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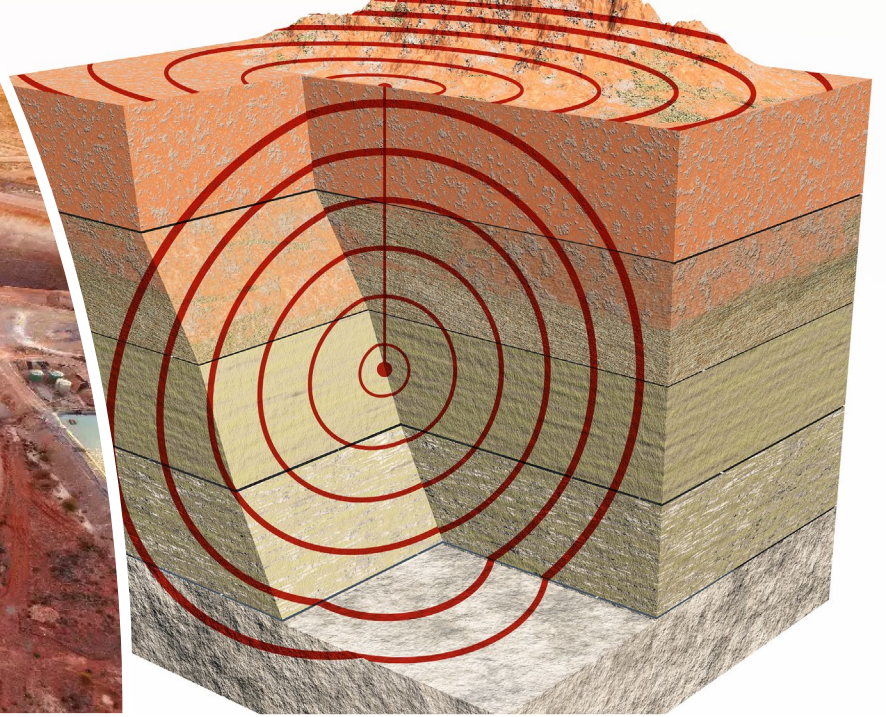
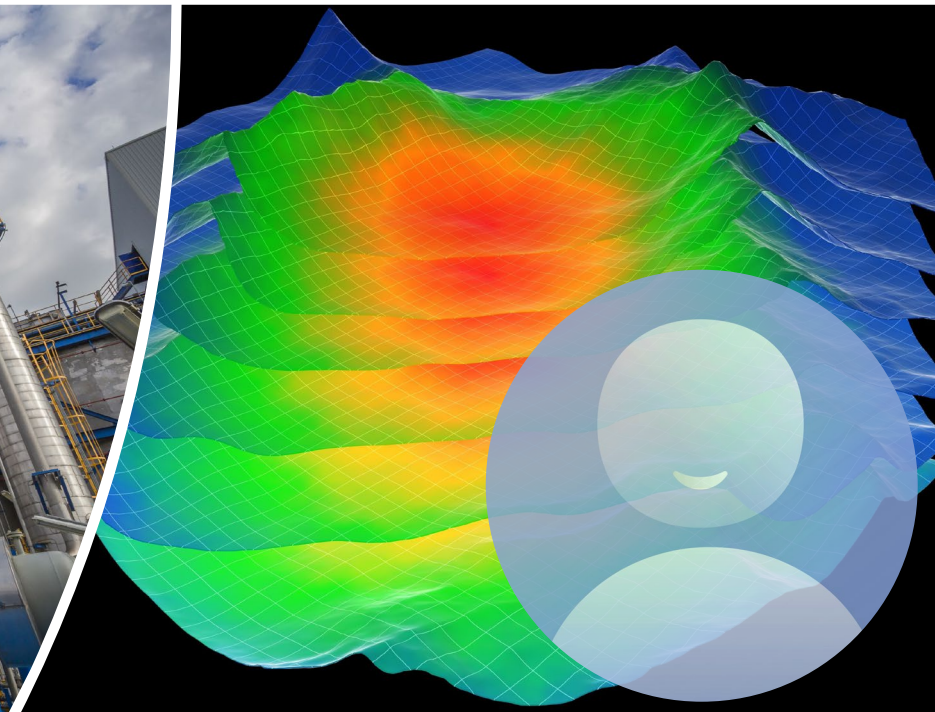


Geophysical Data Analysis

Application: **Mining**



Supervision of Geophysical Projects.

Application: Lithium Exploration.

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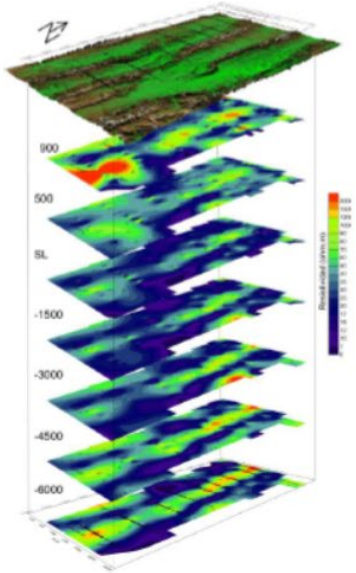
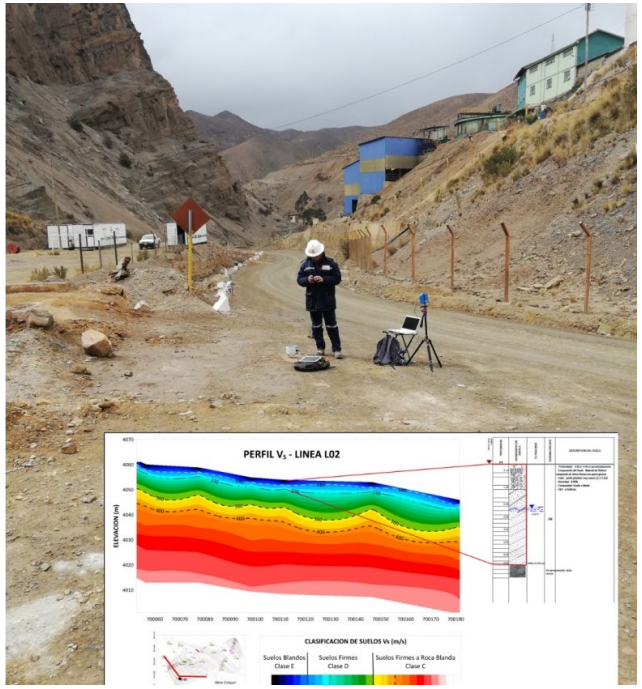
PENTATEX GROUP has a multidisciplinary team of experts in the area of Geosciences, with capabilities in Modeling and Design, Acquisition, Processing and Interpretation of the following data:

