

Correlation between acoustic record and surface sediments of Lake Nojiri, Northern part of Nagano Prefecture, Central Japan

Yusaku Aoki[1]; Yoshio Inouchi[2]

[1] Human Sciences, Waseda Univ.; [2] Human, Waseda Univ.

Reconstruction of lake levels using acoustic records has been conducted for various lakes. This study employs a new method using pinchout points of reflectors as an index of lake level. At Lake Nojiri, the thickness of surface muddy sediment correlates with water depth and surface sediment pinchouts at 16 m water depth. The thickness of surface muddy sediment is related to the depth where the sediment texture changes from muddy to sandy. In Lake Nojiri, muddy sediment changes into sandy sediment at a water depth of approximately 10 m. The water depth of pinchout depends on the resolution of the acoustic system. It may also vary depending on the shape of the lake, a result of changes in lake level which caused changes in the strength of wind-induced waves. Here, the pinchout depth was considered constant at a depth of 16 m to estimate paleo-lake levels.