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鄂尔多斯盆地周边断裂运动学分析与晚中生代构造应力体制转换 [点此下载全文](#)

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摘要:

基于对鄂尔多斯盆地西南缘构造带、中央断裂、东缘边界带和东北部地区的断裂几何特征、运动学及其活动期次的野外观察和测量,并根据断层面上滑动矢量的叠加关系和区域构造演化历史,确定了鄂尔多斯盆地周边地带晚中生代构造主应力方向、应力体制及其转换序列,提出了4阶段构造演化模式和引张-挤压交替转换过程。早中侏罗世,盆地处于引张应力环境,引张方向为N-S至NNE-SSW向。中侏罗世晚期至晚侏罗世,构造应力场转换为挤压体制,盆地周缘遭受近W-E、NW-SE、NE-SW等多向挤压应力作用。早白垩世,盆地构造应力场转换为引张应力体制,引张应力方向为近W-E、NW-SE和NE-SW向。早白垩世晚期至晚白垩世,盆地应力体制再次发生转换,从前期的引张应力体制转换为NW-SE向挤压应力体制。晚中生代构造应力体制转换和应力场方向变化不仅记录了不同板块之间汇聚产生的远程效应,同时记录了盆地深部构造-热活动事件,并对盆地原型进行了一定的改造。

关键词: [鄂尔多斯盆地](#) [晚中生代](#) [断层运动学](#) [构造应力场](#) [应力体制](#)

Fault Kinematic Analysis and Change in Late Mesozoic Tectonic Stress Regimes in the Peripheral Zones of the Ordos Basin, North China [Download Fulltext](#)

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Abstract:

Based on detailed field observations and measurements of fault geometry, kinematics and activity phases along the southwestern boundary zone, the central W-E fault zone, the eastern boundary zone and the northeastern area of the Ordos Basin, and according to striation superimposition relationship on fault plane and regional tectonic events, this paper established late Mesozoic stress directions, stress regimes and their evolution sequence, and proposed a 4-stage tectonic evolution model with tectonic stress regimes changed alternately between extension and compression. The Basin was under extensional stress environment during the Early-Middle Jurassic, with the extension oriented in N-S to NNE-SSW. The tectonic stress regime had changed to multi-directional (W-E, NW-SE, NE-SW) compression during the period from the latest Middle Jurassic to late Jurassic and the peripheral zones of the Ordos Basin submitted to multi-directional shortening deformation. The stress regime changed again to extension during the Early Cretaceous, with the orientations of extension being NW-SE, W-E and NE-SW. It is followed from the latest Early Cretaceous to late Cretaceous by NW-SE compression. The stress field evolution and the changes in stress regimes in the peripheral zones of the Ordos Basin during the late Mesozoic not only recorded far-field effects produced by different inter-plate convergences, but also reflected changes in deep-seated thermal-tectonic regimes beneath the Ordos Basin, which caused the proto basin to have been significantly reformed.

Keywords: [Ordos Basin](#) [late Mesozoic](#) [fault kinematics](#) [tectonic stress field](#) [stress regime](#)

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