

Detrital Zircon and Provenance Analysis of Sedimentary Rock in the Nemuro and Urahoro Groups, Eastern Hokkaido, Northern Japan.

*Harisma Harisma¹, Hajime Naruse¹

1. Department of Geology and Mineralogy, Graduate School of Science, Kyoto University

This study aims to examine development processes of the Cretaceous to Paleogene sedimentary basins in collisional zone between the North East Japan and Kuril Arc systems on the basis of the U-Pb age distribution of detrital zircon grains in sandstones. The study area is located in the eastern part of Hokkaido Island, a part of the Nemuro Belt, which has been interpreted as a complex of deposits of forearc and foreland basins. Recently, paleomagnetic analysis suggested that the Nemuro Belt complex records collisional process associated with block rotation that driven by tectonic activity. This tectonic event is likely to cause uplifting of colliding arc crusts, and thus sediment provenance analysis in the depositional sequences of the Nemuro Belt will provide information about the exact timing and mode of the collision of two arc systems. For this purpose, this study investigated the Nemuro and Urahoro Groups that are well exposed in the Nemuro Belt complex area.

Fifty five samples of sandstones were collected from outcrops. Detrital zircons were separated using standard mineral separation techniques at the Kyoto University. Approximately 200 grains were mounted for each samples, and their U-Pb age was measured by LA-ICP-MS (*Laser Ablation Inductively Coupled Plasma Mass Spectrometry*) to estimate temporal variation of sediment provenances. The result of this study contribute to understand the tectonic history of two arc collisions through constrain the analysis of sediment provenances.

Keywords: Nemuro Group, Sandstone, Urahoro Group, U-Pb dating, Zircon

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Harisma^{1,*}, Hajime Naruse¹

¹)Department of Geology and Mineralogy, Kyoto University.
Kitashirakawa Oiwake-cho, Sakyo-ku, Kyoto 606-8502, Japan.

*Corresponding Author : harisma.75@st.kyoto-u.ac.jp

Tel.: 07042911645

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