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黑龙江东部白垩纪-古近纪古地磁初步结果及其构造意义

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Paleomagnetic study on Cretaceous and Paleogene rocks from eastern Heilongjiang, NE China and its tectonic implications

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摘要

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摘要 陆内块体旋转是周边构造环境和深部构造活动相互作用的结果。前人研究表明华北东部和俄罗斯远东地区晚中生代以来的块体旋转样式,很可能以牡丹江断裂为界发生了显著变化。进一步对牡丹江断裂两侧块体晚中生代以来的块体旋转样式的限定,有助于正确理解这一差异旋转的机制。对采自黑龙江省东部白垩纪和古近纪岩石的(51个采点)古地磁学研究表明,相对于稳定欧亚大陆,牡丹江断裂东侧的佳木斯地块内部的穆稜、鸡西、七台河和桦南地区旋转样式一致,整体发生了30°~40°的逆时针旋转,逆时针旋转很可能发生在晚白垩世末之后。华北东部及俄罗斯远东地区的差异性相对旋转很可能与白垩纪以来太平洋板块的俯冲作用和作为深俯冲带的牡丹江断裂的重新活化有关。

关键词: 佳木斯地块 白垩纪 差异旋转 古地磁学 牡丹江断裂

Abstract: Intracontinental block rotation is the result of interaction between crustal tectonic environment and tectonic activity in the lithospheric mantle. Previous studies show that block rotation patterns in the Eastern North China and the Far Eastern Russian areas are remarkably different on the two sides of the Mudanjiang Fault since the late Mesozoic. Further work about the block rotation on both sides of the Mudanjiang Fault is significantly important for the mechanism of the differential block rotations in the eastern areas of Eurasia. Paleomagnetic studies on the Cretaceous and Paleogene rocks from 51 sampling sites in the Eastern Heilongjiang Province confirm that the Muling, Jixi, Qitaihe and Huanan areas in the east of the Mudanjiang Fault are subjected to counterclockwise rotation of about 30°~40° relative to stable North and South China blocks and Eurasia since the Late Cretaceous. The differential rotation of the Eastern North China and the Far Eastern Russian areas is probably due to the re-activation of the Mudanjiang Fault and the subduction of the Pacific Plate since the Cretaceous.

Keywords: Jiamusi Block Cretaceous Differential rotation Paleomagnetism Mudanjiang Fault

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