

Fundamentals of Seismic Interpretation Techniques in Field Explorations and Developments

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Padma Hotel Bali
February 8-12, 2010

WHO SHOULD ATTEND?

This course is designed for geologists, geophysicists and petroleum engineers who wish to get a thorough understanding on the practical application of fundamental seismic techniques in field exploration and developments.

ABOUT THE COURSE

In this rigorous 5-days course, participants learn and apply fundamentals seismic interpretation techniques to analyze various seismic profiles representing a variety of rock types, stratigraphy, structural styles, tectonic settings and hydrocarbon plays. The class is started with the discussion on the basic seismic interpretation techniques like polarity-phase determination, well-seismic tie, lithology and hydrocarbon signatures recognition. The basic techniques are then applied for more detail analysis of geologic structures, facies, system-tracts and basin evolution, each in the context of field exploration and developments. The analysis of 3D seismic data is also discussed intensively especially on the application of 3D seismic attributes in field exploration and developments. Overview of advance seismic inversion techniques for lithology, facies and fluid analysis is discussed in the last day. The Course comprises of approximately 40% theory and 60% problem-sets. The problem-set packages cover cases from Indonesia as well as from overseas. The course will provide strong knowledge basis if the participants want to pursue further application of advance seismic techniques for lithology, facies, stratigraphy, structure and fluid analysis as required in detail field exploration and developments works.

DAILY AGENDA

Day 1. Basic Seismic Interpretation Concepts

Theories on basic 2D seismic data acquisition & processing, seismic wave reflection concept, polarity & phase, vertical and horizontal resolution, well-seismic tie, check-shot & VSP, velocity function, time-depth conversion, seismic hydrocarbon indicators and pitfalls in seismic interpretation.

Problem sets on polarity-phase determination, well-seismic tie using synthetic seismogram - check shot and VSP, velocity function computation, time depth conversion, modeling of hydrocarbon amplitude response and seismic interpretation pitfall analysis.

Day 2. Lithology & Structural Interpretation

Theories on parameters of individual reflection, geology of seismic section, seismic lithology signature, structure interpretation (folds, normal fault, reverse and thrust fault, strike-slip fault, fault reactivation), basin evolution analysis and the applications in field exploration-developments.

Problem-sets on seismic lithology determination (clastics, carbonate, salt-shale diapir, DHI, etc.), fault interpretation (normal, reverse, wrench and thrust faults), basin evolution analysis and the applications of the techniques in field exploration-developments.

Day 3. Seismic Stratigraphy and System-Tract Analysis

Theories on relative sea level changes and seismic sequences, sequence boundaries : types and their seismic characteristic, seismic facies and depositional sequences : types and their seismic characteristics, cycle and paracycles in the system-tract, interpretation of system tract in seismic section, system tracts and hydrocarbon play, and the applications in field exploration-developments.

Problem-sets on sequence boundary and related sea-level changes determination, seismic facies and depositional sequences analysis, seismic facies and hydrocarbon play determination, system-tract and hydrocarbon play determination, the applications of the techniques in field exploration-developments.

Day 4. 3D Seismic Interpretation

Theories on basic 3D seismic data acquisition & processing, data volume concept, stratigraphy and structural interpretation using 3 D seismic, 3D seismic attributes analysis, the applications of the techniques in field exploration-developments.

Problem-sets on fault and horizon mapping using 3-D seismic data, 3-D seismic for combined structural and stratigraphic trap analysis, stratigraphy-facies-hydrocarbon analysis using 3 D seismic data, the applications of the techniques in field exploration-developments.

Day 5. Overview of Post and Pre Stack Seismic Inversion Techniques

Theories on Acoustic Impedance (AI) - AVO - LambdaMhuRho - Elastic Impedance (EI) inversion and their applications for lithology, facies and fluid identification, the applications of the techniques in field exploration-developments.

Problem-sets on the application of Acoustic Impedance (AI) - AVO - LambdaMhuRho - Elastic Impedance (EI) inversion and their applications for lithology, facies and fluid analysis, the applications of the techniques in field exploration-developments.

ABOUT THE INSTRUCTOR

Sigit Sukmono has been in the oil industry for over 20 years. He has a MSc from Asian Institute of Technology and DR in Applied Geophysics from Institute of Technology Bandung. His main expertise is in the field of petroleum geophysics. Currently he works as an Associate Professor in Reservoir Geophysics, Institute of Technology Bandung. In the last 5 years he has been managing and involved in more than 50 GGR (Geology, Geophysics and Reservoir) studies for major oil companies. In the last 5 years he has been also teaching more than 50 seismic reservoir classes for oil community in various locations in the world (Tokyo, Moscow, Bangkok, Palma-Spain, Dubai, Abu-Dhabi, Cairo, Hong Kong, Beijing, Kuala Lumpur, Mumbai, Luanda, Nigeria, Tripoli, Saudi-Aramco, Algier, Bali, Jakarta, etc). He is a Member of Society of Exploration Geophysicists, American Association of Petroleum Geologists, Indonesian Petroleum Association, Indonesian Association of Geophysicists and Indonesian Association of Geologists. He was awarded Best Research Award by Minister of Research & Technology in 2002 and by Toray Science and Technology Foundation in 1988, and International Scientific Publication Award from the Minister of Education and Culture in Indonesia in 1988. He has authored more than 10 course manuals in reservoir geophysics topics and has published many papers in international journals/seminars.

ENROLLMENT

In order to allow sufficient time for arranging travel plans, early enrollment is recommended. Registration will be closed on January 29, 2010. Late enrollment may result in course cancellation.

CERTIFICATES

A Certificate of Participation will be awarded to each person completing this course.

CANCELLATION, SUBSTITUTION & REFUND

The tuition fee will be refunded (less US\$ 100 registration fee) only if notification of cancellation is received at least 10 days prior to the commencement.

Non payment of tuition fee does not constitute automatic cancellation of participation. Substitution may be made at any time for those enrolled.

TUITION FEE

Tuition fee at USD 2,450.00 + 10% VAT per delegate is due and payable upon confirmation of enrollment. Accommodation is provided at Padma Hotel Bali from February 7-13, 2010 (6 nights). Payment should be settled at the latest on January 29, 2010. ***Any bank charges in connection with payment in US Dollars must be added to payment.*** Tuition fee includes admittance to the course, course materials, daily refreshments and full lunch.

Payment can be made to PT. Geoservices (Ltd)
Bank Central Asia
KCU Menara BCA Lt. 28
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Jl. MH. Thamrin No. 1 - JAKARTA
Account No: 035.3070.964 (US\$)