GEOHACKATHON

FROM GROUP 7 (SEISMIC_INTERPRETER)

The Team

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PREDICTING THE PROPAGATION OF HORIZON ACROSS A GIVEN 2D SEISMIC DATASET

INTRODUCTION

seismic=vibrations and waves

multiple way receiving seismic

energy sources: Air guns, Explossives and vibroseis trucks

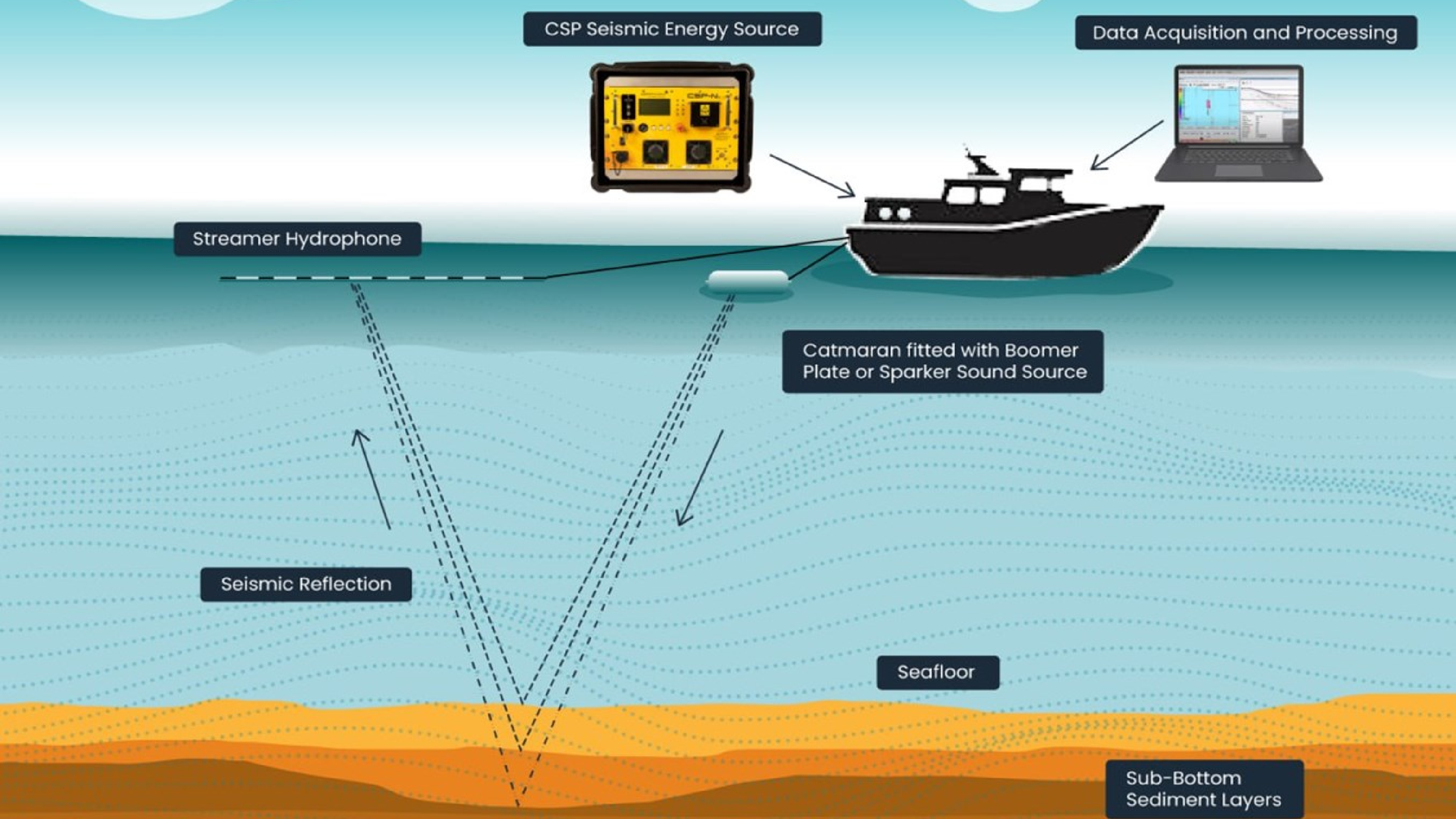
what is seismic?
why is it important?
How the graph is receiving?

