

Introduction to Reservoir Geophysics: The seismic inversion concepts and workflows to quantitatively integrate 3D seismic data into the reservoir model are discussed. Emphasis is placed on deterministic methods with geostatistical constraints to invert for reservoir and fluid properties and to incorporate these data into reservoir models.

Course Outline

1. Introduction to geophysical characterization for reservoir modeling
2. Rock Physics Basis: The Link Between Reservoir Properties and Seismic Response
3. Direct Hydrocarbon Indicators
4. Using Seismic Attributes to Determine Rock and Fluid Properties
5. Stochastic Fluid Properties Inversion
6. Integration of Geostatistics in Reservoir Model Building
7. Time-Lapse Seismic Monitoring
8. Fundamentals of Seismic Inversion
9. Using Neural Networks to Generate Reservoir Property Cubes
10. Spectral Decomposition: Methods and Applications
11. Spectral Broadening: Developing Reservoir Models Below Conventional Seismic Resolution