

## Spatial heterogeneities of deviatoric stress in Kyushu, Japan, inferred from the focal mechanism (2)

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We investigated the spatial variation in stress field in Kyushu Island, southwestern Japan. Kyushu Island is characterized by existence of active volcanoes (Aso, Unzen, Kirishima, Sakurajima) and shear zone (west extension of MTL). High activity of shallow earthquakes are found not only along active faults but also in the central area of the island where there are active volcanoes. We considered the focal mechanisms of the shallow earthquakes on Kyushu Island to determine the relative deviatoric stress field. Generally, the stress field was estimated by method of Hardebeck and Michael (2006), corresponding to a strike slip regime in this area. Minimum principal compression stress ( $\sigma_3$ ) with its direction of near north-south dominates in the entire region. However, the  $\sigma_3$  axes around the shear zone rotated toward normal direction to the zone. This result implied the shear stress reduction at the zone and was consistent with the right lateral fault behavior along the zone detected by strain rate field analysis for GPS data. On the other hand, normal faulting stress field dominates in Beppu-Shimabara area located middle of the island. This result and direction of  $\sigma_3$  are consistent with formation of Unzen graben and Hohi volcanic zone in the area.

Keywords: stress field, Kyushu, focal mechanism