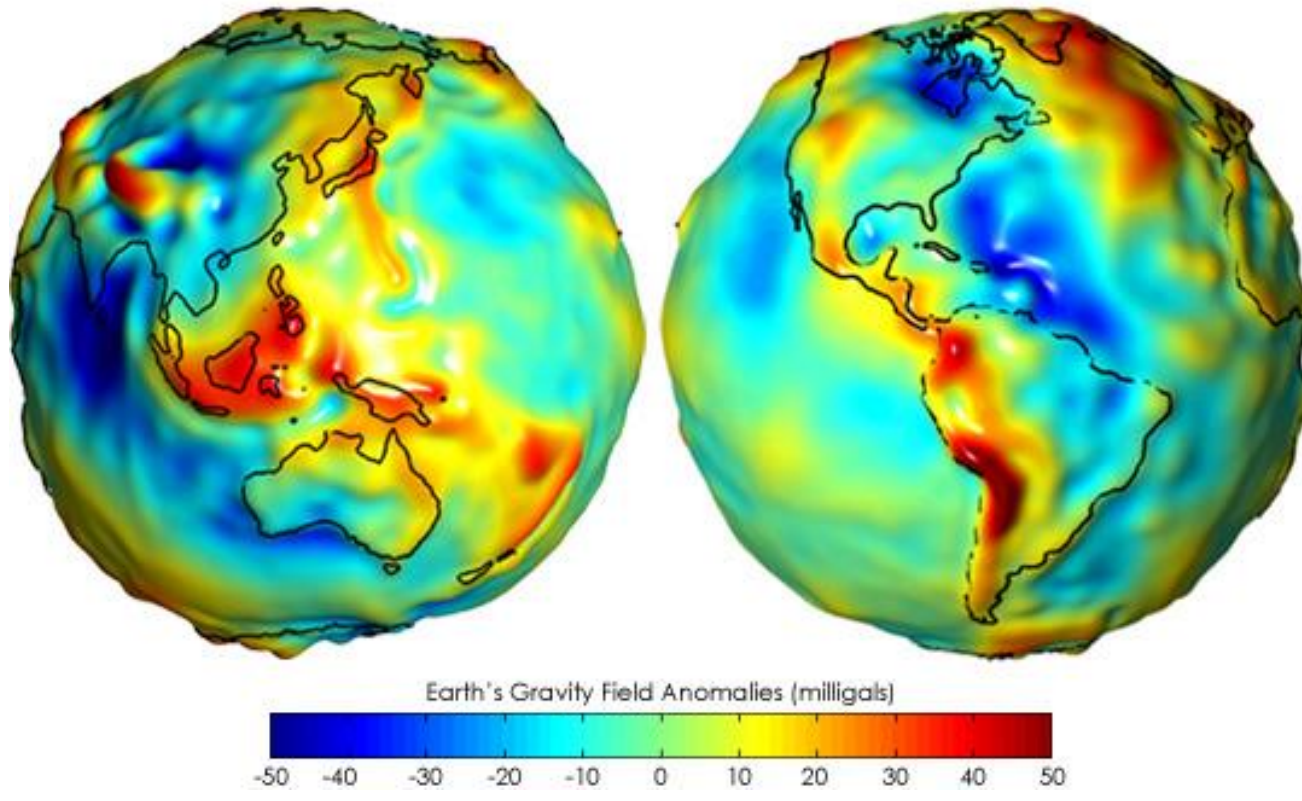


Gravity Techniques

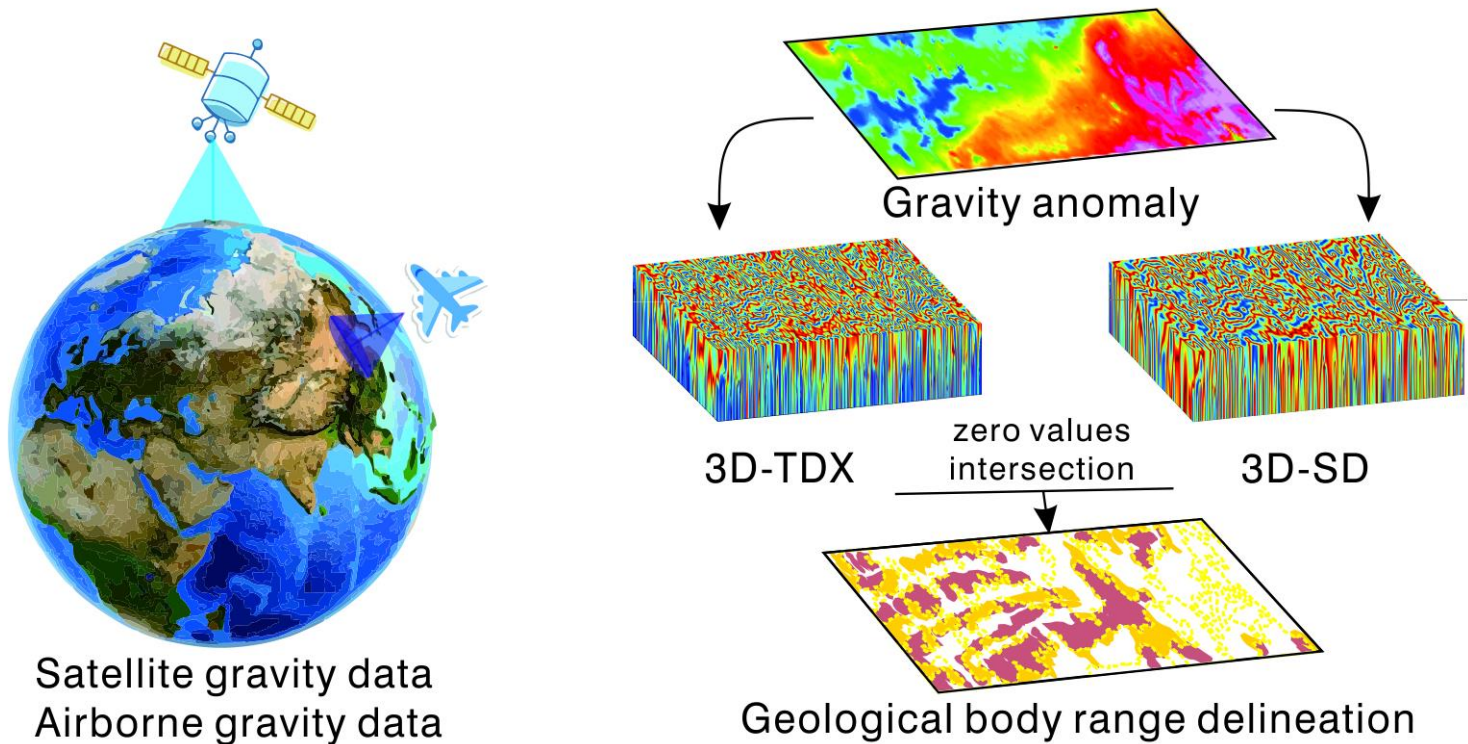
Gravity techniques in geophysics refer to the various methods and approaches used to investigate subsurface structures and