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MORPHOMETRY OF THE MEDITERRANEAN SEA

Francesco MARABINI

Istituto di Geologia Marina, CNR, Via Zamboni 65, Bologna (Italia)

The Mediterranean Sea has been divided into 8 areas (see fig.I). The hypsometry of each area and of Mediterranean Sea is shown in the cumulative frequency curves of fig.I. The frequency curves of the areas 3,4,6,7, are unimodal with the modal class corresponding to the interval 0-500 m. Other frequency curves present modal classes corresponding to the intervals 0-500 m and 2000-3500 m. The frequency curve of the Mediterranean Sea is even bimodal with a main modal class corresponding to the interval 0-500 m and a secondary mode in the 2000-3000 m interval. This interval corresponds, above all, to transition from continental slope to bathyal plains.

The comparison among hypsometric curves, percentage hypsometric curves and clinographic curves to the values of Strahler method (I952) confirm the results from histograms and cumulative frequency curves of fig. I.

The areas have been measured by a polar planimeter Salmoiraghi mod. 236. To avoid the errors due to deformations in the Mercator projection, the measured areas have been corrected by comparison with actual areas of the corresponding spherical trapezes of I° of latitude and I°of longitude dimensions.

The total area of Mediterranean Sea, according to the Authors, is Km^2 2,967,800, the average depth has resulted I486 m with a maximum of 5I2I m in the Ionian Sea, the average slope, by Strahler method is resulted I°22'.

The aim of this work is to show an example for a quantitative geomorphological methodologie using.

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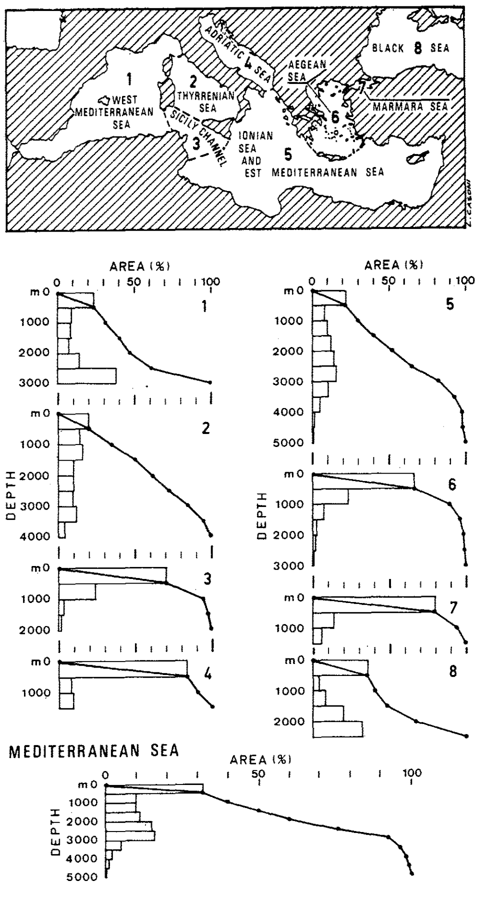

Fig. I:Hypsometry of the Mediterranean Sea

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CRUSTAL DEFORMATION AND TECTONICS OF MOROCCO

J. MAKRIS[(1)], S.N. QURESHI[(1)] and A. DEMNATI[(2)]

(1) Institute of Geophysics, University, Bundesstrasse 55, Hamburg (F.R.G.)
(2) ONAREP, Rabat (Morocco)

A reevaluation of existing gravity and seismic data from Morocco permitted the construction of several 2-D density models for the Atlas and Antiatlas as well as the Rif mountains of Morocco. The computed models were compared to a seismicity map published by Mezcua et al. 1983 and new conclusions were drawn by comparing the models, their isostatic behavior and tectonic deformation. Most areas of the Antiatlas and High Atlas are isostatically in equilibrium with a maximum crustal thickness of approximately 38 to 40 km below the High Atlas. The Meseta is floored by a normal continental crust which rapidly thins towards the Atlantic coastal areas to approximately 22 to 25 km thickness. The young basins developing along the Atlantic coasts are important for hydrocarbons and gas-bearing structures. To the northeast, the Meseta is followed by the Rharb Basin and the Rif mountains. The crustal deformation shows evidence of compressional deformation on a regional scale towards the Alboran Sea. The Rharb Basin and the Rif mountains are not in isostatic balance.
The seismicity data and plane solutions of focal mechanism show that the South Atlas Lineament (SAL) is controlled mainly by shearing, favouring the development of young, pull-apart basins, like the Ouarzagent or Sous Basins. The seismic activity is shifted from the SAL to the Nakor lineament; thus the shearing is tranferred from the Antiatlas-Atlas areas to the Rif. The collision of the Meseta-Rif-Alboran crust with Iberia produces large scale deformation and favours the development of the Rif nappes. The Beni Bouchera ophiolite is thus interpreted as a part of the Nappes and is in an allochthonous position.

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