

## Wide-band MT survey on Tarumai Volcano, Hokkaido, Japan (part 2)

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We performed a wide-band MT(Magnetotelluric) survey in and around Tarumai volcano, Hokkaido, Japan. MT survey is useful in clearly defining the resistivity structure related to volcanic regions. The MT data were acquired over a frequency range 0.00055 - 320 Hz. Applying the remote reference method and manual editing process, we obtained the data from 14 sites. Groom-Beiley's decomposition analysis(Groom and Beiley, 1989) was applied to the tensor impedance data to estimate the direction of the electromagnetic strike. We assumed the strike direction to be N45W. This direction is coincident with that of the volcanic chain formed by Tarumai, Fuppushi and Eniwa volcanos and with that of Ishikari Plain. Subsequently, apparent resistivity and phase data of TM mode and TE mode were inverted using the two-dimensional MT inversion developed by Ogawa and Uchida (1996). The resulting model of the NE-SW profile reveals layer structure of geological formation and conductive area below the summit to about 10 km depth. This conductive area suggests that basement rocks were strongly altered or heated through the thermal activity. On the other hand, we detected a conductor in the volcanic edifice below the summit dome. The position of the conductor is in accord with the hypocenters of low frequency earthquakes and with the electric current source of self-potential(Miyamura et al., 1995). Therefore, the conductor may suggest the existence of the crustal fluid mainly occupied by hot water.