properties based on gravity measurements. These techniques involve the measurement, analysis, and interpretation of the Earth's gravitational field.



Gravity Techniques

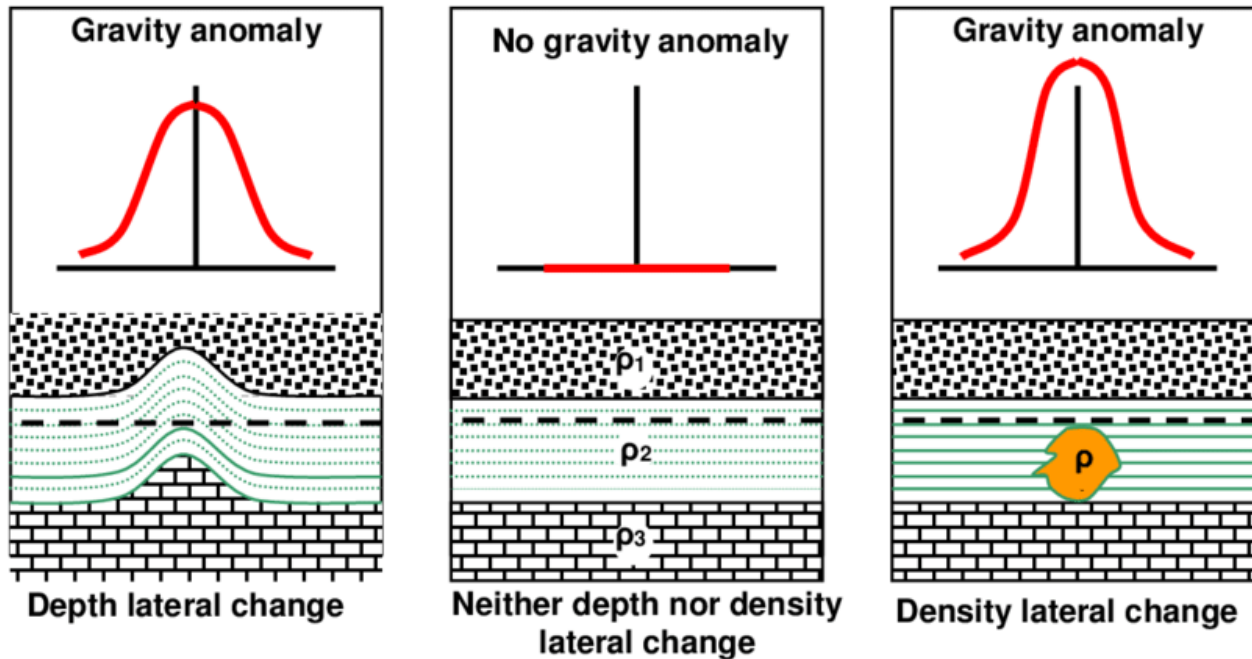
Gravity Surveys:

