Zircons from chromitite in Luobusa Ophiolite, Tibet

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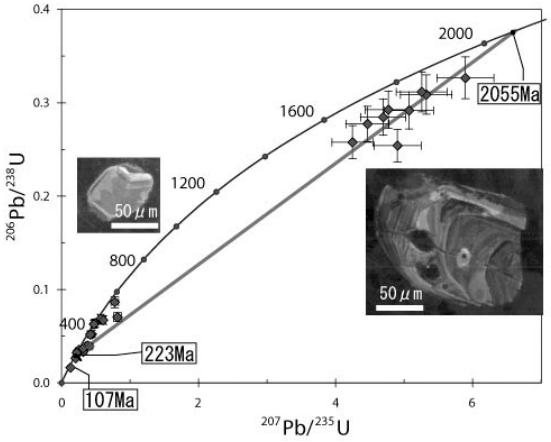
Zircons were obtained from the mineral separation of chromitites in Luobusa ophiolite. U-Pb dating of these zircons by LA-ICP-MS yielded two different ages. One group has relatively younger age 205Ma-534Ma, which plots on a concordia line. Another group has older age 1460-1822Ma, which plots off the concordia line. A discordia line obtained from the zircons with ages of 1460-1822Ma yielded two ages; igneous age about 2055Ma and metamorphic age about 268Ma, which is consistent to younger age of zircons. In additon, cathode luminescence images of these zircons indicate that the older zircons have clear oscillatory zoning, whereas the younger zircons show apparent homogeneous overgrowth, which meaning that younger zircons are metamorphic origine and older ones are igneous origine. Older zircons contain many inclusions, which are quartz, feldsper, mica, apatite, etc, while younger zircons contain less inclusions comparatively.



Luobusa ophiolite has been recognized as fragment of Tethys oceanic crust formed in Cretaceous (100-120Ma). But the age of given by zircons in chromitites is much older than that of ophiolite. So these zircons were probably originated from recycling crustal materials convected through upper mantle.

References

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Change in CNP concentrations and CN stable isotope ratios in the eutrophic lagoon sediment for 200 years

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Lake Shinji (area 79.2 km^2, volume 3.66 x 10^8 m^3, average depth 4.5 m., Fig. 1) is a eutrophic estuarine lagoon. The salinity of the surface water is about 4‰, and the bottom water is about 5‰. Saline water comes through the River Ohashi from adjacent Lake Nakaumi. Freshwater is mainly supplied through the River Hii. Bottom becomes anoxic in summer since 1983.

Historical documents describing the nature of the lagoon are available since 733 AD. However, chemical property of L. Shinji, including nutrient concentration of the lake water, is only available for these 30 years. Information on the onset of anthropogenic eutrophication as well as change in primary productivity of the lagoon caused by natural factors is critical to control anthropogenic eutrophication effectively.

Carbon (C), nitrogen (N), and phosphorus (P) concentrations as well as carbon and nitrogen stable isotope ratios ($\delta^{13}C$ and $\delta^{15}N$, respectively) are often used to detect eutrophication signals in the sedimentary records. They are also used to reconstruct natural environmental change.

This study analyzed CNP concentrations and $\delta^{13}C$ and $\delta^{15}N$ of three core sediments collected from L. Shinji and compared the results with the present surface sediments of L. Shinji and adjacent L. Nakaumi (Yamamuro, 2000) to trace both natural and anthropogenic effects on the coastal lagoon productivity for these 200 years.

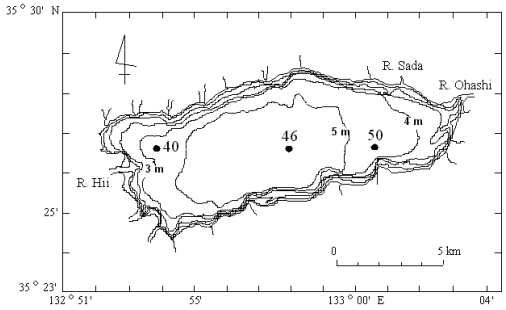

Figure 1: Location of the study site and sampling stations

References

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