

## Source Model of Kirishima Volcano Based on GPS Integrated Analysis in Volcanic Region(2nd report)

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Geospatial Information Authority of Japan (GSI) has been monitoring the crustal deformation of Kirishima volcano using the GPS continuous observation network. Observation data by GEONET revealed that the volcano had started to inflate from December 2009, at first. We combined the observation data from GPS sites of JMA and NIED to estimate the inflation sources under the volcano. We reported the source model, which interpreted the inflation before the eruption of Shinmoedake on January 26, 2011 and the deflation during a few days following the eruption until February 2011, at the 2011 JPGU meeting and CCPVE. The main source of the inflation and the deflation is estimated at the deeper part on the northwest side of the volcano, accompanied by a shallow source under the crater of Shinmoedake. As the shortening of the baseline after the eruption was smaller than the extension that was observed before the eruption, estimated deflation of the source was smaller than the inflation before the eruption.

GSI installed an auxiliary GPS continuous observation site on the northwestern side of the volcano to reinforce the monitoring of the volcano, on February 2, 2011. As we have been monitoring the crustal deformation carefully since then, the inflation by the same rate as before the eruption was observed until the November 2011. The inflation rate of the source was estimated about one million cubic meter per month, as same as the rate before the eruption. Even though the extension of the baseline length crossing the volcano was calming down after December 2011, we would not be able to conclude the supply of magma to the inflation source have finished, as this kind of the slowing down of the inflation had been seen during July to August of 2010, before the preceding stage to the eruption. We are going to watch more carefully how the deformation pattern would change, further.

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