

Vector archeomagnetic secular variation for the past 400 years from Miyakejima volcanic rocks in Japan

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Full vector archeomagnetic secular variation for the past 400 years was obtained from volcanic rocks in Miyakejima, Japan. Recent archeomagnetic studies have revealed the temporal variation of geomagnetic direction and intensity for the several thousands years. The archeomagnetic variation for the past centuries, which is closely related to the directly measured geomagnetic variation, is rather difficult to be obtained due to poor age constraints. Volcanic eruptions in Miyakejima occurred intermittently about every 50 years for the last 400 years. The basaltic lava flows are extremely well dated based on the ancient documents, therefore essentially no age error is needed to be considered. We collected drilled cores oriented with several azimuthal methods by using back-sighting and magnetic, sun and GPS compasses. The archeomagnetic directions were obtained based on the cross-checked azimuth so that the orientation error should be minimized. Thellier paleointensity measurements were performed for primarily the clinker and scoria samples that give much more reliable paleointensities than the solid part of lavas. An automated spinner magnetometer with thermal demagnetizer *TSpin* was utilized for all the Thellier measurements. We will discuss our archeomagnetic direction and intensity results by comparing with the geomagnetic field model *gufm1*.

Keywords: archeointensity, Thellier method, paleomagnetism