

Argument against the evaluation of active faults authorized by the Headquarters for Earthq. Res. Promotion (3)-Tobetsu Fault-

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The Earthquake Research Committee (ERC), the Headquarters for Earthquake Research Promotion of Japan, published the evaluation of the Tobetsu active faults of Ishikari Plain, dated November 12 in 2003. In the evaluation, ERC inferred that the faults had ruptured probably one time in last 11,000 years and that the vertical slip per event was about 1.5m. ERC concluded the fault would generate M 7 earthquake in future. However, these recognitions are not consistent with field evidence. Three main questions are listed as follows.

1.Is the fault length 20km?

Hokkaido government (2002) shows that Tobetsu faults are divided into two segments by distribution and activity. Tobetsu fault in northern part: Tobetsu fault-a is 8km length. Tobetsu fault in southern part: Tobetsu fault-b is 9km length. ERC lumped the different activity of fault evaluated together. Why did ERC adopt 20km for fault length per event?

2.Is the mean slip velocity 0.1-0.2 m/1,000 year?

Hokkaido government (2002) shows that the vertical dislocation of flexure scarp on Terrace 4 covered Shikotsu pyroclastic flow Tephra (about 41ka), the vertical slip is estimated about 6m; on Terrace 5, the vertical slip is estimated about 2.8m; on Terrace 6 covered clay (10ka), the vertical slip is estimated about 1.2m. Hokkaido government (2002) shows the mean slip velocity is 0.1-0.15 m/1,000year. Why did ERC quoted this investigation adopt the maximum mean slip with 0.2m/1,000year?

3.Is the vertical displacement per event 1.5 meters?

The youngest morphological surface deformed by faulting is namely Terrace 6 (T6) and Terrace 6'(T6') along Tobetsu River. Based on systematic measurement of flexure scarp on T6, the vertical slip is estimated about 1.2m. Based on systematic measurement of flexure scarp on T6', the vertical slip is estimated about 0.5-0.6m. Hokkaido government (2002) shows that the vertical dislocation at last event is estimated about 0.6-0.75 m based on the vertical separation indicated by depositional surface of flood granule and sandy silts in Aoyama-Chuo trench. It also implies that the value of 1.3m indicates accumulation for last two events. Why did ERC adopt 1.5m for vertical slip per event?