

# Discussion on the Source of Ore-Forming Fluids in Duobuza Deposit, Tibet, China: From Helium-Argon and Carbon-Hydrogen-Oxygen Isotope Evidence

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**Abstract:** In recent years, Tibet geological prospecting work has made a major breakthrough; Duobuza copper deposit was found. There are three different views on the origin of the ore-forming fluid, which also reflects the complexity of Duobuza copper deposit. Noble gas isotope has long been used for studies on tracing meteorite, oceanic lithosphere mantle evolution and so on; composition and variation of carbon, hydrogen, oxygen isotope characteristics of ore-forming fluids are commonly used in the analysis of fluid properties and sources. On this basis, study on helium and argon isotopic composition and carbon isotopic composition of ore forming fluid was conducted in this paper. The formation mechanism of deposit was pointed out. The reasons for the characteristics of the mixed dye of the parent rocks with the crust and mantle were also explained. It is believed that ore-forming fluid of the deposit is mainly derived from the mantle, and the main source of the ore-forming fluid comes from deep geological processes. The formation of the deposit is related to the mantle fluid.

**Keywords:** He-Ar isotope; C-H-O isotope; ore-forming fluid; Duobuza copper deposit; Tibet