

## Restoration of the bending of the MTL by paleo-stress analyses using healed microcracks

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Paleostress analysis has been carried out on the basis of 3-D orientation distribution of intracrystalline healed microcracks (HC) in quartz grains from the Ryoke granites along the Median Tectonic Line (MTL). From previous microthermometry analyses on the healed microcracks in the Ryoke belt, the healed microcracks were formed in c.60-70Ma. We discuss paleostress field and restoration of the attitude of the MTL before the collision of paleo-Izu arc against the Honshu arc that brought about a bending of the MTL in Chubu region, central Japan. The samples used are Misugi Tonalite (Mie Pref.), Shinshiro Tonalite and Mitsuhashi Granite (Aichi Pref.), Ikuta Granite and Katsuma Quartz diorite (Nagano Pref.), combined with pre-existing data from Nojima Granodiorite (Yamada and Takagi, 2008), Takato Granite (Yasuhara et al., 2007) and Toki Granite (Takagi et al., 2008).

The strikes (=sigma-Hmax) of 3-D orientation distributions of healed microcracks from Ryoke granites is generally subparallel to the MTL from Awaji to Shinshiro regions, however, almost normal to the MTL in Toki and Takato. Those from the Ina area (Ikuta and Katsuma) show both parallel and normal orientations. The dip of 3-D orientation distributions (= sigma-1-sigma 2 planes) of healed microcracks is mostly vertical excepting in the Ikuta and Katsuma in the Ina area where dipping angle concentrate in moderate to shallow angles. The possible explanation of this shallower dipping angle is due to the dip rotation (Ohtomo, 1996) of the MTL associated with the arc-arc collision in Neogene time in Chubu region. Considering together with the previous data, the attitude of the MTL must be uniform and dipped northward at about 40 deg. The estimated sigma-3 normal to the MTL must be related to the exhumation of the Sanbagawa metamorphic rocks, and estimated sigma-Hmax normal to the MTL in the Toki and the Takato granites must be related to the regional compressive stress field caused by the NW movement of subducting Pacific Plate at c. 70-60Ma.

Keywords: healed microcrack, paleo-stress analysis, Median Tectonic Line, Ryoke granite