Gravity surveys involve the systematic collection of gravity data at multiple locations across a study area. Measurements are typically made using gravimeters, which are sensitive instruments capable of detecting small variations in gravitational acceleration.



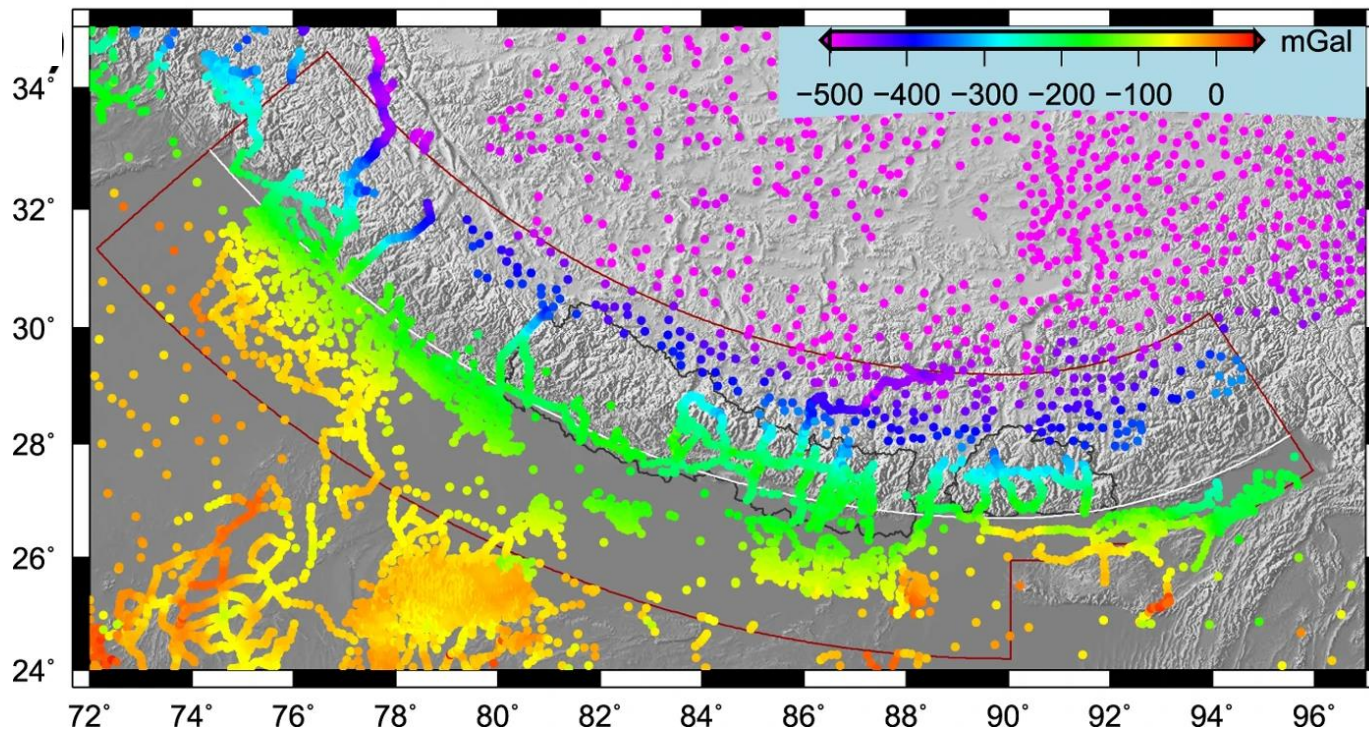
Relative Gravity Survey:

In a relative gravity survey, gravity measurements are made at different locations within the study area. The measurements are referenced to a base station or a benchmark gravity value to obtain relative gravity values. This technique is useful for identifying local variations in gravity and detecting gravity anomalies.



