

## MT imaging of the western part of the North Anatolian Fault zone

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The deep crustal resistivity structure of the western part of the North Anatolian Fault Zone has been investigated by using Magnetotelluric (MT) method, since the area is considered as one of the most seismically active zones in the Earth. Several MT profiles were set up in a region where the strike-slip fault separates into two branches. In this study we introduce two-dimensional models of these profiles. The inversion code used in the creation of the models was developed by Ogawa and Uchida (1996). Both transverse magnetic (TM) and transverse electric (TE) modes were used for the apparent resistivity and phase data that were inverted. A remarkable similarity has been detected between the models and the surface geology. Particularly, the sediments of Izmit Bay basin and an anticline that is cut by the southern branch of the fault, were clearly seen. Another striking result of the models was that the resistivity is low in general between the two branches of the NAF. The aftershocks of the 17th August 1999 Izmit earthquake clusters on the edge of resistive regions neighbouring the conductor regions supporting the idea of fluid involvement in the earthquake generation process.