Application of geoelectrochemical technique to Luoboling porphyry copper-molybdenum deposit in Fujian province, China

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Abstract: Geoelectrochemical technique was undertaken over known a blind porphyry Cu-Mo deposit and assessed the utility of the technique for identifying such deposits in the Luoboling Basin to the west of Zijinshan Cu-Au mine in Fujian province, southeastern China. The method used in the research is a low voltage dipole extraction device which is capable of collecting larger volumes of mobilized metal ions on coated positive and negative electrodes placed in the two holes between 100cm at about 20-40cm depth in the soil, connected with 9V DC battery, poured the 15% concentrated nitric acid, and backfilled the soil and left for about 48h. The electrode units were unearthed, the absorbent coatings were scaled out and digested for analysising Cu, Mo,Au, and W by ICP-MS. The results show the clear geoelectrochemical anomalies of Cu, Mo, Au, and W were detected over the Cu-Mo ore bodies in the granite porphyry body on the profile. The studies we carried out demonstrated that the geoelectrochemical technique can be applied in search for concealed porphyry Cu-Mo deposits.

Key words: Geoelectrochemical technique, Porphyry copper-molybdenum deposit, Luoboling Basin, Fujian province