- **Terrestrial, Aerial and Satellite Gravimetric.**
- **Terrestrial, Aerial and Satellite Magnetic.**
- **Terrestrial Electromagnetic (GPR, MT, AMT, CSAMT).**
- **Remote Sensors.**

- **Seismic Acquisition Design and Modeling.**
- **Seismic Acquisition Supervision and Quality Control.**
- **Seismic Data Supervision and Processing.**
- **Seismic Data Interpretation and Characterization.**





MT data acquisition, processing and interpretation.

Acquisition, processing and interpretation of passive seismic.

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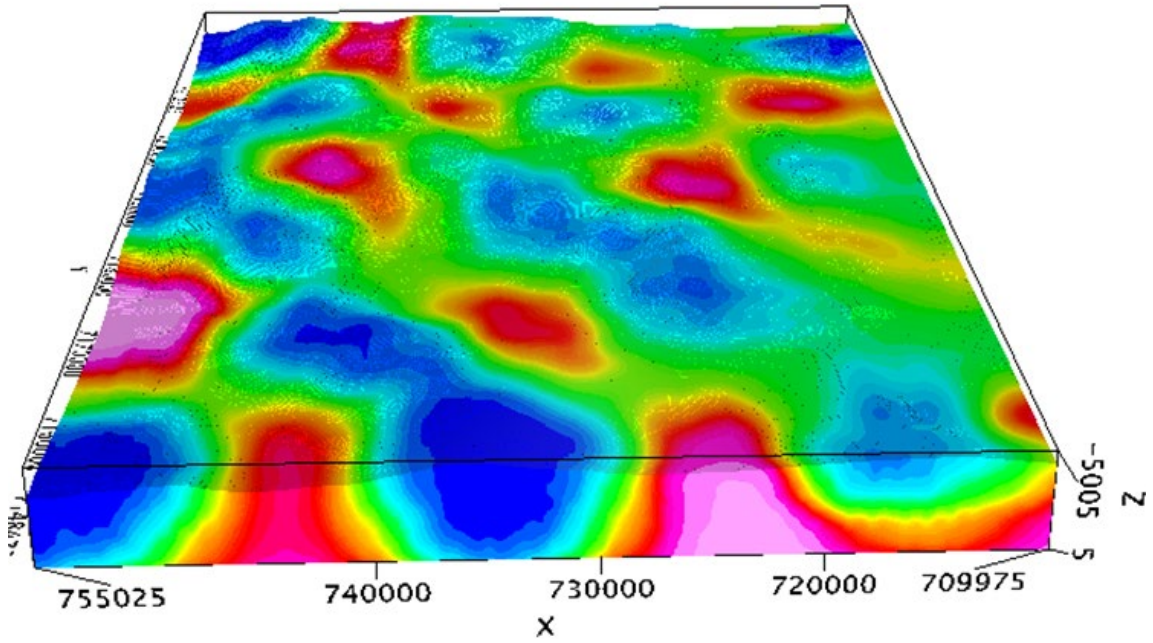
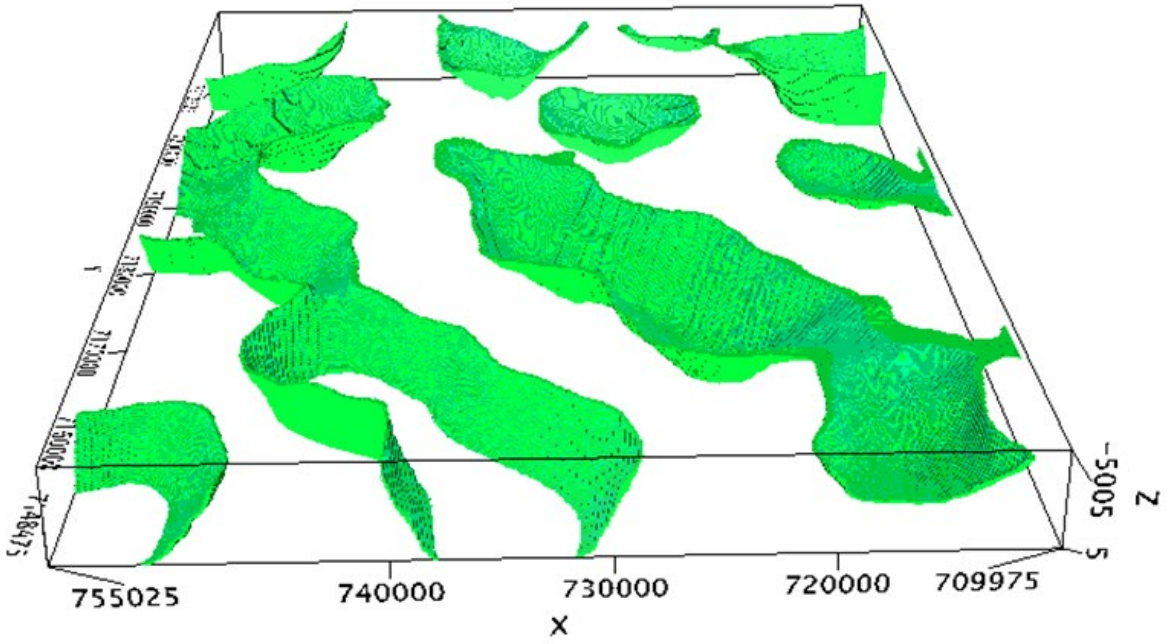
Gravimetric Methods

From the processing and inversion of gravimetric data, a three-dimensional density model was generated, where areas in blue are shown identifying densities between 0.5 and 0.6 g/cm3, correlated with the presence of metallic or lithium minerals.



