

What is ERT?

Understanding ERT

Electrical Resistivity Tomography

Electrical Resistivity Tomography (ERT) is a **geophysical suvery**, and therefore, it en-
ergizes the earth in order to get some information about it. The main product of ERT
is the visualization of the subsurface structure by looking at its resistivity distribution,
and this is achieved this by injecting a known amount of direct current (DC) at strate-
gic points throughout an entire surface and measuring the resulting voltage on each
of them, thus being able to calculate its resistivity (actually an **apparent resistivity**).
Finally, as in every tomography method, we solve the inverse problem for our data,
obtaining a visual representation of who caused the resistivity that we measured.

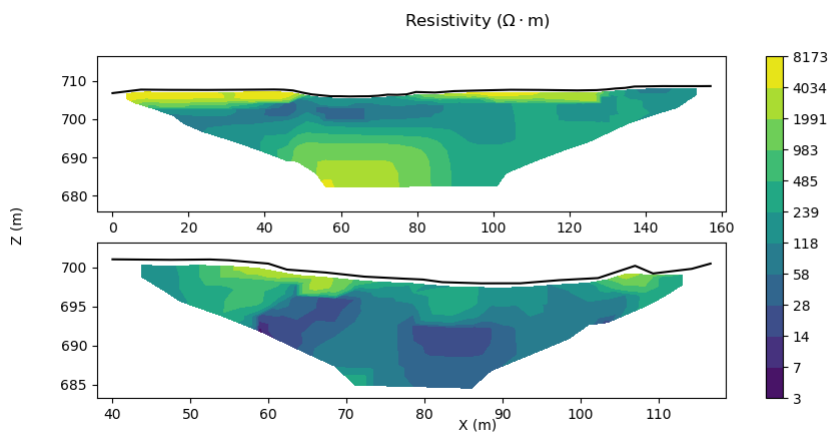


Figure 1: ERT plot from .xlsx data by [lhalloran/ERTplot](#).

ERT is applied as a non-invasive technique for geological or hydrological subsurface structure detection, to finding pollution leakages, and since the 1940s it's being used for mineral exploration¹.

This method demands simple equipment and provides good spatial resolution. The following document will discuss about some whys about ERT and its mathematical and physics principles.

Why resistivity?

asdasd

ERT limitations

uwu

¹In the 1940s, Andrey Nikolayevich worked on solving the inverse problem for the not yet formalized ERT technique, managing to discover large deposits of copper without any help from computers.