

Holocene paleomagnetic secular variation at Fuji volcano, Japan

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Paleomagnetic secular variation (PSV) records in Japan has been presented by archaeomagnetic studies of kilns and paleomagnetic studies of sediment cores. However, the archaeomagnetic results of old kilns are restricted to the last 2000 years, and PSV records from sediment cores don't agree each other. Here, we present a paleomagnetic study of Fuji volcano. Fuji volcano is located in the central Japan and characterized as followings; (1)It is one of the largest basaltic volcano in Japan. (2)Its volcanic activity have been continuing over the last 17,000 years. (3)It has various eruption products, including plinian fall deposits, lava flows, and pyroclastic flows. Recent studies have revealed the eruption ages and intervals in detail from historical records, tephrochronology and ¹⁴C dating, so that we can draw the Holocene PSV using those eruption products. Samples for paleomagnetic measurement were collected from 151 sites of lavas and pyroclastic deposits. At each site, we collected 6 to 12 samples using core-drill. The samples were oriented by the sun compass. The hysteresis data of all sites show the presence of single-domain magnetite. The samples possess strong and stable characteristic remanent magnetization. As a result of our study, the paleomagnetic directions agree with archaeomagnetic secular variation in Japan during the last 1600 years, although a few lava flows shows incogitable directions. At least, Paleomagnetic direction data of Fuji volcano contribute to extend PSV to the last 4000 years and thereby improve the Holocene PSV in Japan.

Keywords: paleomagnetic secular variation, Fuji volcano, Holocene