

Magnesium isotopic variation of Cap-dolostones from Lantian Formation at Shiyu, South China

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Neoproterozoic cap-dolostones were widely distributed over the global strata; their distinctive geochemical features could reflect the extensive sedimentary environments after the Snowball Earth. Interpretation of geochemical features is still contentious for the hypotheses of sedimentary timescale and conditions. Here we present the major ion concentration and $\delta^{26}\text{Mg}$ of the Neoproterozoic cap-dolostones in the Lantian Formation at Shiyu, the South China, to examine the geochemical features of paleo-oceanography in continental margin area during the deglaciation.

To avoid post-diagenesis after precipitation and contamination from silicate materials, hence, the sample extraction procedure was evaluated by a 15-step sequential extraction using ammonium acetate and acetic acid. Geochemical parameters of Mg/Ca, Mn/Sr, $^{87}\text{Sr}/^{86}\text{Sr}$ and $\delta^{26}\text{Mg}$ were determined to ensure the isolation of the primary signals from the cap-dolostone specimens. Matrix separation for Mg was processed using Biorad AG50W-X8 (200–400 mesh), $\delta^{26}\text{Mg}$ were measured by the multiple collectors inductively coupled plasma mass spectrometer (MC-ICP-MS, Neptune) with Aridus II desolvating system. The selected extraction fraction was performed the $\delta^{26}\text{Mg}$ determination and further to discuss the continental weathering and sedimentary changes during the deglaciation.