

## Micro-topography and slush flow deposits found on the eastern slope of Fuji volcano

# Katsutoshi Honda[1]; Jiro Komori[2]; Kunihiko Endo[3]; Tatsuro Chiba[4]; Satoko Nakayama[5]

[1] Geosystem Sciences, Nihon Univ.; [2] Inst. Natural Sci., Nihon Univ.; [3] Geosystem Sci., Nihon Univ.; [4] Asia Air Survey; [5] none

<http://www.geo.chs.nihon-u.ac.jp/html/>

The eastern flank of Fuji volcano is characterized by the low altitude timberline, which is about 1000 meters lower than the other surrounding slopes. The last, explosive Hoei eruption in A.D. 1707 dispersed thick scoria deposits on the eastern flank. Their unstable surface and the frequent occurrence of slush flows, from rapid thaw in mainly early spring must be the major reason for such difference. However, the study regarding the mass movement and geomorphological process in this area is few.

On 15 May, 2006, small lobes composed of scoria and snow blocks were found in a shallow valley (tentatively named "Tarobou south valley") near Futatsuzuka flank volcano on the eastern slope of Fuji volcano. In this study the formation process of the micro-topography with scoria and snow blocks is described.

The studied area, from the eastern flank of the Hoei crater to Tarobou is divided into three areas by topographical features. 1. On the slope from 2100 to 2000 m asl, a number of horse-shoe shaped hollows, 1 to 25 m in diameter were distributed. The traces of washout of the surface materials occurred from their hollows. 2. In the area from 2050 to 1840 m asl, a number of levees and linear lobes covered the slope surface. 3. In the area below approximately 1800 m asl, a shallow valley without surface water extends to timberline. The headward end of the radial valley system lies from 1840 to 1780 m in altitude. Four chains of concave parts with small lobes were found out in the valley. The lowest one is about 1450 m asl.

The upper and middle parts (1 and 2) in this slope must be an initiation and transport zone, respectively. The lower part (3), maybe a deposition zone, have significant features as follows: Small lobes are composed of scoria layer, sandy mud layer, and snow blocks from top to bottom. Between snow blocks and underlying frozen layer, a scoria and scoriaceous sand layer existed, which was also frozen and included the orientated fragments of plant branches. The upper snow block overlies with angular unconformity on the lower block.

On the eastern slope of Fuji volcano flow event formed levees and linear lobes in the transport zone, which were supplied from a number of horse-shoe shaped hollows in initiation zone. In respect that high permeability of the surface of surrounding area, the matrix of the flow may consist of snow. Hence, the flow event can be considered as the slush flow. Furthermore, the flow event probably correlated with the phenomena to make the small lobes in the valley. It is considered from the thickness, facies of snow blocks and direction of oriented plant branches, that the phenomenon is originated from full depth avalanche initially. Thick scoria, derived from the slush flows and cover the snow blocks, contributes probably to prevent melting of snow after the summer.