

EXTENDED MERCURY AUTOCODE

ICT ATLAS

A J BURLEY

HARTRAN

ICT ATLAS

C R CRATCHLEY

FORTRAN V

ICT ATLAS

R B EVANS

P M HOWELL

D MASSON-SMITH

R MCQUILLIN

C N C NWAIGWE

G TURNBULL

PROGRAMS BY GEOPHYSICS DEPARTMENT

EXTENDED MERCURY AUTOCODE (EMA)

GRID-GEOGRAPHIC CONVERSIONS FOR BRITISH GUIANA, BARBADOS, BRITISH WEST INDIES AND JAMAICA.

LEAST-SQUARES BACKGROUND FIELD REMOVAL, MEAN ELEVATIONS IN 5-MINUTE SQUARES, ATTRACTION OF RECTANGULAR BLOCKS, ISOSTATIC CORRECTIONS (LAND AND MARINE), GRAVITY DATA PROCESSING (1), GRAVITY DATA PROCESSING (2), GRAVITY DATA PROCESSING FORMAT TEST, GRAVITY AND MAGNETIC TERRAIN CORRECTIONS, U K GRAVITY TERRAIN CORRECTIONS, GRAVITY TIDE CORRECTIONS, MARINE GRAVITY DATA REDUCTION IN HOME WATERS, GRAVITY DATA FILE (MAGNETIC TAPE DATA BANK), DIRECT INTERPRETATION 2-D GRAVITY (METHOD OF STEEPEST DESCENT), 2-D GRAVITY/MAGNETIC SIMULATOR, GRAVITY AND MAGNETIC FIELD DUE TO AN IRREGULAR BODY (3-D), ELSEC MAGNETOMETER CONVERSION TABLE, WENNER RESISTIVITY CURVES (MOONEY AND WETZEL RANGE), APPARENT RESISTIVITY DATA FOR WENNER CONFIGURATION, APPARENT RESISTIVITY DATA FOR DIPOLE/DIPOLE CONFIGURATION, LAYER THICKNESS AND VELOCITY FROM REFRACTION SEISMIC DATA.

HARTRAN

U K GRAVITY EDITING AND GEOGS-GRID/GRID-GEOGS CONVERSION, AUTOMATIC PLOTTING AND CONTOURING OF GRAVITY DATA WITH THE SC 4020 (UNDER DEVELOPMENT)

FORTRAN V

2-D FOURIER TRANSFORM FOR AEROMAGNETIC DATA (UNDER DEVELOPMENT)

PHOTOGEOLOGICAL DIVISION

MR J E G W GREENWOOD

ICT ATLAS

INTERESTED, IN PARTICULAR, IN APPLICATIONS TO PHOTOGEOLOGICAL PROBLEMS.

SO FAR ONLY STATISTICAL ANALYSIS OF GEOCHEMICAL DATA.

KANSAS, STATE GEOLOGICAL SURVEY OF

LAWRENCE

U.S.A.

DR J C DAVIS

FORTRAN II, FORTRAN IV, BASIC

IBM 360/50
IBM 1130

GE 635
(UNIV OF KANSAS)

PROGRAMS BY J C DAVIS AND R J SAMPSON

TWO- AND THREE-VARIABLE RESPONSE SURFACES. DISCRIMINANT ANALYSIS. TIME-SERIES ANALYSIS. BASIN STRUCTURE ANALYSIS. PROGRAMS FOR MINERALOGIC AND PETROGRAPHIC ANALYSIS OF SEDIMENTARY ROCKS. OPTICAL PROCESSING AND PATTERN RECOGNITION.

GENERAL EVALUATION OF COMPUTER APPLICATIONS TO GEOLOGY. ROUTINE EVALUATION OF SAMPLES ANALYZED BY THE PETROGRAPHY LABORATORY, KGS.

DR D F MERRIAM

FORTRAN IV

IBM 360/50, 65
IBM 1130
GE 625
B 5500

PROGRAMS WRITTEN BY GEOLOGISTS, PROGRAMMERS AND SUMMER CONSULTANTS AT THE KANSAS GEOLOGICAL SURVEY.

THE PROGRAMS ARE DESIGNED FOR THE PROCESSING OF GEOLOGICAL DATA. A LIST OF PROGRAMS AND COMPUTER PUBLICATIONS AVAILABLE MAY BE OBTAINED BY WRITING THE EDITOR, COMPUTER CONTRIBUTION SERIES, KANSAS GEOLOGICAL SURVEY, LAWRENCE, KANSAS. PROGRAMS HAVE BEEN PUBLISHED IN TREND ANALYSIS, TIME-TREND AND TIME-SERIES ANALYSIS, CLASSIFICATION, DISCRIMINATION, FACTOR AND VECTOR ANALYSIS, PROBABILISTIC AND DETERMINISTIC GEOLOGIC MODELING, AND PETROGRAPHIC ANALYSIS.

PRESENT RESEARCH INCLUDES TECHNIQUES FOR ANALYSIS OF SEQUENCES, CRYSTAL STRUCTURES, AND BASIN STRUCTURE PATTERNS. WORK IS CONTINUING ON ECONOMETRICS STRATIGRAPHIC CORRELATION, INFORMATION RETRIEVAL SYSTEMS, AND COMPUTER AIDED INSTRUCTION.

KANSAS, UNIVERSITY OF
R L KAESLER FORTRAN IV
PROGRAMS BY R L KAESLER AND F J ROHLF

LAWRENCE U.S.A.
GE 625(KU)

NUMERICAL TAXONOMY AND QUANTITATIVE STUDY OF PALEOECOLOGY.

NUMERICAL TAXONOMY OF OSTRACODA AND FUSULINIDAE, QUANTITATIVE STUDY OF ECOLOGY OF THESE TWO GROUPS.

DR A J ROWELL FORTRAN IV
PROGRAMS BY ROHLF AND KISHPAUGH

GE 635

NTSYS PACKAGE.
GRAFPAC - GRAPHIC OUTPUT SUBROUTINES
USED FOR THE ANALYSIS OF PALAEONTOLOGICAL DATA.

KEELE, UNIVERSITY OF
MR M S BARRATT ALGOL
PROGRAMS BY M S BARRATT AND DR G R PARSLow

KEELE ENGLAND
EEC KDF9

FOR CALCULATING SPECTROGRAPHIC RESULTS. READINGS FROM A HILGER AND WATTS MICROPHOTOMETER FORM THE INPUT DATA. OUTPUT CONSISTS OF SPECTRAL LINE INTENSITY RATIOS. CALCULATION OF MEANS AND STANDARD DEVIATIONS OF GROUPS OF DATA.

PETROCHEMICAL CALCULATIONS

KINGSTON COLLEGE OF TECHNOLOGY
DR G R PARSLow ELLIOTT ALGOL
PROGRAMS BY G R PARSLow AND ONE MODIFIED FROM BOTT.

KINGSTON ENGLAND
ELLIOTT 4120 (KCT)

GEOPHYSICAL REDUCTIONS, 2D AND 3D MODEL FITTING TO GRAVITY ANOMALIES.

GRAVIMETRIC STUDY OF S UPLANDS PLUTONS

LABORATOIRE DE GEOLOGIE DYNAMIQUE
DR A GUILLAUME FORTRAN IV
PROGRAMS BY A GUILLAUME

PARIS FRANCE
CDC 3600 AND IBM 360/50

SURFACES DE TENDANCE. CARTOGRAPHIE AUTOMATIQUE.

TECTOPHYSIQUE ET PALEO GEOGRAPHIE.

LEICESTER, UNIVERSITY OF
DR M A KHAN

ELLIOTT AUTOCODE
ELLIOTT AUTOCODE
FORTRAN AND ALGOL

LEICESTER ENGLAND
ELLIOTT 803
ELLIOTT 4130
IBM (KANSAS)

PROGRAMS BY M A KHAN AND KANSAS GEOLOGICAL SURVEY

GEOPHYSICAL COMPUTATIONS. TREND SURFACE ANALYSIS (KANSAS PROGRAM)

MR M J SACKIN
DR P H A SNEATH

ELLIOTT ALGOL
FORTRAN IV

ELLIOTT 803
ICT ATLAS (CHILTON)
IBM 7090 (I.C.)
ELLIOTT 4130

PROGRAMS BY P H A SNEATH, MRS L A JORDAN, AND M J SACKIN
ALSO PROGRAMS BY P F SMITH AND O T SPITZ OF THE KANSAS GEOLOGICAL SURVEY

MOST OF THE PROGRAMS ARE FOR CLASSIFICATION IN BIOLOGY, BUT CAN BE APPLIED TO VARIOUS FIELDS, INCLUDING GEOLOGY. MANY OF THE PROGRAMS ARE DESCRIBED IN ISSUE NO 1 OF THE CLASSIFICATION PROGRAMS NEWSLETTER, DISTRIBUTED BY THE MEDICAL RESEARCH COUNCIL MICROBIAL SYSTEMATICS RESEARCH UNIT, UNIVERSITY OF LEICESTER. THESE INCLUDE THE FOLLOWING
04-ALGOL-04 CROSS-ASSOCIATION. SIMILAR TO CROSS-CORRELATION, BUT FOR NON-NUMERIC SEQUENCES SUCH AS AMINO ACID SEQUENCES OR ROCK STRATA. (MJS)
04-FORT-03 FORTRAN IV VERSION OF ABOVE (PFS)
09-ALGOL-03 BEST FIT OF 2-D FIGURES. TAKES TWO FIGURES OF HOMOLOGOUS POINTS, SCALES FIGURES TO SAME SIZE, AND PLACES THEM IN POSITION OF BEST FIT. CALCULATES MEASURES OF FIT FOR INPUT TO TREND SURFACE PROGRAM (PHAS AND LAJ).
09-ALGOL-04 3-D VERSION OF BEST FIT PROGRAM.
09-ALGOL-07 CURVE-SEEKING FROM SCATTERED POINTS IN ANY NUMBER OF DIMENSIONS. ADJUSTS POSITION OF POINTS TO COLLAPSE THEM INTO SMOOTH CURVES (PHAS AND LAJ, NOT YET FULLY WRITTEN). SEE PHAS (1966) COMPUTER J. 8 383-391
PROGRAM SPECIFICATION AND/OR REPRINTS OF RELEVANT ARTICLES ARE AVAILABLE FOR THE ABOVE PROGRAMS ON REQUEST TO MJS.
FORTRAN IV TREND SURFACE PROGRAM UP TO 6TH ORDER (OTS) IS ALSO IN USE.

