

## 九州地方の地殻・上部マントルの3次元比抵抗構造から診る沈み込み帯における流体の移動と島弧火山(2)

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## Upwelling Fluids and Island-Arc Volcano in Subduction Zone: 3D Electrical Resistivity Structure of Lithosphere in Kyushu (2)

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The electrical resistivity structure of the Kyushu island in the Southwest Japan Arc is determined by three-dimensional (3D) inverse modeling of the Network-Magnetotelluric (MT) data. The Kyushu island has volcanically created landscape and contains many quaternary active volcanoes, such as Kirishima, Aso, Kuju, and Unzen volcanoes. Based on the geographical feature of the island including fault zones as well as the volcanoes, it is pointed out that two volcanic chains extend through the island. One chain crosses the island along the volcanic front (VF) of N30°E-S30°W, which is parallel to the subduction front of the N60°W-subducted Philippine Sea Plate (PSP). The other chain in the Beppu-Shimabara graben extends across the island in N60°E-S60°W, which is not parallel to the front of the PSP. As the two chains overlap each other in the northern part of the island, several volcanoes belong to both chains. Additionally, the chain along the VF includes a non-volcanic region in between, which extends about 100 km lengthwise. The region extends from a point where the two chains intersect. It is considered that the formation of the island-arc volcano chains and their complex structural boundaries on the Earth's surface are due to the conditions resulting from the igneous activities in the mantle, such as partial melting. The cross sections of our 3D electrical resistivity structure model taken to include quaternary active volcanoes were classified into several types depending on their characteristic conductive and resistive anomalies. It is also suggested that the classification may be associated with the structural boundaries. The phase tensor [Caldwell et al., 2004] is used to determine whether the 3D electrical resistivity model can reflect the structural boundaries. In this presentation, we would like to show details of the 3D electrical resistivity structure of the Kyushu island in lithospheric scale. Using the representation of the phase tensor analyses, we are also going to demonstrate the consistency between the observed Network-MT data and the calculated data of the 3D inverse modeling based on the geographical feature, especially as contrasted with the structural boundaries.