

Network-MT observation in the Kii Peninsula, southwestern Japan (4)

Daichi Tanigawa[1]; Satoru Yamaguchi[2]; Makoto Uyeshima[3]; Tsutomu Ogawa[4]; Hideki Murakami[5]; Naoto Oshiman[6]; Ichiro Shiozaki[7]

[1] Earth and Planetary Sci. and Tech., Kobe Univ; [2] Earth and Planetary Sci., Kobe Univ.; [3] Earthq. Res. Inst., Univ. Tokyo; [4] Eri, Univ. Tokyo; [5] Natural Environmental Sci., Kochi Univ; [6] DPRI, Kyoto Univ.; [7] Dept. of Civil Eng., Tottori Univ

We performed the Network-MT survey in the Kii Peninsula, southwestern Japan since 2002. 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. This makes us possible to get stable data efficiently for long period.

There are several geophysical interesting points in the Kii Peninsula. First it is said that the Tonankai earthquake will occur off of the Kii Peninsula in near future so it is important to know subsurface structure before the occurrence of the earthquake. Secondly we will be able to know variation of structure from the surface to the upper mantle along the southwestern Japan arc by adding the result in the Kii Peninsula to the result in the Chugoku and Shikoku area. Thirdly we will be able to make clear the mechanism of the deep long-period tremors which were recognized and located in southwestern Japan arc including the Kii Peninsula by Obara (2002), by deciding conductivity structure in and around a region tremors occurred.

We installed three or four self-made electrodes in the area where one central station covers. The locations of these electrodes were selected as far as possible to each other in order to achieve longest dipole length. We made 14 nets (14 central-stations and 48 electrodes) in Mie Prefecture, 17 nets (17 central-stations and 464 electrodes) in Wakayama Prefecture, 23 nets (23 central-stations and 77 electrodes) in Nara Prefecture.

The voltage difference between electrodes and a central-station were recorded every 10 seconds for more than 3 months. The data was collected at a laboratory everyday through telephone line.

MT response functions were computed using rrrmt ver.8 (Chave and Thomson, 1989) for each triangular (or rectangular) area, which is formed by three or four self-made electrodes and/or an earth facility of a central station.

In this presentation, we will report characteristics of a spatial distribution of apparent resistivities and phase values in the Kii Peninsula.