

Crustal deformation along the Liupanshan fault zone derived from GPS

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The Liupanshan fault zone is located in North Central of North-South Seismic Belt, which is the boundary between the northeastern margin of the Tibetan Plateau and Ordos. This study collected 261 GPS stations distributed around the Liupanshan fault zone. 249 stations are belong to CMONOC and start to observe since 1999, 15 stations are constructed by this study and start to observe since 2013. GPS data are processed with the software GIPSY/OASIS (Version 6.0) from JPL, using the Precise Point Positioning (PPP) strategy and JPL products to obtain daily loosely constrained solutions. The result shows that the northern section of fault zone has a relatively weak left-lateral strike slip and 1.5mm/yr dip slip rate, but no significant difference motion is observed on both sides of the southern section. Furthermore, the maximum principal strain rates indicate that the deformation characteristic of the fault is extrusion, and the value gradually decreases from north to south.

Keywords: GPS, Crustal Deformation, Liupanshan Fault

