EUROPEAN SEISMOLOGICAL COMMISSION

ESC

ABSTRACTS

XXV GENERAL ASSEMBLY

September 9-14, 1996

Reykjavík, Iceland

Icelandic Meteorological Office

Ministry for the Environment

University of Iceland

A0.01

CONSTRUCTION OF A SEISMIC CATALOGUE INTO A GEOGRAPHICAL INFORMATION SYSTEM (G.I.S.) FORMAT. CONVERSION METHODOLOGY AND APPLICATIONS SEISMIC DATA EVALUATION AND CARTOGRAPHIC REPRESENTATION

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Seismological data contain a great number of information on specific elements such as geographical location, depth, magnitude, time, etc. This information is stored in digital or analogue format in usually huge files The seismic catalogue of Prof. Makropoulos (Dept of Seismology. Univ of Athens) which contains over 8000 seismic events for Greece since the beginning of the century, is the primary source of data used in this work. The main objective is the automatic production of a thematic layer from the seismic catalogue, taking advantage of a G.I.S ability to present the seismic epicentres as well as their relating attributes as point data in its system The methodology steps are described in short below: 1.) Conversion procedures in order to modify the available digital catalogue in a recognisable format to be accepted in Arc/Info G.I.S. The information concerning the geographical co-ordinates was treated differently from the one concerning the descriptive attributes 2.) Management of the combined information within the G I.S. so as to create the proper topological relationships and real world projections. 3.) Evaluation, spatial correction and analysis using the available G.I.S advanced techniques and capabilities for manipulating large volume data. 4) Production of a final cartographic output presenting the results of the seismic analysis, in an optimised and automated way as well as any other linked information. The methodology described above, leads to the creation of a thematic layer on a map and clearly illustrates the relations between the information entities contained in the primary data source Additional operations include the ability for multiple spatial queries and refined geostatistical management, data correlation and database manipulation

A0.02

SEISMICITY AND GEOPHYSICAL FIELDS ALBORAN SEA AND BETIC-RIF MOUNTA

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Seismicity in the region between 35° − 38°N and 0° − 6°W is studied, based on data from Spanish and Moroccan seismic stations operating in the area. All 400 events above magnitude 3.0 for the time period 1990-1995 are relocated and subsequently location quality criteria are applied to obtain a homogeneous and reasonably accurate hypocenter distribution. 2-D and 3-D seismicity patterns are analyzed. Calculations of b-values and strain release have been performed for a grid of points covering the region, considering the time period 1980-1995, and the results are shown by contour maps which give an indication of the relative seismicity between different sub-regions. Spatial and depth distribution patterns of relocated hypocenters and regional contour maps of seismic parameters are discussed in relation to geophysical fields in the region such as local values of heat flow and Bouguer gravity anomaly.

A0.03

THE EASTERN CORINTHIAN GULF (GREECE) SEISMOLOGICAL TELEMETRY NETWORK (CORNET)

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A seismological permanent network of five digital telemetric stations is installed around the eastern gulf of Corinth (Greece), an area of continuous seismic activity, by the Department of Geophysics of the University of Athens. The network consists of a Lennartz 5800 PCM system and performs three different tasks: the encoder (seismograph), the mixer (recording system) and the decoder (play back system). The recorded signals are transmitted directly or through repeaters continuously to the central station via antenna at predefined frequencies.

The basic tasks of the mixer are to a. resynchronize incoming signals; b. evaluate the trigger information from the individual remote stations by calculating a trigger criterion based on a weighted coincidence sum; c. insert time information and d. perform output traces. A DCF time receiver is used as an external time code to synchronize the internal clock. Furthermore the Mixer is equipped with a IEEE-488 interface for asynchronous data transfer and is connected with a PC's similar interface. The signals are stored on the PC hard disk and then they are transferred via ftp, to HP-720 in order to process and analyze the data.

Since January 1, 1995, when the network has been operational, the activity of the broader area is dramatically increased, allowing for more detailed studies to be performed. Examples from the two larger earthquake sequences occurred during its operation, namely the Kozani (13.5.1995, Ms=6.6) and the Aegion (15.6.1995, Ms=6.0) are also presented.

A0.04

SEISMIC ZONING OF THE WEST REGIONS OF UKRAINE
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Existing map of general seismic zoning of the West Ukrainian territory are unsufficient for modern demands of designers. Therefore, some approach methods taking into account low seismic activity of this territory was created. By means of its use,on the base of well-known earlier and obtained again seismic materials the refinemental scheme of predict seismic intensity for the West regions of Ukraine have been drawn up. The danger for this territory is caused by local earthquakes and strong subcrust earthquakes from Vrancea zone in Rumania. The forecast of maximum influences from Vrancea earthquakes is based on determination of possible Mmax value and the regional spreading laws of seismic intensity. For this purpose, the uniformed catalogues analysis and studying of macroseismic effects spreading are used. The procedure of local earthquakes danger reliable estimating consist of region geodynamic studying, separating of potential seismic dangerous geological structure, their seismic potential investigating and studying of seismic intensity azimuth spreading laws. The region seismicity data sources consist of historical materials and instrumental materials of local and foreign seismic networks observations. On this basis the computer catalogues of earthquakes have been compiled.The programs for their statistic analysis have been worked out. The values of Mmax for different recurrence periods of the Vrancea earthquakes and earthquakes of some local seismic zones were determined. The maps of seismic activity and seismic shakebility of West Ukrainian territory were obtained.