



## **Character and dynamic system evolvement of metamorphic complexes at paleocontinental margin in Jilin during the transition from late Archaean to early Proterozoic**

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The kinematics and dynamical process of tectonic evolvement of metamorphic complexes from late Archaean to early Proterozoic is one of the key problems. And the genesis of metamorphic complexes at the margin of Jilin palaeocontinent has been argued for a long time. This paper is focused on the dynamical evolution of palaeocontinent during the transition from late Archaean to early Proterozoic (2 600–2 000 Ma) by an example study of Banshigou region in Jilin Province. On the time sequence, from palaeocontinental center to the margin, it shows a series of dynamical movements including underplating, horizontal movement, subduction, intraplate extension and separation. And its corresponding sequence of kinematical models is vertical movement, horizontal movement, extension and shearing in contact zone, uplift-sliding movement in paleocontinental margin and interformational sliding, and produced a tectonite sequence: tectonic gneiss, gneissic complex, gneissic complex-mylonite, mylonite and fracture cleavage-mylonite, which consist of the main body of metamorphic complexes. Their palaeostresses are < 20, 20.40, 21.72, 28.80 and 30.8–69.8 MPa respectively. The deformational metamorphic condition is between hornblende and low-grade greenschist facies. The general deformational characters of Jilin palaeocontinent reflect a complete dynamic system of crust evolution, which indicates the formation of the metamorphic complexes and the tectonic evolution are changed from vertical movement to compression and then to extension. It also indicates a continuous tectonic transformation from deep to shallow, and from ductile

to brittle. The transformation between different dynamic mechanisms not only forms tectonic rocks, but also benefits the linking up, exchange and enrichment with rock-forming minerals and ore-forming elements.