

MIS036-P104

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## Surface earthquake fault due to the earthquake in the Fukushima prefecture on 11th of April, 2011

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While total displacement along an earthquake fault can be measured after the earthquake, the trajectory of the fault movement is recorded as fault striae on the fault plane. Surface earthquake fault appeared due to the M7.0 earthquake in the Hamadori district of the Fukushima prefecture on 11th of April, 2011. In this study, we measured the total displacement along the earthquake fault and the orientation of the fault striae, to reveal the fault motion during the earthquake.

### (1) Attitudes of striae and total displacement

The attitude of the fault plane at an outcrop located at 36°58.4'N, 140°41.9'E is N15W78W, and the vertical, strike-slip, and horizontal total displacements are 1.72 m, 0.19 m, and 0.36m, respectively. Dogleg shaped striae are clearly developed on the fault plane and those plunge 77° to south at the upper part and 70° to north at the lower part. Considering the dogleg shape of the striae, the attitude of the striae is concordant with the total displacement. This is also the case at many of other localities. There is, however, a discrepancy between the measured total displacement and the attitude of the striae at one locality. Further study is necessary.

### (2) Heterogeneous slip

The displacement along the earthquake fault is heterogeneous. Although most of the striae plunge to south, some plunge to north. Furthermore, dogleg shaped striae are sometimes observed. These observations suggest that not only the amount of the total displacement but also the direction of fault motion was temporally and spatially changed during the rupture of the earthquake.

### (3) Overlapping of the striae

While striae caused by the present earthquake are clearly developed on the earthquake fault plane, several older striae which are overprinted by striae of this time are found. These striae may have been formed during the Quaternary period, because they develop in clayish fault gouge zones, suggesting a possibility that directions of fault motion of past earthquakes are different.

Keywords: the Hamadori district of the Fukushima prefecture, earthquake fault, total displacement, fault striae