

How formed the Hiji-oki fault group in the beppu bay, Japan?

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In the beppu bay, a clear fault has been confirmed by the shallow marine sub-bottom profiler. The activity history of the fault has been clarified from the age comparison of the stratum with the fault. The Hiji-oki fault group, which consists of short normal fault groups, is typical. However, in the deep part just below the fault, the reflecting surface is continuous without interruption. Fault displacement does not continue to the basement. In order to elucidate its mechanism, a continuous sub-bottom profiler with an extension of 10 km or more across the fault was implemented. In the reflection cross section, a structure showing a tension part and a compression part was confirmed. This structure is a phenomenon that can occur when only the shallow strata move. The fault was Lateral-spread graben which occurred in the tensile area when a soft mud layer of 4 km in width, 8 km in length and 60 m in thickness laterally moved. For this reason, the Hiji-oki fault group is not a fault developing from an earthquake source fault.

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