

# Study on the Geochemistry of Meta-volcanic Rocks from the Longbohe Cu Deposit, Yunnan Province, China

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The Longbohe Cu deposit, which is situated in the southern of the Honghe ore-forming zone, Yunnan Province, China, is a typical orefield where volcanic rocks are wide distribution and related to Cu mineralization in time and space. The volcanic rocks in the orefield, which have experienced the alteration or regional metamorphism of different degree, can be classified into three types including meta-andesite, meta-subvolcanic rock and meta-basic volcanic rock in accordance with the mineral assemblage.

Three types of rocks in the orefield are relatively rich in Na and main samples plot in the area of alkali basalt in the geochemical classification diagram. With the exception of very few elements, three types of rocks are similar in the content of trace elements. In comparison with the basalts of different tectonic setting, the meta-volcanic rocks in the orefield are rich in HFSE (such as Th, Nb etc.) and LILE (such as Sr, Ba etc.) and their primary mantle-normalized trace element patterns appear obvious Th and Nb positive anomaly and Sr and Ba negative anomaly (primary mantle after Ref [1]). Three types of rocks are similar in the REE content range and the chondrite-normalized REE patterns with the exception of Eu anomaly (chondrite after Ref [2]).

Various lines of evidence show that three types of volcanic rocks in the orefield are same as source and different stage magmatic evolution, their original magma is a product of partial melting of the metasomatic-rich mantle and tectonic setting is extension in the continent plate, the crystallization differentiation play an important role in the process of magmatic evolution.

## References

- [1] Wood, D. A., Joron, J. L. and Treuil, M. (1979) *Earth Planet Sci Lett* **45**: 326-336
- [2] Boynton, W. V. (1984) *Dev Geochem* **2**: 63-114