

## An examination of matrix effect on REE analysis of carbonate using LA-ICP-MS

# Kazuya Tanaka[1]; Yoshio Takahashi[2]; Hiroshi Shimizu[3]

[1] Earth and Planetary Sci, Hiroshima Univ; [2] Earth and Planetary Systems Sci., Hiroshima University; [3] Earth and Planetary Systems Sci., Graduate School of Sci., Hiroshima Univ.

In this study, we have examined matrix effect on rare earth element (REE) analysis of carbonate using laser ablation inductively-coupled plasma mass spectrometry (LA-ICP-MS). A UV 213 nm Nd: YAG laser system was coupled to an ICP-MS. Laser ablation was carried out in a He atmosphere to improve transport efficiency and reduce deposition of ablated particles. A small amount of N<sub>2</sub> gas was added to a carrier gas for further enhancement of signal intensities. Synthetic CaCO<sub>3</sub> standards doped with REEs as well as conventional NIST glasses (NIST SRM 610 and 612) were used as calibration standards. Carbonatite composed of pure calcite was measured as an example of carbonate samples. Degree of matrix effect was evaluated by comparison of results calibrated by the synthetic CaCO<sub>3</sub> and NIST glass standards. As a result, the differences of the results between the synthetic and NIST glasses were less than 10 % across the REE series except for 25 % of La. Possibly, matrix effect caused by elemental fractionation between carbonate and silicate glass was effectively reduced in our LA-ICP-MS setup.