



INTERNATIONAL ATOMIC ENERGY AGENCY
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION



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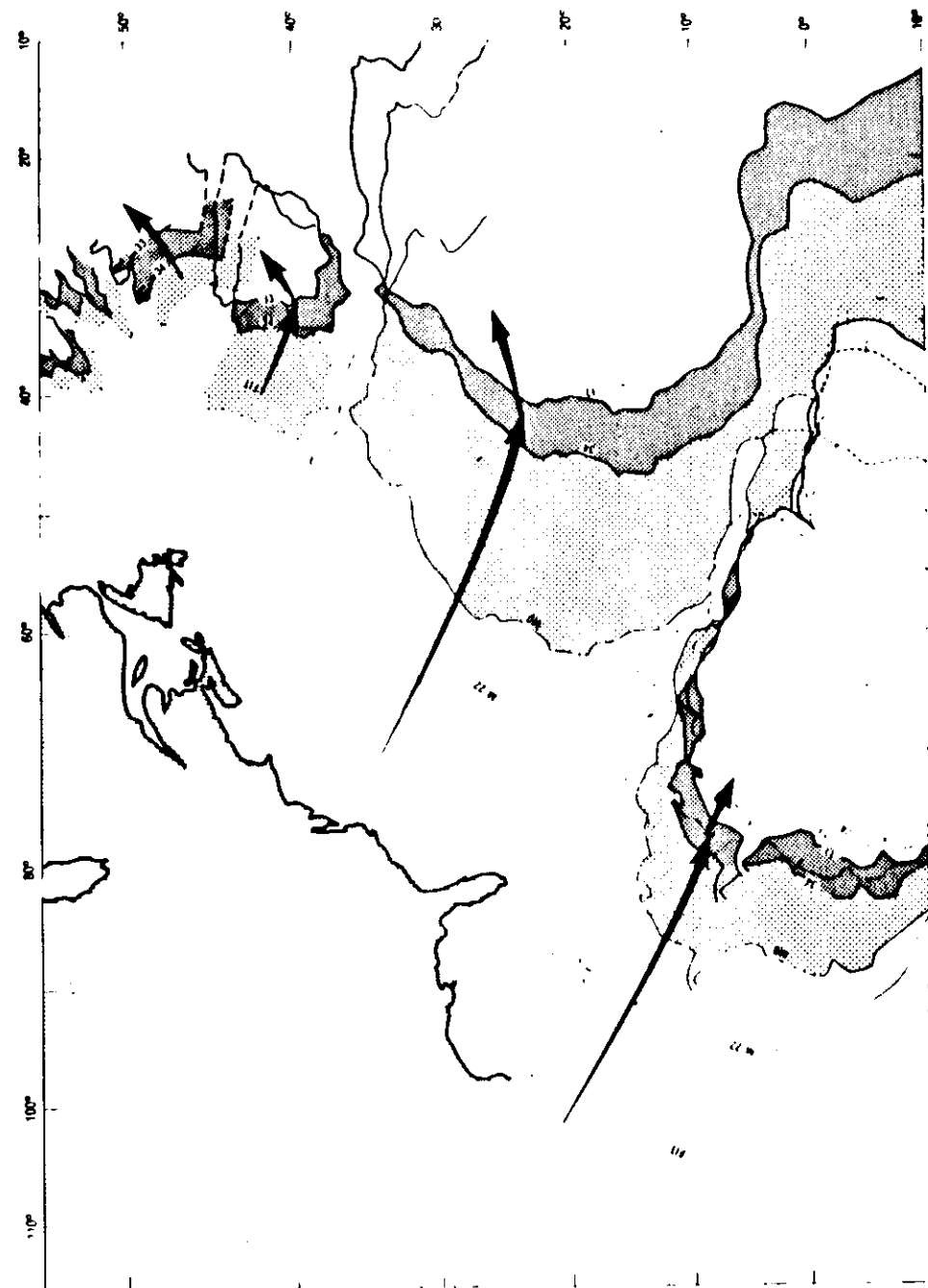
