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大兴安岭西北部中生代盆地群基底电性分带特征研究

刘财, 杨宝骏, 王兆国, 刘洋, 王典, 冯珏, 鹿琪, 王世煜*

吉林大学地球探测科学与技术学院, 长春 130026

A research on the geoelectrical banding characteristics of the bottom of the Mesozoic-Cenozoic basin groups in the Northwest of the Da Hinggan Ling fault

LIU Cai, YANG Bao-Jun, WANG Zhao-Guo, LIU Yang, WANG Dian, FENG Xuan, LU Qi, WANG Shi-Yu*

Geo-Exploration Science and Technology Institute, Jilin University, Changchun 130026, China

摘要

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摘要 位于大兴安岭西北部的中生代盆地群(海拉尔、根河、漠河),其构造受到大兴安岭断裂、德尔布干断裂的控制,西北方向的蒙古—鄂霍茨克缝合带、南部西拉木伦河—延吉缝合带甚至更远的西太平洋板块运动、印度板块运动以及黑龙江中西部微板块间拼合等区域构造应力场叠加作用在该盆地群基底产生了复杂的深部构造特征.本文利用沿盆地群实施的4条(1000余公里、94个测点)MT剖面处理解释的地电学结构,得到盆地群基底电性结构沿北西—南东方向分带的特征.引入物理量“低阻化作用”借以描述盆地基底物性的变化.综合分析表明,盆地群基底电性结构因受到软流圈热物质作用可能在继续演化.

关键词: 大兴安岭西北部盆地群 区域构造应力场 大地电磁(MT)剖面 基底电性结构 低阻化作用

Abstract: The structures of the Mesozoic-Cenozoic basin groups (Hailar basin, Genhe basin, Mohe basin) lying in the Northwest of the Da Hinggan Ling fault are controlled by the Da Hinggan Ling fault and the Derbugan fault, and the regional tectonic stress field of the Mongol-Okhotsk suture zone in the Northwest of the basin groups, the Xilamulunhe-Yanji suture zone in their southern part, even the movements of the western Pacific plate and the Indian plate far away from the basins and the micro-plates collage zones in the middle and west of Heilongjiang province make a superimposed effect to the bottom of the basin groups, both of which produce the complex deep structure features. Using the geoelectrical structure of the four MT sections (about 1000 km, 94 survey points) carried out along the basin groups in this paper, the banding characteristic of geoelectrical structure of the bottom of the basin groups from Northwest to Southeast is obtained. "The effect of the low electrical resistance" is introduced to describe the change of the physical feature of the basin bottom. The comprehensive analysis shows that the electrical structure of the bottom of the basin groups perhaps continue to evolve by the effect of the asthenosphere hot material.

Keywords: Basin groups in the northwest of the Da Hinggan Ling Regional tectonic stress field Magnetotelluric(MT) section Geoelectrical structure of the bottom Effect of low electrical resistance

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Corresponding Authors: 杨宝骏,男,1943年生,教授,博士生导师,主要从事盆地构造、信号分析与处理、非线性波等领域研究.

E-mail: yangbaojun@jlu.edu.cn Email: yangbaojun@jlu.edu.cn

About author: 刘财,男,1963年生,教授,博士生导师,主要从事地震波场正反演理论、综合地球物理等研究. E-

mail: liucaij@jlu.edu.cn

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