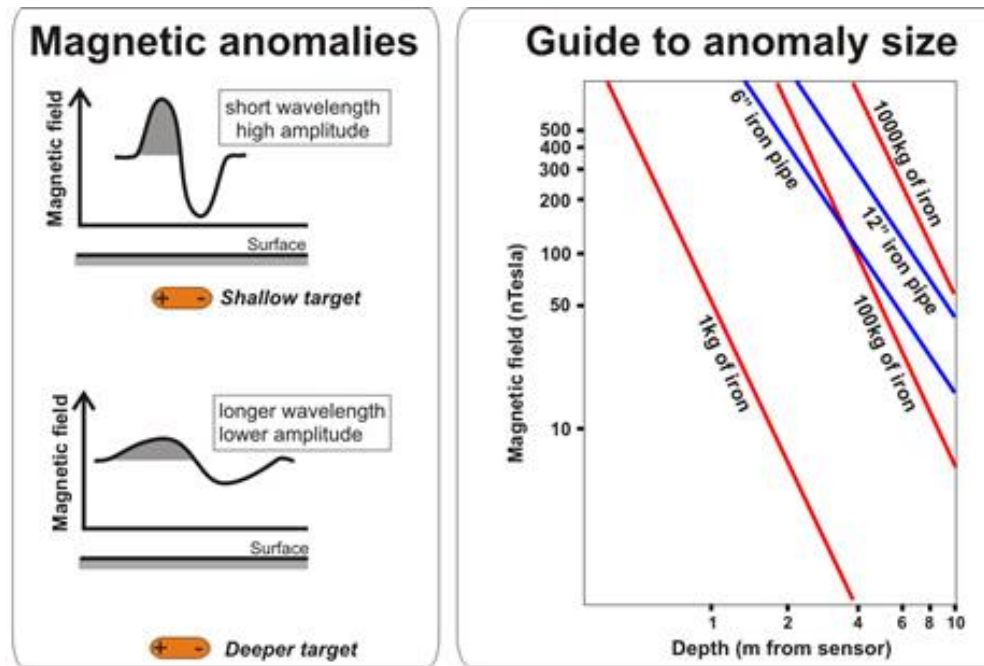


Magnetic Techniques

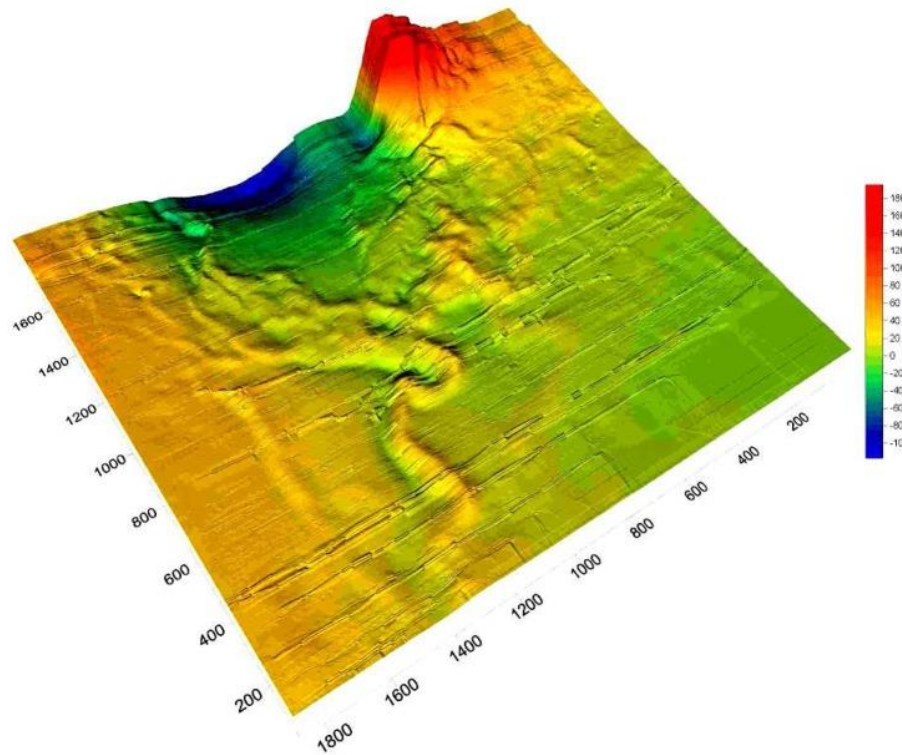
Magnetic techniques in geophysics involve the measurement and analysis of the Earth's magnetic field to study subsurface structures and properties. These techniques rely on the fact that certain rocks and minerals have inherent magnetic properties, and their distribution can be detected and mapped using specialized instruments called magnetometers.