Predicting earthquakes

Carbon reservoir

Finding the rock types

slicing a cake

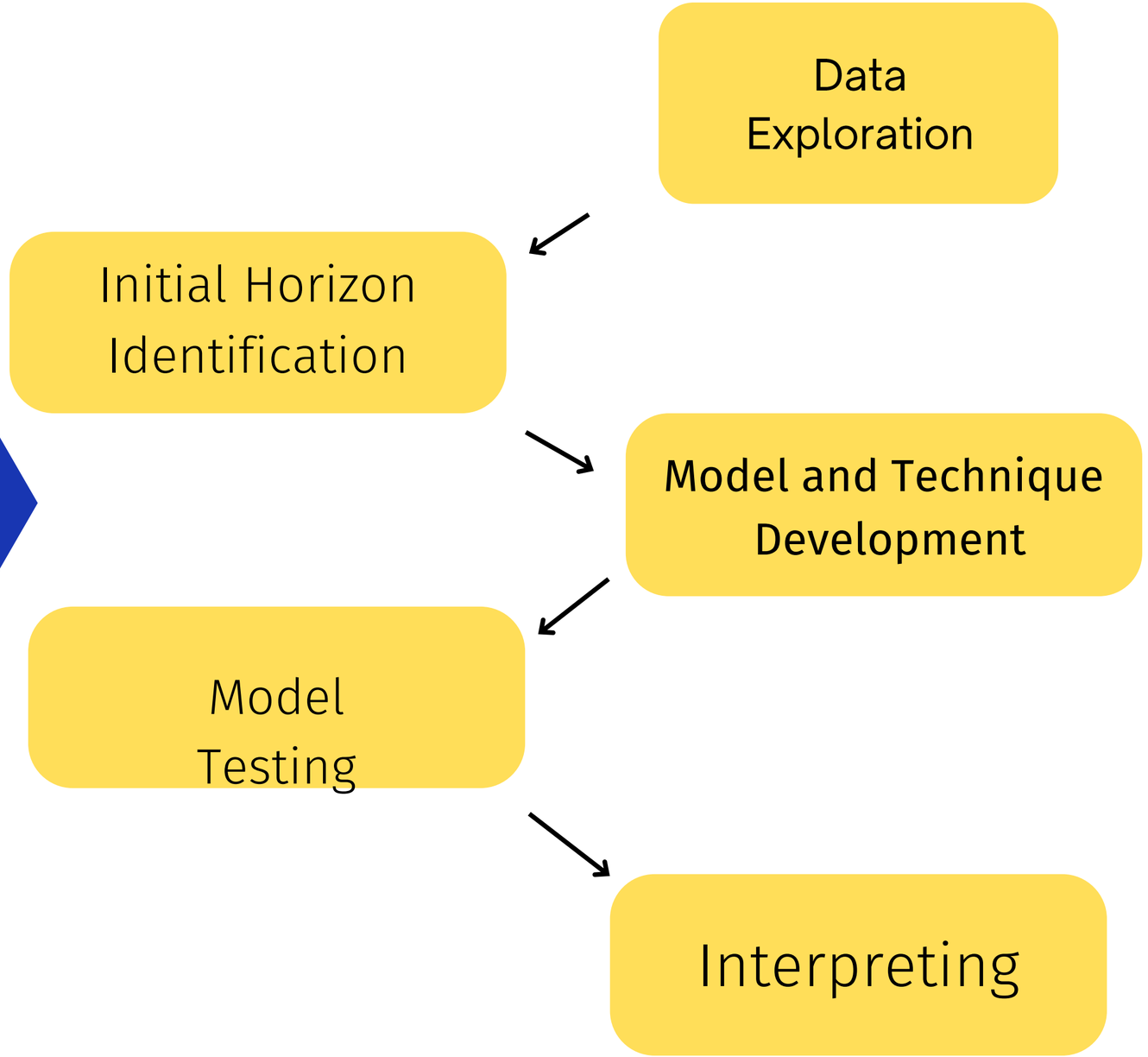

CSP Seismic Energy Source
Data Acquisition and Processing
Streamer Hydrophone
Catmaran fitted with Boomer
Plate or Sparker Sound Source
Seismic Reflection
Seafloor
Sub-Bottom
Sediment Layers

Challenge Goals

To improve seismic interpretation skill through hands-on practice.

