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Landform, debris transport processes and sediment budget in the Dakesawa valley, Northern Alps, central Japan

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The Dakesawa valley is originated in the Mt. Oku-Hotakadake (3190m) and runs down into the River Azusa at the elevation of 1500m. The middle part of the valley is covered with debris which is supplied from the valley side slopes. To discuss the debris transport processes and sediment budget I investigated the characteristics of the valley floor deposits and valley floor landforms. On the middle of the valley bottom, the elevation is between 2180m and 1730m, there are thick unvegetated deposits. The average slope of middle part of the valley floor is 30%. There is no flow water on the valley bottom, because of infiltration to the deposits. From the valley side slope debris are supplied forming talus cones. Erosional scars along the valley floor show debris of the valley floor are originated from the talus cone deposits. Decrease of the size of the valley floor deposits from 3m to 0.5m shows debris transport with sorting process. Debris transported from the upper and middle part stopped entering the forest area. The lower part are filled with huge blocks of talus deposits and debris flow sediments supplied from valley side slopes. Above-mentioned debris closed the outlet of the Dakesawa valley. The upper and middle part deposits cannot reach the lower end of the Dakesawa valley, bordering on the floodplain of the River Azusa. Thus, present day sediments are being accumulated in the valley floor and few sediments flow into the River Azusa.

Keywords: landform, valley floor, debris transport process, sediment budget, Dakesawa, central Japan