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## Chemostratigraphic consideration of the Ediacaran sedimentary rock in northwestern Hunan province, South China

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In the Ediacaran period (635 Ma ~ 542 Ma), two glacial events, the Marinoan and the Gaskiers glaciations have been widely recognized. On the Yangtze block of South China, no glacial diamictite corresponding to the Gaskiers glaciation has been known, although those of the Marinoan glaciation called the Nantuo Formation are exposed in many places. Recognition of the Gaskiers glaciation has been mainly based on chemostratigraphy. Zhu et al. (2007) suspected the possible horizon for the Gaskiers glaciation from a negative shift of inorganic carbon isotope ratio and the increased fossil occurrence in the Doushantuo Formation. Recently, Sawaki et al. (2010) attempted the identification of Gaskiers glaciation in the Yangtze block with high-resolution strontium isotopic ratio. In this study, we tried the chemostratigraphic correlation in relation to the Gaskiers glaciation with strontium isotopic ratio and inorganic carbon ratio at Fengtan section and Yangjiaping section, northwestern Hunan province.

Fengtan section was in a basinal environment of the Yangtze block (Jiang et al., 2007) and sedimentary rocks deposited after the Marinoan glaciation is continuously exposed. This section is about 100 m thick and divided into the Marinoan diamictite of the Nantuo Formation, carbonate-shale sequence of the Doushantuo Formation, and the black chert of the Liuchapo Formation in ascending order. On the other hand, Yangjiaping section was in a shallow environment (Dobrzinski and Bahlburg, 2007) and exposes the Ediacaran sediments of 470 m thick, which consist of the Nantuo diamictite, carbonate-shale-phosphate sequence of the Doushantuo Formation, and the carbonate of Dengying Formation in ascending order.

In the upper part of the lower Doushantuo Formation at Fengtan section, there was distinct co-variation among the strontium isotopic ratio, inorganic carbon isotopic ratio and oxygen isotopic ratio. Here, high strontium isotopic ratio (0.711) was accompanied with the negative shifts of oxygen and inorganic carbon isotopic values. High strontium isotopic ratio (0.709) was also obtained from the upper Doushantuo Formation of Yangjiaping section. Co-variation of strontium isotopic ratio and inorganic carbon isotopic values of this part appear similar relationship with that was observed in Fengtan section.

From these results, it is possible that signature from the Gaskiers glaciation was recorded in the lower Doushantuo Formation in Fengtan section, and in the upper Doushantuo Formation in Yangjiaping section. The sedimentary rates on the Yangtze block greatly vary with depositional environments.

Keywords: Ediacaran, chemostratigraphy, glaciation, China