

## Tectonic geomorphology and segmentation of faulting along the eastern fringe of the Ou backbone range, Northeast Jap

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In the Tohoku district, major active thrust faults distribute on foot of the Ou backbone range and the Dewa hills, respectively. The Kitakami lowland fault zone, located along the eastern fringe of the Ou backbone range is recognized as a fault reactivation of Miocene normal faults to Quaternary thrust faults. Although no historical record of large earthquake along the Kitakami fault zone, in the south end of this fault zone, the Iwate-Miyagi Nairiku earthquake (Magnitude 7.2) occurred in 2008 year and the southeastward area three earthquakes of M6 class occurred in past hundred years.

In order to provide the fundamental information regarding active faults such as their distribution and characteristic activities, we have to study tectonic geomorphology using air-photo interpretation in area, where especially no mapping of active faults but contain of important geologic faults. Then we need to study further problems and questions concerning the characteristics of active faults and the mechanism of the occurring of earthquake ; 1)how many segments divide a long active fault or how many faults group in a particular earthquake ; 2) how we can distinguish between the main fault and the subsidiary fault and how active faults on the surface related to underground seismogenic faults through the investigation of seismic reflection profiles and their geological data.

**Keywords:** Ou backbone range, tectonic geomorphology, segmentation of active zone, subsurface structure, Kitakami lowland fault zone