

IMAGING THE ELECTRICAL RESISTIVITY STRUCTURE AT THE VICINITY OF DUZCE EARTHQUAKE, TURKEY

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Wideband (320 – 0.0005 Hz) magnetotellurics (MT) data were collected at 24 sites to form two parallel profiles on both sides of the 1999 Düzce earthquake's epicenter. All eight elements of the impedance tensor were utilized for deriving the three-dimensional (3D) electrical resistivity structure of the earthquake region and its vicinity. Data space modeling inversion technique which provides faster computation due to smaller number of parameters was used to construct a resistivity model for a 68 x 50 x 40 mesh (including 7 air layers) that extends to a depth of 50 km. The modeling results define a high conductivity region toward the east of the epicenter where earlier studies suggested asperities and wide aftershock distribution.

Magnetotellurics, Electrical Resistivity, North Anatolian Fault, Duzce earthquake

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