



HARNESS THE POWER
OF KNOWLEDGE

Application of Rock Physics for Reservoir Characterization

TRAIN



Introduction

Rock physics is a crucial discipline in the field of reservoir characterization, providing a fundamental understanding of the relationship between the physical properties of rocks and their seismic response. This comprehensive 5-day professional training course will equip you with the essential knowledge and skills to effectively apply rock physics principles for reservoir characterization and subsurface exploration.

Course Objectives

By the end of this course, you will be able to:

- Understand the fundamental principles of rock physics and its application in reservoir characterization
- Identify and interpret diagnostic rock physics parameters related to different depositional environments
- Apply rock physics models to estimate reservoir porosity, permeability, and fluid saturation
- Utilize rock physics data to evaluate hydrocarbon potential, identify seismic facies, and predict reservoir behavior
- Integrate rock physics with seismic and well log data for comprehensive subsurface interpretation

Course Agenda

Day 1: Introduction to Rock Physics

- Explore the history, principles, and applications of rock physics in reservoir characterization
- Understand the relationship between rock properties, such as porosity, permeability, and mineral composition, and their seismic response
- Review the factors influencing rock physics parameters, including stress, temperature, and fluid saturation

Day 2: Rock Physics in Depositional Environments

- Analyze the distribution and characteristics of rock physics parameters in various depositional settings, including fluvial, marine, and lacustrine environments
- Identify diagnostic rock physics assemblages associated with different marine paleosalinities and redox conditions
- Utilize rock physics data to infer paleocurrents, paleocirculation patterns, and paleodepth

Day 3: Rock Physics Models for Reservoir Characterization

- Delve into various rock physics models used to estimate reservoir properties, such as porosity, permeability, and fluid saturation

- Explore the limitations and assumptions of different rock physics models and their applicability to various geological settings

- Apply rock physics models to interpret seismic data and extract reservoir characteristics

Day 4: Rock Physics in Seismic Interpretation

- Understand the integration of rock physics with seismic data for improved reservoir characterization

- Utilize rock physics principles to identify seismic facies, predict acoustic impedance, and map fluid distribution

- Apply rock physics-based seismic inversion techniques to estimate reservoir properties from seismic data

Day 5: Rock Physics in Subsurface Exploration

- Explore the application of rock physics in various aspects of subsurface exploration, including hydrocarbon exploration, environmental assessment, and geotechnical evaluation

- Utilize rock physics data to assess hydrocarbon potential, identify potential exploration targets, and guide drilling decisions

- Apply rock physics principles to evaluate subsurface conditions for environmental studies and geotechnical engineering projects

Who Should Attend

This course is designed for:

- Aspiring and experienced geologists seeking to enhance their understanding of rock physics and its applications in reservoir characterization

- Geophysicists involved in seismic interpretation and reservoir evaluation using rock physics principles

- Petroleum engineers utilizing rock physics data for reservoir modeling, well placement, and enhanced oil recovery

- Environmental scientists applying rock physics to assess subsurface conditions and identify potential contamination risks

Course Benefits

- Develop a comprehensive understanding of rock physics principles, models, and their applications in geoscience

- Gain hands-on experience in applying rock physics models to seismic data for reservoir characterization

- Enhance your ability to interpret rock physics data and integrate it with seismic and well log information

- Apply rock physics knowledge to address real-world challenges in various fields, including hydrocarbon exploration, environmental assessment, and geotechnical evaluation

- Stay updated on the latest advancements and techniques in rock physics research and applications