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Lateral and vertical variation of modal composition in Nyukawa Pyroclastic Flow Deposit

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Nyukawa Pyroclastic Flow Deposit is erupted and outflowed from Yari-Hotaka Caldera Volcano. The caldera is elongate north to south and it was filled by Hotaka Andesite that consist mainly of pyroclastic flow deposit.

Nyukawa P.F.D. is plagioclase rich two-pyroxene dacite and almost densely welded. It include oblate pumice (fiamme) that make eutaxitic texture. Eruption age of Nyukawa Pyroclastic was estimated 1.76 ± 0.17 Ma (Harayama; 1998).

We investigate lateral and vertical variation of modal compositions (matrix/crystal) of the Nyukawa Pyroclastic Flow Deposit.

Lateral variation of them show a few decrease as far as 15km (60-50vol.%), but from 15km to 38 km in distance show obvious increase (50-80vol.%). The matrix decreasing (60-50vol.%) in flow process from source area to 15km distance, suggests that heavier and large crystal particle settled, and fine volcanic ash (= matrix) was losted in proximal area. On the other hand, matrix increasing (50-80vol.%) in distal area from 15km to 38km from the source area, indicate that crystal settling is dominant than volcanic ash losing.

Vertical variation of matrix ratio in same distance shows minor variation (less than 10%) and indicates that matrix increasing controlled mainly by flowing distance from source area.