

Exciting Training Opportunity for Geoscientists

AVO and Seismic Attributes

Uzma Group in conjunction with its Technology Partner, SCA, (a world leader in Upstream Exploration and Production courses) are proud to bring this training opportunity to oil and gas companies in the S.E Asia region. Since its founding in 1988, SCA has provided leading edge technical training services around the world to over 19,000 petroleum industry professionals.

Course Description:

The understanding and application of AVO and attribute analysis is vital to any seismically driven exploration or development program. Learn from one of the industry's top geophysicists - Dr. Mangat Thapar.

This course is a **MUST** for all geoscientists who utilize seismic data in their interpretations. Using Microsoft's Excel, Mathcad and VISTA software, Dr. Thapar will demonstrate key principles and pitfalls related to AVO and seismic attribute analysis including the suitability of seismic data for analysis, preserving amplitudes, properly modeling AVO/AVA and attribute response and matching the predicted response with seismic data, and avoiding pitfalls. These principles control the success or failure of AVO and seismic attributes, and with it the potential success of an exploration program. Other key aspects of the course include:

- Detailed discussion on how to select appropriate acquisition parameters and processing flow to properly record and preserve AVO and seismic attribute anomalies
- Demonstration and discussion of blocking logs using zonation, mean and variance methods to develop AVO/AVA and attribute models. How to extract interval velocities from stacking velocities through ray-tracing in the presence of dip. Discussion on how to select appropriate wavelet for modeling
- Prediction of AVO/AVA and attribute responses using properly generated models and comparison with AVO/AVA extracted from seismic data
- Extensive discussion of pitfalls in AVO and seismic attributes and how to avoid them throughout this presentation

The course concepts are reinforced with a number of real world exercises conducted throughout the course to enhance understanding of the principles presented. Some of these exercises are:

- ❖ Exercises on the tuning thickness effect on AVO, extraction of rock properties (λ μ ρ), AVO interpretation and cross plotting techniques, thin bed thickness estimation from amplitudes and related pitfalls, absorption due to thick reservoir, and many other topics
- ❖ Group discussion and selection of acquisition parameters and processing flow for AVO and attributes
- ❖ Group discussion to develop a risk analysis spreadsheet for AVO which encompasses all factors in acquisition, processing, modeling, and interpretation
- ❖ Group discussion and exercise on how to select appropriate attributes for analysis over a prospect

Learning Outcomes:

1. Analyse and apply AVO and seismic attributes correctly and appropriately
2. Recognize pros and cons of AVO
3. Determine when AVO is applicable using risk analysis exercise
4. Select interpretation relevant attributes
5. Resolve the effect of processing on AVO and seismic attributes
6. Avoid AVO and attribute pitfalls

Who Should Attend:

Interpreters, geophysicists, geologists, technical support personnel, seismic processors, exploration and data processing managers and data acquisition managers.

Prerequisites:

It is recommended that participants take Seismic Survey Design, Acquisition and Processing or equivalent courses.

Course Content:

- AVO Concept and related factors
- AVO pitfalls and assumptions
- Petrophysics and AVO
- Rock properties and wave propagation
- Hydrocarbon detection using AVO
- AVO modeling and processing
- Impact of processing on AVO analysis
- Techniques for interpretation of AVO
- AVO Cross-plotting techniques
- Case studies of AVO
- Seismic attributes and wave factors
- Decon and scaling effect on attributes
- Time and Frequency domain attributes
- Thickness using amplitude
- Thin bed thickness from frequency
- Applications of amplitude, energy and frequency related attributes
- Pitfalls of attributes

For further details contact training@uzmagroup.com or register on line at:
http://scacompanies.com/training_services/CourseDetail.aspx?courseid=44