INTERESTED, IN COLLABORATION WITH DR D F MERRIAM, IN PUTTING ONTO COMPUTERS THE FOLLOWING GEOLOGICAL PROBLEMS.
TREND SURFACE ANALYSIS
CONCORDANCE BETWEEN TRENDS
STRIKE AND DIP CONTOURING
MATCHING OF ROCK SEQUENCES FROM DIFFERENT LOCALITIES
CYCLOTHEM STUDIES
MEASURING RESEMBLANCE BETWEEN MAPS AND SURFACES.

LIVERPOOL, THE UNIVERSITY OF
MR G S P THOMAS
PROGRAMS BY G S P THOMAS

FORTRAN IV

LIVERPOOL ENGLAND
EEC KDF9

SEDANAL - PACKAGE OF THREE PROGRAMS FOR ANALYSIS OF SUPERFICIAL (GLACIAL AND PERIGLACIAL) DEPOSITS.
TILFAB. TWO AND THREE DIMENSIONAL TILL FABRIC. GRAINS. SEDIMENT SIZE DISTRIBUTION. PARTIAL. MACRO PARTICLE FORM CHARACTERISTICS.

STANDARD STATISTICAL PROCEDURES, MOSTLY AMENDED, WITH SOME OF OWN DESIGN. INCLUDE, N POPULATION DISCRIMINANT FUNCTION, SIMPLE AND MULTIPLE LINEAR REGRESSION, Q AND R MODE FACTOR ANALYSIS, ASSOCIATION ANALYSIS.

LONDON UNIVERSITY
IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY
C J DIXON

MOSTLY FORTRAN
SOME ALGOL 60

LONDON ENGLAND
IBM 1401/7090 (I.C.)
ICT ATLAS (LONDON)

PROGRAMMING ADVISER TO THE GEOLOGY DEPARTMENT
PROGRAMS DEVELOPED AT IMPERIAL COLLEGE AND ELSEWHERE.

STATISTICAL ANALYSIS OF GEOLOGICAL FEATURES OF MINERAL DEPOSITS. PROGRAMS INCLUDE DATA EDITING ROUTINES AND VARIOUS MULTIVARIATE ANALYTICAL PROGRAMS.
GRAPHICAL INPUT/OUTPUT OPERATIONS.
UNDER DIRECTION OF C J DIXON

CALCULATIONS IN ROCK MECHANICS AND SOIL MECHANICS.
SPECIALLY DEVELOPED PROGRAMS TO SIMULATE VARIOUS ROCK MECHANICAL AND
SOIL MECHANICAL PROBLEMS.
UNDER GENERAL DIRECTION OF J KNILL
PROCESSING AND CORRECTION OF ELECTRON PROBE MICROANALYSIS RESULTS.
SPECIALLY DEVELOPED PROGRAMS TO CARRY OUT PROGRAMS FOR ABSORPTION ETC.
UNDER DIRECTION OF M T FROST AND T K KELLY

SIMULATION OF DEFORMATION IN ROCKS.
SPECIALLY DEVELOPED SIMULATION PROGRAMS TO STUDY EFFECT OF STRESSES ON
PEBBLY OOLITES ETC.
UNDER DIRECTION OF N J PRICE.

DATA PROCESSING AND STATISTICAL ANALYSIS OF FEATURES APPEARING ON AIR
PHOTOGRAPHS
SPECIALLY DEVELOPED ROUTINES.
DIRECTION BY J NORMAN.

MR J FERGUSON FORTRAN IV
PROGRAMS AND MODIFICATIONS BY J FERGUSON

IBM 7094(1.c.)

TIME TREND ANALYSIS(MOD)
VECTOR TREND ANALYSIS (MOD)
GROWTH ANALYSIS
STRATIGRAPHIC MATCHING
ENTROPY
TREND SURFACE ANALYSES (MOD)
VARIATION AND COVARIATION
MARKOV CHAINS (MOD)

PALAEONTOLOGIC AND STRATIGRAPHIC STUDIES OF MIDDLE JURASSIC IN
NORTHAMPTONSHIRE, ENGLAND.

J A FRANKLIN FORTRAN IV
PROGRAMS BY J A FRANKLIN

IBM 7090(1.c.)

ROCK STRENGTH ANALYSIS. CLASSIFICATION OF ROCK ACCORDING TO TRIAXIAL
STRENGTH AND OTHER MECHANICAL PROPERTIES.

ROCK MECHANICS AND ENGINEERING

DR R J HOWARTH FORTRAN IV
PROGRAMS BY R G GARRETT, J KHALEELEE, R J HOWARTH

IBM 7094(1.c.)

ANALYTICAL CONTROL OF REGIONAL GEOCHEMICAL DATA, BASIC STATISTICAL
ANALYSIS OF TRACE ELEMENT DISTRIBUTIONS, GRAPHICAL DISPLAY, MULTIVARIATE
STATISTICS APPLIED TO REGIONAL TRACE ELEMENT DISTRIBUTION PATTERNS
(FACTOR AND CLUSTER ANALYSIS)

COMPUTER-AIDED INTERPRETATION OF REGIONAL GEOCHEMICAL SURVEYS.

A W MALONE FORTRAN IV
PROGRAMS BY B STIMPSON AND A W MALONE

IBM 7090

ROCK NOISE ANALYSIS (ACOUSTIC SIGNALS GENERATED BY STRESSING)
THE AMPLITUDE DISTRIBUTION AND ENERGY OUTPUT RELATIONS

ROCK ENGINEERING

DR N MORGENSTERN FORTRAN

IBM 7090
ICT 1900

PROGRAMS BY V E PRICE, CITY UNIVERSITY, AND DR N MORGENSTERN

MECHANICS OF LANDSLIDES
OPTICAL RESPONSE OF AGGREGATE OF ORIENTED BIREFRINGENT CRYSTALS
STRESSES IN ROCK MASSES

LANDSLIDES AND RELATED PHENOMENA
PARTICLE ORIENTATION IN SEDIMENTS
SEDIMENTATION AND COMPACTION OF SEDIMENTS
VARIOUS PROBLEMS RELATED TO STRESSES IN SOILS AND ROCKS

DR I NICHOL
PROGRAMS BY R G GARRETT

FORTRAN IV

IBM 7094(I.C.)

DETERMINATION OF FREQUENCY DISTRIBUTION MEAN S.D. SKEWNESS KURTOSIS
DETERMINATION OF ANALYTICAL PRECISION
SURFACE TREND ANALYSIS - MODIFICATION AFTER WHITTEN
ROLLING MEAN ANALYSIS
FACTOR - VECTOR ANALYSIS. MODIFICATION AFTER IMBRIE AND VAN ANDEL.

PROGRAMS BY R J HOWARTH - TAXONOMY PACKAGE

TAXONOMY PACKAGE TRANSFORMS RAW DATA, FORMS CORRELATION, DISTANCE, OR
JACCARD/SOKAL-MICHENER COEFFICIENTS OF ASSOCIATION, CLUSTERS BY WEIGHTED/
UNWEIGHTED VARIABLE/PAIR GROUP METHODS. DRAWS DENDROGRAM.
CAN HANDLE UP TO 200 OTUS IN R- OR Q-MODE.

COMPUTER-AIDED INTERPRETATION OF REGIONAL GEOCHEMICAL SURVEYS

B STIMPSON
PROGRAMS BY B STIMPSON

FORTRAN IV

IBM 7090

FINITE ELEMENT METHOD FOR TWO DIMENSIONAL ELASTIC ANALYSIS OF DAM
FOUNDATIONS WITH IRREGULAR GEOMETRIES AND COMPLEX GEOLOGICAL STRUCTURE.
ROUTINE USING CALCOMP PLOTTER (MODEL 563) TO PLOT PRINCIPAL STRESSES,
NORMAL AND SHEAR STRESSES, AND FINITE ELEMENT IDEALISATION FROM A FINITE
ELEMENT ANALYSIS.

KINGS COLLEGE

DR A HALL

EXCHLF AND FORTRAN IV

ICT ATLAS (LONDON UNIV.)
IBM 360/65 (UNIV. COLL. LONDON)
CDC 1700 (KINGS COLL. LONDON)

PROGRAMS BY A HALL AND OTHERS

RECALCULATION OF ROCK AND MINERAL ANALYSES, CALCULATION OF CORRECTIONS
IN XRF ANALYSIS, TREND SURFACE ANALYSIS, CRYSTALLOGRAPHIC PROGRAMS.

MR R I YOUNG
PROGRAMS BY R I YOUNG

FORTRAN IV

IBM 360/65 (UNIV. COLL. LONDON)

ANALYSIS OF SEDIMENTOLOGICAL DATA.

QUEEN MARY COLLEGE

DR A B POOLE

FORTRAN

ICL ATLAS (LONDON)
ICL 1905E (QMC)

PROGRAM FROM BRITISH MUSEUM MODIFIED FOR EXCHLF.

B.M. PROGRAM - NORMS, MOL. PROPORTIONS ETC.
BRAGG EQUATION SOLUTION AND TABULATION OF RESULTS FOR USE WITH THE
X-RAY SPECTROGRAPH. X-RAY FLUORESCENT SPECTROGRAPH CALIBRATION AND
CALCULATION OF RESULTS. SEDIMENTARY NORM FOR EVALUATION OF MOINE
METASEDIMENT DATA.

CORRECTION OF X-RAY FLUORESCENT ANALYSIS RESULTS. IN PREPARATION -TREND
SURFACE ANALYSIS FOR USE IN CONNECTION WITH MOINE GEOCHEMICAL DATA.

