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Inversion Tectonics and Oil-Gas Accumulation

The East China Sea Basin, covering an area of about 260,000km², becomes an important and attractive recently in petroleum exploration and development due to its rich hydrocarbon resources and close to fast growing economy of Yangtze River delta area.

The basin is a Cenozoic back-arc extensional type developed on the base of Mesozoic J-K residual basin. It exhibits two-layer framework with rifting at the lower and depressing at the upper. The basin tectonically can be divided into western zone with Taibei and Changjiang depressions and the eastern zone with Diaobei, Xihu and Fujiang depressions.

The basin is characterized by the widely developed inversion tectonics, particularly in Xihu and Diaobei depressions at the eastern zone of the basin. Discoveries in Xihu depression demonstrated that 90% of the reserves found are related to inversion tectonics in terms of trap mechanism. The Xihu depression is regarded as a rich hydrocarbon sub-basin with good source rock and prospecting play concepts. Three favorable oil and gas accumulation zones are identified as central reverse structural zone, the western slope zone and eastern zone. It is believed that Diaobei depression is similar to or better than that of Xihu. The potential zones in Diaobei sub-basin include the central structural zone and its west slope area.