Geophysical Research Abstracts, Vol. 7, 01375, 2005 SRef-ID: 1607-7962/gra/EGU05-A-01375 © European Geosciences Union 2005



Geoelectrical Methods in City Construction Planning: Examples from Istanbul City

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Kocaeli earthquake (1999, Ms=7.4), about 90 km far from Istanbul city, caused a heavy damage or collapse of some buildings in Istanbul, Avc1 lar district. After this event the importance of earth sciences in city planning is better understood. Firstly the Istanbul Municipality and some other companies made some efforts using geophysical methods for a better substructure and superstructure planning. In this study we will present some applications of geoelectrical methods and results of 2-D resistivity modeling for subsurface imaging. The resistivity of the rocks change logarithmically and they are highly affected by presence of water in weak, crushed zones, geoelectrical methods are useful tools to image the subsurface discontinuities; such as faults, basement depth changes, week subsurface zones, regional water table ext. Some examples of planning the location and alignment of substructure and superstructure construction such as the tunnels, buildings by the use of the geoelectrical methods are given in this work.