

Preliminary results of wide-band MT survey over the source region of low-frequency earthquakes near Mt. Iwate

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Since 1998, deep low-frequency earthquakes have been occurring in the area of southern and northeastern foots of Iwate volcano. In order to reveal resistivity structure of the region occurring the deep low-frequency earthquakes, we carried out wide-band magnetotelluric survey along the line across the epicentral area at the southern foot of Mt. Iwate. Surveys were performed at 16 points in August and November of 2001, by use of two sets of instrument MTU-5. We processed all data by remote reference method by using reference field of another instrument each other. The magnetic field data at Esashi or Mizusawa station of Mizusawa Geodetic Observatory of GSI were used as reference field in the low frequency band. Almost all of data suggests an assumption of two-dimensionality of the subsurface is reasonably applied.

We obtained following two preliminary results;

(1) It seems that hypocenters of deep low-frequency earthquake distribute around the boundary between high and low resistivity structures. Appended observation in near future will clear these characteristics.

(2) We found a low resistive area around 10km deep in western part of Shizukuishi basin, where shallow seismicity became very high level when the moderate earthquake of M6.1 occurred on September 3, 1998. This suggests that the low resistive area is considered to be fluid supplied from lower crust.