

## Miocene tectonics in western Kyushu inferred from minor fault analysis

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Western Kyushu is located at the arc-arc junction between the Southwest Japan and the Ryukyu island arcs and preserved the structures formed by the opening of Japan Sea and Okinawa Trough. Two major models (A: fan-shaped opening model, e.g. Otofuji et al., 1985 and B: pull-apart basin model, e.g. Lallemand and Jolivet, 1986) are suggested and still controversial. To understand the opening history of these back-arc basins, the tectonic evolution at arc-arc junctions are important because deformations by opening process converged at these area. Therefore, we have performed minor fault analysis over the western part of Kyushu area.

Fault-slip data have been collected from the Upper Cretaceous and Paleogene strata over the northern part of Koshikijima Islands and the western coast of Amakusa Shimoshima Island. The multi-inverse method (Yamaji, 2000) was applied to each of the fault-slip data sets. The results of analysis show that ENE-WSW extensional stress (D1) and WNW-ESE extensional stress (D2) were developed in these areas. These paleostress directions were restored using paleomagnetic directions. Crosscut relationships and extensional directions indicate that D2 corresponds to the opening of the northern Okinawa Trough since the late Miocene. On the other hand, D1 is arc-parallel extension and probably active before Middle Miocene based on the K-Ar dating. This result implies that the arc-parallel extension has been developed at the southwestern edge of the Japan Sea when this back-arc basin was opening.

### Reference

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