

## Bulk rock compositions of geological obsidians from Central Honshu: for sourcing of archeological obsidians

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Obsidians, which were used as raw materials of artifacts in prehistoric periods, are glassy felsic volcanic rocks such as rhyolites. Since trace element compositions of rhyolitic rocks highly depend on compositions of their source materials such as the crust, they could be significantly various if basement geology is heterogeneous. Geology of Japan is characterized by the development of zonal structures with different lithology, which indicates that Japanese obsidians would have various trace element compositions. There are more than one hundred obsidian sources there. Large amounts of obsidian artifacts have been excavated and stored in museums. Therefore, Japan is one of the most suitable areas to examine prehistorical human activities through the sourcing of obsidian artifacts.

Several laboratories have independently carried out obsidian sourcing in Japan. However, there is no common database of geological obsidian compositions to compare those of archeological obsidian, which is a significant barrier to entry. The compositional database of geological obsidian therefore required for further developments of obsidian sourcing in Japan. We have been trying the construction of the compositional database of Japanese obsidians using wavelength-dispersive X-ray fluorescence (WD-XRF) spectrometer. We have been analyzing Japanese geological obsidians collected by predecessors of Meiji University. Calibration lines of WD-XRF were prepared using synthetic standard samples, which makes a combination of analytical results with those obtained using other methods, such as INAA and ICP-MS, easy. We analyzed about 80 geological obsidians collected from the central part of Japan. In this presentation, I report the analytical results. I also propose the discrimination of obsidian sources in central Japan based on trace element compositions.

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