

HGM005-P03

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## Controls on the 2004 Aresawa rockslide, Southern Japanese Alps

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The Aresawa rockslide, which carves the eastern slope of Mt. Ainodake (3189 m a.s.l.), Akaishi Range, partly collapsed ( $5-10 \times 10^5 \text{m}^3$ ) on 10-11 May 2004. This study aims to evaluate factors affecting the 2004 rockslide, based on the analyses of aerial photographs before and after the 2004 rockslide (interpretation and digital photogrammetry), and meteorological data. A tension crack appeared as a precursor of the 2004 rockslide behind the head scarp at least seven months before the collapse, resulting from downslope movement of an unstable slope. The DEM data produced by photogrammetry indicate that the 2004 rockslide had the maximum width of 250 m, relative height of 325 m (2745-3070 m a.s.l.), slope length of 350 m and mean depth of 13 m. The maximum depth reached about 40 m, where a subsidiary ridge was included. The main scarp retreated by up to 30 m. The rockslide originated from a smooth slip plane (N30E, 45S) below a tension crack, which followed geological structure. Meteorological data indicated that the 2004 rockslide occurred in the early snow-melting period in response to a large amount of water supply, originating from precipitation and snowmelt water, although the amount was smaller than that in 2003. These situations suggest that the 2004 rockslide probably happened when long-term slope deformation reached a threshold, aided by snowmelt water that further enhanced slope instability toward the collapse.

Keywords: rockslides, sackung, precursor, snowmelt, photogrammetry, Akaishi Range