Subsurface heat structure based on geothermal resources maps

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Geothermal resources maps of the Tohoku and Kyushu were compiled at 1:500,000 scale. Hot springs, fumaroles and geothermal wells and geothermal resources areas are plotted on a simplified geologic map. Hot springs were classified by water temperature, pH, total dissolved matter and major anion composition. Geothermal resources areas were categorized into following 3 types. 1) Geothermal resources area related to Quaternary volcanoes, 2) Deep-seated hot water resources area, 3) Geothermal resources area not related to Quaternary volcanoes. The high temperature geothermal resources are closely related to young volcanism. The less number of geothermal areas not related Quaternary volcanoes in kyushu than in Tohoku may be caused by the lack of Miocene volcanism "green tuff" in Kyushu.

Geothermal resources maps of the Tohoku and Kyushu regions were compiled at 1:500,000 scale for understanding an outline of geothermal resources areas and relation between distribution of geothermal resources and regional geologic setting. Hot springs, fumaroles and geothermal wells and geothermal resources areas are plotted on a simplified geologic map. Hot springs were classified by water temperature, pH, total dissolved matter and major anion composition. Fumaroles were classified by maximum temperature, and geothermal exploration wells were classified by maximum well temperature and well condition. Geothermal resources areas were categorized into following 3 types. 1) Geothermal resources area related to Quaternary volcanoes, 2) Deep-seated hot water resources area, 3) Geothermal resources area not related to Quaternary volcanoes. The last one is subdivided into type A) and B) by the backarc side or forearc side from the volcanic front. Geothermal resources areas except type 2) areas are classified into 3 ranks (rank A, B and C) base on their geothermal potential. The map was digitally edited by GIS software. It allows us to maintain data easily and to distribute the map and data in digital publishing form such as CD-ROM. A rough comparison of the number of the geothermal resources area between Tohoku and Kyushu region revealed the similarity of importance of young volcanism to the high temperature geothermal resources in both areas. The less number of geothermal areas not related Quaternary volcanoes in kyushu than in Tohoku may be caused by the lack of submarine Miocene volcanism, so-called "green tuff" in Kyushu.