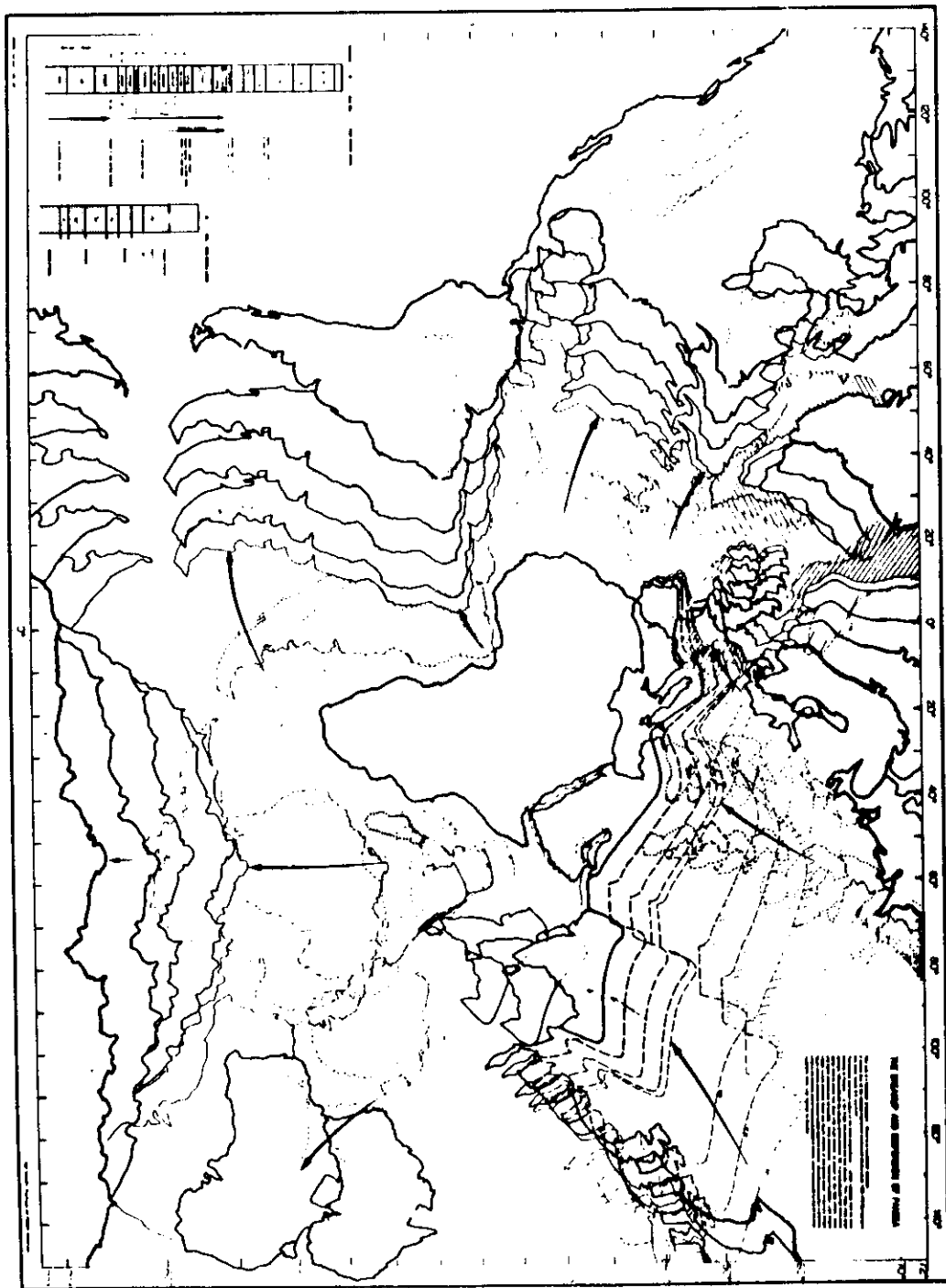
WORKSHOP
GLOBAL GEOPHYSICAL INFORMATICS WITH APPLICATIONS TO
RESEARCH IN EARTHQUAKE PREDICTIONS AND REDUCTION OF
SEISMIC RISK