To predict and make propagation of horizons across a given 2d seismic dataset.

METHODOLOGY



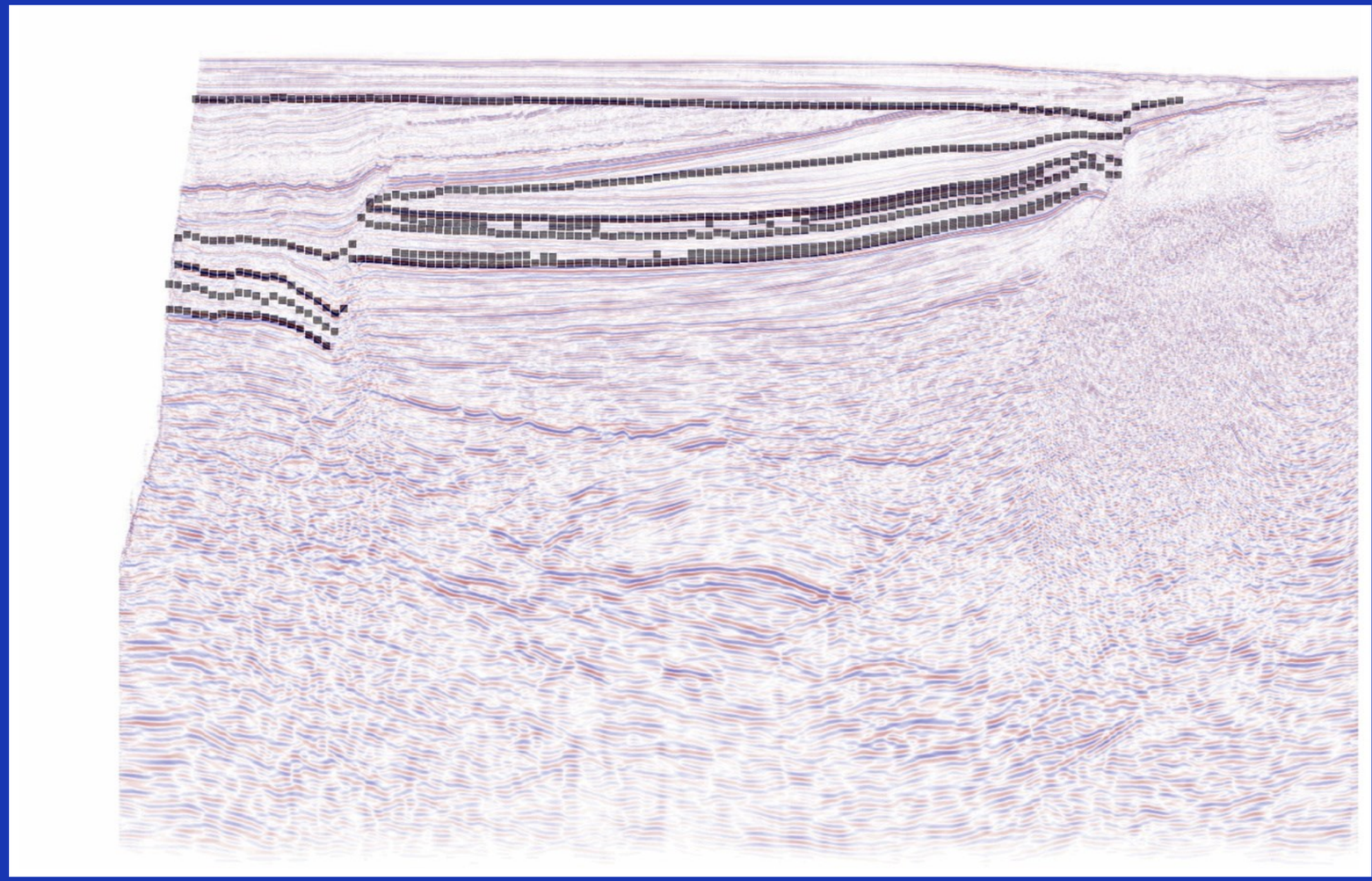
RESULTS

Horizontal Lines: These are the most prominent features. They represent the reflections of sound waves of different rock layers. The lines are curved because the Earth's subsurface is not flat.

Color Variations: The colors (shades of purple and brown) indicate different rock types or properties. Denser rocks typically produce stronger reflections, which appear brighter in the image.

