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Salt tectonics and its mechanism in West Kuqa Fold Thrust Belt, Tarim Basin, Northwestern China

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Thick salt in paleogene was developed in the West Kuqa Fold Thrust Belt (WKFTB) of north Tarim Basin. Based on field work and seismic interpretation, salt sheet, salt wall, salt nappe and salt anticline were observed in WKFTB. The distribution of the salt structures has some relationship with folds and faults. The salt sheets were located at the side of Kalayuergun strike-slip fault, the salt wall and salt nappe were developed beneath thrust fault and the salt anticlines were associated with the fold. Differential loading, compress stress and shear stress were the three forces which drove salt flow. After salt was deposited, Suweiyi formation was developed, which was thinning from north to south. At the same time differential loading affected the salt and salt diapir appeared. In the Neogene, compression stress affected WKFTB, and resulting intense shorting and forming folds and thrusts. At the Kalayuergun strike-slip fault belt, pull-aparting and tearing formed salt sheet.
Key words: salt tectonic; differential loading; compress stress; shear stress; West Kuqa Fold Thrust Belt; Northwest China