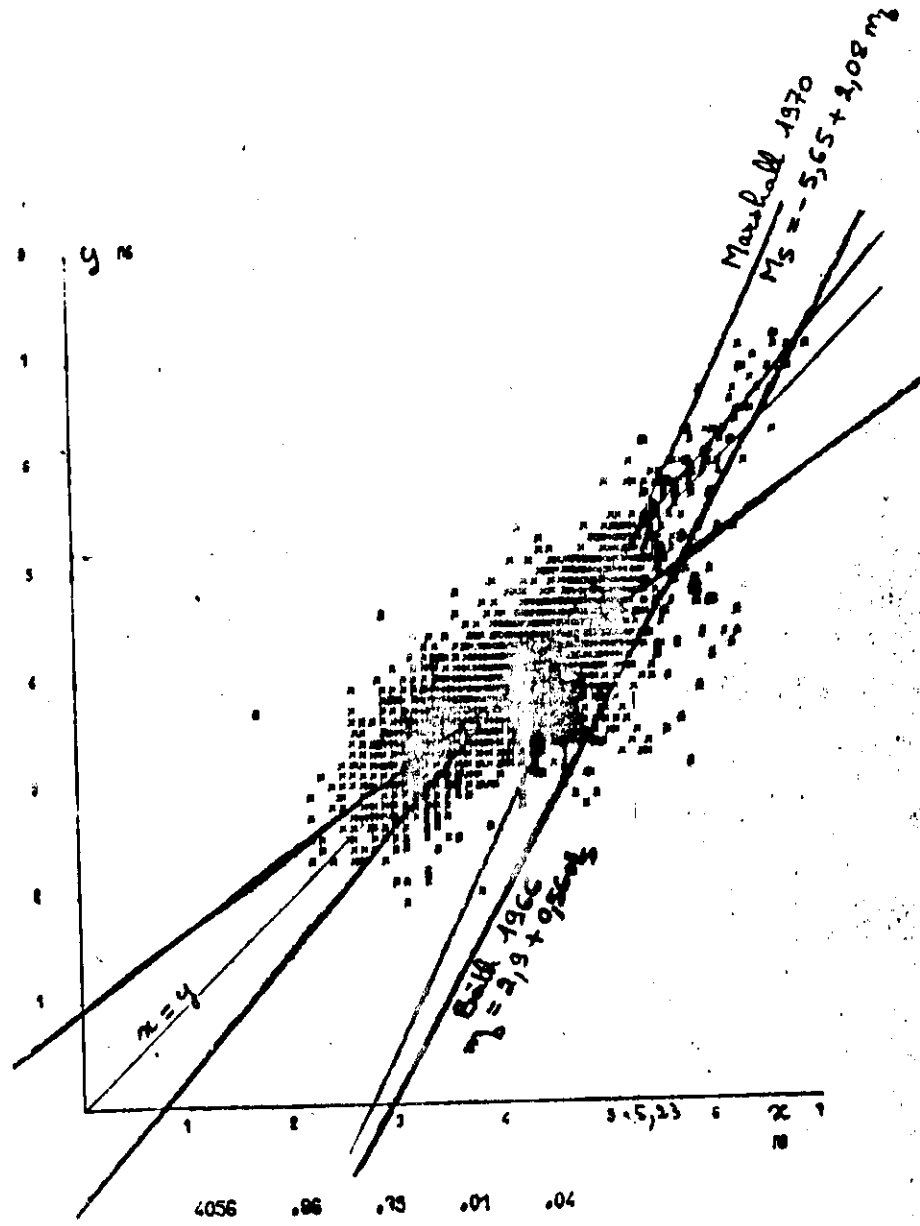
