

Exploration Data Integration: An Effective Data Re-engineering Process for New Petroleum Plays in Gulf Offshore Basins

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In recent years, data integration and statistical modeling play significant roles in the oil and gas exploration industry. Data integration provides an immense value to exploration industry, when it is associated with appropriate data mining tools. Statistical modeling is one of the data mining tools that often utilize different types of data from different sources. Authors attempt to use statistical modeling concepts for simulating depositional features of offshore oil field provinces, where heterogeneous data are integrated more effectively from different sources.

Materialized data views are extracted from integrated exploration data. Data properties and their attribute strengths, such as porosities from well data and their predictions from seismic volumes, have been analyzed, where more active petroleum geological plays reported. Statistical methods of data exploration tools prove to be very effective. Volume extractions are used to mine channel events from reengineering process approach to visualize and even track channels. These tools can measure the strength and magnitude of properties of data-attributes. Present study infers possible definition of geological facies and their framework for assessing the petroleum potential. Porosity estimation using seismic attributes as well as borehole data provides a knowledge solution on reservoir properties and their areal extents in the producing gulf provinces.