Petrogenium. Academy

Upstream (Geophysics)

Seismic Interpretation Fundamentals

Consultant / Trainer

Gerhard Diephuis

The **Petrogenium (in collaboration with EPTS) Seismic Interpretation Fundamentals** participants gain an understanding of seismic reflection principles and the complete interpretation workflow, from data quality control through to building geological subsurface models that support E&P decisions. They develop practical skills in interpreting 2D and 3D seismic data, including horizon and fault picking, well ties, mapping, and basic depth conversion using modern interpretation software. They also improve their ability to integrate seismic with well and geological data and assess risk and uncertainty so that seismic interpretations translate into better-informed drilling and investment decisions.

Participants

This **Petrogenium.** course aims at Geologists, geophysicists and petroleum engineers involved in the interpretation of 2D and 3D seismic data.

Learning Objectives

At the end of the course participants will have a solid foundation in Seismic Interpretation principles and workflows. They will be able to plan and execute an interpretation project and be able to avoid the most common pitfalls and will be familiar with interpretation QAQC. Whereas the course does not cover training in the hands-on use of common industry software tools for interpretation, it will provide the necessary foundation required for subsequent use of such tools in a professional manner

Programme

Day 1

Recapitulation of the fundamentals that are of direct relevance for interpretation, reflection coefficients, polarity convention etc. Exercises on seismic fundamentals. Brief summary on seismic acquisition and processing, focusing on aspects that have direct relevance for interpretation, such as minimum/maximum offset, multiplicity, type of imaging, phase issues etc. Seismic acquisition/processing related exercises.

Day 2

Generation of synthetic seismograms and well-to-seismic matching. Well-to seismic Matching exercise. Summary of well geophysics. Interpretation fundamentals and introduction of 2D/3D seismic interpretation workflows. Marker recognition and transfer. Seismic (volume) attributes for seismic interpretation.

Day 3

Seismic illustration of structural styles: extension, compression, wrench and halokinesis. Exercise with examples from the different styles. Structural interpretation workflow in detail. Exercise with round correlation of shallow markers. Horizon tracking exercises. Mechanics of faulting and Fault interpretation. Exercise with hand interpretation of fault segments.

Day 4

Brief summary of stratigraphic interpretation. Exercise on stratigraphic interpretation. Interpretation pitfalls. Interpretation project QAQC. Overview of seismic velocities. Time-to-depth conversion. Exercise on seismic velocities, and time-do-depth conversion. Mapping and contouring.Contouring exercise. Volumetrics and uncertainties. Exercise on volumetrics.

Day 5

Seismic expression of DHI's.Introduction to rock and fluid prediction from seismic. Seismic inversion and AvO, exercises.

Why select Petrogenium.?

The above support will be provided by principal consultants with 30+ years world-class experience in the technology and hands-on know-how from operation of refinery units.

Contact Petrogenium.:

Email: training@petrogenium.com
Website:https://www.petrogenium.com/training/

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Programme

Day 2

Review key points Day 1

4. Geometry of sedimentary bodies

   Exercise 4.1: interpreting body shapes

5. Effect of seismic processing on seismic facies expression; importance of display parameters

   Exercise 5.1: Facies & Resolution

6. Seismic velocity and lithology prediction

   Exercise 6.1: Lithology-seismic facies, using velocity information (offshore Morocco).

Day 3

Review key points Day 2

7. Chronostratigraphy

   Exercise 7.1: Mar Cantabrico, Spain

   Exercise 7.2: Sulawesi

8. Sedimentation patterns and sea-level changes

   Exercise 8.1: Gulf of Cadiz (Spain)

9. Carbonate systems

   Exercise 9.1: Bali-Flores

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Day 4

Review key points Day 3

Exercise 9.2: Maldives

10. Clastic systems: Coastal - shallow marine

Exercise 10.1: Niger delta

11. Clastic systems: Turbidites

Exercise 11.1: Turbidites

Exercise 11.2: sand-seal prediction

Day 5

Review key points Day 4

12. Continental deposits

Exercise 12.1: Bohai Bay

13. Facies mapping

Exercise 13.1: North Sea facies mapping

14. Reservoir scale seismic stratigraphy

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