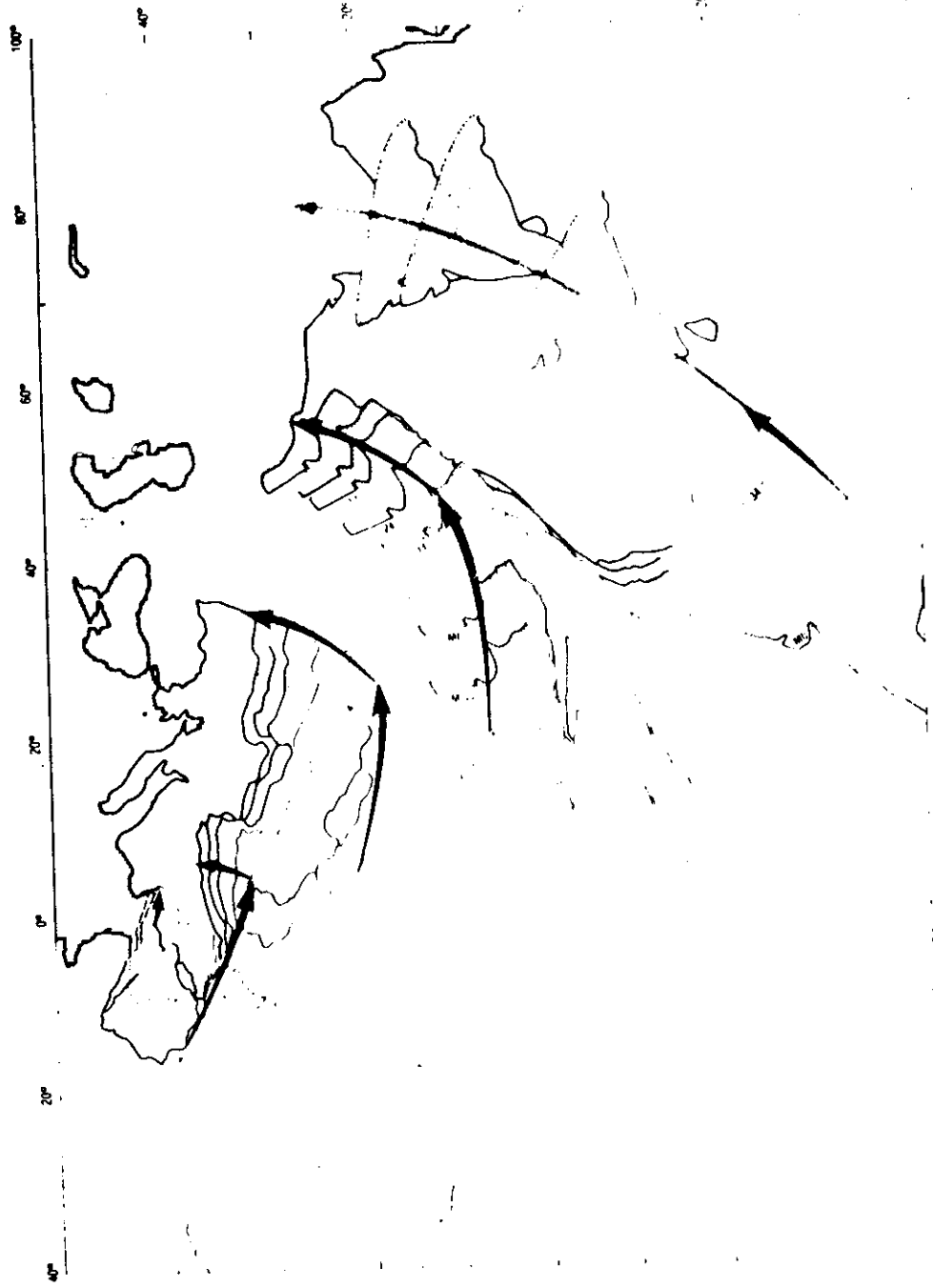
(15 November - 16 December 1988)