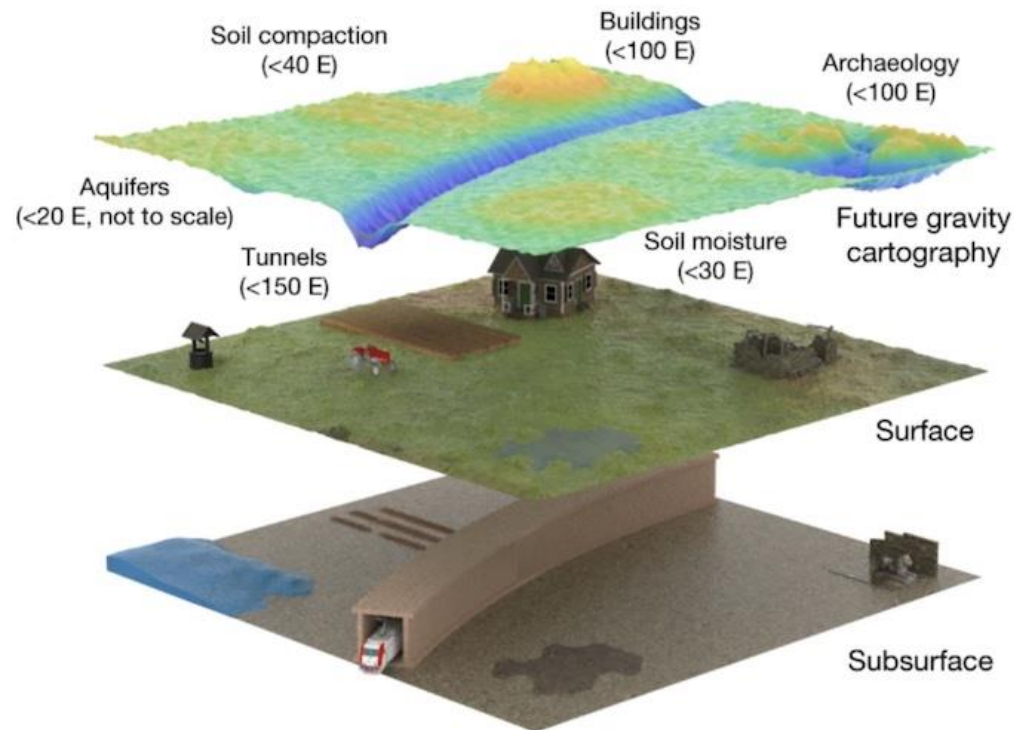
Absolute Gravity Survey:

An absolute gravity survey involves the determination of the absolute value of gravity at a specific location. It requires a highly accurate and stable gravimeter. Absolute gravity measurements are essential for calibrating relative gravity measurements and establishing a reference gravity field.



Gravity Gradiometry:

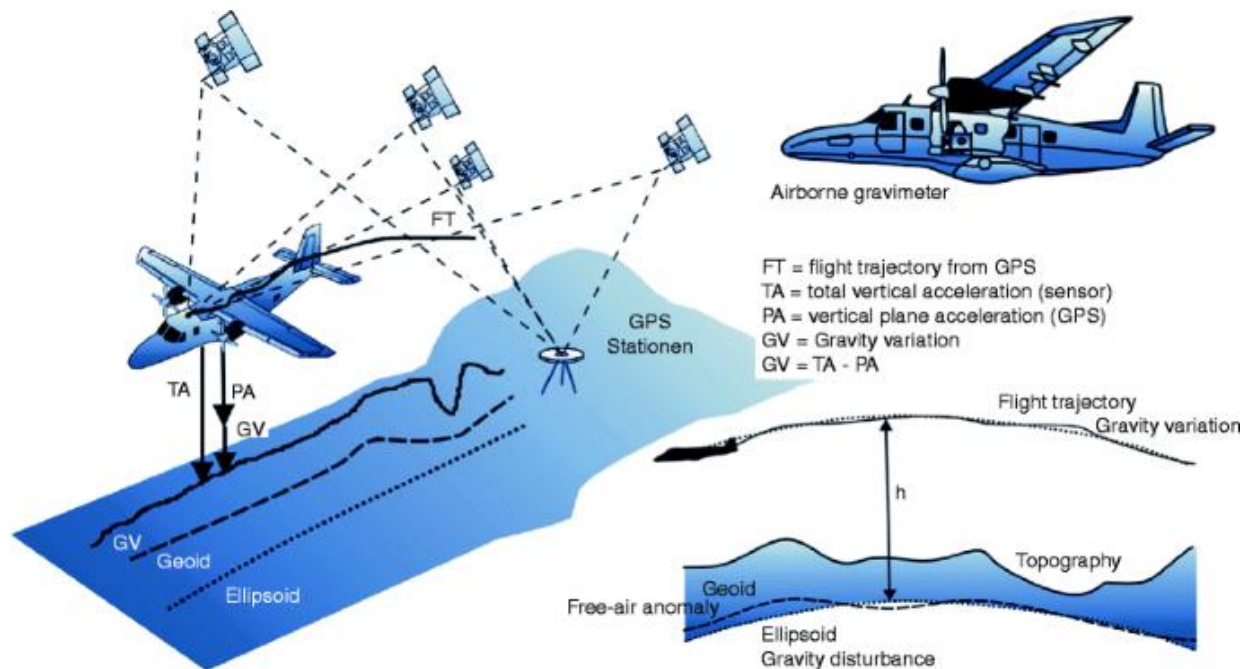
Gravity gradiometry is a technique that measures the spatial variations in the gravity gradient. The gravity gradient represents the rate of change of the gravitational field with respect to position. Gravity gradiometers are used to capture the fine-scale variations in gravity, which can provide more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



