

Exploration and Genesis Information Revealed from Comparative Copper Isotope Analysis of Sulfides from PCDs, IOCGs, and Mantos

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This talk shows how copper isotope compositions of chalcopyrite and pyrite can be used as a vector to mineralization as well as identify metal transport mechanisms during deposit genesis. Chalcopyrite and pyrite from PCDs (16 deposits, >150 samples) and IOCGs (8 deposits, >200 samples) display a general pattern of relatively lower values in the cores of the systems to higher values in the periphery. The starting points in the cores of the systems are different and PCDs show a larger range of values within each deposit type. In contrast, Mantos (4, ~40 samples) have significantly lower mean copper isotope values. We will explore the global and regional implications of these observations in the context of exploration and ore deposit genesis.