

SEARCHING CONDUCTORS AT THE WESTERN PART OF NORTH ANATOLIAN FAULT ZONE (NAFZ) BY AUDIO-FREQUENCY MAGNETOTELLURICS (AMT)

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ABSTRACT *Audio-frequency Magnetotellurics (AMT) surveys were carried out along three profiles crossing the western part North Anatolian Fault zone, including the northern branch (Izmit-Adapazari segment) on which Izmit earthquake took place on 17 August 1999 and the southern branch (Iznik-Mekece segment) which is a seismic gap. In this paper, we focus on the shallow depths in search for conductors near the fault zone. Groom-Bailey decomposition was applied to check the two-dimensionality of the AMT data at the study area. Following the tensor decomposition, two dimensional inversions were applied using the code of Ogawa and Uchida (1996) for three profiles. The resulting models that are based on the TM and TE modes suggest that the North Anatolian Fault has a sharp lateral contrast in electrical resistivity that may be acting as a barrier for fluid flow.*