**R003-02**
**D 会場 ：11/5　PM1 （13:45-15:30）**
**14:00〜14:15**

#南　拓人 [1)]
(1 神戸大理

# Effects of the difference in sensitivity between ACTIVE and MT on the joint inversion in volcanic regions

#Takuto Minami[1)]
(1Kobe Univ.

Resistivity structures are important for understanding the internal systems of volcanic edifices. While MT measurements are in common use to investigate the resistivity structure of volcanos (e.g. Kanda et al. 2019), controlled-source electromagnetic sounding methods are also useful in many points. ACTIVE (Utada et al. 2007) is an electromagnetic volcano monitoring system using the TEM (Transient Electro-Magnetic method) technique. ACTIVE consists of transmitters that transmit the electric currents of a square waveform through two earthing electrodes and an array of induction coil receivers for measurement of the vertical component of the induced magnetic field. The TEM measurement with controlled-source has an advantage in high S/N ratio and independence from the galvanic distortion and static shift in MT measurements.

I am currently developing a joint inversion code for ACTIVE and MT data, where the ACTIVE and MT data contribute in different ways to optimal models with their different sensitivities. I calculated and compared the sensitivities of MT and ACTIVE measurements at a single frequency of 99 Hz with a single receiver site using the method of Schwalenberg et al. (2002). The sensitivity of MT for a single site distributes as an hemisphere centered by the receiver location. On the other hand, the sensitivity of ACTIVE distributes beneath both the transmitter and the receiver and complicated compared to that of MT. The difference in sensitivity potentially not only enhances the spatial resolution of the inferred resistivity structure but also resolves some anisotropy of the subsurface resistivity. In the presentation, I will report the sensitivity analysis of MT and ACTIVE measurements and discuss how the difference in sensitivity could enhance the model resolution and accuracy in the joint inversion using both MT and ACTIVE data