Volume distribution of densities (g/cm3)
Source: BGI.

From this density model we were able to restrict the green areas delimiting densities between 0.5 and 0.6 g/cm3, correlated with the presence of Lithium Chloride.

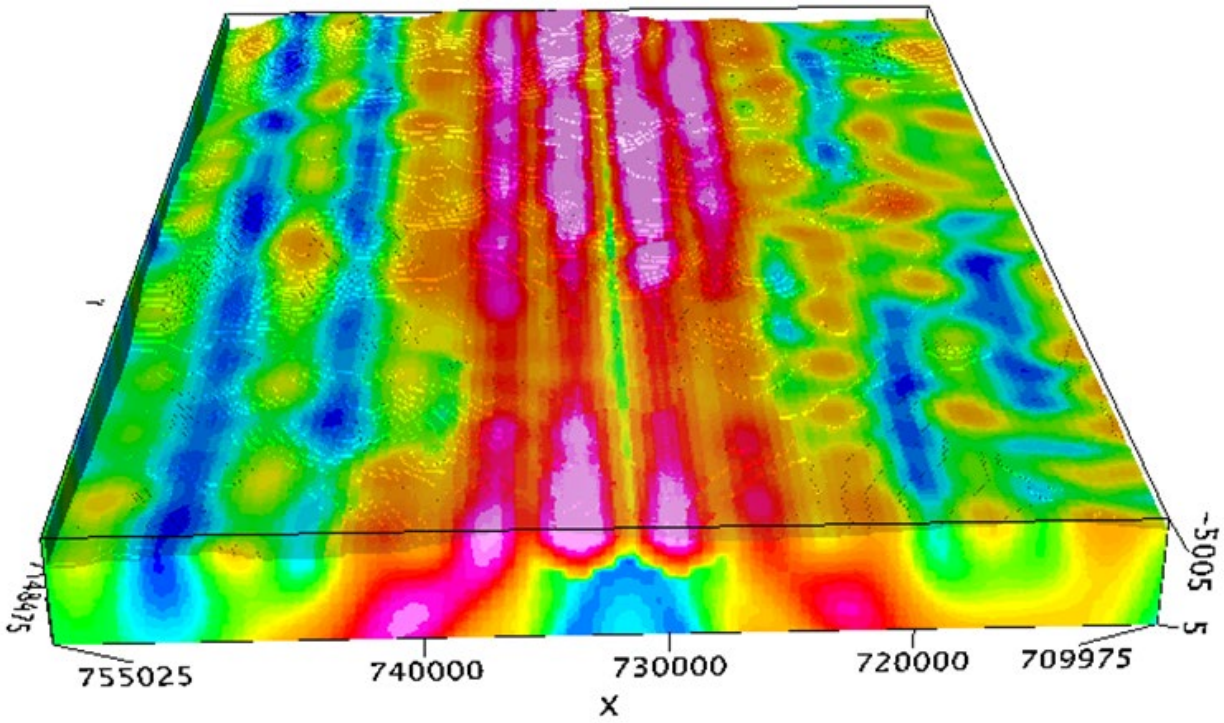


Probability of density distribution (g/cm3)
Lithium Chloride (0.534 g/cm3)
Source: BGI.

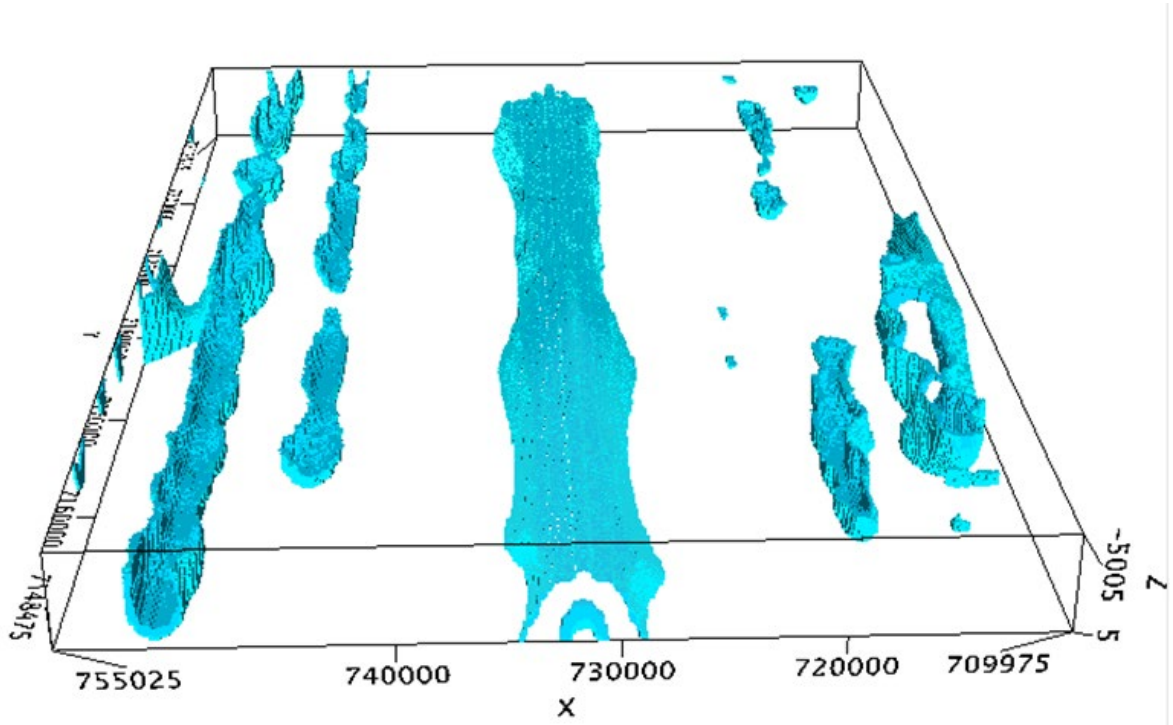
Magnetic Methods

From the processing and inversion of magnetic data we can generate a three-dimensional model of magnetic susceptibility (SI), where we are able to show with magnetic susceptibilities (SI) that determine the presence of minerals.