GEOCHEMICAL CALCULATIONS FOR STANDARD FORMAT DATA CARDS, CIPW NORM(W FRENCH)
ACF DIAGRAM COORDINATES, SIMPLE CURVE FITTING, OXIDE TO ELEMENT AND
ELEMENT TO OXIDE CONVERSION.

UNIVERSITY COLLEGE

DR A J LLOYD
PROGRAMS BY A J LLOYD AND OTHERS

FORTRAN IV

IBM 360/65(UCL)

SIMPLE STATISTICS, TREND SURFACES, CLUSTERING ETC.

HYDROGEOLOGICAL PROBLEMS, NUMERICAL TAXONOMY, STRATIGRAPHY-FAUNAL AND
LITHOLOGICAL RELATIONSHIPS.

WYE COLLEGE
DR B BOOTH

FORTRAN II

IBM 1620
ELLIOTT 4130

PROGRAMS BY DR T P BURNABY

TREND SURFACE ANALYSIS OF GEOLOGIC DATA
CALCULATION OF CELL CONTENT

CONVERSION OF RAW WEIGHT PERCENTAGES (CHEMICAL ANALYSIS) INTO CATION
PERCENTAGES, CATAMOLECULAR NORMS, NIGGLI VALUES AND CELL CONTENT.
TREND SURFACE ANALYSIS OF GEOLOGIC (MODAL) DATA.

LUTON, COLLEGE OF TECHNOLOGY

DR G TAYLOR

FORTRAN II AND IV

LUTON

ENGLAND

ICL ATLAS (CHILTON)
ICL 1902 (LUTON)

PROGRAMS BY WHITTEN, GARRETT, KRUMBEIN, LOUDON AND TAYLOR

TREND SURFACE ANALYSIS, REPRESENTATION OF DATA AND COMPUTATION OF
STANDARD STATISTICAL TESTS, FACTOR ANALYSIS, STOCHASTIC PROCESS MODELS,
CIRCULAR AND SPHERICAL NORMAL DISTRIBUTION. VARIATION IN GRANITE MASSES,
CLASSIFICATION OF MEDIUM-GRADE METASEDIMENTARY ROCKS, INVESTIGATION
OF THE METAMORPHIC AND STRUCTURAL EVENTS OF OROGENIC BELTS,
REPRESENTATION OF STRUCTURAL DATA AND THE CLASSIFICATION OF DIASTROPHIC
STRUCTURES.

MCLEAN PALEONTOLOGICAL LABORATORY

MR J D MCLEAN JR

ALEXANDRIA U.S.A.

IBM 1301-G

SERVICE BUREAU CORP, WASHINGTON, DC

OURS IS STRICTLY A SPECIES AND STRATIGRAPHICALLY ORIENTED INFORMATION
RETRIEVAL SYSTEM UNDER THE NAME STRATA DATA AND UTILISES PROGRAMS AND
CODES AS GIVEN IN THE STRATA DATA CODE BOOK.

TO ELICIT INFORMATION ON STRATIGRAPHY AND ECOLOGY OF SEDIMENT SAMPLES
BASED ON THE OSTRACODAL AND FORAMINIFERAL FAUNAL ELEMENTS FOUND IN A
GIVEN SAMPLE, AND TO ARRANGE DATA IN USEFUL FORM WITHOUT REFERENCE TO
EXOTIC LANGUAGE CODES. TAXONOMIC AND PHYSICAL DATA ARE ALSO AVAILABLE
IN THE SYSTEM, WHICH IS CLOSELY INTEGRATED WITH THE SOURCE AND REFERENCE
OF THE LITERATURE INVOLVED.

PROBLEMS IN STRATIGRAPHY, CORRELATION, ECOLOGY, TAXONOMY AND GEOGRAPHIC
AND STRUCTURAL CONTROLS PROBLEMS. THE BASIS OF CONTROL OF DATA IS BY
SPECIES NAME (OR ASSOCIATED RANDOM ACCESSION SPECIES NUMBER) AND
BIBLIOGRAPHY (OR RANDOM ACCESSION BIBLIOGRAPHIC REFERENCE NUMBER).

MCMASTER UNIVERSITY

DR G V MIDDLETON

INTERCOM 100, FORTRAN IV

HAMILTON CANADA

IBM 7040

BENDIX G-15

PROGRAMS BY G V MIDDLETON, P MARTINI, P J LEE, R G WALKER, D M SHAW
AND OTHERS.

VARIOUS STATISTICAL ROUTINES, INCLUDING MULTIPLE REGRESSION DISCRIMINANT
FUNCTION, FACTOR ANALYSIS, CANONICAL CORRELATION AND TREND ANALYSIS.
PROCESSING GRAIN ORIENTATION AND GRAIN SIZE DATA. PROCESSING
STRATIGRAPHIC DATA ON STRUCTURES IN TURBIDITES (WALKER, 1967, JOUR
SEDIMENTARY PETROLOGY). COMPUTATIONS CONNECTED WITH SPECTROGRAPHIC
ANALYSIS OF ROCKS AND MINERALS.

APPLICATIONS ARE LEGION. IN OUR DEPARTMENT THE MOST ACTIVE APPLICATIONS ARE
IN SEDIMENTOLOGY AND GEOCHEMISTRY.

MANCHESTER, UNIVERSITY OF

DR J ESSON

ATLAS AUTOCODE

MANCHESTER ENGLAND

ICT ATLAS (MANCHESTER)

PROGRAMS BY J ESSON

CIPW NORMS FROM ROCK ANALYSES.

LINEAR REGRESSION AND CORRELATION. CALCULATION OF LINEAR REGRESSION
EQUATIONS (X ON Y AND Y ON X) FOR MULTIPLE VARIABLES, CONFIDENCE LIMITS,
CORRELATION COEFFICIENT, T.

PARTICLE SIZE DATA ANALYSIS (MEAN, STD. DEVIATION, 3RD AND 4TH MOMENTS).
(FOR USE BY A C DUNHAM)

X-RAY FLUORESCENCE MASS ABSORPTION CORRECTION AND RESULTS CALCULATION.

ATLAS AUTOCODE VERSION OF PROGRAM PUBLISHED BY J G HOLLAND AND D W BRINDLE
SPECTROCHIM ACTA, 1966, 22, 2083.

PROGRAM BY K MAHOMMAD ATLAS AUTOCODE

CALCULATION OF ATOMIC PROPORTIONS IN MINERALS FROM CHEMICAL ANALYSIS.
(FOR S RAHMAN)

PROGRAMS BY D TAYLOR ATLAS AUTOCODE

LATTICE PARAMETERS FROM 2 THETA VALUES FOR ALL CRYSTAL SYSTEMS.
(USED BY C M B HENDERSON)

ATOMIC AND MOLECULAR PROPORTIONS FROM CHEMICAL ANALYSIS AND CALCULATION
OF VARIOUS PARAMETERS FOR TRIANGULAR PLOTS, ETC.
(USED BY C M B HENDERSON)

MICROPALAEONTOLOGY INFORMATION COMMITTEE

U.S.A.

THE FOLLOWING MICROPALAEONTOLOGY DATA PROCESSING PROGRAMS ARE BEING
PREPARED UNDER THE SPONSORSHIP OF MIC, UNDER THE AUSPICES OF THE AMERICAN
GEOLOGICAL INSTITUTE AND THE NATIONAL SCIENCE FOUNDATION.

DR H C KENT, WESTERN INTERIOR FORAMINIFERAL PROJECT, COLORADO SCHOOL OF
MINES, GOLDEN, COLORADO, U S A.

80 COLUMN PUNCHED CARDS, FIXED FORMAT. STORAGE AND RETRIEVAL OF PUBLISHED
DATA REGARDING CRETACEOUS FORAMINIFERAS OF THE WESTERN INTERIOR REGION
OF THE U S A. WILL HANDLE BIBLIOGRAPHIC, TAXONOMIC, REPOSITORY,
STRATIGRAPHIC AND GEOGRAPHIC DATA.

DR W R RIEDEL, SCRIPPS INSTITUTE AND DR H P FOREMAN, OBERLIN COLLEGE, U S A.
COMPILING DATA ON RADIOLARIANS IN FORM SUITABLE FOR A D P., BUT NO
COMPUTER PROGRAM YET ESTABLISHED. BIBLIOGRAPHIC, MORPHOLOGIC, GEOGRAPHIC,
LITHO-STRATIGRAPHIC, CHRONOSTRATIGRAPHIC, LITHOLOGIC, PALEONTOLOGIC,
ECOLOGIC, AND REPOSITORY DATA INCLUDED.

DR H COUSMINER, MICROPALAEONTOLOGY DEPARTMENT, AMERICAN MUSEUM OF NATURAL
HISTORY, NEW YORK, U S A.

TESTING APPLICABILITY OF BIOSCIENCES INFORMATION SERIES (BIOSIS)
(PHILADELPHIA, PA.) WITH IBM 360 FOR A.D.P. OF FORAMINIFERAL DATA FROM
PUBLISHED SOURCES. PRINCIPAL AIM IS BIBLIOGRAPHIC CONTENT ANALYSIS AND
BIBLIOGRAPHY PRINT OUT (HAS WRITTEN A PROCEDURAL MANUAL FOR INFORMATION
TRANSFER OF BASIS MICROPALAEONTOLOGICAL DATA IN CONJUNCTION WITH THIS
PROJECT).

DR A TRAVERSE AND DR R SANDERS, PALYNOLOGICAL DATA RETRIEVAL,
PENNSYLVANIA STATE UNIVERSITY, STATE COLLEGE, PENNSYLVANIA, U S A.
ATTEMPTING TO WRITE PROGRAM FOR A.D.P. OF PALYNOLOGICAL DATA. WILL BE USING
A COMPROMISE PROGRAM WITH VARIABLE LENGTH RECORD, HANDLING NUMERIC,
BINARY, AND CLEAR TEXT DATA. IBM 360-67 PROBABLY WILL BE UTILIZED WITH
COBAL, SNOBAL, OR ALGOL W LANGUAGE. SEVERAL PROGRAMS UNDER INVESTIGATION.
INPUT WILL INCLUDE TAXONOMIC, STRATIGRAPHIC, GEOGRAPHIC, ECOLOGIC,
LITHOLOGIC, GEOLOGIC, MORPHOGRAPHIC AND PROCESSING DATA FOR PUBLISHED
PALYNOFORMS. GRAPHIC CAPABILITIES MAY BE INCLUDED.

