

Applications of Isotope Geochemistry for Resource Plays*

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Abstract

The purpose of this presentation is to acquaint forum participants with the tools, methods, terminology, and interpretive techniques of stable isotope and noble gas geochemistry used to understand the origin and fate of hydrocarbons and associated compounds in the earth's subsurface. Since, in practice, stable isotope geochemical data must be constrained by equally important geological, hydrological, and engineering data, most of the presentation shows how the geochemical data are interpreted in conjunction with other earth science information. The talk provides a brief overview of first principals concerning isotope geochemistry in the earth sciences, followed by selected examples of how natural gas and liquid hydrocarbon geochemistry can be applied to addressing specific problems encountered in resource plays.