From this magnetic susceptibility (SI) model, we were able to constrain the blue areas that delimit the magnetic susceptibilities (SI) between 0.000014 and 0.00002 correlated with the presence of Lithium Chloride.



Magnetic susceptibility distribution volume (SI) Source WDMAM.



Magnetic susceptibility distribution probability (SI) Lithium chloride. Source WDMAM.

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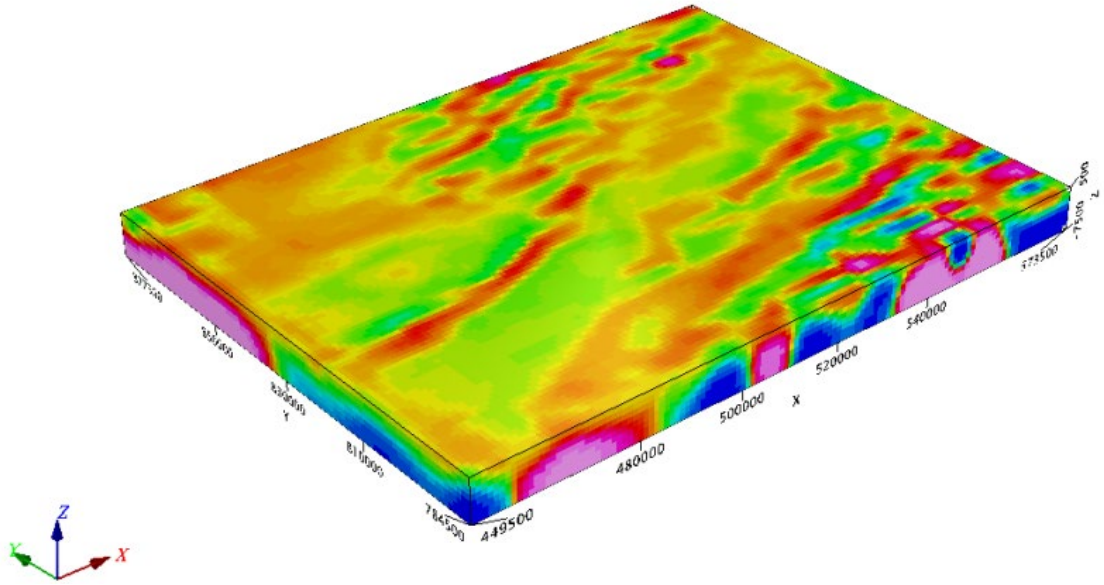
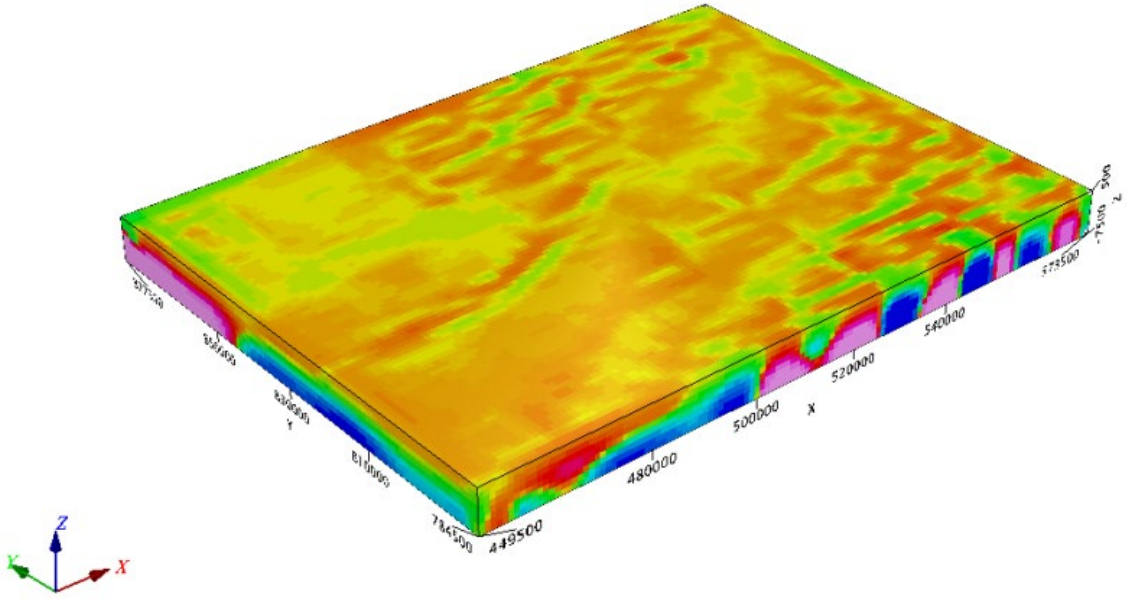
Joint Inversion

Our exclusive **PENTATEX GROUP** methodology weights the magnetic susceptibility and density models from the joint inversion of gravimetric and magnetic data from the study area.



Joint inversion of gravimetric data with density distribution (SI)



Joint inversion of magnetic data with magnetic susceptibility distribution (SI)

