

# **An Integrated Method of Tight Carbonate Reservoir Prediction and Hydrocarbon Detection**

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## **ABSTRACT**

Carbonate reservoirs are widely developed in China. It is dominated by the system of fracture-cavity reservoirs. Forming mechanism of the reservoirs is controlled by sedimentary system, later structure, diagenesis evolution, etc. This kind of reservoir has strong heterogeneity with lower porosity (lower than 6%), lower permeability (lower than 1 md) and complicated distributions. Therefore, it is much more difficult to predict the distribution of reservoir and types of fluid. This article demonstrated an integrated method to identify the lateral and vertical distribution of tight carbonate reservoirs and fluid types. According to this research, a set of the key technologies and workflow was taken as the aim of the tight carbonate reservoirs evaluation. The variance and texture properties, highlighting body and elastic impedance attributes achieve preferably effect in the identification of tight carbonate reservoirs. Poisson ratio,  $V_p/V_s$  and fluid mobility attribute are sensitive to the hydrocarbon of the carbonate reservoirs. Therefore, the integrated analysis of these methods probably acquires satisfactory effect in the evaluation carbonate reservoirs.