

# **The Neogene Meshwork-Carpet Oil and Gas Pooling System in the Jiyang Depression, East China**

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Taking oil and gas pool characters in the Neogene of the Jiyang depression as an example, the concept of “meshwork-carpet” oil and gas pooling system is put forward. The system comprises of a three-layered structure: (1) the lower section is a meshwork layer for hydrocarbon source passages, (2) the middle section is a carpet storage layer and (3) the upper section is a meshwork layer for hydrocarbon accumulation. This unique structure is determined by the changes of the depositional capacity from small to large in the course of fluvial sequence development.

The basic prerequisite for the development of the “meshwork-carpet” oil and gas pooling system is the unique fluvial sequence architecture which often has an enormously thick “carpet” like transportation layer at the base and “branched” sandstone lens superimposed on top. The effective hydrocarbon migration upward within the “meshwork-carpet” oil and gas pooling system is facilitated by the existence of a fault meshwork connecting to the oil source and linking to the storage layer and oil and gas accumulation layer. Effective hydrocarbon trapping in the storage layer and accumulation layer are critical for the formation of secondary oil and gas pools. This new concept of hydrocarbon accumulation provides new insight for exploring secondary oil and gas pools. Sedimentary basins with similar geological regimes as the Jiyang Depression may also have “meshwork-carpet” oil and gas pooling system.