

Precious shallow resistivity survey and monitoring by a high-density electrical method in geothermal areas

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In some geothermal areas, the application tests of various geophysical monitoring, such gravity, self-potential, resistivity, and seismic monitoring, are performed. The purpose of the monitoring is to characterize and forecast the mass and heat flows, which occur in geothermal reservoirs during the production and reinjection of geothermal fluid. However, the monitoring data observed on the surface are directly influenced by the fluctuation of the groundwater near the surface, which is independent on the fluctuation of deep geothermal reservoirs. The groundwater movement can be spatially detected and monitored by electrical survey. Therefore, Geological Survey of Japan carried out the precious resistivity surveys and monitoring by the high-density electrical method in two geothermal areas.