

Stress conditions affected by pressure from magma reservoirs inferred from Miocene dikes in the Shitara area, Japan

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Paleostress conditions were investigated from the attitudes of igneous dikes around Middle Miocene cauldrons in the Shitara area, Central Japan, by means of the methods of Yamaji et al. (2010) and Yamaji and Sato (2011). The former method determines the three stress axes and the stress ratio with their 95% confidence limits from the strikes and dips of dikes. If dikes in question were formed under different stress conditions, the latter one is a statistical method that distinguishes and infers the conditions.

There are two cauldrons and hundreds of dikes in the area. One cauldron has ring and radial dikes. The stress conditions inferred from the dikes had E-W or NW-SE trending σ_3 -axes. It was found that σ_1 -axes were inclined and pointing the center of magma reservoirs, the position of which were inferred by Geshi (2003) and others, suggesting that we detected the local stress conditions affected by the pressure from the reservoirs.

Keywords: tectonics, cauldron, stress, magma pressure