

Boulder accumulation on an alluvial cone in the Kamikochi Valley, the northern Japanese Alps: its distribution, lithotypes, and emplacement processes

Natsuno Teramatsu¹, *Yoshihiko Kariya², Kuniyasu Mokudai³

1. Undergraduate, Senshu University, 2. Senshu University, 3. Tohoku Gakuin University

Accumulation of large angular blocks is seen on a steep talus-alluvial cone in the small alpine catchment (1.54 km²; 1540-2931 m ASL) in the Kamikochi Valley. We attempted to clarify distribution, dimension, and lithofacies of the rock clasts by field and laboratory approaches. We could check those parameters for a total of 95 blocks (>2 m diam.). Distribution concentration can be separated into two. One is beneath the high rockwalls in the upper part of the cone (Grp-U) and another is concentrated on the smooth surface in the lowermost part of the cone (Grp-L). Lithotypes of blocks are almost limited (97 %) to a thermally-jointed welded tuff that widely exposes in the middle to higher part of the catchment, although granite and sedimentary rocks are distributed in the lower areas. Our hypotheses that the main source areas of rock clasts are the high rock walls of welded tuff in the uppermost part of the catchment and rock blocks belonging to the Grp-U have been supplied by rockfalls and short-range rolling down related to periglacial weathering. On the other hand, rock clasts of the Grp-L have been moved and emplaced by rock slide and/or rock avalanche phenomena with high kinetic mobility, may be related to snow accumulation on the cone surface.

Keywords: Maehotakadake welded tuff bed, Rock avalanche, Rock slide, Geomorphic change in alpine environments, Cryogenic weathering

