

The relationship between flow path of Beppu Onsen and S velocity distribution by microtremor array survey.

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In Beppu Onsen, Osawa et al. (1994) and Osawa and Yusa (1996) have revealed the flow path of hot spring water in the southern and northern part of Beppu hot spring area. These flow paths are classified into 3 to 4 types for each spring quality, and branching and inflection are seen while overlapping in three dimensions.

In order to clarify the relationship between these flow paths and the geological structure, microtremor array survey with a radius of 0.6 m to 350 m was conducted at 105 points and the three dimensional distribution of S wave velocity was obtained

As a result, in the southern area, it is clarified that Na - Cl type hot spring flow path is obstructed in the region with high S wave velocity, which is considered to be low permeability base at 300 m below sea level (b.s.l.), and rounds from both sides.

On the other hand, in the northern region, the Ca - Mg - HCO₃ type flow path was inflected to the north by hitting a region with high S - wave velocity with low water permeability at an 100 to 200m b.s.l. And at 400 to 600m b.s.l., Na - Cl type hot springs flowed down to the east part of the region with relatively high water permeability and moderate S wave velocity.

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