

Field research on Hachioji tectonic line in Hanno, Saitama

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Introduction

The Hachioji tectonic line places between the Kanto plain in the east side and the Kanto Mountains in the west side. The linear topography is shown extending from northern Saitama prefecture to Kanagawa prefecture. The tectonic line was formed in 5 million years ago and it has been weathered. It makes the local geographical features not clear. The local place of fault is important for risk assessment against earthquakes. Especially, the Ogose fault, a part of the Hachioji tectonic line, is important because it is an active fault. However, the exact position of the fault is not known. In this study, I conducted the field survey and determined the place of Ogose fault in Hanno, Saitama prefecture.

Study Method

In this study, I estimated the fault position from geographic features and conducted field survey to determine accurate fault place.

(1) Estimating of the fault

The estimated fault is reported in the southern part of Ogose-Komahongo fault from Hanno-Gawara. A fracture zone is reported around Yaoroshi [2]. I newly estimated the position of the fault based on the geological features; the flow paths of 2 rivers are bended to vertical direction.

(2) Field surveys

I conducted field survey in three points(B,C and D)around the estimated fault.

Results and discussions

(1) Estimation of fault location

North of Hanno Gawara

Because valleys and steep slopes can be confirmed at the position of the estimated fault, the position of the fault is considered to be the position indicated by the solid line in Fig.3.

South of Hanno Gawara

Because the flow path rivers are changed vertically at the intersection of the Koma River and the Iruma River and the estimated fault, I presumed that the intersection point with the Nariki River in the southern part of Hanno City will also turn in the vertical direction, It can be thought that the position of the fault is on the solid line in Fig.3 .

(2) Field survey

B point ... It was found that the fault routed through the dotted line in Fig. 4, which is between each survey site, because the outcrop of quartzite on the west side and conglomerate on the east side could be confirmed.

C point ... Although it was not possible to specify the type of rock, it was confirmed that the type is different in the east and west, so it was found that the fault passed through the solid line in Fig.4.

D point ... Although the outcrop of quartzite could be confirmed, since fracture zone and a slickenside could not be confirmed, it is shown in Fig.4 with broken line which means an estimated fault.

From the field survey results, it was found that the fault position from the north to the A point is on the dotted line and the solid line in Fig. This well matches the position of the estimated fault reported in Ref. [2]. By locating the fault, it is expected to be applied to risk assessments for seismic disasters. In the future, I plan to investigate the fracture zone and slickenside to locate the fault near D point.

References

- [1] Quoted from Google map, Categories
- [2] Ministry of Land, Infrastructure and Transport 50,000 1 Prefectural land classification basic survey
- [3] Horiguchi Mankichi Sunday's Geology 1 On the Geology of Saitama (Tsukiji Shogunate, 1975)
- [4] Time series topographic map browsing site old map map on the web, cited from
- [5] Quoted from the Geographical Survey Map, Categories

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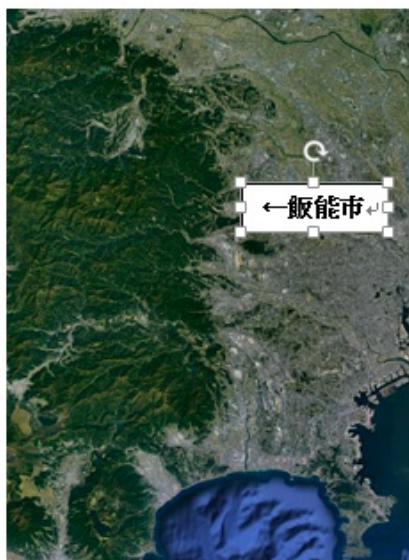


図-1 八王子構造線周辺の航空写真[1]



図-2 飯能市周辺の地質図[2]

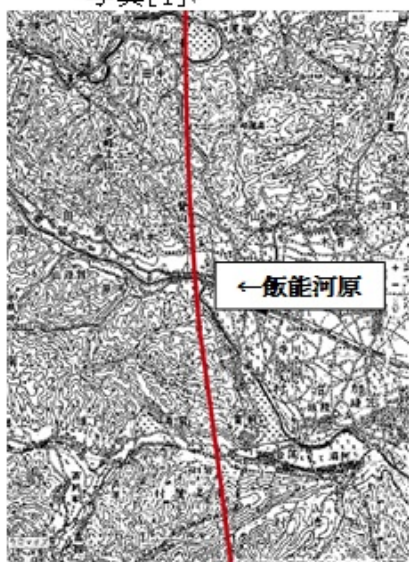


図-3 推測した断層位置[4]



図-4 実地調査で特定した断層位置[5]