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Temporal changes in electric resistivity at Sakurajima volcano from magnetotelluric observation (February to July, 2010)

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Continuous magnetotelluric (MT) measurements were conducted from February to July, 2010 at Sakurajima volcano. Six observation sites were established at locations approximately 2~3 km away from the summit crater. The sampling frequency were 32Hz (15:00~20:00 UT), 1024Hz (17:00~18:00UT), and 32768Hz (23:10~23:11). By applying the comb filter to reduce the harmonics of 60Hz and the robust MT response function estimation code (Chave and Thomson, 2004), we obtained the impedance tensor in the frequency range of 10,000 ~ 1Hz. The diagonal component of impedance tensor (Z_{xy} , Z_{yx}) showed temporal variations in apparent resistivity of approximately $\pm 20\%$ and phase of $\pm 3\%$, which is similar to the previous observations in May 2008 to July 2009 (Aizawa et al., 2011, JVGR). The results are also similar to the previous paper in that the polarity of apparent resistivity change is not the same, and in that there are time lags of resistivity change. In this presentation, we will show the temporal change of the resistivity structure by the inversion, and will discuss the mechanism of the electric resistivity change.