Magnetic Techniques

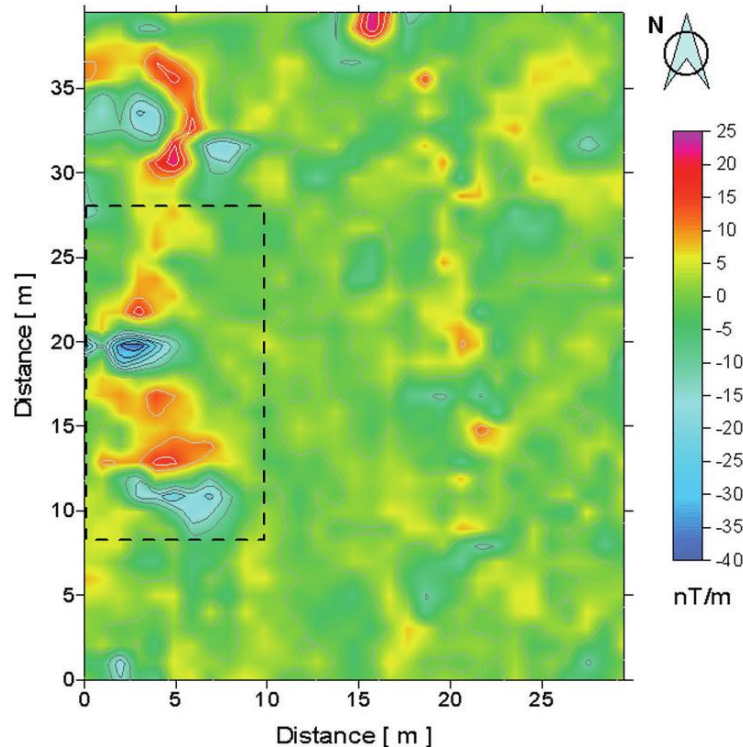
Magnetic Surveys:

Magnetic surveys involve the systematic collection of magnetic data over a study area. Measurements are made using magnetometers, which can detect and measure variations in the Earth's magnetic field. The data are typically collected along evenly spaced survey lines or grids.



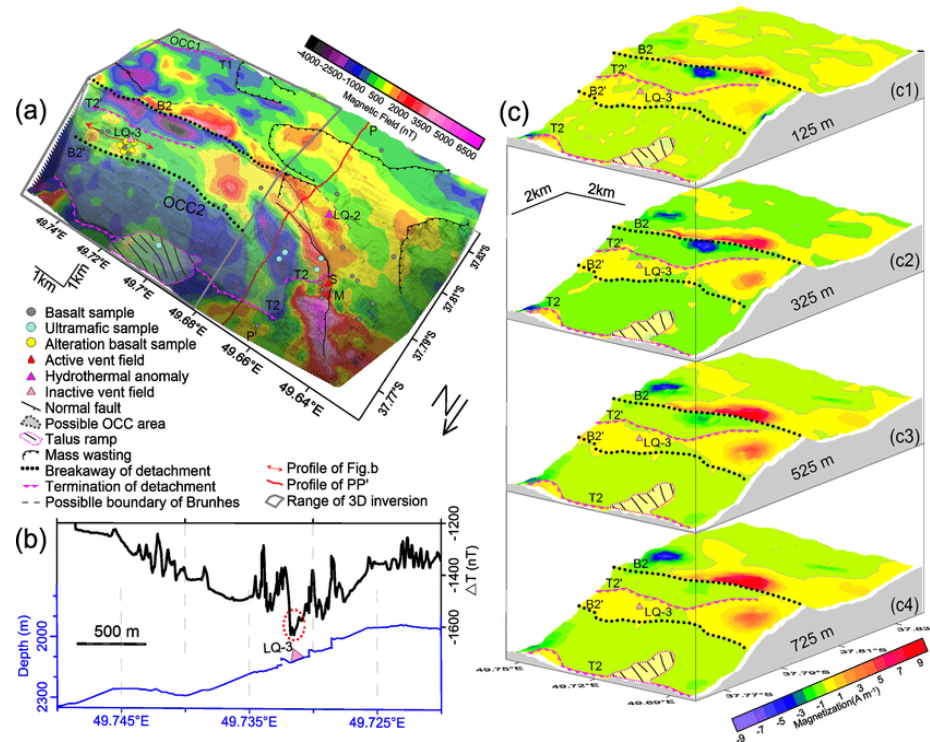
Magnetic Gradient Surveys:

Magnetic gradient surveys measure the spatial variations in the magnetic field gradient. The magnetic gradient represents the rate of change of the magnetic field intensity with respect to distance. Gradient measurements provide more detailed information about the location and extent of subsurface magnetic sources.



Magnetic Anomaly Inversion:

Gravity gradiometry is a technique that measures the spatial variations in the gravity gradient. The gravity gradient represents the rate of change of the gravitational field with respect to position. Gravity gradiometers are used to capture the fine-scale variations in gravity, which can provide more detailed information about subsurface structures.



Magnetic Imaging:

Magnetic imaging techniques, such as magnetic resonance imaging (MRI) and magnetic tomography, are used to create detailed images of subsurface structures based on magnetic data. These techniques utilize advanced imaging algorithms to reconstruct cross-sectional or three-dimensional images of the subsurface, providing insights into geological structures and properties.

