

山西代县滩上钼多金属矿床辉钼矿Re-Os同位素测年及其地质意义

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中文摘要:山西代县滩上钼多金属矿床位于华北陆台北缘五台山—恒山多金属成矿区,分布于滩上复式杂岩体与滹沱群四集庄组含砾变质长石石英岩的接触带及附近岩石裂隙中,其中辉钼矿呈细脉状、团块状、星点状。在对区内钼多金属矿床地质特征研究的基础上,选取7件辉钼矿样品进行Re-Os同位素测年。获得的模式年龄为 $(129.3 \pm 2.0) \sim (132.3 \pm 1.8)$ Ma, 加权平均年龄为 (131.09 ± 0.98) Ma, MSWD=1.2, 等时线年龄为 (131.60 ± 0.72) Ma, MSWD=1.08, 187Os初始比值为 (-0.041 ± 0.036) ng/g。该等时线年龄代表了辉钼矿的形成时间,可以作为该矿床的形成年龄,即钼成矿作用发生于早白垩世。与华北陆台北缘五台山—恒山多金属成矿区内多个矿床一样,该矿床推测是燕山期大规模构造-岩浆-流体活动的产物,与中生代以来华北克拉通减薄事件有关。

中文关键词: [Re-Os同位素测年](#) [辉钼矿](#) [山西代县](#)

Re-Os Isotopic Dating of Molybdenite from the Tanshang Mo-polymetallic Deposit in Daixian County, Shanxi Province, and Its Geological Significance

Abstract:The Tanshang molybdenium-polymetallic deposit in Daixian County of Shanxi Province is one of the most typical ore deposits in Wutai Mountain-Hengshan Mountain polymetallic ore-forming area within the northern part of North China Craton. The deposit is situated in the contact zone and adjacent rock fractures between the Tanshang complex and Hutuo Group metamorphic gravel-bearing meta-arkose, with the lumpy, veinlet and dotted molybdenites as the ore minerals. On the basis of an investigation of the geological features of the deposit, Re-Os isotopic dating was conducted for seven representative molybdenite samples, which yielded model ages of (129.3 ± 2.0) to (132.3 ± 1.8) Ma, weighted mean age of (131.09 ± 0.98) Ma, MSWD=1.2, initial 187Os of (-0.041 ± 0.036) ng/g and an isochron age of (131.60 ± 0.72) Ma, MSWD=1.08, respectively. Thus the isochron age is interpreted as the formation time of the molybdenite, i.e., Mo-polymetallic mineralization occurred in Early Cretaceous. Similar to other Mo deposits in the Wutai Mountain, Hengshan Mountain of the northern part of North China Craton, the Tanshang molybdenium-polymetallic deposit was closely associated with the Yanshanian large-scale tectonic-magmatic activity and related to the thinning of the North China Craton since Mesozoic.


keywords:[Re-Os isotopic dating](#); [molybdenite](#); [Daixian County](#) [Shanxi Province](#)

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