

Regional electrical conductivity distribution beneath the Kii peninsula inferred from the Network-MT observation

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We performed the Network-MT observations in the Kii Peninsula, southwestern Japan. This method is one of magnetotelluric methods and is characterized by employing the commercial telephone network to measure voltage differences with long dipole length of several kilometers.

We observed at 17nets (17 central-stations and 64 electrodes) during September 2002 - January 2003 and January 2003 - July 2004 in the Wakayama prefecture. In the Nara Prefecture, we observed at 23nets (23 central-stations and 77 electrodes) during August 2003 - December 2003 and December 2003 - March 2004. In the Mie prefecture, we did at 14nets (14 central-stations and 48 electrodes) during March 2002 - August 2002 and December 2003 - March 2004.

MT response functions were determined at each triangular (or rectangular) area, which are formed three (or four) electrodes and/or an earth-facility of central-stations, using the RRRMT ver.8 (Chave and Thomson. 1993). Firstly, we calculated MT response functions between electric data in the Kii Peninsula and the magnetic data at the Kakioka Geomagnetic Observatory. We transferred these MT response functions to the MT response functions between electric data and magnetic data in the Kii Peninsula using the geomagnetic horizontal components transfer functions between the Kakioka Geomagnetic Observatory and the temporal magnetic station in the Kii Peninsula.

In this presentation, we will show the final MT response functions at each triangular (or rectangular) area, and spatial distribution of the values of apparent resistivity and phase. We will present regional conductivity structure beneath the Kii Peninsula, too.