# 房総半島南部の２次元比抵抗構造モデル

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# 2-D Resistivity Structure in the Southern Part of Boso Peninsula

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The southern part of Kanto District, central Japan locates in front of the triple-trench junction of tectonic plates (Pacific, Philippine Sea, and Eurasian), and tectonic activity associated with the subduction is remarkable. At the southern part of Boso Peninsula, there exists complex geological features due to the past plate motion. The outcropped serpentinite and basalt around Mineoka Range are noticed as the evidence of the former plate boundary.

The main purpose of this study is to infer the geological and tectonic structures beneath the southern part of Boso peninsula by using the magnetotelluric (MT) exploration. Many seismological models have been suggested for the Kanto District. This MT study may provide some electrical constraints to the configuration of subducting plates and surface geological structure. In this study, we compare the resistivity model with recently published seismic profiles (Sato et al., 2005; Matsubara et al., 2005).

MT observations were carried out in 2001 and 2005. MT stations are 30 along the three base lines; across the Kamogawa Basin (NS x 2 lines; about 50 km distance) and along the Mineoka Range (EW x 1 line; do. 20 km). The distance between the 2 NS base lines is about 10 km. Location of the stations was designed for the purpose of two- and three-dimensional modeling and interpretations.

We used a two-dimensional modeling code (Siripunvaraporn and Egbert, 2000) to find the optimum model fitting of the apparent resistivity and phase. We obtained 2 NS profiles across the Kamogawa Basin. The depth of resistivity model is from the surface to 100 km. The inversion revealed the configuration and resistivity distribution of Philippine Sea (PHS) and Pacific (PAC) plates. Furthermore, two NS profiles indicate the three-dimensional geometry of PHS and surface structure. The model indicates that conductive layer (10˜50 Ohm-m) exists to the depth of 20 km, and clear vertical boundary exists at the northern limit of Kamogawa Basin. These heterogeneous structures correspond to the conductive accretionary complex and forearc basin. Although no clear boundary was found in the vicinity of southern fault, there is an extremely conductive zone (˜5 Ohm-m) beneath the south part of Kamogawa Basin. The distribution of conductive accretionary complex and resistivity PHS plate is similar to the profiles which were obtained by seismic velocity disturbance, however, some differences were found by the detailed comparison. We will clarify the cause of their difference, and the relationship between the resistivity and the distribution of fluids, temperature, and other physical conditions in the future study. In this presentation, we show the obtained resistivity model and preliminary interpretations.

References
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