NATIONAL ADVISORY COMMITTEE ON RESEARCH
IN THE GEOLOGICAL SCIENCES

TORONTO CANADA

MR D A SHARP

CHAIRMAN OF STANDING COMMITTEE ON STORAGE AND RETRIEVAL OF GEOLOGICAL DATA

INFORMATION STORAGE AND RETRIEVAL.

SEE REPORT BY THE AD HOC COMMITTEE ON STORAGE AND RETRIEVAL OF GEOLOGICAL
DATA IN CANADA.

A NATIONAL SYSTEM FOR STORAGE AND RETRIEVAL OF GEOLOGICAL DATA IN CANADA.

EDITED BY W C BRISBIN AND N M EDIGER, AUGUST 1967.

AVAILABLE FROM THE GEOLOGICAL SURVEY OF CANADA.

NATIONAL COAL BOARD
MR M J CLARKE

ROTHERHAM ENGLAND
IBM 360/50

INTERESTED IN GENERAL INFORMATION AND BIBLIOGRAPHIES
STRATEGY ADOPTED
OVERALL - TO ASSESS THE FINANCIAL EFFECTS OF VARIOUS LEVELS OF ERROR, IN
THE SPATIAL ARRANGEMENT OF THE SEDIMENTARY FRAMEWORK AND TECTONIC SETTING
OF COAL SEAMS, ON ALTERNATIVE PLANNED TIME DEPENDENT GEOMETRIES OF THE
MINES OVER 5 YEAR PERIODS UPDATED ANNUALLY.
NOW - TO PRINT OUT CONTOURED RAW DATA ON THE THICKNESS, SEAM STRUCTURE,
QUALITY AND QUANTITIES OF COAL SEAMS AND THE ROOF AND FLOOR STRATA.
LATER - TO OBTAIN GENERALIZED DATA ON THE INTENSITY AND ORIENTATION OF
FAULTING IN COALFIELDS.

MR R H HOARE
MR A J HUGHES
MR A R L JONES

IBM 1401
IBM 360/50

PROCESSING AND FORECASTING OF DATA ON COAL SEAMS AND SURROUNDING STRATA
FILING OF A LARGE MASS OF DATA ON COAL SEAMS AND SURROUNDING STRATA
RETRIEVAL OF THE DATA FOR SPECIFIC MINING PURPOSES
PROJECTION OF DATA TO NEW MINING AREAS.

NATIONAL OCEANOGRAPHIC DATA CENTRE
DR THOMAS S AUSTIN, DIRECTOR

WASHINGTON U.S.A.

EAM
669T9AN
(U.S. NAVAL OCEANOGRAPHIC OFFICE, MARYLAND.)

EAM EQUIPMENT (NODC)
CALCOMP 670/564 (NODC)
IBM 1401/7074

DR M WEISS
PROGRAMS BY NODC DATA PROCESSING DIVISION
AUTOCODER, FORTRAN

IBM 1401/7074

GEOLOGICAL SAMPLING INVENTORY AND LOCATION PLOTS. PROCESSING, UPDATING AND
RETRIEVAL PROGRAMS FOR GEOLOGICAL SAMPLE DATA FILES IN NODC FORMAT.

NODC ALSO HAS A PROGRAM LIBRARY AND CATALOGUE OF ABSTRACTS OF GENERAL
INTEREST TO GEOSCIENTISTS, FROM NUMEROUS OTHER INSTITUTIONS.

NEWCASTLE, UNIVERSITY OF
MR D H TARLING
ALGOL
ALGOL AND FORTRAN
PROGRAMS BY SEVERAL AUTHORS

NEWCASTLE ENGLAND
EEC KDF9 (NEWCASTLE)
IBM MULTIACCESS SYSTEM (SOON)

SEVERAL PROGRAMS ARE OPERATED, ALL IN CONNECTION WITH PALAEOMAGNETIC
ANALYSIS OF DATA LEADING TO STUDIES OF CONTINENTAL DRIFT, TECTONICS,
ORIGIN OF REMANENCE IN SEDIMENTS ETC.

NEW SOUTH WALES, UNIVERSITY OF
MR A C COOK
FORTRAN II

WOLLONGONG AUSTRALIA
IBM 1620 (UNSW)
60k, 4 TAPES

PROGRAM BY R J SAMPSON AND J C DAVIS, EXTENSIVELY MODIFIED AND WITH TWO
ADDITIONAL SUBROUTINES.

TREND 3
STRUCTURE AND SEDIMENTATION STUDIES

PROGRAM BY P D BOLTON
LINEAR AND NONLINEAR REGRESSION
COAL PETROGRAPHY

PROGRAM BY A C COOK
SEDIMENT ANALYSIS
SEDIMENTATION

ALSO SUNDRY SMALL PROGRAMS TO CALCULATE VARIOUS STATISTICAL PARAMETERS.

LOWER HUTT NEW ZEALAND

DSIR APPLIED MATHEMATICS DIVISION REPORT 3
PRINCIPLE COMPONENTS. DISCRIMINANT FUNCTIONS. CANONICAL ANALYSIS.
SIMULATION OF GROWTH IN PLANKTONIC FORAMINIFERA.

MATHEMATICAL AND STATISTICAL ANALYSIS OF GEOLOGICAL DATA. OUR PROGRAM LIBRARY HAS A BATTERY OF PROGRAMS SUITABLE FOR STANDARD STATISTICAL ANALYSIS (MEAN AND VARIANCE, CORRELATION COEFFICIENTS, ETC.), AS WELL AS PROGRAMS FOR FACTOR ANALYSIS, DISCRIMINANT ANALYSIS, TREND SURFACE ANALYSIS, AND MORE RECENTLY, SPECIAL PROGRAMS FOR SIMULATION OF GEOLOGICAL PROCESSES BY STOCHASTIC PROCESS MODELS.

NORWOOD, TECHNICAL COLLEGE OF
DR J F POTTER
PROGRAM BY UNIVERSITY OF TEXAS UTZ-03-G001

LONDON ENGLAND
IBM/360/60 (GLC)

NOTTINGHAM, UNIVERSITY OF NOTTINGHAM ENGLAND
MR R B ELLIOTT ATLAS AUTOCODE AND ALGOL KDF9
PROGRAMS BY R G BRUCE AND P K HARVEY

PROCESSING THE DATA FROM X-RAY FLUORESCENCE SPECTROGRAPH. PROBLEMS OF
ROCK VARIATION. NORMATIVE CALCULATIONS.

PROCESSING TAPE OUTPUT FROM P W 1212 SPECTROMETERS AT BRISTOL AND NOTTINGHAM, COLLATING DATA BETWEEN X-RAY TUBE PROGRAMS, AND MAKING THE NECESSARY INTERTUBE AND MASS ABSORPTION CORRECTIONS. RE-CALCULATION OF SILICATE ANALYSES AS FOLLOWS. NIGGLI NUMBERS, BARTH CELLS, CATION AND MOLECULAR PERCENTAGES, UNIT CELL CONSTANTS FOR MINERALS ETC, AND WITH A T LUNEL, CIPW NORMS, STANDARD KATANORMS AND EPINORMS TOGETHER WITH A WIDE SELECTION OF THEIR VARIANTS. (THESE PETROCHEMICAL PROGRAMS HAVE BEEN BUILT INTO A SINGLE PACKAGE OF SUBROUTINES). STATISTICAL ANALYSIS OF GEOCHEMICAL DATA INCLUDING SIMPLE STATISTICS, DEVIATION, CORRELATION AND CORRELATION CONFIDENCE MATRICES, DISCRIMINANT FUNCTIONS, POLYNOMIAL CURVE FITTING AND PLOTTING, ANALYSIS OF VARIANCE AND T-TESTING, ETC, TREND SURFACE AND MULTIPLE REGRESSION ANALYSIS. SORTING AND REGENERATING LARGE DATA MATRICES.

STUDIES OF PETROCHEMICAL VARIATION AND DESCRIPTIVE GEOCHEMISTRY. TESTING SIGNIFICANCE AND DISCRIMINATING BETWEEN ROCK GROUPS. AREAL VARIATION STUDIES. THE CALCULATION AND SIMULATION OF METASOMATIC CHANGES AND PROCESSES. RATIO-CORRELATION PROBLEMS, SORTING AND CLASSIFICATION OF GEOCHEMICAL DATA. PROCESSING AND CALIBRATING DATA FROM PW 1212 SPECTROMETER.

MR S HENLEY
PROGRAMS BY DR P HARVEY, S HENLEY ET AL.

EEC KDF9 (NOTTS UNIV)

AS FOR DR P HARVEY, ALSO CELL-EDGE DETERMINATION FROM POWDER PHOTOGRAPHS
(EXCEPT FOR MONOCLINIC AND TRICLINIC SYSTEMS)

GEOCHEMICAL PROSPECTING IN MID-CORNWALL SOIL SURVEYS. CALCULATING
RESULTS OF XRF ANALYSES, AND CALCULATING NORMS. (PERHAPS) STRUCTURAL
ANALYSIS.

DR C A M KING
PROGRAMS BY MCEWAN, MCCULLAGH AND MATHER

ATLAS AUTOCODE, ALGOL AND EGDON FORTRAN ICL KDF9

PRINCIPAL COMPONENT ANALYSIS, FACTOR ANALYSIS, CLUSTER ANALYSIS,
DISCRIMINANT ANALYSIS, TREND SURFACE ANALYSIS WITH CONFIDENCE SURFACE,
SEDIMENT SIZE AND SHAPE ANALYSIS, SPITSYM (RANDOM SIMULATION MODEL),
INFORMATION RETRIEVAL, POLYNOMIAL INTERPOLATION (LAGRANGE, AITKEN),
ANALYSIS OF VARIANCE WITH UNEQUAL SAMPLE SIZE, GENERAL STATISTICAL PROGRAMS.

