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Bjorn P. Wygrala¹, Christof Keuser¹, Michael Hertle¹ (1) IES Integrated Exploration Systems, Juelich, Germany

Multi-Dimensional Petroleum Systems Modeling Applied to Atlantic Margin Basins

The advent of the first full 3D Petroleum Systems Modeling technology about 3 years ago and the rapid development process that has since taken place, has resulted in a significant number of applications in Atlantic Margin basins, notably in Brazil and West Africa, but also in Eastern Canadian offshore basins. One of the principle reasons for the success of the methodology are improvements in the prediction of hydrocarbon properties due to new hydrocarbon component/phase handling methods, in particular the inclusion of fast flash calculation algorithms in high-resolution 3D models.

The presentation will illustrate the latest developments of the technology and the value of their deployment in the analysis of petroleum migration and occurrences. A comparison of the quality of the results with those obtained with simpler methods will be shown. Special references will then be made to examples in Atlantic Margin basins, covering both early stage exploration work as well as production related applications. This technology, which is the result of a development effort reaching back for more than 20 years, has - with the introduction of 3D - become one of the most rapidly growing new geoscience applications in the industry.