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# The effect of tan-lu fault zone on the tectonic development characteristics of Liaodong Bay Depression

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Liaodong Bay Depression (LBD) located in the north of Bohai Bay Basin. The Tan-lu Fault Zone (TFZ) runs through LBD from south to north, divides LBD into three uplifts and three sags. The TFZ controls the development of structural units in LBD, making them being parallel strips in NE-SW trending. Based on detailed 3D seismic interpretation, coherence time slice, along-horizon attribute slice, analysis of regional stress field, evidence of microscopic structure, as well as previous research results, this paper re-understand the fault system in LBD. Building on this, it also analyzed the controlling effect of TFZ on its internal basin structure. The results show that: 1) In western Liaoxi area, the faults are mainly developed in flower structure or flower-like structure. The fault surface is single and clear in deep formation, while in shallow formation, it shows en echelon or brush structure composed of a series of secondary faults. Combining with instructions of microscopic structure, the study area, controlled by TFZ, is a typical strike-slip fault system; 2) Local deformations occurred on fault bending or step-over of the strike-slip fault, forming the structures characteristics of alternating appearance of extensional and compressional structures Influenced by dextral strike-slip system. According to different developmental ways and parts of bending or step-over, different induced structures are developed; 3) Uplifts are formed in extrusion part; correspondingly, sags are formed in extension part, in dextral strike-slip system, in eastern LBD.

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