NOVA SCOTIA RESEARCH FOUNDATION

HALIFAX CANADA

DR D E T BIDGOOD
PROGRAMS BY A G JOST AND D HUBER

FORTAN IV AND PL/1

IBM 360/50 (DALHOUSIE UNIV)

REDUCTION OF GRAVITY DATA, INCLUDING LATITUDE, ELEVATION, TERRAIN
CORRECTIONS. ESTIMATION BOUGUER DENSITY. MACHINE CONTOURING. SURFACE
FITTING TO SIXTH ORDER POLYNOMIAL. CALCULATION OF VELOCITY AND DEPTHS
TO INTERFACE FOR HAMMER SEISMIC DATA. ESTABLISH A MAGNETIC DISK FILE
OF GRAVITY DATA FOR NOVA SCOTIA.

LOCATING LARGE SCALE SALT STRUCTURES. DETECTING BARITE ORE BODIES.
DETERMINING THE MAJOR STRUCTURAL ELEMENTS IN NOVA SCOTIA. THICKNESS
OF DRIFT AND DEPTH TO BEDROCK MEASUREMENT.

OCCIDENTAL MINERALS CORPORATION

WHEAT RIDGE U.S.A.

MR R L HAXBY
PROGRAMS BY R L HAXBY

FORTAN IV

FLORIDA GAS CO.

MINING AND GEOLOGICAL ENGINEERING AND ECONOMICS

ORE RESERVE ESTIMATES, ECONOMICS, STATISTICS.

OFFICE OF SCIENTIFIC AND TECHNICAL INFORMATION LONDON

ENGLAND

MR C C LEAMY

GENERAL INTEREST IN ESTABLISHMENT OF DATA BANKS, STORAGE AND RETRIEVAL
OF GEOLOGICAL INFORMATION AND DATA.

OXFORD, UNIVERSITY OF

OXFORD ENGLAND

DR E J W WHITTAKER

EEC KDF 9 (OXFORD)

PROGRAM FOR RE-CALCULATION OF ROCK ANALYSES TO MODIFIED CIPW NORM AND
ATOMIC OR MOLECULAR PERCENTAGES. ALSO MINERAL ANALYSES TO STRUCTURAL
FORMULA. PROGRAM IN MERCURY AUTOCODE. WRITTEN BY M H HEY, R W LE MAITRE
(BRITISH MUSEUM) AND B C M BUTLER (OXFORD, DEPARTMENT OF GEOLOGY AND
MINERALOGY).

INDEXING X-RAY POWDER PATTERNS FAGAB10 IN C-AUTOCODE. REFINING CELL
PARAMETERS BY LEAST SQUARES FAGAB20 IN C-AUTOCODE.
VARIOUS PROGRAMS FOR CRYSTAL STRUCTURE DETERMINATION USING KDF 9.
UNDER THE DIRECTION OF E J W WHITTAKER

ELECTRON PROBE MICROANALYSIS CALCULATIONS. UNDER THE DIRECTION OF F B ATKINS

PROGRAM FOR PROCESSING DATA FROM DIGITAL OUTPUT OR CHART RECORDER FROM
M S 2 MASS-SPECTROMETER FOR RB-SR ISOTOPE WORK. UNDER THE THE DIRECTION
OF DR N GALE.

PROGRAM FOR COMPUTING EQUAL AREA POINT DENSITY STEREOGRAMS FOR STRUCTURAL
GEOLOGICAL PROBLEMS. WRITTEN BY G MUECKE IN BOTH FORTRAN AND ALGOL.
UNDER THE DIRECTION OF DR E R OXBURGH.

PENNSYLVANIA STATE UNIVERSITY

UNIV. PARK U.S.A.

SEE ALSO MICROPALAEONTOLOGICAL INFORMATION COMMITTEE (MIC)

DR J C GRIFFITHS

FORTRAN IV, PL1.

IBM 360/67

REMOTE TERMINAL TO 360 SYSTEM

UNIVERSITY COMPUTING CENTER (1401, 1410, 360/67L)

PROGRAMS BY J C GRIFFITHS, L J DREW, C ONDRICK, E C DAHLBERG AND OTHER GRADUATE STUDENTS.

STATISTICAL ANALYSIS, OPERATIONS RESEARCH IN GEOLOGICAL SCIENCES AND MINERAL INDUSTRIES.

SEDIMENTARY PETROLOGY - CLASSIFICATION AND INTERPRETIVE PETROLOGY.

IGNEOUS PETROLOGY. GEOCHEMISTRY - TRACE ELEMENT ANALYSIS.

PETROLEUM GEOLOGY - BEHAVIOR OF RESERVOIR ROCKS. EXPLORATION - SEARCH MODELS.

ALSO USED IN CERAMICS, MINING, METALLURGY, SOLID STATE, ETC.

POMONA COLLEGE

CLAREMONT U.S.A.

DR D B MCINTYRE

FORTRAN, PL/I

IBM 360/40 (POMONA COLLEGE)

ASSEMBLY

COBOL

PROGRAMS BY D B MCINTYRE

X-RAY SPECTROGRAPHY, STATISTICAL, GEOCHEMICAL (GRANITE, GROUND WATER)

STRUCTURAL, GEOPHYSICAL (GRAVITY), FACTOR ANALYSIS, TREND ANALYSIS

DISCRIMINANT ANALYSIS, AUTOMATIC CONTOURING ETC.

PRAHA, GEOFOND

PRAHA

CZECHOSLOVAKIA

MR J HRUSKA

IBM 1410

PROGRAMS BY G DEL BIGIO (I A E A VIENNA)

STORAGE, INDEXING AND RETRIEVAL OF GEOLOGICAL INFORMATION. MONTHLY BIBLIOGRAPHY GEO-INDEX WRITTEN IN ORIGINAL TITLE AND CZECH TRANSLATION.

PUNJAB, UNIVERSITY OF THE

LAHORE

PAKISTAN

DR M NAWAZ

EXCHLF AUTOCODE

ICT ATLAS (LONDON)

PROGRAMS BY UNIVERSITY OF LONDON INSTITUTE OF COMPUTER SCIENCE.

STATISTICAL ANALYSIS OF MINERALOGICAL AND GEOCHEMICAL DATA.

STUDIES OF RELATIONSHIP BETWEEN PHYSICAL PROPERTIES AND COMPOSITION IN SEVERAL GROUPS OF MINERALS. STUDY OF CHEMICAL CHANGES INVOLVED IN METASOMATISM.

READING, UNIVERSITY OF

READING

ENGLAND

PROFESSOR P ALLEN

FORTRAN II

IBM 7090

PROGRAMS FROM NORTHWESTERN UNIVERSITY

TREND SURFACE ANALYSIS

WEALDEN SEDIMENTOLOGY AND STRATIGRAPHY

MR A T BULLER

FORTRAN IV

ICT ATLAS (CHILTON)

PROGRAMS FROM ROKDOC PACKAGE (SEE LOUDON, READING)

COMPUTER CLASSIFICATION, COMPONENT AND FACTOR ANALYSIS.

ANALYSIS OF SUBMARINE CARBONATE SEDIMENT CONSTITUENTS, MANNIN BAY, COUNTY GALWAY, EIRE.

DR D T HOPKINS

ELLIOTT ALGOL

NATIONAL-ELLIOTT 803

PROGRAMS BY D T HOPKINS ASSISTED BY COMPUTER UNIT STAFF

REDUCTION OF GRAVITY FIELD RESULTS.

COMPUTING RESULTS OF FIELD DATA, ANALYSING THIS DATA, COMPUTING THEORETICAL GRAVITY MODELS FOR COMPARISON WITH FIELD DATA.

ANALYSIS OF ELECTRON-PROBE MICROANALYSER RESULTS.

DR C MCCANN

ELLIOTT 803

ICT ATLAS (CHILTON)

PROGRAMS BY C MCCANN AND D M MCCANN (I.G.S., LONDON)

ANALYSIS OF ACOUSTIC PROPERTIES OF SEDIMENTS.

RELATIONS BETWEEN ACOUSTIC AND MECHANICAL PROPERTIES OF RECENT SEDIMENTS.

SERVICE BUREAU CORPORATION

MR J WOODS

FORTAN IV, PL/1

PALO ALTO U.S.A.

IBM 7094 II

IBM 360 MOD 40, 50, 65

SBC BASIC

PROGRAMS BY J WOODS, IBM AND SBC

GEOPHYSICS, PETROLEUM RESERVOIR SIMULATION. STATISTICAL ANALYSIS.
HEAT FLOW SIMULATION, MINING OPTIMIZATION. DATA STORAGE AND RETRIEVAL.
AUTOMATED INSTRUMENTAL ANALYSIS.

DATA REDUCTION IN GEOPHYSICS AND GEOCHEMICAL EXPLORATION. STORAGE AND
RETRIEVAL IN PALEONTOLOGY/SYSTEMATIC ZOOLOGY. STATISTICAL ANALYSIS IN
PALEONTOLOGY, SEDIMENTARY AND IGNEOUS PROCESSES. SIMULATION OF SEDIMENT
TRANSPORT, RESERVOIR DEPLETION AND LOWER CRUSTAL PROCESSES.

SHEFFIELD, UNIVERSITY OF

MR R TILL

SHEFFIELD ENGLAND

ICL1907(COMPUT.DEPT)

PROGRAM BY P WILKINSON EMA
CORRELATION AND REGRESSION ANALYSIS.

PROGRAM BY D SPENCER(WOODS HOLE) FORTAN II
FACTOR ANALYSIS.

GENERAL DATA ANALYSIS IN GEOCHEMISTRY.

SHELL OIL COMPANY

DR F A E REEVE

FORTAN IV ETC

HOUSTON U.S.A.

