

SEM031-P05

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## Volcanic lightning and seismo-electromagnetic signal on the data of the continuous magnetotelluric observation at Sakura

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Magnetotelluric (MT) continuous measurements were conducted since May 2008 to July 2009 at Sakurajima volcano by setting up two observation sites. The main purpose of this observation is to detect the resistivity change.

In the record of MT measurement, electric pulses approximately 0.01 - 0.05 (mV/m) are frequently observed within 3 minutes after the starts of eruptions. The movie taken by NHK camera, which is synchronized with a GPS clock, shows a large number of volcanic lightning at Sakurajima volcano. Some electric pulses and volcanic lightning occur simultaneously, and therefore, I conclude that the electric pulses are induced by volcanic lightning. Because electrification process likely correlate with the physical property of magma, the volcanic lightning may have the information of magma that caused the eruption. I will present preliminary analysis that investigates the relationship between electric pulse and some various volcanic activities, such as explosiveness of eruption, cloud rising speed, and temperature. Interestingly, electric pulses are not observed in the explosive eruptions.

In addition to volcanic lightning signals (pulses), seismo-electromagnetic signals are also observed. We will also investigate the feature of seismo-electromagnetic conversion at Sakurajima volcano by increasing the observation sites.