

Geochemical characteristics of the Damaya gold deposit, Sichuan province, China

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Damaya gold deposit is a typical quartz vein - disseminated-type gold deposit in the Daduhe gold orefield, which is located in the north of the well know Sanjiang ore cluster area. Wall rocks are amphibolite with pyrite sericite quartzalteration. The altered rocks have an obvious negative Eu anomaly compared with the wall rocks in the deposit. The $\delta^{34}\text{S}$ average is 0.1‰ for pyrite and 2.3‰ for chalcopyrite. Fluid inclusion homogenization temperature are primarily 280°C-300°C; salinities are at 4-6wt% and densities vary between 0.79 and 0.99g/cm³. The source of sulfur is inferred to be the mantle, with mixing additional sulfur from the crust. CO₂ dominates in the compositions of some fluid inclusions. The date suggests that the Damaya gold deposit fit with its field setting as an orogenic deposit.

Keywords: mineralizing fluid, Daduhe gold field, Damaya gold deposit