UNIVAC 1108

IBM 7094

X-Y PLOTTER ETC

GEOLOGICAL PURPOSES PERTINENT TO OIL EXPLORATION AND DEVELOPMENT.

SMITHSONIAN INSTITUTION

MR D F SQUIRES

COBAL

WASHINGTON U.S.A.

HONEYWELL 1200 (SMITHS INST.)

PROGRAMMING AND SYSTEM DESIGN BY SMITHSONIAN INSTITUTIONS INFORMATION
SYSTEMS DIVISION.

PROGRAMS ARE A PART OF A GENERAL INFORMATION SYSTEM (SIIRS -SMITHSONIAN
INSTITUTION INFORMATION RETRIEVAL SYSTEM) DEVELOPED FOR BIOLOGICAL AND
GEOLOGICAL COLLECTION DATA. PROGRAMS FOR INPUT OF SPECIMEN DOCUMENTATION
AND RESEARCH DATA FROM SOURCE DATA AUTOMATION UNITS (PUNCHED PAPER TAPE),
FORMATING, FILE STORAGE, AND RETRIEVAL. PERMITS RETRIEVAL OF DOCUMENTATION
OF SPECIMENS INVOLVING ROCK NAME AND TYPE CLASSIFICATION, MINERAL
COMPOSITION, STRUCTURAL/TEXTURAL CHARACTERISTICS, CHEMICAL COMPOSITION,
AGE AND GEOGRAPHIC LOCATION.

GENERAL SERVICE TO IN-HOUSE AND OUTSIDE SCIENTISTS REQUIRING SPECIFIC
INFORMATION ABOUT PETROLOGIC SPECIMENS HOUSED IN NATIONAL COLLECTIONS,
DEPARTMENT OF MINERAL SCIENCES, MUSEUM OF NATURAL HISTORY, SMITHSONIAN
INSTITUTION. PROJECT WILL BE EVENTUALLY EXTENDED TO METEORITE, MINERAL,
AND PALEOBIOLOGICAL COLLECTIONS.

SOUTHAMPTON, UNIVERSITY OF

DR N HAMILTON

ICT C CODE

ICT K CODE

SOUTHAMPTON ENGLAND

EEC KDF 9

PROGRAMS BY N HAMILTON AND R F KING

CALCULATION OF THE DIRECTIONS OF THE PRINCIPAL AXES OF SUSCEPTIBILITY
FROM TORQUE CURVE MEASUREMENTS AND OTHER PARAMETERS RELEVANT TO
SUSCEPTIBILITY ANISOTROPY MEASUREMENTS. (RFK)
CALCULATION OF SEDIMENT SIZE DISTRIBUTIONS FROM ANALYSES USING THE
GALLENKAMP SEDIMENTATION BALANCE. (NH)
PETROCHEMICAL CALCULATIONS. (NH)

MAINLY GRAIN FABRIC STUDIES, BUT HOPE TO CONTINUE WITH PETROCHEMICAL
CALCULATIONS.

PROF F HODSON

FORTAN IV

ICT 1907(SOUTHAMPTON)

PROGRAMS BY UNIVERSITY PROGRAMMER

STATISTICAL WORK IN PALAEONTOLOGY ETC. FOURIER ANALYSIS - CRYSTALLOGRAPHY.
REDUCTION OF GEOPHYSICAL DATA. CALCULATION ON OUTPUT DATA OF PHILIPS 1212
X-RAY SPECTROMETER. ETC ETC ETC.

A I REES
PROGRAMS BY A I REES AND C G A HARRISON

ICT 1907

ROUTINE COMPUTATION OF SECOND RANK SYMMETRIC TENSOR.
STATISTICAL TREATMENT OF MAGNETIC PROPERTIES INCLUDING FISHER AND CIRCULAR
NORMAL STATISTICS.

ROCK MAGNETISM AND PALAEOCURRENT INVESTIGATIONS.

SOUTH WALES, UNIVERSITY COLLEGE OF CARDIFF WALES
MR J D ROBERTS BASIC AND COBOL EEC4/50 (CARDIFF)
PROGRAMS BY J L CUTBILL (CAMBRIDGE)

AT THE MOMENT, SIMPLE SORTS ON SPECIMEN DATA, AT FIRST CONFINED TO
NORWEGIAN CALEDONIAN WORK. INFORMATION STORAGE AND RETRIEVAL.

STANFORD UNIVERSITY STANFORD U.S.A.
DR G F BONHAM-CARTER FORTRAN IV IBM 360/67/50 (STANFORD)
IBM 7090

PROGRAM BY G F BONHAM-CARTER

CLUSTER ANALYSIS USING QUALITATIVE AND SEMI-QUANTITATIVE DATA. OUTPUT
IN FORM OF DENDROGRAM PLOTTED BY CALCOMP.DELTA SIMULATION PROGRAM
DYNAMIC MODEL.

CLASSIFICATION USING CLUSTER AND FACTOR ANALYSIS, QUANTITATIVE DECISION
MAKING, COMPUTER SIMULATION OF GEOLOGICAL PROCESSES.

DR J W HARBAUGH IBM 360/50
FORTRAN IV, PL/1 IBM 360/67
PROGRAMS BY J W HARBAUGH AND OTHERS

HARMONIC ANALYSIS OF GEOLOGIC STRUCTURES, WITH DOUBLE FOURIER SERIES.
TREND-SURFACE ANALYSIS.
SIMULATION OF SEDIMENTATION AND OF COMPETITION BETWEEN MARINE ORGANISM
COMMUNITIES.

SEDIMENTATION
MARINE PROCESSES. BEACH NEAR-SHORE PHENOMENA. SEDIMENT TRANSPORT.
BASIN DEVELOPMENT.
ANALYSIS OF TECTONIC HISTORY OF SEDIMENTARY BASINS.
COMPUTER-ASSISTED INSTRUCTION, EMPLOYING DYNAMIC SIMULATION MODELS THAT
PERTAIN TO ISOSTASY, MAGMATIC DIFFERENTIATION, EVOLUTION, ETC.

STRATHCLYDE, UNIVERSITY OF GLASGOW SCOTLAND
MR G BOWES ALGOL ICT 1900 (STRATHCLYDE)
PROGRAMS BY J W HARBAUGH (STANFORD) ADAPTED BY L ROBERTSON (STRATHCLYDE)

TREND SURFACE ANALYSIS. THIS IS A PROGRAM TO FIT LINEAR, LINEAR +
QUADRATIC, AND LINEAR + CUBIC SURFACES WHERE X AND Y VALUES ARE
IRREGULARLY SPACED. PROGRAM PRINTS OUT Z VALUES CALCULATED AT THE GIVEN
X-Y POINTS AND ALSO COMPUTES DEVIATIONS OF ACTUAL Z VALUES FROM TREND
VALUES. ERROR MEASURE AND PER CENT TOTAL SUM OF SQUARES ARE CALCULATED,
TREND SURFACES ARE CONTOURED.

PROGRAMS BY G BOWES

GRAPHICAL REPRESENTATION OF BOREHOLE LOG DATA AND SUMMARY OF GEOLOGICAL
INFORMATION. CONVERTS BOREHOLE LOG INTO COLUMN ON SCALE ONE-THIRD INCH
TO ONE FOOT AND CALCULATES CUMULATIVE THICKNESS AND PERCENTAGE OF TOTAL
OF EACH ROCK TYPE. INTENDED FOR CORRELATION OF SHALLOW BORES UNDERTAKEN
DURING SITE INVESTIGATION.

SIRIUS AUTOCODE SIRIUS
PROGRAM TO COMPUTE RESULTANT VECTOR FROM DIP (OR TWO APPARENT DIPS)
AFTER CORRECTION FOR REGIONAL DIP.

INTENDED FOR APPLICATION TO A STUDY OF ORIENTATION OF CROSS-BEDDING.

SURREY, UNIVERSITY OF
MR N S FARRAR

ALGOL

GUILDFORD ENGLAND
ELLIOTT 503
ICL 1905F

PROGRAMS BY G M JOHNSON

STATISTICAL ANALYSIS OF SCHMIDT HARDNESS VALUES FOR ROCKS, INCLUDING THE
PLOTING OF HISTOGRAMS ON A GRAPH PLOTTER.

ENGINEERING GEOLOGY - ROCK SELECTION FOR CIVIL ENGINEERING.

TORONTO, UNIVERSITY OF

B GREENWOOD

ALGOL

WEST HILL CANADA
ELLIOTT 503

PROGRAMS BY B GREENWOOD AND MISS C FAITHFUL

FORTRAN IV

IBM 7094

PROGRAMS BY B GREENWOOD AND STATE GEOL SURV, UNIVERSITY OF KANSAS

TEXTURAL ANALYSIS - SIZE FREQUENCY ANALYSIS - ESTABLISHES DATA FOR
CUMULATIVE FREQUENCY CURVES AND GIVES STATISTICAL PARAMETERS.
UNIQUE FREQUENCY CURVE DATA - USES METHOD OF CENTRAL DIFFERENCES TO
PRODUCE DATA FOR UNIQUE SIZE-FREQUENCY DISTRIBUTION. DETERMINATION OF
PEARSONIAN CURVE TYPE.
CERTAIN STATISTICAL PROCEDURES - FOR EXAMPLE, LINEAR DISCRIMINARY
ANALYSIS. TREND SURFACE ANALYSIS. DETERMINATION OF PEBBLE SHAPE AND
ROUNDNESS PARAMETERS.

ESTABLISHMENT OF MEASURES FOR DISCRIMINATING BETWEEN DIFFERENT
ENVIRONMENTS ON THE BASIS OF SIZE FREQUENCY DISTRIBUTIONS. CALCULATION
OF STATISTICAL PARAMETERS. SPATIAL VARIABILITY OF SEDIMENT PARAMETERS.

TOWNSVILLE, UNIVERSITY OF

W R MORGAN

FORTRAN II

TOWNSVILLE AUSTRALIA
IBM 1620 (UCT)

PROGRAMS BY W R MORGAN

BARTH MESONORM (FOR SATURATED ROCKS ONLY). NIGGLI VALUES. C.I.P.W. NORM
UNIT CELL CONTENTS OF OLIVINE, PYROXENE, AMPHIBOLE, MICA AND FELDSPAR
SOME VARIATION DIAGRAM DATA.

