

Paper Number: 109

## Tectonic Framework of Orogenic belts and Basins System in abdomen of Asia

Yang Zhanlong<sup>1</sup>, Chen Qilin<sup>1</sup>, Li Xiangbo<sup>1</sup>

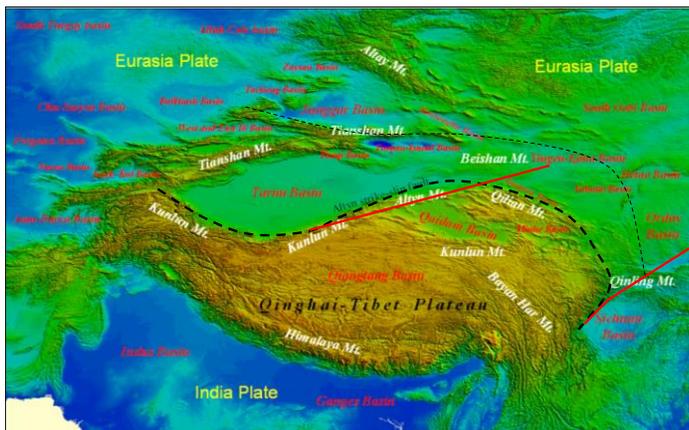
<sup>1</sup>Northwest Branch, Research Institute of Petroleum Exploration and Development, PetroChina, P.R.China, 730020  
No.535 Yanerwan R. Chengguan D., Lanzhou Gansu, P.R.China

---

Taking the orogenic belts and sedimentary basins in abdomen of Asia into a unified tectonic environment, based on the theory of plate tectonics to comprehensive analysis the overall tectonic framework and their evolution of orogenic belts and basins. Study shows that the northward collision and subduction of India plate and Eurasia plate in Meso-Cenozoic era is the main geology reason for the development of orogenic belts and basins system. The continuing activities of Altyn strike-slip fault, NE-SW direction, is the main controlling factor for the adjustment of the tectonic framework of orogenic belts and basins system in abdomen of Asia.

The comprehensive study of geometry, kinematic and dynamic show the two basic structural units, the basins and the orogenic belts, which consist of the orogenic belt and basin system in abdomen of Asia, are close coupling in spatial conversion in material, adjusting and balanced to each other on the morphology. The movement of orogenic belts not only provided the filling material to sedimentary basin, but also controlled the formation, reconstruction and adjustment of structures in basin. The sediments in basin not only reflect the depression process of basin, but also record the geological history of the adjacent orogenic belt.

Study shows that the coupling of sediment provided by orogenic belt and the preservation in sedimentary basin is the key factor for the developing of source rock, reservoir and capping formation in basin. The coupling of multi-stage tectonic activities of orogenic belt and structural developing, multi-stage hydrocarbon migration driving in basin is the key factor for the study of hydrocarbon migration and accumulation in basin. The sedimentary basins circumjacent of the Qinghai-Tibet plateau are one of



main hydrocarbon mineralization areas within the abdomen of Eurasia continent, so the comprehensive study of the coupling relationship of orogenic belt and basin

system circumjacent the Qinghai-Tibet plateau is theoretical and practical for the revealing of hydrocarbon accumulation, especially for the finding of new exploration domain in sedimentary basins.

*Figure1: Distribution of orogenic belts and basins in abdomen of Asia*

