

Argument against the evaluation of active faults authorized by the Headquarters for Earthq. Res. Promotion (2) -Kitakami Lowland-

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The Earthquake Research Committee of the Headquarters for Earthquake Research Promotion has examined the features and rupture history of active faults in Japan. I would like to have some arguments with the committee about the evaluation of active reverse faults in Kitakami Lowland. The conclusions drawn by the committee are announced officially: the most recent faulting occurred 4,500 yBP, the amount of vertical dislocation was 4.8 m and the average recurrence interval of faulting is estimated to be 16,000-26,000 yrs.

(1) The committee made mistakes in understanding the faulted structures. Besides, although there are several active fault traces, the committee paid attention only to a single trace and concluded that there have been only two faulting events since 32,000 yBP, assuming that no faulting occurred along the other traces. Is it right way to investigate the record of reverse faulting?

(2) The amount of vertical displacement around the trenching site was about 2 m, but the authorized amount of vertical displacement is 4.8 m. In contrast with (1), the committee took account of the possible rupture along the other traces in this case. This strongly contrast to the way above mentioned. If some faulting events along the traces across which we have not yet excavated are acceptable, it is also reasonable to conclude that five faulting events with 2 m vertical displacement have occurred since about 26,000 yBP: the average recurrence interval should be 4,000-5,000 yrs.

(3) The average recurrence interval of 16,000-26,000 yrs suggests that only 20-30 % of the interval has passed since the latest event, but 4,000-5,000 yrs indicates that the next failure may occur soon. Why should the committee insist on the former? There are still many problems to solve. We ought not to jump to hasty conclusions.