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STROMBERG-CARLSON 4020 PLOTTER.

PROGRAMS MAINLY BY UKAEA STAFF

MULTIPLE REGRESSION, SIMPLE STATISTICS, TIME SERIES ANALYSIS,
CLASSIFICATION (NUMERICAL TAXONOMY), GRAPH AND MAP PLOTTING ROUTINES,
SPECIALIST GEOPHYSICAL PROGRAMS.

PUBLICATIONS- A SPECIAL PURPOSE LEAST SQUARES PROGRAM BY A DOUGLAS, UKAEA,
AWRE REPORT O-54/66. NOV. 1966.
MAP, TIME SERIES AND OTHER PLOTTING ROUTINES FOR USE WITH THE STROMBERG-
CARLSON 4020 PLOTTER BY J B YOUNG AND A DOUGLAS UKAEA, AWRE REPORT O-41/68

UNITED STATES GEOLOGICAL SURVEY

J J CONNOR

ALGOL 60 AND FORTRAN IV

DENVER U.S.A.
BURROUGHS 5500
(DENVER UNIVERSITY)
IBM 360/20/65
(USGS DENVER AND WASHINGTON)

PROGRAMS BY THE US GEOLOGICAL SURVEY

STATISTICAL ANALYSIS OF GEOCHEMICAL DATA

GEOCHEMISTRY OF SEDIMENTARY ROCKS. SAMPLING OF LARGE ROCK BODIES.

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PROGRAMS BY COMPUTER CENTER PROGRAMMERS AT USGS

MANIPULATION OF DATA FROM CHEMICAL ANALYSES AND GEOLOGICAL
INVESTIGATIONS ON SAMPLES COLLECTED IN HEAVY METALS PROJECT AREA.

STATISTICAL PROGRAMS ARE BEING USED TO CONDENSE AND SUMMARIZE CHEMICAL
DATA AND GEOLOGICAL PARAMETERS FROM SAMPLES COLLECTED IN HEAVY METALS
PROJECT. IN THE FUTURE, PLOTTER PROGRAMS WILL BE USED TO PREPARE
GEOCHEMICAL MAPS.

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PROGRAMS BY M POTTORF

TO AUTOMATICALLY TABULATE QUANTITATIVE DATA ON THE PROPERTIES OF ROCK AND SOIL MATERIALS AND PROCESS STATISTICAL STUDIES OF THE DATA.

STUDIES IN GROUND WATER HYDROLOGY ESPECIALLY AS RELATED TO QUANTITATIVE CHARACTERISTICS OF WATER-BEARING FORMATIONS.

R V MENDES

IBM ASSEMBLER LANGUAGE

IBM 360/65 WASHINGTON DC

IBM 360/20 DENVER

PROGRAMS BY R V MENDES

DATA STORAGE AND RETRIEVAL OF LOCATION, DESCRIPTIVE AND ANALYTICALLY DETERMINED GEOCHEMICAL DATA ON ROCK, SOIL, STREAM SEDIMENT AND SIMILAR SAMPLES.

DATA STORAGE AND RETRIEVAL.

A T MIESCH

ALGOL 60 FORTRAN IV ALGOL 58

BURROUGHS 5500 DENVER UNIVERSITY

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PROGRAMS BY USGS PROGRAMMERS AND MATHEMATICIANS

STATISTICAL REDUCTION OF GEOCHEMICAL DATA, SIMULATION OF GEOCHEMICAL SAMPLING PROBLEMS, STORAGE AND RETRIEVAL OF GEOCHEMICAL DATA.

GEOCHEMICAL FIELD INVESTIGATIONS AND SURVEYS, PERTAINING PARTICULARLY TO CAMBRO-ORDOVICIAN ROCKS OF THE WESTERN UNITED STATES.

R R TIDBALL

IBM 360/65 WASHINGTON DC

PROGRAMS BY USGS PROGRAMMERS BRANCH OF COMPUTATIONS

GENERAL AND SPECIALIZED STATISTICAL ANALYSIS. DATA PREPARATION AND PRELIMINARY ANALYSIS. PLOTTER PROGRAMS.

DEVELOPMENT OF A SAMPLING DESIGN TO ACQUIRE A GEOCHEMICAL CENSUS OF SOILS WITHIN A LARGE REGIONAL SETTING.

UNITED STATES GEOLOGICAL SURVEY

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IBM REPORT PROGRAM GENERATOR LANGUAGE FOR IBM EQUIPMENT

BURROUGHS ASSEMBLY LANGUAGE FOR BURROUGHS EQUIPMENT

PROGRAMS BY COMPUTER DIVISION, US GEOLOGICAL SURVEY

DATA STORAGE AND RETRIEVAL OF CHEMICAL DATA ON ROCKS, MINERALS PLANTS, WATER SAMPLES, COAL, OIL SHALE, AND PHYSICAL PROPERTIES OF ROCKS.

DATA REDUCTION OF CHEMICAL AND PHYSICAL PROPERTIES OF ROCKS, MINERALS ETC, FOR USE IN GEOCHEMISTRY, GEOPHYSICS, PETROCHEMISTRY, TRACE ELEMENT STUDIES, MINERAL COMMODITY STUDIES.

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MR R J VAN WYCKHOUSE

FORTRAN

WASHINGTON U.S.A.

IBM 1401/7074

PROGRAMS BY R.J. VAN WYCKHOUSE, F MAAS AND ED T WILCOX

UTILIZING THE CALCOMP PLOTTER, BOTTOM SEDIMENT TYPES DIGITIZED ON PUNCH CARDS AND MAGNETIC TAPE ARE PLOTTED ON A MERCATOR PROJECTION AT ANY DESIRABLE CHART FORMAT. CODING MANUAL ALSO AVAILABLE.

THE COMPUTER IS USED TO COMPILE TAPES THAT DRIVE THE CALCOMP PLOTTER. FURTHER USE ALONG THIS LINE IS INTENDED.

UNITED STATES STEEL CORPORATION
J M MALONE II FORTRAN II
PROGRAMS BY J MALONE, R TURNER AND OTHER SOURCES.

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CDC G-20A

GENERAL STATISTICAL ANALYSIS, INCLUDING GRAPHICAL DISPLAY.

IN CONNECTION WITH IRON, COAL AND LIMESTONE SITE DEVELOPMENT. (HOWEVER
MOST STATISTICAL APPLICATIONS ARE NOT RELATED TO GEOLOGY.)

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PROF R A REYMENT FORTRAN
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UPPSALA SWEDEN
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ANALYSIS OF BIOLOGICAL VARIATION IN FOSSIL AND LIVING ANIMALS. SEDIMENTOLOGY.
MOST PROGRAMS CONCERN PROCEDURES OF MULTIVARIATE STATISTICAL ANALYSIS.
RANDOM PROCESSES IN GEOLOGY.

THEORETICAL PROBLEMS IN BIOLOGY. EVALUATION OF ECOLOGIC DATA ON THE NIGER
DELTA.

VULCANOLOGY, ACTUOGEOLOGY, EARTHQUAKES, ANALYSIS OF BIOLOGIC VARIATION

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PROGRAMS BY D W MORRIS AND K ATKINSON

ABERYSTWYTH WALES
IBM 1620 (ABERYSTWYTH)

TO FACILITATE THE DERIVATION OF DEGREES OF DIVERSITY IN FORAMINIFERAL
POPULATIONS.

AT PRESENT THIS IS BEING APPLIED TO RECENT FORAMINIFERAL POPULATIONS IN
THE HOPE THAT SPECIES DIVERSITY INDICATES FAVOURABLE ECOLOGICAL
CONDITIONS. THIS WILL THEN BE ATTEMPTED IN POPULATIONS OF VARIOUS AGES
USING RECENT FIGURES FOR DIVERSITY AS STANDARDS OF REFERENCE.

DR M R DOBSON ALGOL AND FORTRAN

ELLIOTT 4130
IBM 1620
ATLAS

PROGRAMS BY D MORRIS

DESCRIPTIVE STATISTICS, STORAGE, SEDIMENT TEXTURE DATA FROM SOUTHERN
IRISH SEA.

SEDIMENTATION, FLORA, FAUNA, DISTRIBUTION.

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ALGOL

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ELLIOTT 4130 (UCW ABERYSTWYTH)
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PROGRAMS BY D W MORRIS WHEN STANDARD PROGRAMS ARE NOT AVAILABLE

WORK HAS ONLY JUST BEGUN ON THE PROGRAMMING ASPECTS OF MY STUDY. PROGRAMS
WILL HAVE THE FOLLOWING PURPOSES.
THE SOLUTION OF SEDIMENT TRANSPORT AND BUDGET EQUATIONS. FACTOR ANALYSIS
AND OTHER TOPICS IN MULTIVARIATE ANALYSIS. SOLUTION OF X-RAY DIFFRACTION
EQUATIONS FOR THE CONVERSION OF X-RAY DATA TO QUANTITATIVE MINERALOGICAL DATA.
TEXTURAL ANALYSIS OF SEDIMENTS. FOURIER ANALYSIS.

CURVE FITTING AND PLOTTING. STORAGE OF DATA ON MAGNETIC TAPES.

MR D J UNWIN FORTRAN IV AND ALGOL

ELLIOTT 4130

PROGRAMS BY D J UNWIN
STATISTICAL ANALYSIS OF GEOMORPHOLOGICAL DATA-CORRELATION AND
REGRESSION, MULTIPLE REGRESSION, DISCRIMINATE FUNCTION, CHI-SQUARE.

PROGRAMS BY WHITTEN AND PEIKERT EXTENSIVELY MODIFIED BY D J UNWIN
SURFACE FITTING PROGRAMS FOR UV AND UVW TREND SURFACE ANALYSIS.

