

Basin architecture of the lower Pleistocene Handa Formation of the Sekinan Group in the south of Beppu Bay, southwest Japan

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Median Tectonic Line (MTL) has large influence on the deformation of the crust of southwest Japan in Quaternary. Itoh et al. (1998) argued that the active trace of MTL in early Pleistocene around Beppu Bay was located in the south of the modern one, and a dextral slip occurred along it. Their argument is based on the observation by Yoshioka (1992) on the lower Pleistocene Handa Formation and Notsuharu Formation of the Sekinan Group, which are located near the old trace of MTL. Yoshioka (1992) inferred that the formations filled pull-apart basins formed by dextral slip of south boundary faults between the formations and basement rocks.

However, the dextral slip of the boundary faults are still uncertain in the following points.

- 1) The striations of the boundary faults, which indicate the slip directions of the faults, have not been observed
- 2) As the result of fault-slip analysis in the Handa Formation, strike-slip faulting stress regime was not detected

This study aims to reveal the basin architecture of the Handa Formation by measuring the directions of the striations of the boundary faults and by analyzing fault-slip data to obtain stress condition. As a result, dip-slip striations predominated on the boundary faults, and only normal faulting stress regime was detected. Thus, the basin of the Handa Formation seems to have been formed as a half graben along the boundary normal fault. We should note that the strike of the boundary fault of the Handa Formation is oblique to the strike of the old trace of MTL. So there still remains the possibility that the motion of MTL was dextral slip in Early Pleistocene and the half graben of the Handa Formation was formed at a releasing bend of MTL.

References

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