

-7. - STRUCTURE OF THE EARTH'S CRUST IN SOUTH-EAST BULGARIA *

by Zv. VELCHEV, Iv. PETKOV, S. SAVOV - Académie Bulgare des Sciences
Rue 36, Quart. Geo Milev Sofia
XIIIe.

Based on complex interpretation of geophysical and geological data the thickness of the Earth's crust in SE Bulgaria has been determined by means of the formula of Demenickaya (1967) and deep fault zones have been located which shape its block structure.

The area studied covers the East Rhodope and the East Srednogorie and is characterized by higher Bouguer gravity values which increase from west to east. The regional background is complicated by a system of step-like gravity breaks and intensive maxima. To the west the area is bounded by the first order Central Rhodope deep fault zone expressed by a gravity break of 70-90 mlg. The north boundary is the Yambol deep fault zone.

The geomagnetic field has a complicated mosaic-like structure. Its values range from +3000 to -2000 gammas. North of the Yambol zone the gradient is gentle and typical of areas covered by a thick sedimentary blanket.

The features of the gravity and geomagnetic field reflect the block-mosaic structure of the crust. Here it is intensively saturated by basic and ultrabasic intrusives marked by local gravity maxima. Important anomaly is the sharp gravity break along the second order Topolovgrad deep fault zone.

The East Rhodope and the area of Sakar and Strandza make up the eastern part of the ancient Tracian massiv, affected by violent tectono-magmatic activity during the Paleozoic and the early Mesozoic. During the late Mesozoic the Topolovgrad zone divided the Subrhodope block into two smaller blocks: 1) the East Srednogorie, magmatic consolidated at the end of the Upper Cretaceous and 2) the East Rhodope, additionally saturated during the Paleogen. The differences in the development and consolidation of the two blocks are reflected in the thickness of the Earth's crust - 38-34 km in the East Rhodope and 34-30 in the East Srednogorie. The crust is thinnest in the area of the Burgas gulf. Along the Topolovgrad deep fault zone there is a rapid change of thickness of 2 km.

* Paper read by Pr. FOOSE.