PROGRAM BY SHARMAN AND UNWIN IMPLEMENTED IN ALGOL FOR ELLIOTT 4130
WITH BENSON LEHNER 4296 PLOTTER.
MACHINE CONTOURING OF RANDOMLY SPACED POINT DATA.

ANALYSIS OF GRAIN SIZE PARAMETERS FOR GLACIAL DEPOSITS.
LATE GLACIAL CLIMATE OF WALES.

WALES, UNIVERSITY COLLEGE OF
DR M BROOKS

FORTTRAN II AND IV

SWANSEA WALES
ICT 1905 (SWANSEA)
IBM 1620 (SWANSEA)

PROGRAMS BY M BROOKS, P N CHROSTON, P D SLATTERY AND D G JAMES

GEOPHYSICAL DATA REDUCTION AND INTERPRETATION.

THE MAIN PROGRAMMING EFFORT IS DIRECTED TOWARDS CONSTRUCTING PROGRAMS WHICH DIRECTLY INTERPRET FIELD DATA. PROGRAMS ARE AT PRESENT BEING APPLIED TO GRAVITY AND MAGNETIC DATA FROM SOUTH WALES AND NORTHERN NORWAY, AND TO SPARKER SURVEY DATA FROM THE BRISTOL CHANNEL.

DR G KELLING

FORTTRAN

IBM 1620 (SWANSEA)
ICT 1905

PROGRAMS BY IBM AND J M BEVAN

{ IBM 6.0.67 MODIFIED }. SIMPLE LINEAR REGRESSION
{ IBM 6.0.79 MODIFIED }. THREE WAY CHI-SQUARE ANALYSIS
{ IBM 6.0.82 MODIFIED }. TWO WAY CHI-SQUARE ANALYSIS
{ DAVIES - BEVAN, SEDIMENTOLOGY, IN PRESS }. GRAPHICAL PRESENTATION OF GEOLOGICAL DATA.

FOR ASSESSING INTERACTION, STATISTICAL SIGNIFICANCE AND RELIABILITY OF ANY GEOLOGICAL VARIABLES AND EXPRESSING THE DATA, GRAPHICALLY. (IN PRACTICE THE PROGRAMS HAVE PRINCIPALLY BEEN USED IN REGIONAL STUDIES OF SEDIMENTARY PETROGRAPHY).

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SEATTLE U.S.A.
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PROGRAMS BY J C KELLEY

A NUMBER OF STATISTICAL OPERATIONS - TREND SURFACE ANALYSIS, FACTOR ANALYSIS, DISCRIMINANT FUNCTION ANALYSIS, ETC PLUS PROGRAMS FOR THE TREATMENT OF FABRIC DATA AND FOR THE STUDY OF STOCHASTIC PROCESS MODELS IN OCEANOGRAPHY.

STUDIES OF SEDIMENT VARIABILITY AND TRANSPORT. METAMORPHIC AND SEDIMENTARY FABRIC ANALYSIS. DEAD RECKONING NAVIGATION COMPUTATIONS ABOARD SHIP. AUTOMATIC CONTOURING, COMPUTER MODELS OF CHEMICAL AND NUTRIENT SYSTEMS IN THE OCEAN, TIME SERIES AND SPECTRAL ANALYSES APPLIED TO SHORT PERIOD FLUCTUATIONS IN THE WATER - PARTICULARLY, TO STUDY INTERNAL WAVES.

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D LAWSON

FORTTRAN IV

WATERLOO CANADA
ICT ATLAS (CHILTON)

PROGRAMS BY T V LOUDON

ANALYSIS OF CROSS-BEDDING AND RIPPLE-MARKS.

STUDY OF PALAEOCURRENTS

STUDY OF INTERRELATIONSHIPS BETWEEN TRACE AND MAJOR ELEMENTS IN CLASTIC SEDIMENTARY ROCKS OF PRECAMBRIAN AGE.

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FORTTRAN II

PERTH AUSTRALIA
IBM 1620 (UWA)

PROGRAMS BY W R O, BEIRNE

CALCULATION OF ABSORPTION CORRECTIONS IN SILICATE ROCKS ANALYSED BY X-RAY FLUORESCENCE SPECTROSCOPY.

CALCULATION OF C.I.P.W. NORMS.

CALCULATION OF ELEMENTAL AND NORMATIVE MINERAL RATIOS FOR ACID IGNEOUS ROCKS

TO AID MY RESEARCH PROJECT ON THE PETROLOGY AND GEOCHEMISTRY OF THE PORPHYRIES IN THE KALGOORLIE AREA OF WESTERN AUSTRALIA.

WEST INDIES, UNIVERSITY OF
DR J F TOMBLIN SPS III
PROGRAMS BY P J JUTSUM

ST AUGUSTIN TRINIDAD
IBM 1620(UWI)

SORTING AND TABULATING THE GROUND VELOCITIES OF EARTHQUAKES RECORDED BY
SEISMOGRAPH STATIONS. PUBLICATION NO 5.
DETERMINATION OF THE FOCAL PARAMETERS OF CARIBBEAN EARTHQUAKES.
PUBLICATION NO 6.

PROGRAM BY J F TOMBLIN AND P J JUTSUM

CALCULATING THE CIPW NORMS FROM ROCK ANALYSES. PUBLICATION NO 7.

FORTRAN
PROGRAM BY K G BARR AND G E HODNETT

IBM 1620

ANALYSIS OF THE CO-VARIATION OF ELEMENT AND OXIDE ABUNDANCES IN A GROUP
OF ROCKS.

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DR J W AUCOTT ATOMIC ENERGY DIVISION, INSTITUTE OF GEOLOGICAL SCIENCES,
YOUNG STREET, LONDON W8, ENGLAND

DR T S AUSTIN DIRECTOR, NATIONAL OCEANOGRAPHIC DATA CENTRE, WASHINGTON
D C 20390, USA

DR H BAADSGAARD DEPARTMENT OF GEOLOGY, UNIVERSITY OF ALBERTA, EDMONTON,
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FOUNDATION, P O BOX 1027, HALIFAX NOVA SCOTIA, CANADA

MR R F BLAKELY INDIANA GEOLOGICAL SURVEY, 611 NORTH WALNUT GROVE, BLOOMINGTON,
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DR G F BONHAM-CARTER STANFORD UNIVERSITY, STANFORD, CALIFORNIA 94305,
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MR J M DEAN INSTITUTE OF GEOLOGICAL SCIENCES, 19 GRANGE TERRACE, EDINBURGH, 9, SCOTLAND

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MR R B ELLIOTT DEPARTMENT OF GEOLOGY, UNIVERSITY OF NOTTINGHAM, UNIVERSITY PARK, NOTTINGHAM, ENGLAND

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MR M T FROST DEPARTMENT OF GEOLOGY, IMPERIAL COLLEGE, PRINCE CONSORT ROAD, LONDON SW7, ENGLAND

DR R G GARRETT GEOLOGICAL SURVEY OF CANADA, 601 BOOTH STREET, OTTAWA 4 ONTARIO, CANADA

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MR J E G W GREENWOOD INSTITUTE OF GEOLOGICAL SCIENCES, PHOTOGEOLOGICAL DIVISION, 5 PRINCES GATE, LONDON SW7, ENGLAND

DR J C GRIFFITHS DEPARTMENT OF GEOCHEMISTRY AND MINERALOGY, 239 DEIKE BLDG, PENNSYLVANIA STATE UNIVERSITY, UNIVERSITY PARK, PENNSYLVANIA 16802, UNITED STATES OF AMERICA

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MR S HENLEY DEPARTMENT OF GEOLOGY, UNIVERSITY PARK, NOTTINGHAM, ENGLAND

MR R H HOARE N C B, THE MINING INDUSTRY OFFICE, 72 LEEK ROAD, STOKE-ON-TRENT, ENGLAND

MR B HOCKEY DEPARTMENT OF GEOGRAPHY, UNIVERSITY OF CANTERBURY, CHRISTCHURCH 1, NEW ZEALAND

PROF F HODSON DEPARTMENT OF GEOLOGY, THE UNIVERSITY, HIGHFIELD, SOUTHAMPTON, ENGLAND

DR D T HOPKINS SEDIMENTOLOGY RESEARCH LABORATORY, UNIVERSITY OF READING, WHITEKNIGHTS PARK, READING, BERKSHIRE, ENGLAND

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VANCOUVER 1, BC, CANADA

DR J IMBRIE DEPARTMENT OF GEOLOGY, COLUMBIA UNIVERSITY, NEW YORK, UNITED
STATES OF AMERICA

M P ISNARD CENTRE DE RECHERCHES PETROGRAPHIQUES ET GEOCHIMIQUES, CASE
OFFICIELLE NO 1, 54 - VANDOEUVRE-LES-NANCY, FRANCE

MR A I JOHNSON STAFF HYDROLOGIST, WATER RESOURCES DIVISION, U S GEOLOGICAL
SURVEY, FEDERAL CENTER, DENVER, COLORADO 80225, UNITED STATES OF AMERICA

MR A R L JONES N C B, THE MINING INDUSTRY OFFICE, 72 LEEK ROAD, STOKE-ON-TRENT,
ENGLAND

MR R L KAESLER DEPARTMENT OF GEOLOGY, THE UNIVERSITY OF KANSAS, LAWRENCE,
KANSAS 66044, UNITED STATES OF AMERICA

DR J C KELLEY DEPARTMENT OF OCEANOGRAPHY, UNIVERSITY OF WASHINGTON,
SEATTLE, WASHINGTON 98105, USA

DR G KELLING GEOLOGY DEPARTMENT, UNIVERSITY COLLEGE OF SWANSEA, SINGLETON
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MR T K KELLY DEPARTMENT OF GEOLOGY, IMPERIAL COLLEGE, PRINCE CONSORT
ROAD, LONDON SW7, ENGLAND

DR C H KELSEY DEPARTMENT OF MINERALOGY AND PETROLOGY, DOWNING PLACE,
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DR D R C KEMPE DEPARTMENT OF MINERALOGY, BRITISH MUSEUM (NATURAL HISTORY),
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