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Approximately 500 line-kilometers of single-channel continuous seismic reflection and magnetic profiles were obtained with 40 cu-in PAR airgun system and proton magnetometer in the Gulf of Edremit (Western Turkiye). The data were collected from the research vessel K. Piri Reis of the Institute of Marine Sciences and Technology (Izmir-Turkiye). Fig. 1 shows the schematic tectonic map of the western Turkiye and surroundings.

During 1991 an international group of scientists and students carried out a training and research program on board the Russian Research Vessel "Gelendzhik". In the Russian sector of the Black Sea this was partially directed towards a study of the distribution and character of mudvolcanoes in an area South East of the Crimean peninsula, by means of subbottom profiling and side scan sonar recording, followed by box- and gravity coring.

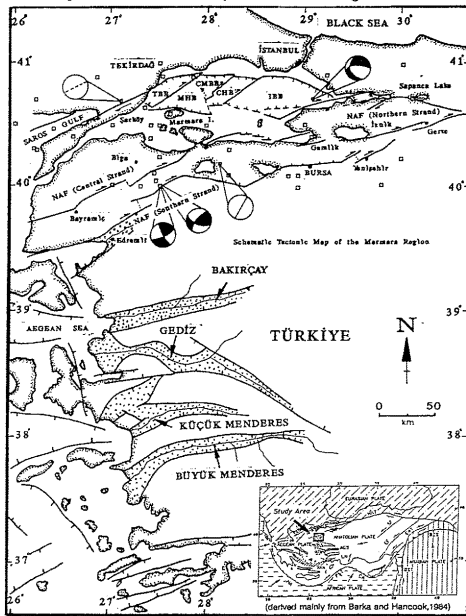


Fig. 1: Schematic tectonic map of Marmara region and western Turkiye derived from WONG *et al.*, 1990 and AKSU *et al.*, 1990.

Detailed interpretations of the geophysical data show that the Gulf of Edremit is also an asymmetric graben as well other east-west trending grabens in the western Turkiye, associated with the regional north-south extension of the Aegean plate. These grabens and the intervening horsts control the west flowing drainage systems of western Turkiye.

Fig. 2 shows the geological map of Gulf of Edremit area and the seismic lines were measured during the cruise and offshore exploration well Edremit-1. The interpretation of seismic data shows that there are several NE-SW trending faults in the Gulf of Edremit which are subparallel to the major "southern strand of North Anatolian Fault (NAF)". The activities of these faults began probably in early Miocene and are still continuing.

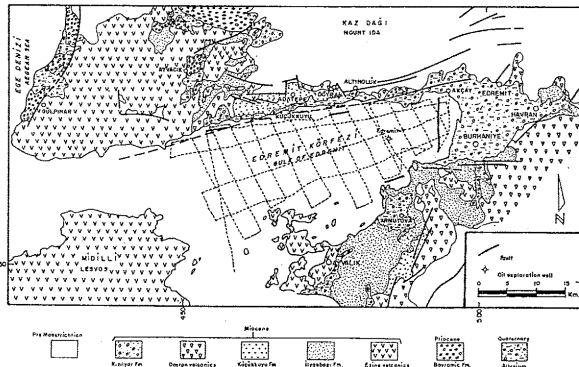


Fig. 2 : Geological map of Gulf of Edremit area (from SIYAKO *et al.*, 1989) and seismic and magnetic lines.

From the magnetic data is shown that there are no important anomalies in the northern side of Gulf of Edremit. But in the southern side of region there are some important anomalies, because of the volcanic rocks which appear on land and on islands.

There was also further obtained gravity data from the Gulf of Edremit besides obtained seismic and magnetic measurements. Calculated gravity models from Bouguer Map of north western Turkiye show that there are 2-3 km thick sediments in the Gulf of Edremit which are transported by the streams of "Edremit Çayı", "Havran Çayı" and "Karadere". The sediments in the eastern side are thicker than the western side in the Gulf of Edremit.

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