Geochemical variation of Izu rear-arc volcanic rocks at drill Site U1437: Results from IODP Expedition 350

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Crustal composition (e.g. in terms of K, LREEs) in the Izu arc differs beneath the arc-front and rear-arc (e.g. [1, 2, 3]). Site U1437, drilled during IODP Expedition 350, is located in a basin between the Manji and Enpo rear-arc seamount chains, about 90 km west of Myojinsho arc-front volcano, and it is the first drill site in the Izu rear-arc. This study will present major element (measured by XRF), trace element (measured by XRF and ICP-MS) and isotope ratios such as Sr, Nd, Pb and Hf (measured by ICP-MS and TIMS) to examine the geochemical signature of the recovered material and whether it can be related to the present day rear-arc or arc-front.

The drilling reached 1806.5 mbsf. Initially we have analyzed the major and trace element compositions of the volcanic clasts (>2 cm) collected below 1600 mbsf, These clasts are possibly derived from proximal sources [4]. These show a wide range of compositions, from basalt to rhyolite (average $SiO_2 \approx 54$ wt%). The K_2O contents and Zr/Y are within the range of both the present day Izu arc-front and rear-arc. The present rear-arc type lavas are strongly enriched in LREEs, whereas the arc-front type are depleted. However, the chondrite normalized REE patterns of selected clasts are flat or show slight depletions in LREEs relative to HREEs, so it is not clear if these proximal clasts are similar to the current arc-front or rear-arc.

Analyses of additional samples and the isotope compositions of the clasts are in progress.

[1] Hochstaedter et al. (2001) *G3*, **2**(**7**):1019. [2] Ishizuka et al. (2003) *EPSL* **211**, 221-236. [3] Tamura et al. (2007) *Journal of Petrology* **48**, 1999-2031. [4] Tamura et al. (2015) Proceedings of the International Ocean Discovery Program, Expedition 350.