Emerging Technologies Dinner Meeting, November 21

Structural and Stratigraphic Interpretation Utilizing 3-D Seismic Coherence

by Dan Morris, President, Coherence Technology

The application of 3-D coherence processing provides the oil community with an exciting new technology which significantly impacts the economics associated with improved 3-D interpretation accuracy and productivity, while extracting a vast amount of information from the 3-D seismic waveform which would otherwise be overlooked.

The technique is equally useful to geophysicists, geologists, and reservoir engineers to help build a more accurate reservoir model. Working closely with the interpretation staff, the specialized coherence processing geophysicist can optimize the parameters to focus the features of interest. The spatial changes detected in the seismic waveform can readily be related to geologic features and depositional environments. Faults and fracture systems can now be spatially imaged and directly mapped from the coherence cube without the tedious task of drawing faults on each vertical section and proceeding blindly without prior knowledge of their spatial position.

A case study focuses on a south Louisiana data set, the impact that coherence technology had on the interpretation, and the economic impact realized.

Biographical Sketch

Dan Morris is a co-founder of Coherence Technology Company, which was formed to offer the Coherence Cube™ technology developed by Amoco Production Research as a service to the oil and gas industry. He previously served as marketing coordinator for Western Geophysical's Western Hemisphere data processing services and worked for the former Halliburton Geophysical Services. He is a founding member of Halliburton Energy Service's corporate planning group and holds degrees from the Colorado School of Mines and the American Graduate School of International Management (Thunderbird). ■