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Reconstruction of processes of gravitational slope deformation around Mt. Eboshi using terrestrial cosmogenic nuclide

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A number of linear depressions are widely distributed around Mt. Eboshi, Northern Japanese Alps. This study addressed the reconstruction of formation processes of gravitational slope deformation using terrestrial cosmogenic nuclide. The rock samples for exposure dating were taken from three scarp faces, which are estimated as slip planes related to gravitational slope deformation, corresponding to three linear depressions; two depressions are located at the upper part of the slope and the other is at the middle part of the slope. The concentration of cosmogenic nuclide (^{10}Be) at the two scarp faces at the upper slope was higher than that at the middle slope. Assuming that initial nuclide concentration is zero and no shielding by seasonal snow cover, we estimated minimum exposure ages of these scarp faces. The minimum exposure ages of upper two scarps were estimated as 2.9 ka and 1.2 ka, while it was calculated to be 0.9 ka for the middle one. These data suggest that slope deformation had advanced downward in Holocene.

Keywords: Terrestrial cosmogenic nuclide, Holocene, granitic rocks, Northern Japanese Alps