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Discussion on Cenozoic tectonic evolution and tectonic dynamics of the Huanghua depression

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Abstract: In this paper, two seismic profiles of the Huanghua depression were balanced and restored by 2DMove software. We calculated the extension parameters of the balanced corss-section in the different period, analyzed the tectonic deformation of the Huanghua depression. According to the total extension parameters of balanced cross-section, the Cenozoic evolution of the Huanghua depression may be divided into two phase of tectonic evolution which are rifting stage and post-rift stage. The rifting stage included three episodic rifting: The third members of Shehejie with the rapidest subsidence, Ⅰ episodic rifting; The first and second members of Shahejie with the fault-depression, Ⅱ episodic rifting; The Dongying with terminal fault-depressed ,Ⅲ episodic rifting . The Huanghua depression shows a double-layer vertical structure with faulting structures in the lower and depressing structure in the upper sector. Combined the structure revealed by seismic profiles across the Huanghua depression, we further discusses the relationship between the evolutionary process of their structure and dynamics mechanism.

Keywords: The Huanghua depression; Balanced Cross-sections; tectonic evolution sections; tectonic dynamics mechanism