ID #126

Seismic Applications

info@mineaoil.com

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www.mineaoil.com

jh

This may also be of interest

- Basics of Petrophysics
- Petrophysics Characterization of Hydrocarbon Reservoirs
- Geostatistical Reservoir Modelling with Petrel

Specialist Trainer

Andrés Peña

Andrés is an expert geophysical engineer at the Central University of Venezuela, with more than 40 years of experience in exploration and development at Lagoven, a subsidiary of PDVSA.

He has worked in acquisition, processing, and seismic interpretations as the leader for exploration prospect generation with assignment in TOTAL in Paris, France, and ChevronTexaco coordinating multidisciplinary projects (+20 geoscientists) for the identification of the oil system, estimation and hierarchy of HC volumes, risk analysis, conceptual development plans and estimation of economic indicators for offshore exploration prospects in Venezuela.

In CGG Mexico he worked on the identification of opportunities in the Macuspana, Reforma-Akal and Salina del Itsmo, in CBM generation of exploration prospects for Pemex, with Galem performing seismic and multidisciplinary interpretations. He currently is a CBM consultant in the areas of exploration and production and lectures for MineaOil Ltd.

Description

This course presents the basic principles and methods used in seismic interpretation for hydrocarbon exploration and production.

The training is designed to cover seismic interpretation from regional studies at the sedimentary basin level to the detailed studies of fields and reservoirs. This course provides essential knowledge in seismic interpretation, elements of data processing; well records; rock physics and qualitative interpretation with an emphasis on multidisciplinary integration in the areas of geoscience knowledge and oil engineering. An introduction and general description to the quantitative methods is included at the end of the basic topics.

Objectives

- Demonstrate the fundamental principles for profile assessment.
- Describe the basic principles of the seismic interpretation process
- Present the importance of seismic interpretation in hydrocarbon exploration and production
- Explain the phases that include the processes of acquisition, processing, and interpretation of seismic data
- Describe the impact of seismic processing on seismic interpretation results
- Emphasize the importance of seismic attributes in subsurface characterization
- Discussion on the state of the art of seismic interpretation with various examples and their use
- Introduce the technical aspects and methodologies used in seismic interpretation
- Highlight the importance of multidisciplinary integration in exploration and production work and the role of seismic interpretation

Audience

The training is aimed at professionals who participate in the process of exploration and or production of fields and who wish to improve their level of competence in aspects related to seismic interpretation and their related topics, such as:

- Geologists and Petrophysics

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Audience (cont.)

- Drilling Engineers
- Reservoir Engineers and Production Engineers

Content

Day 1
Introduction to Geophysics in the Oil and Natural Gas Industry

- General aspects of exploration
- Delimitation and development of fields associated with seismic interpretation
- Exploration and Production Geophysics
- Key geological elements in seismic interpretation
- Field Examples

Day 2
Seismic processing

- Seismic Processing Basics
- Seismic processing factors that impact the quality of seismic interpretation results
- Seismic processing speeds and well speeds
- State of the art of seismic processing
- Field Examples
- Exercises

Day 3
Seismic Attributes and Direct Hydrocarbon Indicators (AVO)

- Determining the properties of rocks and fluids from seismic data
- Theoretical and practical aspects of rock physics
- Field Examples
- Exercises

Day 4
Seismic interpretation

- Determining the geological significance of seismic horizons
- 2D seismic interpretation – 3D (time and/or depth)
- Deep time conversion
- Geological mapping of seismic interpretation
- Field Examples
- Exercises

Day 5
Multidisciplinary integration (geology – geophysics – petrophysics)

- Identifying exploratory opportunities
- Generating exploratory leads
- Delimiting deposits
- Seismic characterization of deposits
- Estimation of original hydrocarbon volumes
- Basic Description of seismic quantitative interpretations
- Field Examples
- Exercises

End of Training