

Study on sulfur source of acid rain using sulfur isotopic trace in Jiangxi province, China

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The acid rain is sulfuric acid type acid rain in Jiangxi province, it is an important means that using sulfur isotopic trace sulfur source of acid rain.

We analyzed the sulfur isotopic composition of rainwater from Nanchang City in this paper (Fig. 1). The results indicated that the sulfur isotopic composition possesses a seasonal variation trend, isotopically lighter in summer and heavier in winter and spring. The sources of sulfur in rainwater include bio-organic sulfur, anthropogenic sulfur and sulfur from the sea. In summer, the sulfur in rainwater comes mainly from bio-organic sulfur. In winter and spring, the sulfur in rainwater dominantly originates from anthropogenic sulfur. The sulfur in rainwater from the sea may be very small in percentage.

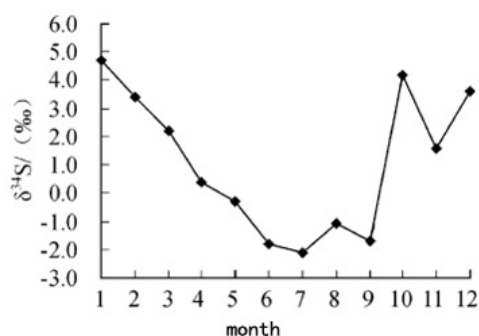


Figure 1: Seasonal variations in sulfur isotopic composition of the precipitation.

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The petrogenesis of mafic-ultramafic intrusions, in the Huangshan region, Eastern Tianshan, Xinjiang, China

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A number of small mafic-ultramafic intrusions are distributed in the Huangshan region, Eastern Tianshan, Xinjiang, China. Some of them host large or medium-sized Ni-Cu-(PGE) deposit, such as Huangshandong, Huangshan, Hulu. Whereas some of them only have a few copper-nickel sulphide mineralization, such as Erhongwa. Geochemistry characteristics indicate that they all may have derived from the same source, and primary magma is Mg-rich mafic magmas. Huangshandong, Huangshan and Hulu intrusions have assimilated by crustal material, It is estimated from modeling calculation of ($^{143}\text{Nd}/^{144}\text{Nd}$)_i and La/Sm that the degree of crustal contamination is 5%, 5-10% upper-intermediate continental crust for Huangshandong and Hulu intrusion, respectively. Contamination for Huangshan intrusion is the intermediate-lower crust. While Erhongwa intrusion did not visible contamination. Nb, Sr, Pb isotope and trace element geochemistry characters indicate the magma source is composed of wedge matasomised by subducting slab and asthenosphere components. These mafic-ultramafic intrusions are the result of the lithospheric delamination at the root and the upwelling of asthenosphere components.

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