TECTONICS & EARTHQUAKE DATA FILE

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The inner structure of data

- level 1 $\left\{ \begin{array}{l} \overset{a}{\cancel{b}} : \text{computational data} \\ \text{(epicenter location, maximum intensities, seismic moment, magnitudes, ...)} \\ \underset{b}{\cancel{a}} : \text{observational data} \\ \text{(arrival times, quotation of disasters from books, ...)} \end{array} \right.$
- level 2 : raw data
(seismograms, historical sources *in extenso*, ...)
- level 3 : ancillary data
(miscellaneous : stations directory, glossary of waves, bibliographic references, ...)

EPI

EPI ID, Quadrat ID, Reporting Agency, Year, Latitude + error, Longitude + error, Type, Origin time, Magnitude [2 x (type + value)], Confidentiality code.

PARAM EPI ID, Travel-time table, Method of computation, Depth computed?, Depth + error, Azimuthal gap, RMH, RMS, Number of associated phases, Number of phases used, Maximum - Minimum distances, Maximum intensity reported, Areal extent of pleistose intensity scale used, Catalog ID, Determination's quality index.

$n_1 \times \text{MAGN}$ EPI ID, 6 x (Magnitude type + averaged value + number of reported values + reporting agency)

$n_2 \times \text{FOCMEC}$ EPI ID, Reporting agency, Scalar moment (mantissa + power), $(\phi_1, \lambda_1, \delta_1)$, $(\phi_2, \lambda_2, \delta_2)$, (modulus + azimuth + plunge of 1st axis), (modulus + azimuth + plunge of 2nd axis).

$n_3 \times \text{Tensor}$ EPI ID, Reporting agency, Scaling factor, r-r component + error, ϕ - ϕ component + error, θ - θ component + error, r- θ component + error, r- ϕ component + error, θ - ϕ component + error.

$n_4 \times \text{STAPHA}$ EPI ID, station (binary) code, phase (binary) code, epicentral distance, epicentre azimuth, static residuals, actually included in computations?, weight, overlap on following day?

$n_5 \times \text{ASSO}$ EPI ID, associated EPI ID, Reporting agency, Catalogue ID, Association's quality index

$n_6 \times \text{QUOTE}$ EPI ID, Secondary reporting agency + catalogue ID,

$n_7 \times \text{REFER}$ EPI ID, Pointer(s) to bibliographic references

$n_8 \times \text{COMMENTS}$ EPI ID, Comments

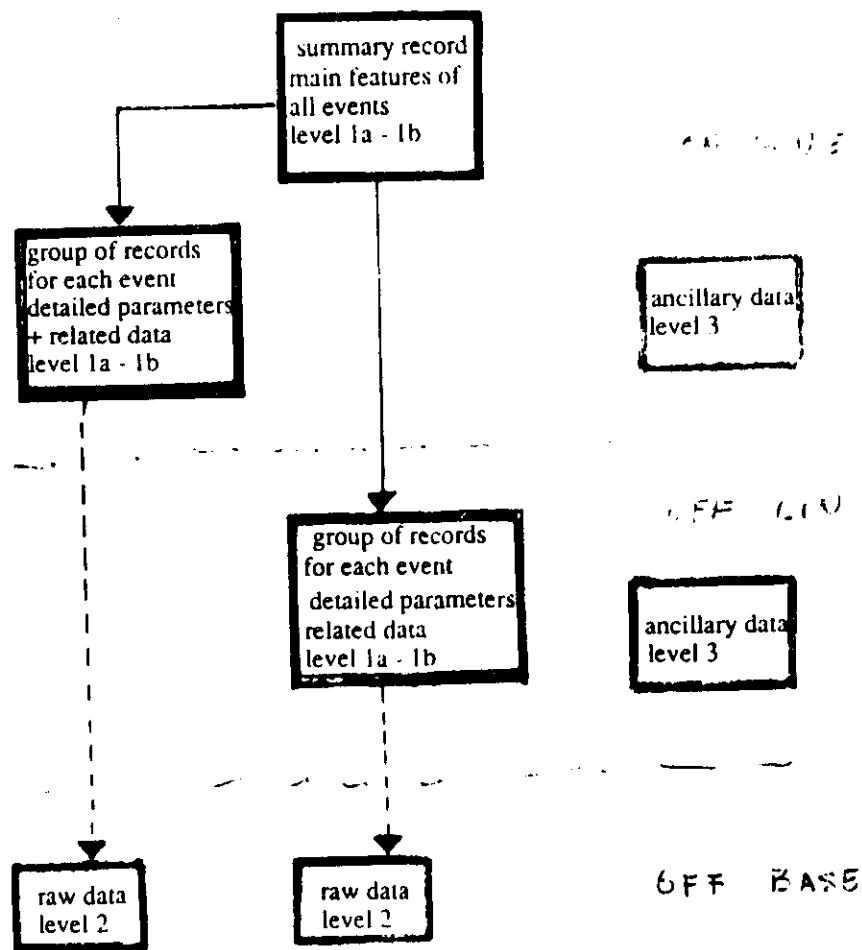
STADAT

STADAT ID, Station (binary) code, Phase (binary) code, Arrival time + date,
instrument code, Amplitude + period, First-motion deviation

m x EPISTA STADAT ID, $p \times (EPI + STAPHA)$ ID including given STADAT in computation