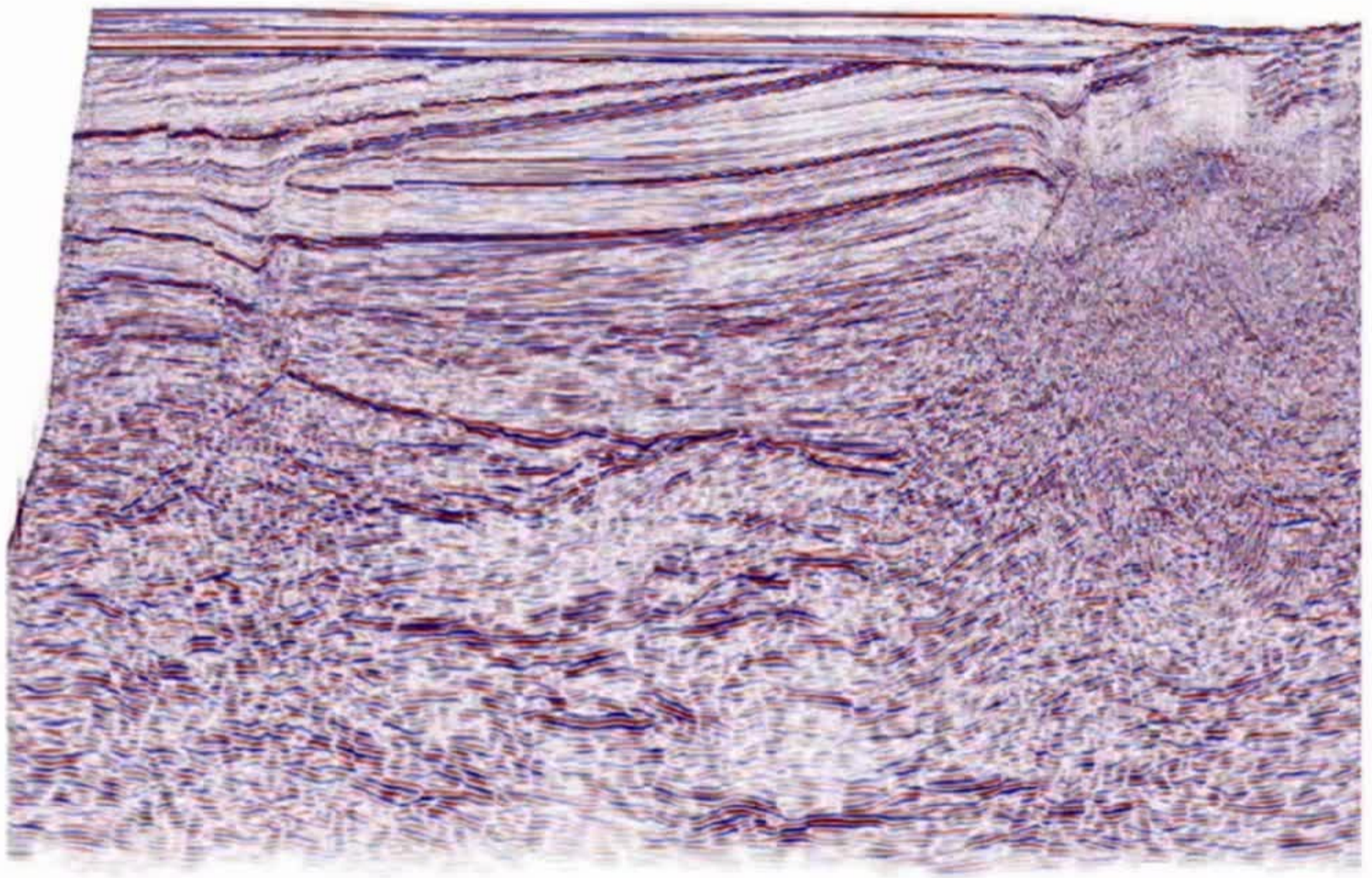
Horizon: The black line running across the image is a "horizon," which is a boundary between two different rock layers. This horizon is a key geological feature that can be used to understand the subsurface structure.