Gravity Techniques

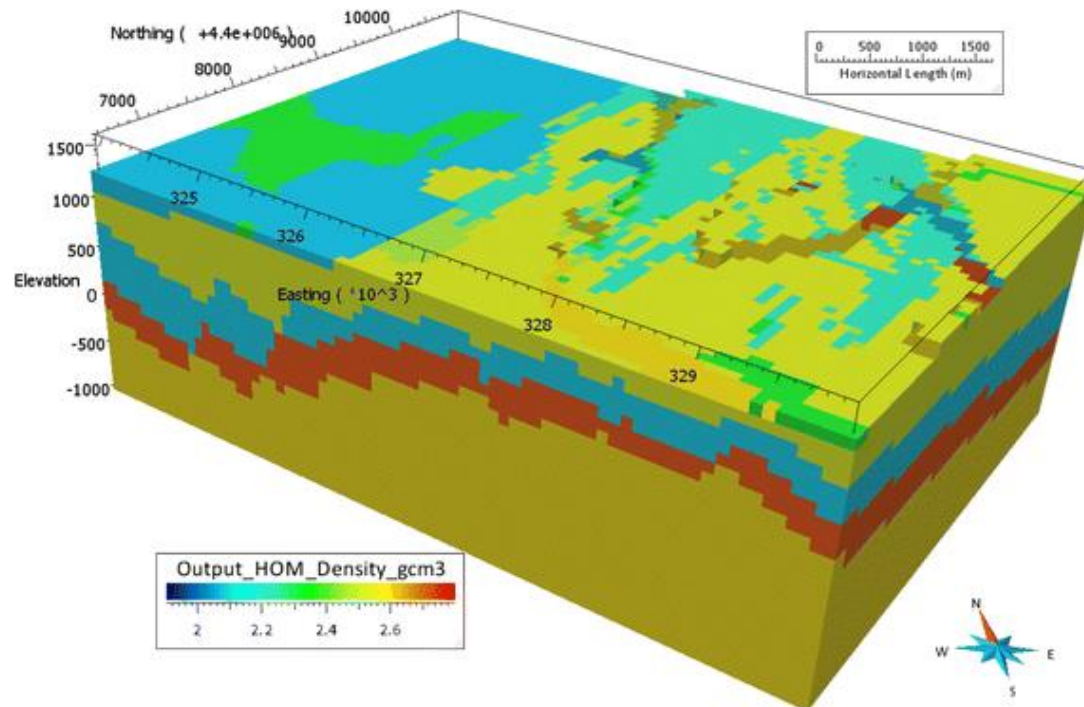
Airborne Gravity Surveys:

Airborne gravity surveys are conducted using gravity meters installed in aircraft. The aircraft flies over the study area, and gravity measurements are collected along flight lines. Airborne gravity surveys are efficient for covering large areas and are particularly useful in remote or inaccessible regions.



3D Gravity Inversion:

Gravity inversion is a computational technique that uses gravity data to estimate the subsurface density distribution. By applying mathematical algorithms, gravity anomalies are inverted to create a 3D model of the subsurface, depicting variations in density. This technique aids in the interpretation and visualization of subsurface structures.



Joint Inversion:

Joint inversion refers to the integration of gravity data with other geophysical data, such as seismic or magnetic data, into a single inversion algorithm. This approach allows for a more comprehensive and integrated interpretation of subsurface properties and structures.

