

## Resistivity image of the Philippine Sea Plate around the 1944 Tonankai earthquake zone deduced by Marine and Land MT surveys

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The Nankai Trough is an active convergent region in southwest Japan and mega-thrust earthquakes occur repeatedly in some area of its plate-boundary interface. Generation of mega-thrust earthquakes is inferred to be related to the existence of water. The resistivity structure is very sensitive to the existence of water. For that reason it is important to obtain the resistivity image around the rupture area of mega-thrust earthquakes. We therefore carried out land and marine magnetotelluric surveys in Kii Peninsula and offshore Kii Peninsula where the 1944 Tonankai earthquake occurred. Using those results with an inversion technique, we constructed a 2D resistivity model using an inversion technique. The modeled resistivity structure portrayed the Philippine Sea Plate as resistive region. However, its resistivity becomes more conductive as the plate subducts, showing 10 W-m around the down-dip limit. These characteristics are considered to relate to the water of dehydration. Therefore, we infer that water might control the generation of mega-thrust earthquakes.