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Surface deformation since Pliocene along the Nanshozan active fault group, in northern end of the Kitakami lowland fault

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The Nanshozan faults group is active thrust belt composed of the piedmont line (F1 fault), fault scarp across terraces (F2 fault), and the most basin-ward thrust (F3 fault). This study proposes that fault activity of the Nanshozan fault group have migrated by comparing late Quaternary slip rate and Pliocene-Pleistocene displacement. The F1 fault is the active thrust along the piedmont line, and is not active in late Quaternary. Miocene strata thrusts over the Pliocene-Pleistocene Siwa formation along the F1 fault. The F2 fault deforms fluvial terraces in the foot wall of F1 fault, about 1 kilometer away from the piedmont line. Upper Siwa formation overlies middle Siwa formation with an angular unconformity, on the hanging wall of the F2 fault. This angular unconformity is inferred to have been formed in the F2 fault activity. Fluvial terraces slip rate across the F2 fault is 0.3km/ka. The F3 fault deformed fluvial terraces in the foot wall of the F2 fault, about 2 kilometers away from piedmont line. Early Pliocene lower Siwa formation displacement on the F3 Fault is more than 150 meters. The fluvial terrace slip rate across the F3 fault is 0.05km/ka. Thus, the fluvial terrace slip rate on the F2 fault is the fastest. On the other hand, Siwa formation displacement on the F2 fault is smallest.

Keywords: tectonic landform, Siwa Formation, slip rate