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Abstract

The detailed kinematic pattern of the Ordos block, North China and its surrounding rift systems remains uncertain, mainly due to the low signal-to-noise ratio of the Global Positioning System (GPS) velocity data and the lack of GPS stations in this region. In this study, we have obtained a new and dense velocity field by processing GPS data primarily collected from the Crustal Motion Observation Network of China and from other GPS networks between 1998 and 2014. The GPS velocities within the Ordos block can be interpreted as counterclockwise rotation of the block about the Euler pole with respect to the Eurasia plate. Velocity profiles across the graben-bounding faults show relatively rapid right-lateral strike-slip motion along the Yinchuan graben, with a rate of 0.8∼2.6 mm/a