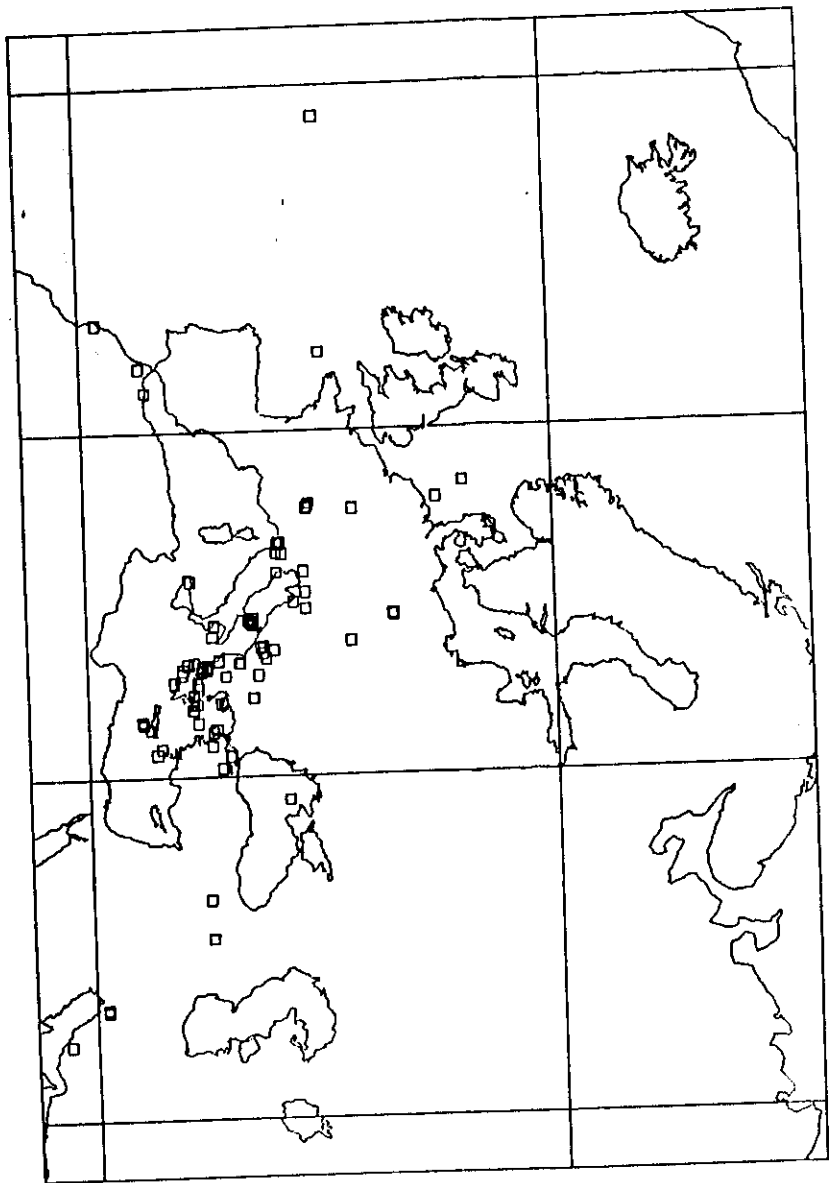
IB	Bibliographic references + table of (Epi + related records) id quoted.
TATAB	Table : binary code $\Leftrightarrow$ international alphanumerical code
TATION	Seismographic stations directory (including instruments characteristics)
PNET	Seismographic network directory
HASTAB	Table : binary code $\Leftrightarrow$ usual alphanumerical code
VD FLI	Table : quadrats covered by each "Flinn + Engdahl's region"
FLINN	"Flinn + Engdahl's regions" directory
COUNTRY	Table : quadrats covered by each political country
EOLOC	(evolutive) table : quadrats covered by vernacular geographic names
ATALOG	Table : Epi ids of any given catalogue
RGANISM	Seismological agencies directory
SPLIT	Directory of split quadrats

