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Geological and geochemical prospecting models of porphyry Mo deposits in China

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Mo resources is rich in China and porphyry Mo deposits, dominantly located in East Qinling metallogenic belt and Yan-Liao metallogenic belt, is the main type of Mo deposits and the most important source of Mo ore resources. Currently, the investigations of porphyry Mo deposit mostly focused on the discussions on the geological and geochemical characteristics of typical deposits, there are fewer studies about geochemical prospecting indicators and models of metallogenic belts or entire country. The author aims to summarize geological and geochemical characteristics of typical deposits in two main metallogenic belts (East Qinling metallogenic belt and Yan-Liao metallogenic belt) to build prospecting models of porphyry Mo deposit. The results indicate that porphyry Mo deposit in China is mainly hosted in Precambrian strata and controlled by deep-seated big faults, the ore-bearing rocks are usually strong acidic rocks with high silicon, high alkalinity and high potassium. Regional geochemistry demonstrate that most of the porphyry Mo deposits locate in the geochemical province with low Mo background and the association of ore-forming elements is
Mo、Bi、W、Sn、Cu、Pb、Zn、Ag、As、Sb、Cd、Au、Mn, the elemental distribution exists horizontal zoning, Mo、Bi、W、Sn are usually located in the centre of ore body and other elements occur at the edge of ore body. These characteristics are of great significance for the geological exploration of porphyry Mo deposits in Chinese.