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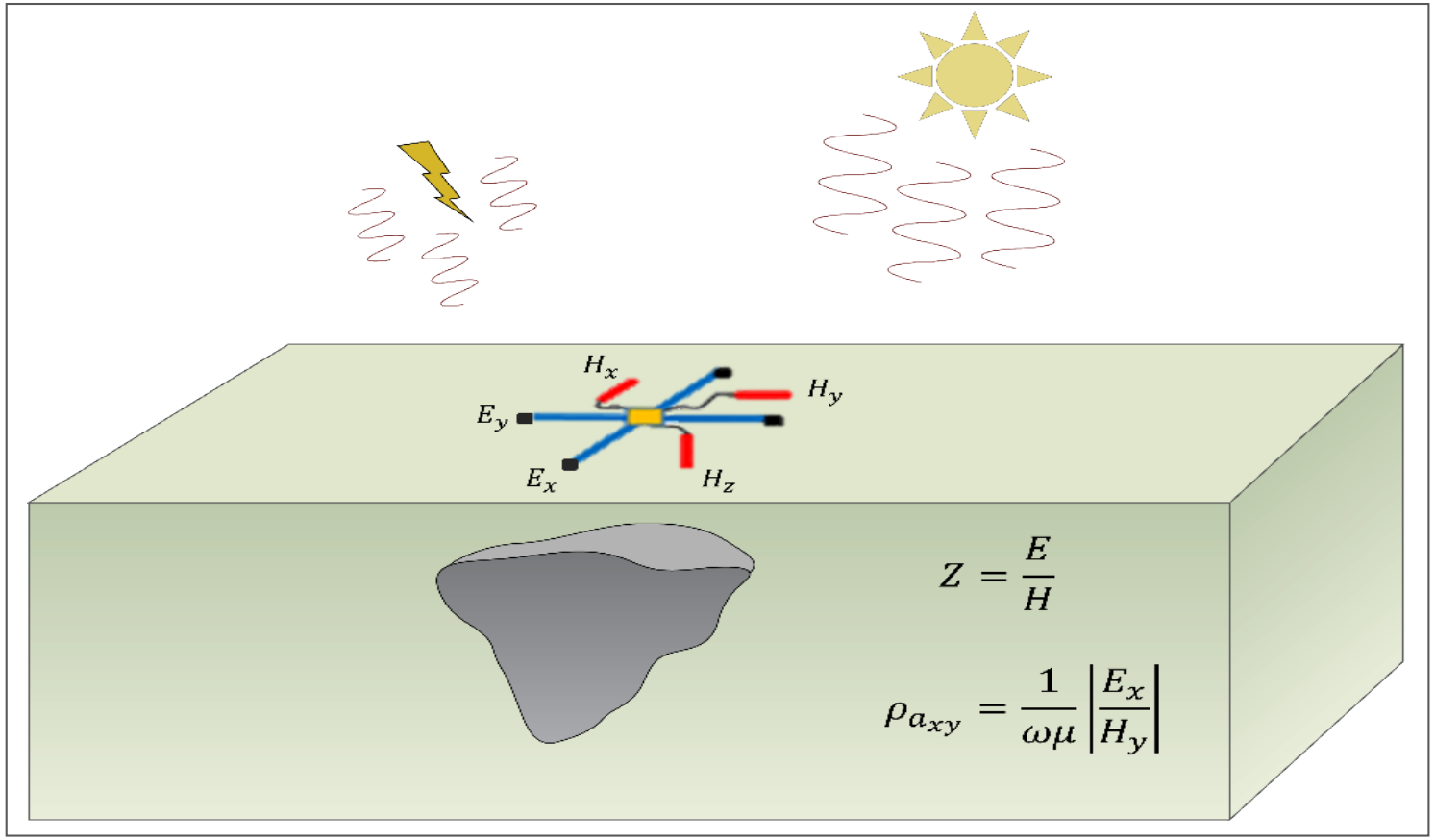
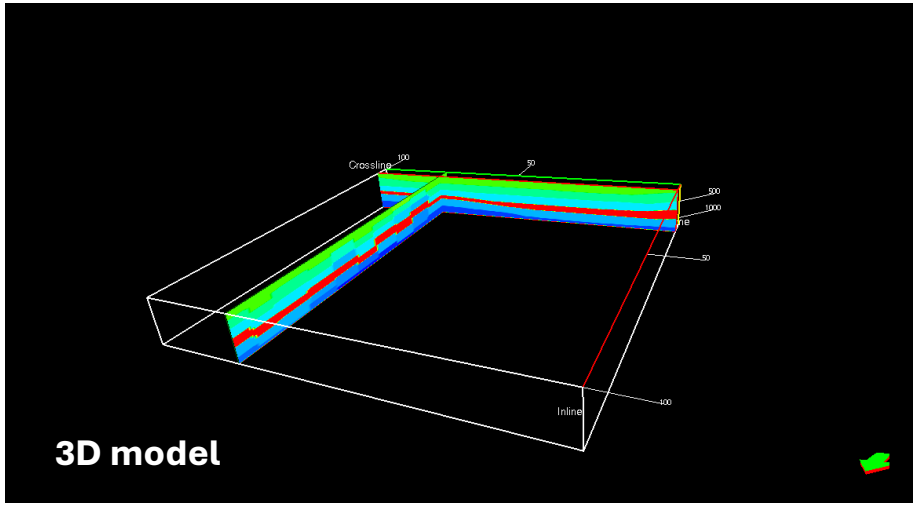
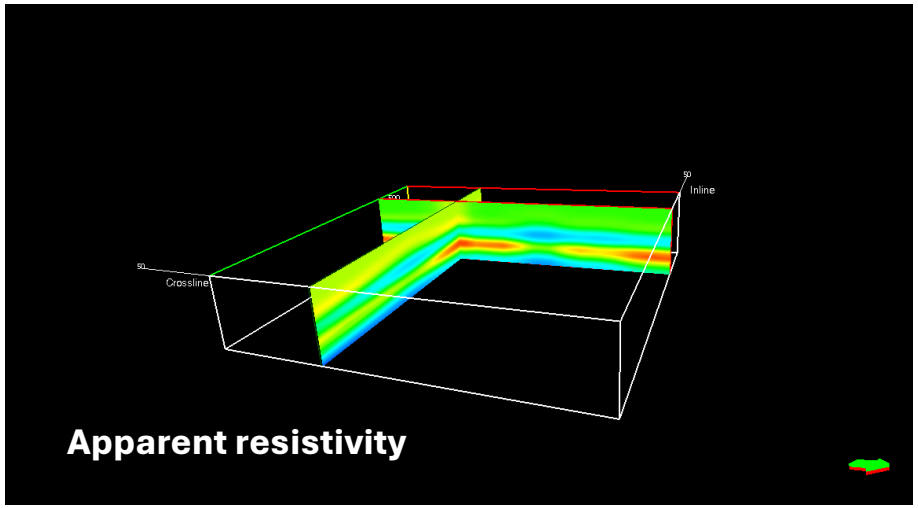
Magneto telluric Methods

Our exclusive **PENTATEX GROUP** methodology defines resistivity models based on Magneto-Telluric data inversion obtained from the study area data.



