

### **Enhanced Visualization of Seismic Attributes for Structural Interpretation**

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Complex fault architectures are becoming increasingly common in newly discovered hydrocarbon reservoirs. Mature development projects are also requiring more detailed representations of faulting in order to optimize secondary recovery. In this work we demonstrate how seismic structural attributes coupled with modern visualization techniques can be leveraged to enhance interpreters' perception of complex fault architectures in three dimensions. Seismic structural attributes coherence and fault enhance volume have been studied in relation to known structural settings in real and model data. Observations from those experiments have been documented and can be used to make better informed interpretations of fault geometries in terms of fault extent, connectivity, relative fault zone width. Moreover, visualizing those attributes in three dimensions using isosurfacing and advanced volume rendering enables viewing the complete fault architecture with a variable amount of detail prior to doing any manual interpretation. As a result, this analysis enables interpreters to choose which faults to interpret, make decisions about their horizontal and vertical connectivity, recognize different fault styles and the intervals that limit them, and, therefore, make a better interpretation the first time. A-priori insight gained from this approach allows significant cycle time reduction due to less editing required to fault interpretation.