

## Preliminary report of volcanogenic fault at the foot of Usu Volcano

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Many faults related to volcanism distributes at the flank of Usu volcano, southwestern Hokkaido. These faults are re-activated at the 1910, 1977-1982, and 2000 eruption. Several deformation events related to past volcanic activities are found at the Tokotan fault (F6), left-lateral strike slip faults at the northeastern foot of the volcano. Major deformation events are, 1) tilting of the ground surface at 1910 and underlain channel-fill lahar deposits, 2) spacing of accommodation of channel-fill lahar cut the Us-IIIa pumice fall deposits, 3) formation of a crack filled by only Us-Va pyroclastic ejecta. These suggest that Tokotan fault has been active, synchronous to the volcanic activity of the volcano after 1769

Many faults related to volcanism distributes at the flank of Usu volcano, southwestern Hokkaido. Two faults, appeared at the northern and northwestern foot of the volcano are well known. Tokotan fault is the N-S trended left-lateral strike slip faults (F4-F2-F6-F23: Katsui et al., 1985), at the northern foot of the volcano. The other is the NNE-SSW right-lateral strike-slip faults at the Sobetsu Spa, northern foot of the volcano. These faults are re-activated at the 1910 (Omori, 1913), 1977-1982 (Katsui et al., 1985), and 2000 eruption (Hirose et al., 2000). However, there are few information about their activity at other historical eruption of Usu volcano.

Several deformation events of the fault, related to past volcanic activities, are found at the cross section of Tokotan fault (F6). Pre-Us-b gravel, Us-b, Us-Va, IVa, IIIa tephra and lahar deposits of 1910 eruption are overlain by 1977-1978 pumice fall deposits. Units from Us-b to 1910 eruption deposits were deformed by faults or shows sedimentary structure controlled by fault activities. Major deformation events are, 1) tilting of the ground surface at 1910 and underlain lahar deposits, 2) spacing of accommodation of channel-fill lahar cut the Us-IIIa pumice fall deposits, and 3) formation of cracks filled by only Us-Va pyroclastic ejecta. These suggest that Tokotan fault has been active, synchronized to the volcanic activity of the volcano after 1769. From geographical analysis, the displacement of piedmont line of Toya Caldera wall is over 80 m for recent 300 years. It suggests that the faults are subdivided into AAA-class active faults.