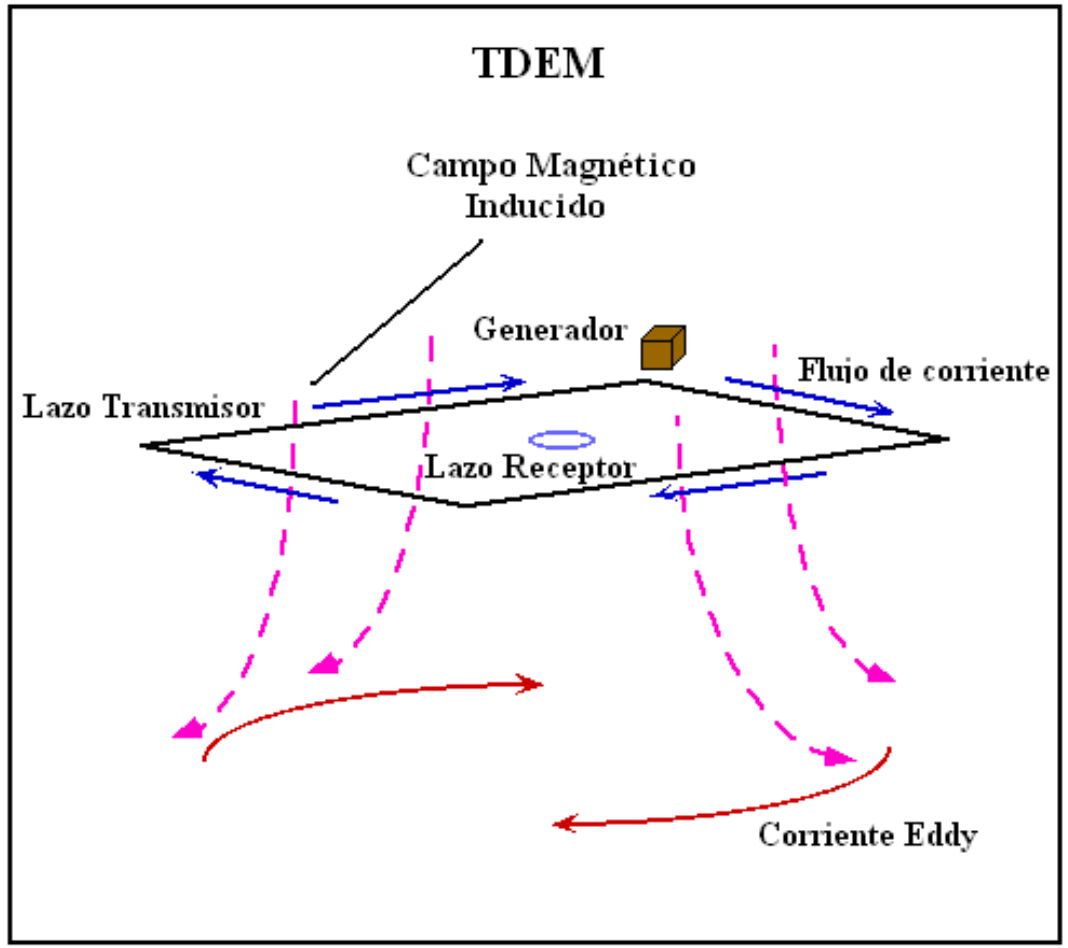
Conceptual diagram of the physical principle of the MT method.



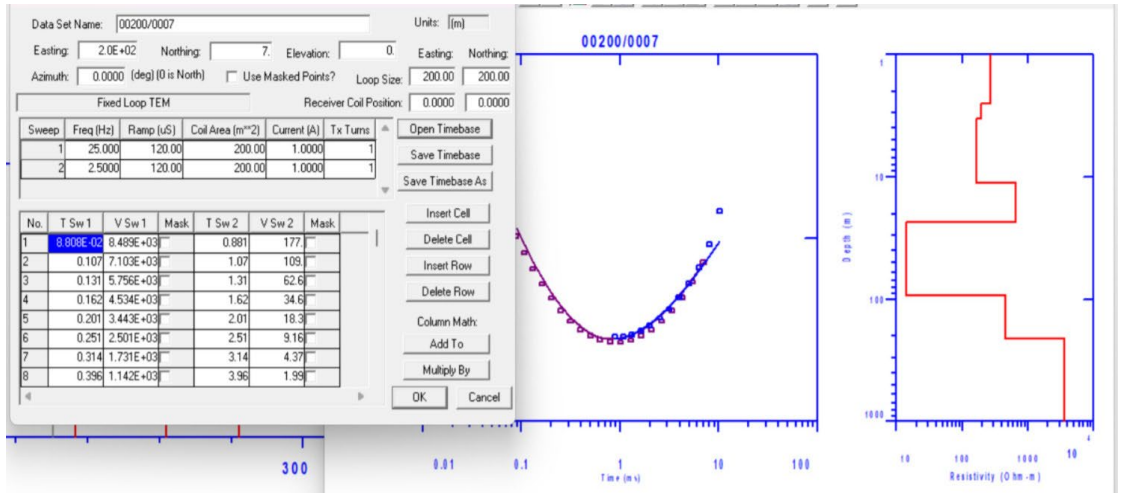


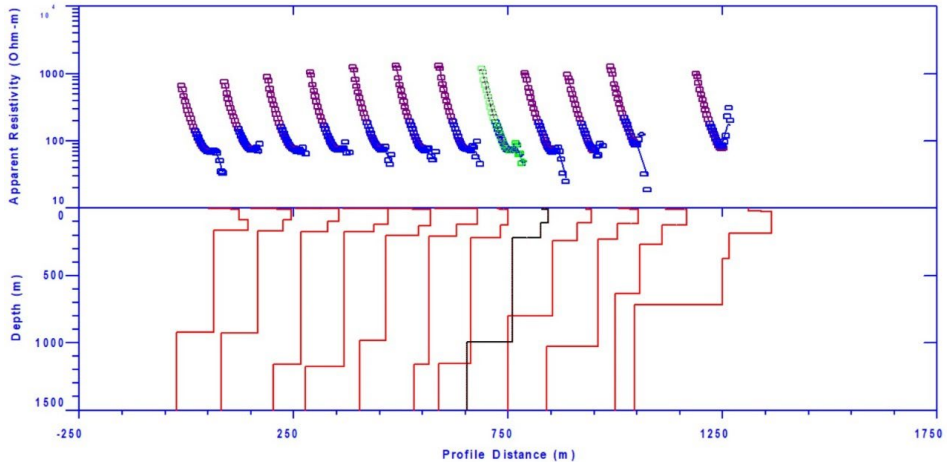
Transient Time Domain Electromagnetic Methods (TDEM)

Our exclusive **PENTATEX GROUP** methodology defines resistivity models from data inversion **(TDEM)** obtained from data in the study area.



