

## **Control of interior sources on time-bound characteristics of mineralization in the southwest Yangtze Massif**

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The mineralization of Au, Ag, Hg, Sb, As, Sn, Pb, Zn etc. strata-bound ore deposits in the southwest Yangtze Massif is concentrated in the Cambrian, Devonian, Upper Permian to Lower Triassic and rarely in the other horizons, i.e. it shows of the time-bound features. The metallogenic elements are highly enriched in these host strata and the degrees of enrichment and deficiency in the other horizons are very limited. The isotope researches indicate that the metallogenic elements in the ore deposits mainly came from the host strata. The studies of trace elements of blackshale and mudstone in the host strata show lower Th/Sc, Th/U ratios, higher Cr, Ni, Co etc. mafic element contents and the chondrite-normalized REE patterns quite different from the common mudstone and shales with relatively steep HREE slopes (relatively high  $(\text{Tb/Yb})_N$  ratios, between 1.48 and 2) and no or slightly negative Eu anomalies (high  $\text{Eu/Eu}^*$  ratios, between 0.79 and 0.89). The NASC-normalized REE patterns of the mudstone in the host strata are very similar to those of the hydrothermal siliceous rocks and to those of the tuffs and basalt except the higher total REE contents. All of these geochemical characteristics are suggestive of the existence of interior sources pouring into basin when the host strata were deposited. The research of basin evolution confirmed that the host strata were deposited in the pulling-apart periods. It can be realized from these facts that it is only the particular horizons corresponding to the particular periods of the earth's evolution that can be the significant source beds because only in these unusual horizons can there be highly enriched metallogenic elements.