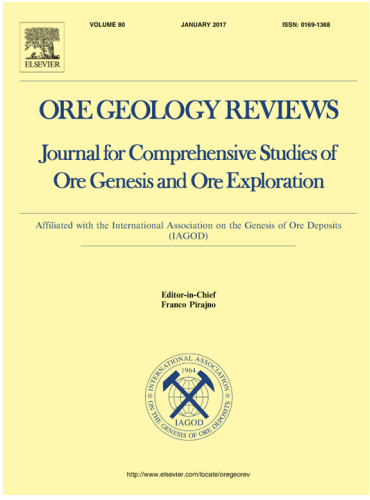

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Fluid Inclusions and Ore Precipitation Mechanism in the Giant Xikuangshan Mesothermal Antimony Deposit, South China: Conventional and Infrared Microthermometric Constraints

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Abstract

The giant Xikuangshan antimony deposit, located in the Xiangzhong (central Hunan) Basin, South China, is the largest antimony deposit throughout the world. Ore mineral is predominantly stibnite, gangue minerals consist of quartz, calcite, fluorite and barite. The mineral assemblages for ores include early-stage quartz-stibnite, fluorite-quartz-stibnite and barite-quartz-stibnite, and late-stage calcite-stibnite. In spite of numerous researches on the Xikuangshan deposit during the past several decades, the signatures of ore-forming fluid and its ore precipitation mechanism are poorly constrained. In order to characterize the fluids responsible for antimony mineralization, and ascertain the precipitation mechanism for ores in the Xikuangshan ore district, conventional and infrared microthermometric measurements had been performed in this study on fluid inclusions hosted in those transparency minerals (quartz, fluorite and barite) and opaque stibnite,

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