



## Advanced Seismic Stratigraphy: A Sequence-Wavelet Analysis Exploration-Exploitation Workshop - ADS

### COURSE

#### About the Course

Seismic stratigraphy is a powerful tool for exploration and exploitation, especially when the rock-fluid information within the seismic wavelet (reflection character analysis) is integrated with the lithofacies-stratigraphic information, which is determined from reflection group geometry (sequence analysis). The methods used in this workshop do not rely upon either cosmetic processing or interpretation as an art; instead, practical methods of seismic stratigraphy are employed as a science, based upon firm, tested principles that are applied to a spectrum of tectonic structural styles and depositional environments.

This rigorous, five-day course is a problem-oriented, hands-on workshop including significant group discussion and presentation. Participants learn how to make seismic modeling-interpretation judgments as a basis for seismic-facies and reflection character analysis. Case studies for exploration and development incorporate 2D and 3D seismic data with well data selected from around the world.

*"I was happy with the pace of the course."* - Senior Staff Geophysicist, United States

*"Vivid explanations and examples of instructor."* - Exploration Professional, Germany

#### Target Audience

Geophysicists, geologists, and explorationists who have completed the PetroSkills course, Introduction to Seismic Stratigraphy: An Exploration Workshop: A Basin Scale Regional Workshop, or have comparable training and desire a challenging workshop, which will improve exploration and development skills.

#### You Will Learn

Participants will learn how to:

- Evaluate rock-fluid information from wavelet analysis (frequency, velocity, Q, seismic attributes, and AVO)
- Understand the strengths and weaknesses of geovalidation using and misusing synthetics, seismic inversion, and VSP
- Determine fault mechanical stratigraphy through proper interpretation of fault imaging
- Understand the differences, weaknesses, and strengths of both the Vail with the Galloway sequence paradigms and when to optimally employ them
- Develop sea level curves from micropaleontology

- Construct detailed seismic facies maps and understand their relationship to Walter's law
- Classify deltas based upon their seismic characteristics
- Differentiate basin floor fan facies and parasequence sets
- Interpret clastic and carbonate depositional system responses to allocyclic and autocyclic processes and the effects upon reservoir architecture and seal potential
- Optimally interpret parasequence set fairways for exploration
- Geophysically characterize reservoirs for optimizing development

## Course Content

- Introduction: review of philosophy and epistemology
- Application of geophysical fundamentals (wave theory, attributes, frequency substitution, and coherency)
- Amplitude variation with offset (lithologies, fluids, gases, porosities, and pressures)
- Fault mechanical stratigraphy
- Vail and Galloway sequence theory and application
- High resolution sea level curve generation from micropaleo
- Shallow and deep water siliciclastic sequences
- Seismic facies and paleo-environmental analysis
- Reservoir scale geophysics using the wavelet
- Imaging hydrocarbons
- Geohistory reconstruction
- Optimizing exploration and development

## Product Details

Categories: [Upstream](#)

Disciplines: [Geophysics](#)

Levels: [Specialized](#)

Product Type: [Course](#)

Formats Available: [In-Classroom](#)

Instructors: [John Pigott](#)