Conceptual scheme of the physical principle of the TDEM method.





TDEM data processing and inversion.

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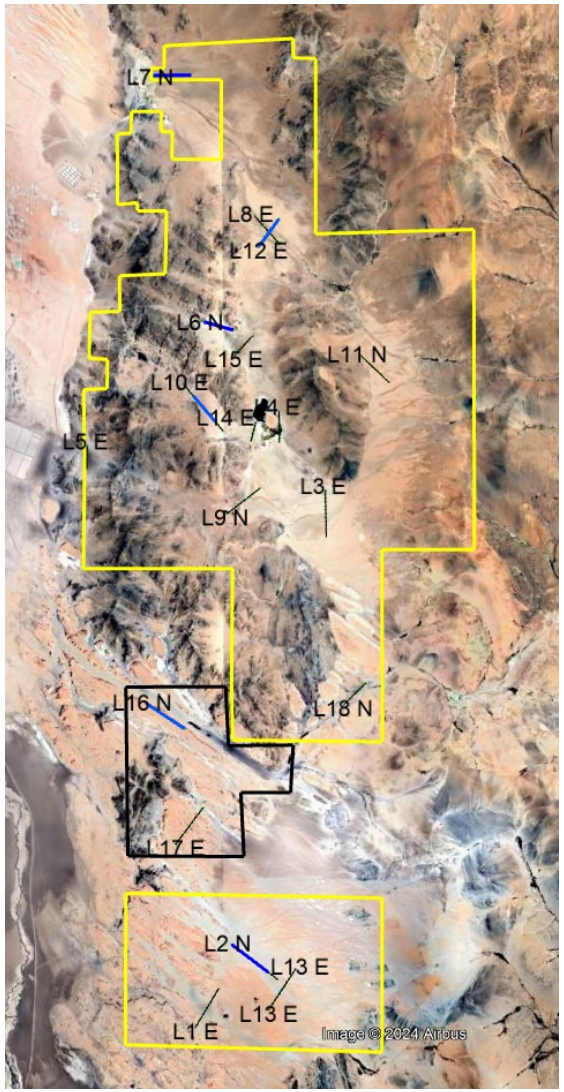
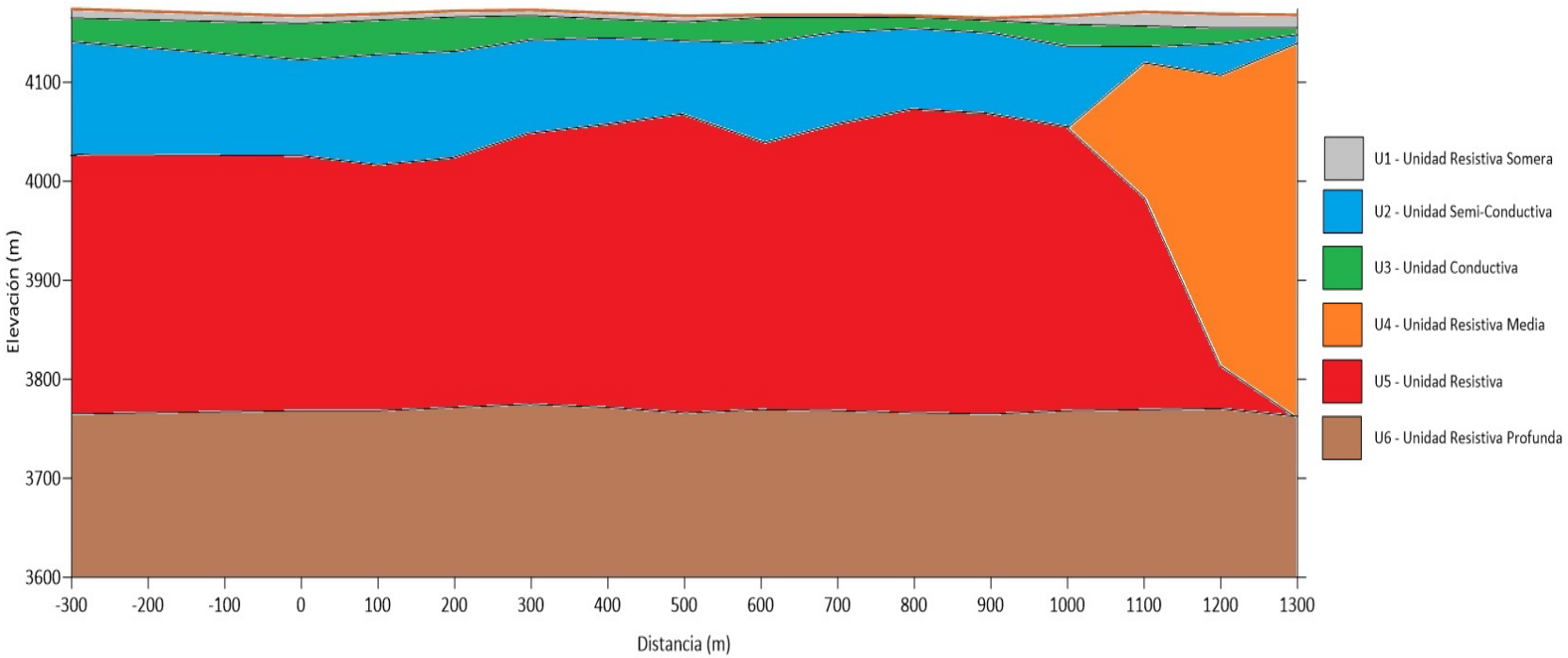
Transient Time Domain Electromagnetic Methods (TDEM)



Study area and location of TDEM profiles.



Interpretation of TDEM profiles.

