

Estimation of a regional geothermal system around the Toyoha geothermal area, Hokkaido, by electromagnetic exploration

Outline

We collected and analyzed data from MT surveys conducted in and around the Toyoha geothermal area to estimate the regional geothermal system and evaluate whether geothermal development in the Toyoha area would affect the Jozankei hot springs.

Detail

Analysis of the regional resistivity model showed that a large conductive zone, interpreted as a geothermal reservoir, is present below Mt. Muine and the Toyoha area, and that there is another conductive zone, interpreted as a hot-spring reservoir, below the Jozankei area. The possibility that they will interfere with each other is thought to be low because they are separated by a resistive zone corresponding to a pre-Neogene basement (Usubetsu formation).

- Takakura, S. (2014) Butsuri-Tansa (Geophys. Explor.), **67**, 195-203

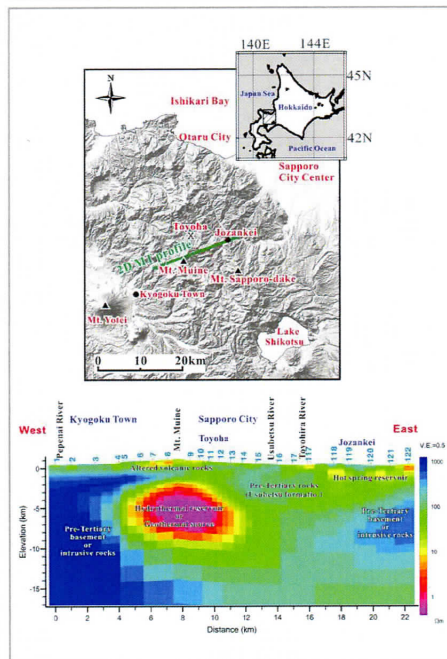
Application of research results

Electromagnetic methods will play an important role in evaluation of geothermal reservoirs or a hot springs because the analyzed resistivity structure facilitates estimation of the regional structure of a geothermal system including the geothermal reservoirs, heat sources, and hot springs.

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A 2-D resistivity section of the Toyoha geothermal area, including Mt. Muine and the Jozankei hot springs as analyzed and interpreted for the 2D profile.