On-line data retrieval



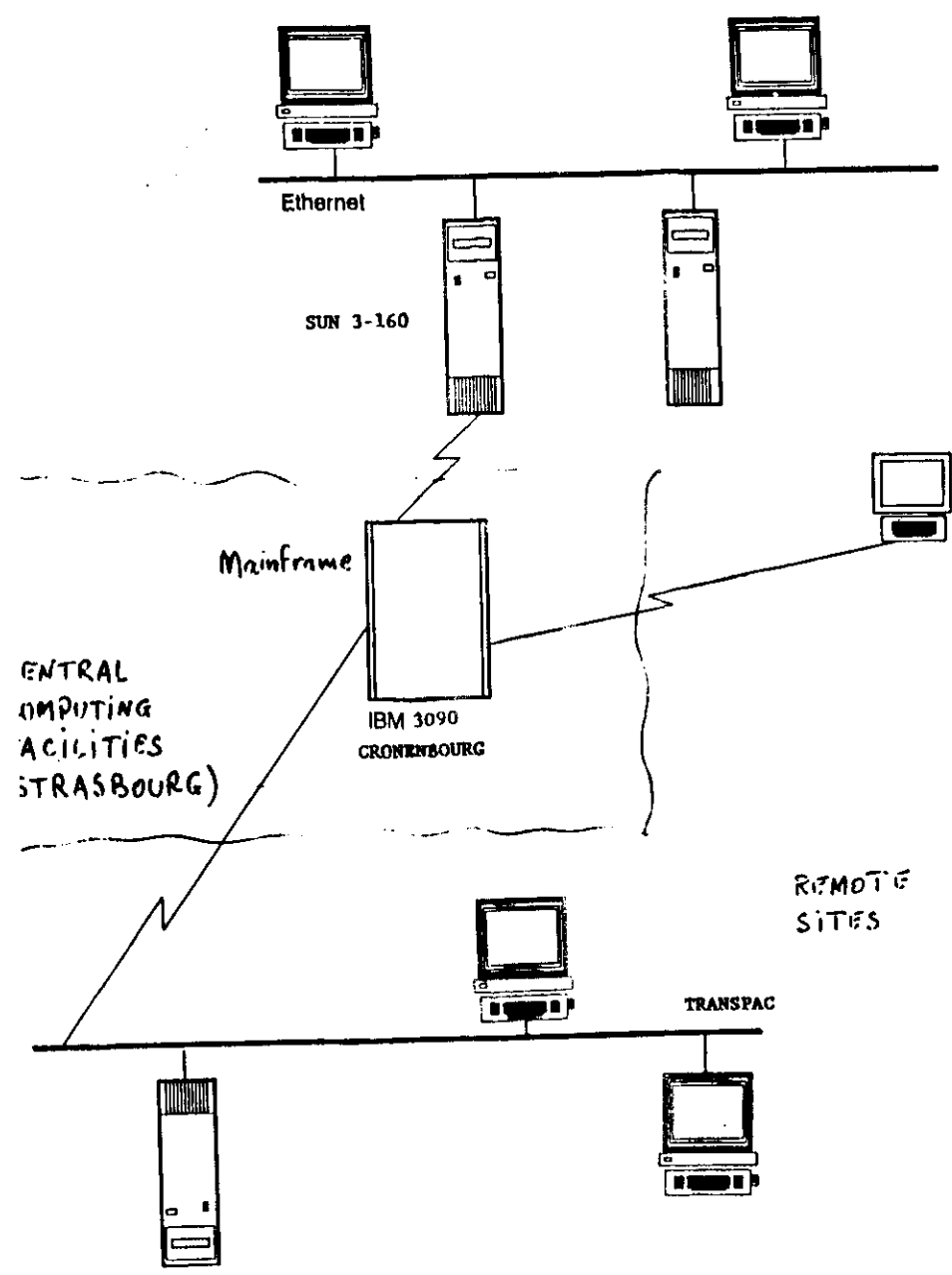
Data retrieval : how ?

- using general-purpose procedures structured in menus
- using SQL interactive DBMS language
- using screen-oriented procedures (whenever possible)
- using FORTRAN programs (at the centre)
- ability to transfer data to one's own computer through general-purpose or dedicated networks



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Network architecture



Further topics

- use of natural languages in retrieval ?
- additionnal map drawing software
- customized output
- compatibility with statistics software