朱赖民,张国伟,李犇,郭波,康磊,吕拾零. 2009. 陕西省马鞍桥金矿床地质特征、同位素地球化学与矿床成因. 岩石学报, 25(2): 431-443

陕西省马鞍桥金矿床地质特征、同位素地球化学与矿床成因

作者	单位
朱赖民	西北大学地质系,大陆动力学国家重点实验室，西安 710069
张国伟	西北大学地质系,大陆动力学国家重点实验室，西安 710069
李犇	西北大学地质系,大陆动力学国家重点实验室，西安 710069
郭波	西北大学地质系,大陆动力学国家重点实验室，西安 710069
康磊	西北大学地质系,大陆动力学国家重点实验室，西安 710069
吕拾零	西北大学地质系,大陆动力学国家重点实验室，西安 710069

基金项目：国家重大基础研究项目（2006CB403502）、国家自然科学基金项目(40872071)、南京大学内生成矿作用国家重点实验室项目（14-08-1）、陕西省教育厅基金项目（07JK414）和国家基础科学人才培养基金项目（J0830519）

摘要：

马鞍桥金矿床产于西秦岭造山带商丹断裂带南缘的E-W向脆-韧性剪切带中，矿体定位受剪切带控制并集中于变形强烈的部位，赋矿围岩为泥盆系浅变质沉积建造。出露于矿区的香沟花岗斑岩脉发生蚀变和金矿化，但未达工业品位。矿化岩石和矿石的铅同位素比值与地层接近，而与香沟花岗岩相异，暗示矿石铅不可能来自花岗岩。碳-氧同位素组成特征显示，成矿流体来源于碳酸盐地层或相似岩石建造的变质或改造脱水作用；从成矿早阶段经主阶段到晚阶段，成矿流体的$\delta^{18}O$及δD值逐渐降低，指示成矿流体从早阶段的变质热液或地层改造热液向晚阶段的大气降水热液演化。马鞍桥金矿分布于大陆内部造山带中，成矿作用与始于印支晚期的陆内造山作用有关，后者以陆内俯冲、推覆叠置和陆壳变质变形等为特点。马鞍桥金矿床地质特征和同位素地球化学组成与阳山超大型金矿床相似，应为类卡林型金矿床或属介于造山型和卡林型之间的过渡类型金矿床。

英文摘要：

The Maanqiao gold deposit occurs in an E-trending brittle-ductile shear zone narrowly south of the Shan-Dan geo suture in the western Qinlin orogen. Orebodies of the deposit are spatially controlled by the shear zone and mostly o ccur at strongly-deformed positions, hosted in the low-grade metamorphosed Devonian sediments. The Xianggou mo nzonitic granite-porphyry dyke outcropped in the Maanqiao mining area was altered and gold mineralized, but is not of industrial significance. The lead isotope ratios of the ores and altered rocks are similar, but different from those of t he Xianggou monzonitic granite-porphyry, indicating that ore-forming lead did not come from the monzonitic granite-p orphyry. The carbon and oxygen isotopic characteristics show that ore-fluids were mainly sourced from metamorphic a nd/or reworking devolatilization of the strata or/and similar lithologies which comprise carbonaceous phyllite or marbl e. The $\delta^{18}O$ and δD values of the ore-forming fluids decrease gradually from early, through main to late stages, sugge sting that the ore-forming fluid-system evolved from early metamorphic or formation-connatural to late meteoric wate r. The Maanqiao gold deposit, located in an intra-continental collisional orogenic belt, is genetically related to the intr a-continental collisional orogenesis characterized by duplicated thrusts, crustal deformation and metamorphism, and i ntra-continental subductions since Late Indosinian era. The geological features and the isotopic compositions of the Maanqiao gold deposit are similar to those of the Yangshan giant gold deposit. Hence the Maanqiao gold deposit can be genetically attributed to the Carlin-like gold class or to the transition between Carlin- and organic-types.

关键词：马鞍桥金矿床 地质特征 同位素地球化学 矿床成因 秦岭造山带

投稿时间： 2008-10-03 最后修改时间： 2008-12-20

HTML 查看全文 查看/发表评论 下载PDF阅读器

本系统由北京勤云科技发展有限公司设计