

## Rock magnetism of the rock forming minerals from the chromian spinel-bearing andesitic lava without FeTi oxide phenocrysts

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Suwanosejima volcano in Tokara Islands, southwest Japan, is one of the most active volcanoes in Japan. Strombolian eruptions have repeatedly occurred. During the last fatal eruption in 1884-1885, andesitic lava flows were effused from the summit crater and covered the eastern flank of the volcano. In order to clarify the eruption process of the 1884-1885 activity, we have carried out magnetic petrological analyses on the lava samples. Rock magnetic analyses indicated that the lava from the flow surface showed very high MDF of 100 mT. Microscopic observations revealed that FeTi oxide phenocrysts and microphenocrysts are absent in the samples and small amounts of titanomagnetite and Cr spinel are included in silicate minerals. In order to determine the cause of high MDF, lava samples were crushed and separated into phenocrysts and groundmass, and then rock magnetic analyses were carried out on the separated samples. As a result, we found each samples showed distinct magnetic characteristics. Lava chips, which did not suffer mineral separation, showed very high Hcr of 120-140 mT and those hysteresis loops are wide open at the middle of loops. Some separated groundmass samples showed almost same hysteresis loops and hysteresis parameters, indicated that magnetic minerals in the groundmass are dominant magnetic carriers and responsible for high MDF. The minerals seem to be titanomagnetite with very small size, which cannot identify through optical microscope. Separated pyroxene grains, in which Cr spinel is included, also showed high Hcr of 100 mT. It is suggested that Cr spinel is one of the causes of high MDF.