

## Inversion analysis of deep-seated structure of the Median Tectonic Line by using a helicopter-borne gravimetry data

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The Median Tectonic Line (MTL), with a length of about 1,000 km, is the representative geological tectonic line separating the outer zone from the inner zone in the Southwestern Japan. The MTL is also one of the longest active faults in Japan being elongated from the Kii Peninsula to northwest Shikoku. This active fault system runs parallel to the coastline in the Iyo-nada Sea, northwest Shikoku.

There is a boundary between the Sambagawa metamorphic rocks (high density) on the south side and the Ryoke granitic rocks (middle density) on the north side along the MTL active fault system in the Iyo-nada Sea, and a long trench and a thick accumulative sedimentary layer (low density) have been formed on these base rocks along the MTL. Therefore, a belt of remarkable negative gravity anomaly runs parallel to the coastline in the Iyo-nada Sea. So, Nishizaka et al. (2006) made a helicopter-borne gravimetry perpendicularly to the coastline from the inland to the offshore.

In this study, we bound the structure above base rocks with the result of a reflection survey and a refraction survey, and we calculated the dipping of a boundary between the Sambagawa metamorphic rocks and the Ryoke granitic rocks by Simulated Annealing method (SA method), using a helicopter-borne gravimetry data by Nishizaka et al. (2006). As a result, the MTL as a geological boundary in the Iyo-nada Sea was presumed to have the north dipping by 30-40 degree.