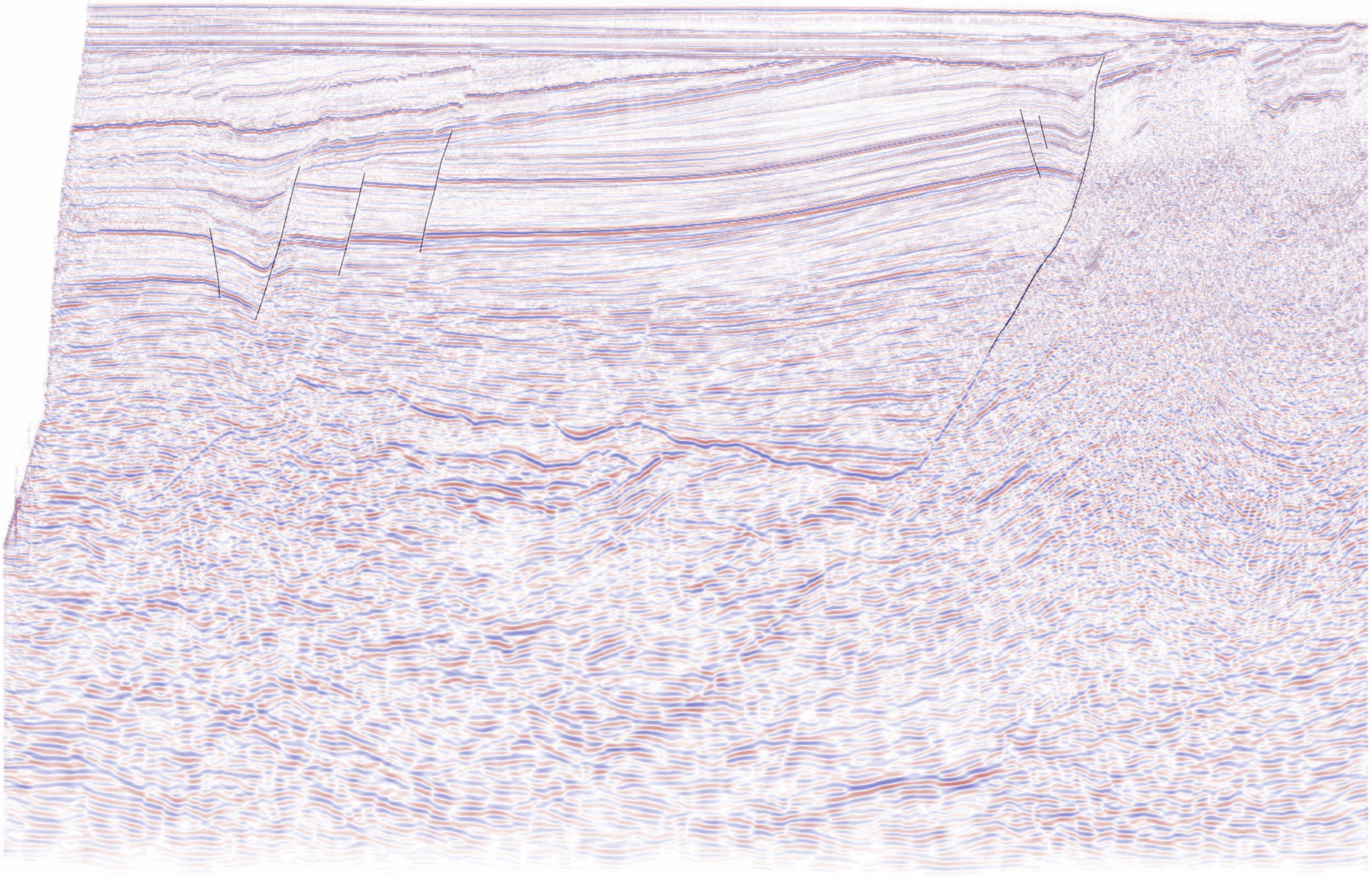
Faults: Formation of fault around the environment due to tectonic activity.



PREDICTING THE PROPAGATION OF HORIZON

The horizon spreads/gets wide throught the 2D seimic datasheet





Thank you!

Feel free to approach us if you have any questions.

Resource Page

https://se.copernicus.org/articles/10/1651/2019/

https://se.copernicus.org/articles/10/1049/2019/

https://www.geoinsights.com/advanced-trends-in-machine-learning-for-seismic-fault-delineation/

https://se.copernicus.org/articles/10/1049/2019/