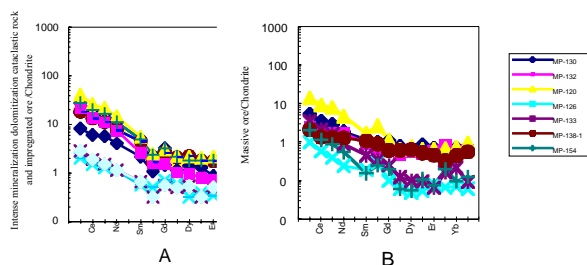


## Features of REE Geochemistry for the NE-trending Fault Tectonics and the Ore-finding Signification in the Maoping Zn-Pb Deposit, Yunnan, China

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The Maoping Zn-Pb deposit is located in the southern end of Yangzi Massif, and occurs in Sichuan-Yunnan-Guizhou carbonate-hosted Pb-Zn Ore-forming Zone. It is a middle-type deposit, which lies in Northeast Yunnan Zn-Pb metallogenic district. On the basis of study on the geological features, the NE-trending faults are considered as the mainly ore-controlling faults, exemplified as their tectonics in the Zaige Formation of Devonian series, which distributes the NO.1 orebody of Maoping Pb-Zn deposit. The tectonics is classified into the four types. They are graded into -200 mesh under a contamination-free environment and are prepared as the specimens. The analysis of REE is by ICP-MS method. The data are normalized by Chondrite. The REE distribution models of fault tectonics have been classified as four types: "the depleted Eu --wide "V" type; "the depleted Eu--downward lean type; " the depleted Eu--plate type; " the enrichment Eu--plate type. From the model " to model ", they are representative of the patens of the non-mineralization rock to ore. From non-mineralization dolomitization cataclastic rock to massive ore,  $\Sigma$ REE is decreasing, but  $\delta$ Eu is increasing. 1) In the four models, the fractionation of LREE and HREE has some resemblance, which shows the Pb-Zn ore-forming fluids having the succession from the wall rock. 2) A and B Patens provide some information for orefield and the same variety deposits, which is the ore-finding sign of REE geochemical in this area.



### References

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## Sedimentary environment and silver(antimony) mineralization in the shale-hosted silver-antimony deposit at Songxi, South China

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The organic matter associated with silver(antimony) mineralization in the shale-hosted silver-antimony deposit at Songxi, which hosts the Lower Jurassic Songling Formation in the northeastern Guangdong Province of South China, has been studied by using organic petrography, elemental analyses, vitrinite reflectance and gas chromatograms techniques. These results show that the Lower Jurassic Songling Formation is an organic-rich black shale sedimentary formation. The organic matter of host rocks in the Songling Formation consists amorphous graphite, marine vitrinite, and solid bitumen. The contents of the total organic carbon (TOC), silver and antimony of 57 samples from wall rocks and mineralized rocks of the Songxi ore deposit show some significant characteristics: (1) The TOC content of the carbonaceous shale is the highest in all various lithologic rocks, its average value of all samples analyzed being 1.02 percent. The TOC content of 12 mineralized samples ranges from 0.09 percent up to 5.0 percent, and averages at 1.09 percent. (2) The silver content of wall rocks mainly ranges between 0.02 ppm and 5.94 ppm, average values varying between 0.26 ppm and 1.06 ppm depending on lithology. The antimony content of the wall rocks mainly varies between 11.13 ppm and 733.5 ppm, average values ranging from 29.02 ppm to 133.4 ppm. (3) The correlation between total organic carbon (TOC) and silver and antimony of 27 samples analyzed in various rocks of the drill hole ZK609 shows a general positive correlation.

Gas chromatograms of the saturated hydrocarbons in unmineralized and mineralized samples of the Songxi deposit show that these rocks have a higher concentration relative to the adjacent n-alkanes, and the pristane to phytance ratio is approximately 1. The unmineralized sample was deposited in less strongly reducing condition, and the mineralized sample was deposited under extremely reducing conditions. Data of the marine vitrinite reflectance calculated by the solid bitumen reflectance are in the range  $1.75 < R_{vo} < 3.02(\%)$ , most of which are above 2.0 percent. The silver contents analyzed by the electron microprobe within two types of organic matter (marine vitrinite and solid bitumen), vary in the range of 100-350ppm, which are generally several times higher than the tenor of silver for industrial exploitation of the Songxi deposit. The quantitative assessment in this study suggests that the distribution of solid bitumen in the ore district may be considered as an ore indication for mineral exploration.