A very representative example is the one carried out in the **Salar Hombre Muerto** in 2022 where **16 TDEM profiles** were executed where the brine can be observed with a highly conductive behavior (low resistivity) on a more resistive base, the observed depth of this brine is between 300 and 400 meters.

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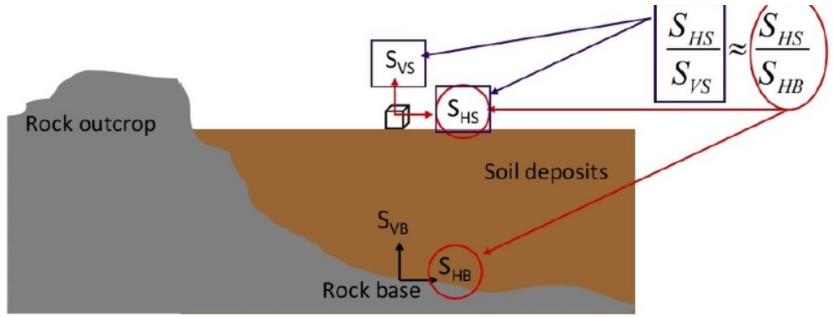
Passive Seismic

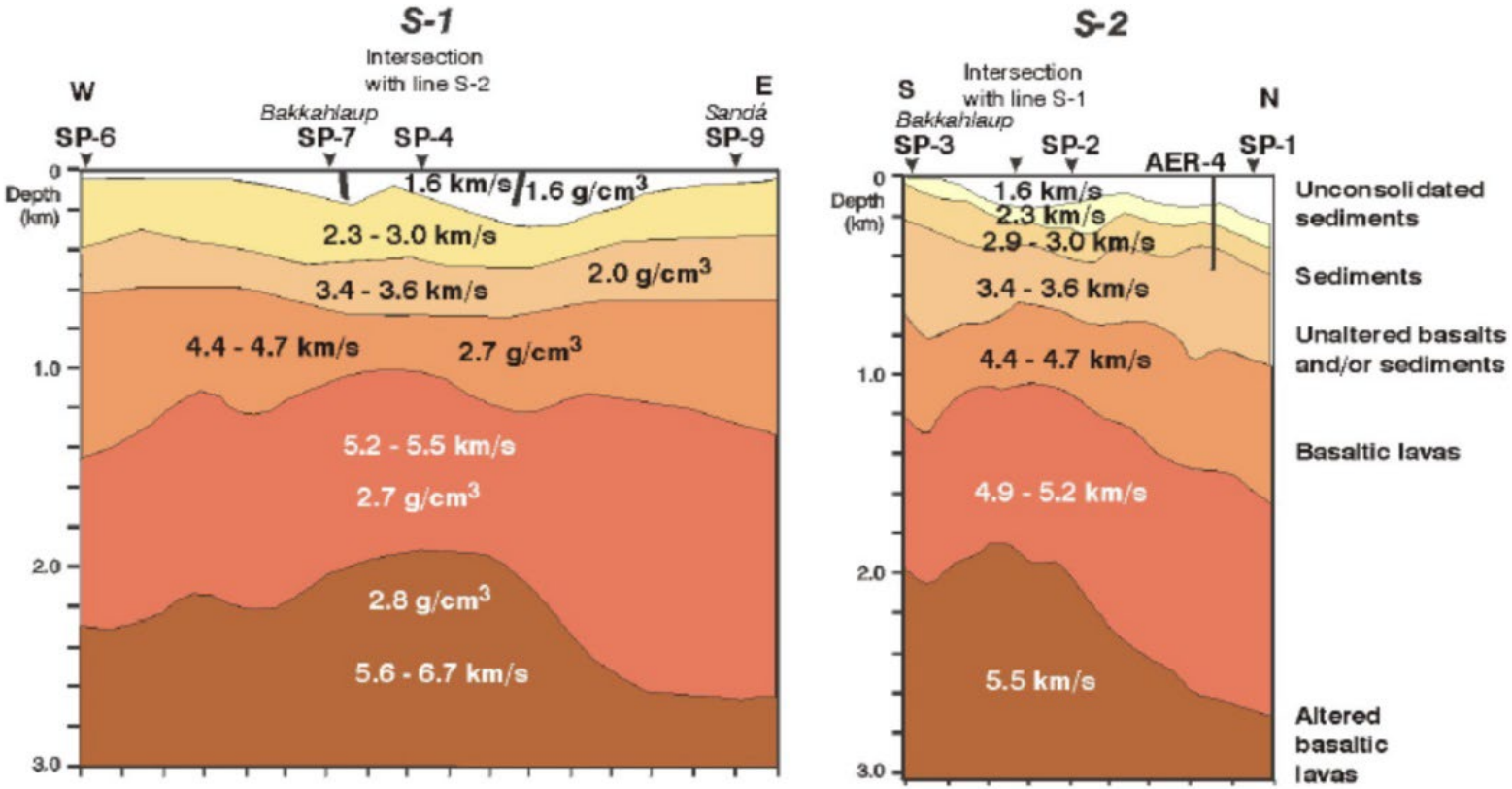
From natural seismic activity to delimit active faults, permeable zones or locate transition zones, indicating the contrast of velocities associated with lithium deposits.

This can be combined with the model obtained with gravimetry to generate a profile in which both the shear wave velocity and density can be characterized.

In addition to being able to combine the results with those obtained with the **HVSR Method (Nakamura)** to perform an integrated seismic analysis.



S_{HS} = Spectrum of Horizontal on the Surface
S_{VS} = Spectrum of Vertical on the Surface
S_{HB} = Spectrum of Horizontal on the Base
S_{HB} = Spectrum of Vertical on the Base



Combination of Passive Seismic and Gravimetry.

Applied Geophysics

Application: Lithium Exploration.

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Gravimetric and magnetic data allow us to generate a **3D model** to carry out a regional survey that indicates the structural characteristics, density and magnetic susceptibility, to predict accumulations of Lithium Chloride.

However, it is necessary to have a detailed study and use other geophysical methods **CSMT, AMT, MT, TDEM** and VES to identify resistivity changes and estimate the depth to determine the accumulations of Lithium Chloride.

From the analysis, interpretation and integration of this data we can delimit the areas with the greatest economic potential by estimating and certifying reserves.

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