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Prognosticating Target Location of Porphyry Copper Mineral Concentration and Ore Field in Gandese Mountains, Tibet

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Abstract

The research of porphyry copper belt in Gangdese is a hotspot at present and prognosticating target location of porphyry copper deposit is a key problem in mineral exploration. According as geology information, We studied the geochemical prediction methods of porphyry copper mineral concentration and ore field using regional geochemical data. The research shows that the targets of porphyry copper mineral concentration could be predicted by index of SiO_2 , K_2O and Na_2O . The targets of porphyry copper ore fields are capable of prognosticated location by indication elements. Qulong mineral concentration should be first survey target.

Key words: Gangdese; porphyry copper belt; mineral concentration; ore field; Prognosticating target location

华南晚震旦世陡山沱组有机碳同位素地球化学研究

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晚震旦世扬子地台陡山沱组地层出露较好, 沉积环境多变, 由浅水区的台地相向深水区的盆地相变化, 是最重要的成磷期之一。地层中有著名的“帽”碳酸盐岩沉积和瓮安生物群产出。本研究展示了来自以下几个剖面沉积岩的碳酸盐与之共生的有机质碳同位素组成: 台地相区的贵州瓮安剖面, 过渡相区的贵州松桃剖面和南明剖面, 盆地相区的湖南岩屋滩剖面。主要是分析和探讨该时期扬子地台的生命演化过程和环境变化的关系。从南沱组到陡山沱组, 有机碳同位素组成从-35.0‰逐渐上升。陡山沱组沉积岩无机碳同位素组成在-9.9‰和3.6‰间变化, 有机碳同位素组成在-35.6‰和-21.5‰间分布, 沿地层变化明显。重的有机和无

机碳同位素组成表明, 有机碳埋藏量增大, 此阶段生物的光合作用程度强, 生物量大(比如瓮安生物群)。扬子地台不同相区陡山沱组沉积岩出现消极的 $\delta^{13}\text{C}_{\text{carb}}$ 和 $\delta^{13}\text{C}_{\text{org}}$, 说明相应的 ^{13}C 亏损, 无机碳溶解的不断减少, 可能是由于低的初始生产力引起的。本研究展示了一个沉积模式, 认为上升洋流作用、海水的分层结构和海底热液作用等是影响陡山沱组沉积岩碳同位素组成变化的重要因素。碳同位素组成变化规律可以用于反映晚震旦世扬子地台陡山沱组沉积层序和世界同期地层全球碳循环的变化。有机碳同位素组成成为晚震旦世扬子地台不同相区地层界线划分和对比的重要工具, 为理解该时期区域或全球事件提供了信息。