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西藏冈底斯矿带南缘矽卡岩型铜矿床含矿岩体锆石U-Pb年龄及意义

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摘要:

西藏冈底斯矿带发育大量斑岩铜钼矿床及铜铅锌多金属矿床, 形成斑岩铜矿带及多金属矿带。过去的工作表明, 冈底斯带南部矿床同位素年龄多小于30Ma, 形成于碰撞期后伸展环境。本文测定了冈底斯矿带南缘克鲁-冲木达矽卡岩型铜(金、钼)矿集区桑布加拉矽卡岩型铜(金)矿化岩体锆石LA-ICP-MS U-Pb年龄及锆石 $Ce^{4+}/Ce^{3+}$ 比值。矿化岩体锆石U-Pb年龄:  $92.1 \pm 0.6Ma$ , MSWD=1.0, 锆石 $Ce^{4+}/Ce^{3+}$ 比值在90~562之间, 平均值为287。锆石 $Ce^{4+}/Ce^{3+}$ 比值和玉龙矿带含矿岩体锆石的比值基本一致, 显示矽卡岩矿化岩体岩浆氧逸度较高。印度板块与欧亚板块碰撞时间在65~45Ma之间, 桑布加拉矽卡岩型铜矿化岩体锆石U-Pb年龄表明冈底斯带不但发育碰撞期后大规模成矿作用, 也发育与洋壳俯冲构造岩浆事件有关的成矿作用。这为冈底斯矿带洋壳俯冲有关矿床的寻找提供了依据。

英文摘要:

A lot of porphyry Cu-Mo deposits and Cu-Pb-Zn polymetal ore deposits have been found in the southern Gangdese, which form a porphyry copper ore belt and polymetal ore belt in the southern Gangdese, respectively. Former work suggests that the deposits found in the southern Gangdese were formed in post collision environment with isotope age less than 30Ma. Here we report a relatively older zircon LA-ICP-MS U-Pb age for the Sangbujiala intrusion genetically associated with skarn Cu (Au) mineralization in the southern margin of the Gangdese terrain. The Sangbulajia intrusion has zircon LA-ICP-MS U-Pb age of  $92.1 \pm 0.6Ma$  with MSWD=1.0. The  $Ce^{4+}/Ce^{3+}$  ratios of the zircon grains vary from 90 to 562, with an average value of 287, which is similar to those of porphyries associated with Cu-Mo mineralization in the Yulong ore belt, suggesting that the intrusive melt is characterized by relatively high oxygen fugacity. The collision of India with Asia occurred during 65~45Ma. Our new zircon age of the Sangbujiala intrusion genetically associated with Cu (Au) mineralization suggests that the southern Gangdese has undergone mineralization events not only associated with postcollision environment but also with subduction of the Neotethyan ocean crust. The new zircon age for the Sangbujiala intrusion reveals that the southern Gangdese could be next exploring target for mineralization related to oceanic crust subduction.

关键词: [西藏](#) [冈底斯](#) [矽卡岩型铜矿床](#) [洋壳俯冲](#)

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