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大兴安岭西坡德尔布干断裂地球物理特征与构造属性

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Geophysical features and tectonic attribute of the Derbugan fault in the western slope of Da Hinggan Ling mountains

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摘要

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摘要 对1:250万重力异常向上延拓不同高度并分别计算135°方向水平导数, 德尔布干断裂表现为北东向延伸的重力场分界线, 采用基于DCT法欧拉反褶积对1:10万高精度重磁数据向上延拓0~20 km追踪断裂轨迹, 并进行1:100万大地电磁测深反演和海拉尔盆地地震剖面解释, 识别出德尔布干断裂具有向南东倾斜, 切割深度至下地壳的特征. 结合实测地质剖面 and 显微构造研究, 认为德尔布干断裂的构造属性不是地块之间和不同时期造山带之间的拼接带, 而是在晚侏罗世-早白垩世切割至下地壳北东向延伸的大型伸展变形带, 也是晚中生代隆起区与根河-拉不大大林-海拉尔盆地之间的控盆边界断裂带.

关键词: 德尔布干断裂 重磁异常 大地电磁测深 反射地震 构造属性

Abstract: The upward continuation of 1:2500000 gravity anomalies was calculated for different heights and direction of 135° horizontal derivatives respectively, the Derbugan fault showed as a gravity field demarcation line of NE extension. Through calculating the 0~20 km upward continuation by the Euler deconvolution, based on the method of DCT (Discrete Cosine Transform), of the 1:100000 high-precision gravity and magnetic data to track the fault trajectory, and combining 1:1000000 magnetotelluric sounding inversion and the geological interpretation of seismic profiles of Hailar basin, we identified Derbugan fault with the characteristics of southeast direction dip and cutting lower crust. Combining the study of the measured geological section and the microstructure, it is considered that tectonic attribute of the Derbugan fault is not the matching belt between massif and massif, orogenic belt and orogenic belt in different periods, but it is a NE extending, large-scale extensional deformation zone cutting lower crust in Late Jurassic-Early Cretaceous. And it is also the boundary fault zone of control basin between the uplift region and the basin in Genhe, Labudalin and Hailar in Late Mesozoic era.

Keywords: Derbugan fault Gravity and magnetic anomalies Magnetotelluric sounding Reflection seismic Tectonic attribute

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