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四川盆地震旦系灯影组油气四中心耦合成藏过程

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摘要:

四川盆地元古界震旦系灯影组,时代老、埋藏深,天然气藏形成经历了生气中心(古油藏和未成藏石油的富集区)-储气中心(古气藏和未成藏天然气及水溶气的富集区)-保气中心(现今气藏和未成藏天然气及水溶气的富集区)的变换过程。生气中心是储气中心的主要"气源"、储气中心是现今保气中心的主要"气源"。生气中心的形成受控于烃源岩所在部位的生烃中心(烃源灶)。震旦系灯影组天然气藏的形成是在多期构造作用控制下由油气的四中心(生烃中心、生气中心、储气中心和保气中心)的耦合关系决定的。油气能否成藏和保存下来的关键取决于烃源是否丰富和保存条件是否较佳,即具有源盖联合控烃控藏的特征。生烃中心受控于盆地的原型格局,形成后其空间位置即无变动性;而其余三中心受构造作用的控制而变动性较易和较大。因此,"三中心"(生气中心、储气中心和保气中心)在空间上的分布关系,决定了油气的最终分布。威远-资阳震旦系灯影组气田的成藏过程是典型的储气中心和保气中心短距离(30km)移位的耦合关系;川东南丁山-林滩场震旦系灯影组古油气藏的形成及破坏过程是典型的缺乏保气中心的耦合关系。

英文摘要:

Dengying Formation of Late Sinian age located in the Sichuan Basin was deeply buried and its paleo-oil pool (gas generating center) was transformed into paleo-gas pool (gas accumulating center) and present gas pool (gas preserving center). Paleo-oil pool was the main "hydrocarbon source" for the paleo-gas pool which was also the main "hydrocarbon source" of present gas pool. The formation of paleo-oil pool was controlled by the occurrence and location of source rocks (hydrocarbon generating center). Therefore the formation of present natural gas pool in the Upper Sinian Dengying Formation was determined by the coupling process of hydrocarbon generating center, gas generating center, gas accumulating center and gas preserving center, under the control of multiphase tectonic activities. The key factors of petroleum accumulation and preservation was plentiful hydrocarbon sources and better preservative conditions (good seal development). That is, both source rock and sealing condition could have controlled hydrocarbon accumulation simultaneously. Being controlled by the structure and sedimentary background of the early basin, hydrocarbon generating center appeared to have been stationary in the space, while the other three centers were not. Therefore, the spatial relationship between the "three centers" (gas generating center, gas accumulating center and gas preserving center) decided the final result of oil and gas accumulation.

关键词: [油气藏](#) [成藏过程](#) [震旦系](#) [四川盆地](#)

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