R003-03
Zoom meeting A ：11/3　AM1　(9:00-10:30)
09:30-09:45

## 跡津川断層系周辺での面的広帯域 MT 観測

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## Dense broadband magnetotelluric array around the Atotsugawa Fault System

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The Atotsugawa fault system, the northern part of central Japan, is in a deformation belt with high strain rates, known as the Niigata-Kobe Tectonic Zone (NKTZ). This system is composed of three right-lateral strike-slip faults (the Atotsugawa, Mozumi-Sukenobe, Ushikubi faults). In 1858, the Hietsu Earthquake (M 7.0) occurred along the Atotsugawa fault. Although high seismicity has been observed along this fault by the recent modern seismograph network, the distribution of microearthquakes shows a spatially heterogeneous feature. To discuss the role of the Atotsugawa fault system in the NKTZ, Yoshimura et al. (2009) revealed a two-dimensional electrical resistivity model passes through the relatively low-seismicity segment and the deepest area of the seismicity cutoff along the Atotsugawa fault. Yoshimura et al. (2006) tried to clarify the heterogeneous electrical resistivity structure along the Atotsugawa fault by using two-dimensional profile data parallel to the fault. Although such two-dimensional modeling is of value to grasp an essential image around the fault, it is necessary to obtain a three-dimensional electrical resistivity structure for a detailed comparison with the spatial heterogeneity of the seismicity along the Atotsugawa fault. To investigate the relationship between the heterogeneous distribution of microearthquakes and electrical resistivity structure, we planned to conduct dense broadband magnetotelluric (MT) array and estimate three-dimensional resistivity structure around the Atotsugawa fault system.
In addition to the above existing MT data, we obtained magnetotelluric/telluric data at 46 new sites around the Atotugawa fault system in 2019 by using MTU5A (Phoenix Geophysics Ltd.) and ELOG-MT/ELOG-PHX (NT System Design Inc.) systems. The number of sites can use in this project amounted to 73, including 27 existing MT data. The average recording duration of new sites was 10 days. At the telluric-only sites, magnetic data from the nearest magnetotelluric sites were used for estimations. In most sites, high-quality MT responses were estimated using the BIRRP code (Chave and Tomson, 2004).
In this presentation, we will introduce the outline of our project and show the preliminary results of broadband MT observations.