

Isotopic characterization ($^{87}\text{Sr}/^{86}\text{Sr}$ and $^{143}\text{Nd}/^{144}\text{Nd}$) of the distal tephra (B-Tm and To-a) from the lake sediment core (Tohoku region, northern Japan)

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The absolute date of Millennium Eruption (ME) of Changbaishan Volcano, located at the border between China and North Korea, has been defined as AD 946. The tephra deposition of the ME is known as the Baegdusan-Tomakomai ash (B-Tm), and has been found at the marine and lake sediment core in northern Japan and even at Greenland ice core. This means that the tephrochronology using the widely dispersed B-Tm tephra deposits shows great promise for obtaining robust-age constraints in the late Holocene period in lacustrine and marine sediments at local and hemispheric scales. As well as the B-Tm, Towada caldera eruption (To-a) at around 900 years ago has been also found just below the B-Tm tephra deposits in the northern Japan. We obtained these tephra depositions from a sediment core in Lake Ogawara, Tohoku region, northern Japan, located in the overlap area of these Holocene distal tephra deposits. In order to apply the B-Tm tephra deposit as a precise and robust chronological key bed in the sediment core, the isotopic identifications ($^{87}\text{Sr}/^{86}\text{Sr}$ and $^{143}\text{Nd}/^{144}\text{Nd}$) of the B-Tm and To-a depositions were carried out. These isotopic values showed a large difference between those of B-Tm and To-a. Our results suggest that the isotopic identifications of volcanic depositions could be used as a tool to clarify the volcanic source of the tephra depositions.