



Modeling the Magnetic Data of Eastern Black Sea

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The Black Sea possesses an “intercontinental” nature as being located between Europe and Asia, as well as an “intramontane” quality being surrounded by mountains. It has a suboceanic structure in terms of bathymetric features. The contraction formed as a natural consequence of the North Anatolian Mountains (Pontids) and the Crimean Mountains approaching towards each other has divided the Black Sea into two basins as the East and the West. The situation compressing the region has also affected the seabed.

The main aim of our study is to analyse the magnetic data obtained from the Turkish territorial waters of the Eastern Black Sea region, using the Talwani Modelling method. For this purpose, following a preliminary assessment on the magnetic map, two sections were selected. Making use of the seismic and bathymetric data, geological models were obtained.

The positive anomalies reflected in the SW part of the profiles are due to the Upper Cretaceous island arc volcanism that is present in the vicinity of the coast. The same issue is also an evidence of the thinning of the crust and intrusion of basaltic crust to the surface in these regions. On the contrary, toward the middle region of the Black Sea that corresponds to the NE part of the profiles, the crustal thickness increases, reaching up to approximately 10 kilometers.