

ERT

Electrical Resistivity Tomography is a versatile, fast and cost effective technique for mapping the shallow subsurface structure. It covers a wide spectrum of resistivity ranging from <1 Ohm.m to several thousands of Ohm.m. In Resistivity Tomography Technique the two dimensional (2D) resistivity data generated using multi-electrodes which resulted in high density pseudo-sections with dense sampling of apparent resistivity measurements at shallow depth ranging from surface to a depth of 30 m in a short time. The 2D measured resistivity data later being edited, processed, inverted using 2D inversion approach gives 2D true resistivity models. The maximum depth of investigation is shown in the resistivity models along the vertical axis and is determined by the spacing between the electrodes and the number of electrodes used in the specific type of array.

The basic idea in the resistivity method is to introduce into the ground a direct or low-frequency alternating current by means of two electrodes (metal stakes C_1 and C_2) connected to the terminals of a portable battery source. The resulting potential distribution on the ground, mapped by means of two probes (metal stakes P_1 and P_2), is capable of yielding information about the electrical distribution below the surface.

The method was extensively used by our personnel in order to obtain full quantitative geological information of the geological structure up to 30 m depth in various sites and even complex terrains.

A typical Apparent Resistivity Pseudosection) and thus the Inverse Model Resistivity Section (c) which represents true subsurface resistivities is shown in the following figure.

