First Report on Magnetotelluric Survey on Sakurajima Island for High-resolution Estimation of Subsurface Structure

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Sakurajima is one of the most active volcanoes in Japan, located on the southern rim of the Aira Caldera in Kyushu, Japan. JMA reported that Sakurajima's activity is still ongoing with hundreds of explosions and ash emissions occurring every year. Therefore, a comprehensive study is needed to improve the hazard assessment in the Sakurajima volcanic area. Our study aims to obtain a deep image of the subsurface structure that may control the Sakurajima volcanic activity using the magnetotelluric (MT) method. A broadband MT survey has been conducted at 35 observation sites on Sakurajima Island from late October until the present. We checked the time series data carefully and found that the nighttime data has less artificial electromagnetic noise than the daytime data. However, at sites near the road that circles the island, periodic artificial noise was clearly detected both day and night, so data analysis needs to be done carefully. In this presentation, we will present preliminary results, focusing on the estimation of MT responses for each site.
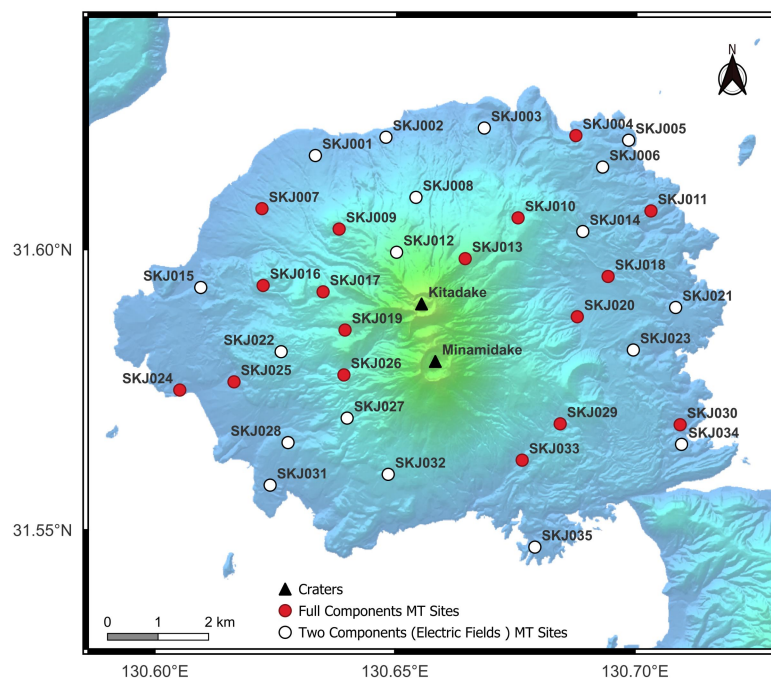

Figure 1. Distribution of MT observation sites on Sakurajima Island