

Study of geological structure and Paleogene kinematic history of the Fault system along the MTL, the west Shikoku.

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For the long time span of the Paleogene period, the fault movement along the MTL (Median Tectonic Line) has not been fully clarified. Kubota and Takeshita (2008) inferred that Paleogene kinematic history of the MTL is divided to 63-58 Ma (Ichinokawa phase) and 45-25 Ma (Pre-Tobe phase), the pre-Tobe phase defined by N-S directed shortening, which is responsible for a large-scale folding of the Izumi Group and thrusting. The Okamura Fault, Kawakami Fault, and Iyo Fault distribute parallel to the trend of the MTL, and northern part of the MTL in the west Shikoku. We study the geological structure and the deformation structure of fault fracture zone for these faults.

The Okamura Fault has been recognized as active fault, and as right-lateral strike-slip faults (Ehime Prefecture 2001). And, Aoya et al.(2013) reported the development of left-hand en echelon folds along the Okamura Fault, and this study the folds with wavelength of ~500m of map scale and ~10m of outcrop scale. The fault fracture zone develops in alternating beds of sandstone and mudstone in the Izumi Group, The whole fault with ~25m width has been consisted of foliated cataclasite zone with ~15m width. Left lateral slip and top to the south movement sense by the observation of foliation structure. Furthermore, cataclasite zone with breccia and develops. It has been weakly foliation and shear band, partially remained bedding plane. The fault gouge 30-45cm thick develops at southern margin of fault fracture zone with foliation and shear band has shown movement sense of right lateral slip predominantly. Furthermore, in this study the deformation conditions had been discussed by the microscope observation of fault rocks. Further, the Kawakami and Iyo Fault had been the development of left-hand en echelon folds of map-scale along the Fault, and fault fracture with cataclasite zone with slip sense of left lateral slip and top to the south.

It indicates that the faults had been formed with movement sense of left lateral slip and top to the south. This movement period has been inferred the Paleogene according to the result of K-Ar age dating of the other faults in north of the MTL (Shibata et al. 1989), accordingly the movement is important data for clarify of Pre-Tobe phase of MTL.

Aoya, M.,Noda, A.,Mizuno, K., Mizukami, T., Miyachi, Y., Natsuura, H., Endo, S., Toshimitsu, S. and Aoki, M., 2013, Geology of the Niihama district. Quadrangle Series, 1:50,000, Geological Survey of Japan, AIST, 181p.(in Japanese with English abstract, 3P);EHIME PREFECTURE 2001. Report on active faults in Ehime Prefecture, a summary-Investigation on the MTL fault systems in the northwestern part of Ehime Prefecture, the northern border of the Ishizuchi Mt. and the southern border of the Sanuki mountain range. pp. 47, Ehime Prefecture. (in Japanese).;Kubota, Y., Takeshita, T., 2008. Island Arc, vol. 17, p. 129-151.;SHIBATA K., NAKAJIMA T., SANGAWA A., UCHIUMI S. & AOYAMA H. 1989. K-Ar ages of fault gouges from the Median Tectonic Line in Shikoku. Bulletin of the Geological Survey of Japan 40, 661-71 (in Japanese with English abstract).

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