

Temporal variation of geomagnetic total intensity before and after the 2011 summit eruption at Shinmoe-dake crater

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At Shinmoe-dake crater in Kirishima volcano, a weak summit eruption occurred in 22th, Aug., 2008. Since then, 3 weak eruptions took place in 2010, and intense magmatic activities including generation of lava dome and explosive summit eruptions have started since 26th Jan., 2011. Since moderate volcanic activities in 1991-1992, we have performed continuous monitoring of geomagnetic total intensities at several sites in the vicinity of the Shinmoe-dake crater, aiming at detecting temporal variation due to thermal magnetic effect or piezo-magnetic effect before and during the main eruptions. Although all the four observation sites (SMN, SMNW, SMW, SMS) just near the summit were damaged by the intense volcanic activities from 26th Jan., 2011, we could re-start the observation from July, 15, 2011 at SMW station. We present temporal variation before and after the recent eruption and discuss on source of the changes due to thermal geomagnetic effects.

Keywords: kirishima shinmoe-dake crater, volcanic eruption, geomagnetic total intensity, thermal demagnetization