

The geochemical characteristics of Houmachang granitoid in Suixi, China, and its significance

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The Houmachang granitoid is located in Suixi, the northern Anhui Province, China. It could be divided into two groups, diorite and granodiorite, respectively. Compared with the granodiorite, diorite has higher concentrations of FeO_T, TiO₂, MgO, CaO and P₂O₅ and lower Na₂O and K₂O contents. The Houmachang granitoid is enriched in Cr, Ni, large ion lithophile elements (Rb, Sr and Ba) and light rare earth elements (REE), and depleted in P, Ti and high field strength elements (Nb, Ta and Y). With the lower chondrite standard values of Yb and concentration of Y, the granitoid has the characteristics of adakite.

The high Mg# and Cr, Ni contents of Houmachang granitoid indicate the feature of mantle-derived magma. However, the enrichment of Sr, Ba and LREE suggests that the granitoid might be derived from the crustal melts. Combined with the other adakite in Xuzhou-Huaibei area, Houmachang granitoid might be derived from the partial melting of the delaminated continental lower crust, with the contamination of the mantle melt. This magmatism was in response to the subduction of Yangtze Craton beneath the North China Craton.

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