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Determining of Secondary Faults from Shallow Seismic Data between Büyükçekmece and Tekirdağ

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The Marmara Sea presents complicated morphological system mainly controlled by the active tectonic regime of the North Anatolian Fault Zone (NAFZ). In this study, shallow seismic with high-resolution and multi-beam bathymetric data are collected in the area of the Marmara Sea Northern Shelf between the Büyükçekmece and Tekirdağ were interpreted. In the shelf region, bathymetry map of Marmara Sea was prepared through depth data of study area in centimeter sensitivity collected by multi-beam microbathymetry data. A study of prepared bathymetry map reveals that the bottom topography has seen with a slope of about 1.5 a depth of about -50 meters from shore. Existing of plain has been detected between -50 to -100 meters depth. In this region, the sea bottom starting from -100 metres falls abruptly and forms a very steep cliff oriented east-west. In addition, numerous linearity were observed in the bathymetry map with NW-SE, E-W and NW-SW trending. In the study area, the presence of some important faults was also observed in the interpreted shallow seismic section. Linear section on bathymetry has a coherence with faults that are in seismic section. Same accuracy has seen also in mainland topography. In conclusion faults which are located in the sea continue on land. Faults are considered as secondary cracks of North Anatolian Fault Zone.