N518: Seismic Sequence Stratigraphy for Exploration and Production

Instructor(s): Vitor Abreu

Format and Duration

Classroom - 2 Days
Virtual - 4 Sessions

Summary

Sequence Stratigraphy is a method developed to support geoscientists in the geologic interpretation of subsurface data. The method can be applied to 2D and 3D seismic in all depositional environments. This course will review the basic terminology and definitions of surfaces, systems tracts, sequence sets, and stratigraphic hierarchy. The method will be described and applied to interpret subsurface data in non-marine, shallow marine, and deep marine depositional settings. The emphasis will be in the recognition and mapping of play elements from exploration to production scales.

Business Impact: Participants will develop an understanding of how sequence stratigraphy aids in **prediction** and **mapping** of **play elements** presence and quality based on seismic data. They will enhance value for their employers by **identifying high- and low-risk areas**, generating robust **resource volume assessments,** and providing an **interpretation of reservoir distribution** that allows for more accurate **prediction of production**.

Learning Outcomes

Participants will learn to:

1. Interpret seismic lines in a sequence stratigraphic context
2. Implement the method of sequence stratigraphy to define play, prospects and predict play elements presence and quality in seismic data.
3. Apply the concept of facies, facies stacking and shoreline trajectory to define parasequences, surfaces, and systems tracts.
4. Evaluate the main controls on depositional sequences.
5. Describe the accommodation Succession Method and Sequence Stratigraphy Hierarchy.
6. Apply the sequence stratigraphic method in non-marine, shallow marine and deep marine environments.

Training Method

This is a classroom or virtual classroom course comprising a mixture of lectures, discussion, case studies, and practical exercises.

Who Should Attend

Geophysicists, geologists, and managers who are interested in an introduction or review of the theory and application of contemporary seismic stratigraphic techniques to exploration and production.

Course Content

- Sequence Stratigraphy Method Applied to Seismic

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- Idealized Depositional Sequences
- Fundamentals of Seismic Stratigraphic Interpretation
- Sequence Sets and Composite Sequences
- Seismic Stratigraphic mapping at Exploration Scale
- Play Definition at Regional Scale
- Seismic Facies Mapping
- Woodbine Seismic Facies and EoD Mapping
- Reservoir Distribution in Deep Water Settings
- East Breaks Seismic Interpretation and Mapping