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## 渭河盆地及邻区地壳深部结构特征研究

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The research of deep structural features of Weihe basin and adjacent areas

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摘要

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**摘要** 利用穿越区域南段为秦岭褶皱带山区,中段为渭河断陷盆地,北段为鄂尔多斯地台南缘的宽角反射/折射地震测深剖面所获得的资料对该区地壳结构进行研究.结果表明:该区地壳呈明显的分层、分区结构;上下地壳的分界是由壳内反射波较为连续可靠的P2以及P3所确定的.鄂尔多斯地台是本区M界面最深的地区,地壳厚度大,达42 km左右,结构相对简单,结晶基底浅.秦岭褶皱带的地壳厚度约37~38 km,结晶基底浅,甚至出露.渭河断陷盆地莫霍界面相对两侧明显且不对称的上隆,地壳结构复杂;而莫霍界面相对鄂尔多斯地块突变隆起和上地幔高速物质侵入于下地壳,是该区发生中强地震的深部构造背景.

**关键词** 渭河断陷带, 地壳结构, 秦岭褶皱系, 鄂尔多斯地台

**Abstract:** The crustal structure was investigated with Deep Seismic Sounding (DSS) data obtained from wide angle reflection/refraction profiles crossing the region; its southern section is Qin-ling fold zone, the middle is Weihe rift basin, and the northern section is the southern margin of the Ordos platform. The results showed that the crust has obviously layered and laterally varying structures; the boundary between upper and lower crust is reliably determined by the relatively continuous reflection wave, P2 and P3 in the crust. The M interface of Ordos platform is the deepest in the region; the crustal thickness is up to 42 km or so and the crustal structure is relatively simple with shallow crystalline basement. The crustal thickness of Qinling Fold Belt is about 37~38 km, with shallow or even exposed crystalline basement. The Moho interface under Weihe fault basin is significantly and asymmetrically uplifted relative to both sides, and the crustal structure is complex; the abrupt Moho uplift relative to the Ordos block and the intrusion of high-speed material of the upper mantle into the lower crust are the deep tectonic background of occurrence of strong earthquakes in the area.

**Keywords** Weihe fault depression belt, Crust structure, Qinling fold belt, Ordos block

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