Magnetic fabric reveals mode of emplacement of Kogarasuyama granodiorite

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Late Miocene to Pleistocene Higashi-Yamanashi volcano-plutonic complex located in northern part of south Fossa Magna is N-S trending elongated cauldron and is composed of the Kogarasuyama granodiorite and the Konarayama volcanic rocks mainly consisting rhyolitic to dacitic welded tuff. The Kogarasuyama granodiorite intruded into the Konarayama volcanic rocks with sub-vertical contacts. The Kogarasuyama granodiorite showing vertical section of huge dike-like intrusion is cropped out over 1000m in relative height and 25km in length. We carried out anisotropy of magnetic susceptibility measurements for the Kogarasuyama granodiorite. Subvertical magnetic foliations predominantly arrange in a conformable manner to the shape of the body. Sub-horizontal foliations are seen in the inner part of the body. Subhorizontal magnetic lineations are frequently oriented toward elongation trend of the body except at the northern and southern parts of the body. These magnetic fabrics indicate that magmas of the Kogarasuyama granodiorite probably upwelled through subvertical conduit-like regions and successively flowed subhorizontally and that the magma intrusions may have occurred multiply.

Keywords: anisotropy of magnetic susceptibility, Kogarasuyama granodiorite, magnetic fabric, dike, plutonic rock, emplacement

