

Development history of ridge-top depressions east of Kamikochi, central Japan: Correlation between Nagakabe Ridge and Tokugo Pass

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The ridges between Mt. Chogatake and Tokugo Pass in the Japanese Northern Alps, about 2,500 m above sea level (asl), have round-top and steep-slopes. Deep-seated gravitational slope deformations with topographic features such as multiple ridges and ridge-top depressions are well-developed on the NE-SW trending ridges, because the basement rocks in this area are Jurassic accretionary complexes with bedding planes generally striking NE-SW. The sediments accumulated in the ridge-top depressions were cored by using hand-auger boring system at the 2,000 m (asl) point on the Nagakabe Ridge (Point A) and at the 2,150 m (asl) point to the NE of Tokugo Pass (Point B), and the lithology of the sediments were described and the refractive index of volcanic glasses in very-fine sand fractions were measured. The sediments at Point A are mostly composed of silty to sandy mud, although those at Point B are volcani-clastics. Two cores drilled at Point A have peaks of volcanic glass contents of the K-Ah tephra (7,300 cal BP) at 67 and 90 cm depth, respectively, while the core at Point B includes K-Ah glass at all depths. The sediments at Point B are probably originated by the volcanic activities of Mt. Yakedake, which is located about 9.5 km WSW from Point B, about 2,000-5,000 years ago on the basis of their sizes and compositions. The sediment accumulation rates are calculated ca. 0.1 mm/y for the points A, and faster than 0.26 mm/y at Point B. The difference is also related to the distance and direction from Mt. Yakedake of these points.

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