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摘要:

湖南东坡矿田位于南岭成矿带的西段,构造位置上处于扬子板块与华夏板块的对接地带,矿田内以千里山岩体为中心,发育一系列与燕山期花岗质岩浆作用有关的超大型、大型和中型钨锡铋多金属矿床。金船塘锡铋矿床是东坡矿田内一个以锡铋为主的大型矽卡岩型多金属矿床。本文对该矿床的矽卡岩型矿石中的辉钼矿进行了Re-Os同位素测年。结果显示,辉钼矿Re-Os同位素模式年龄范围为 $157.2 \pm 2.8$ Ma至 $162.4 \pm 2.4$ Ma,加权平均值为 $159.8 \pm 2.9$ Ma,对应的Re-Os等时线年龄为 $158.8 \pm 6.6$ Ma;这些年龄数据与柿竹园矿床辉钼矿的Re-Os等时线年龄( $151.0 \pm 3.5$ Ma)在误差范围内基本一致,亦与区内千里山岩体锆石U-Pb年龄( $152 \pm 2$ Ma)接近,指示金船塘Sn-Bi矿床与区内花岗岩具有密切的时间和成因关系。结合区域上已有的研究成果,包括金船塘矿床在内的东坡矿田的成岩成矿作用主要集中在 $149 \sim 161$ Ma,与南岭地区大规模的钨锡多金属成矿作用时限( $150 \sim 160$ Ma)一致;另外,区域上的研究表明,幔源物质广泛参与了湘南钨锡矿集区晚中生代的成岩成矿作用,指示该区中-晚侏罗世爆发式的成岩成矿作用可能是区域地壳拉张-岩石圈伸展减薄背景下,强烈的壳幔相互作用的结果。

英文摘要:

The Dongpo ore field is in the western part of the Nanling polymetallic metallogenic belt, which is located in the intersection between Yangtze block and Cathaysian block. There are a series of large-and medium-sized W-Sn-Mo-Bi polymetallic deposits distributed around the Qianlishan granite in the Dongpo ore field. The Jinchuantang deposit is a large-sized skarn-type tin-bismuth deposit in the Dongpo ore field. Direct Re-Os dating on molybdenites collected from the skarn ore in the Jinchuantang deposit have been carried out, in order to further restrict the age of mineralization. The results show that Re-Os model ages range from  $157.2 \pm 2.8$ Ma to  $162.4 \pm 2.4$ Ma, with an average of  $159.8 \pm 2.9$ Ma, and give an isochron age of  $158.8 \pm 6.6$ Ma. Combined with the Re-Os isochron age ( $151.0 \pm 3.5$ Ma) of Shizhuyuan deposit and zircon SHRIMP U-Pb ages ( $152 \pm 2$ Ma) of the Qianlishan granite, it is suggested that the mineralization of the Jinchuantang Sn-Bi deposit is temporally and genetically related to the granite in this area. Based on previous studies, petrogenesis and metallogenesis of the Dongpo ore field, including the Jinchuantang deposit, mainly occurred  $149 \sim 161$ Ma, which is similar to the large-scale tungsten-tin polymetallic mineralization ( $150 \sim 160$ Ma) in the Nanling region. Coupled with previous studies in this region, it is suggested that mantle components were extensively involved in the petrogenetic and metallogenetic processes of the Mesozoic W-Sn polymetallic ore district, southern Hunan Province, indicating that the Middle-Late Jurassic explosive mineralization of this region is probably as results of crust-mantle interactions under a geodynamic setting of the lithospheric thinning and extension.

关键词: [Re-Os同位素](#) [辉钼矿](#) [锡铋矿床](#) [金船塘](#) [湖南](#)

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