Paleomagnetic correlation of Miocene pyroclastic flow deposits in the Kii Peninsula, southwest Japan

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Magnetic measurement were made on middle Miocene pyroclatic flow deposits in the Kii Penisula, named to the Muro Pyroclastic Flow Deposit, Sekibutsu Tuff, Furutera Tuff and Tamateyama Tuff, in order to investigate correlation of them and the origin of their remanent magnetic direction. Except for the Furutera Tuff, stable primary magnetization was recognized from 76 sites of the Muro Pyroclastic Flow Deposit, 5 sites of the Sekibutsu Tuff and 5 sites of the Tamateyama Tuff. All the characteristic magnetic components determined were characterized by a westerly deflected declination and a steep inclination of reversed polarity. The identical paleomagnetic directions of these pyroclastic flow deposits confirm correlation that has been proposed on the basis of lithofacies, radiometric dating and glass and mineral chemistry (Yokota, 1978; Nishida, 1990, 1992; Akaishi, 1995; Iwano and Danhara, 1990; Ozaki et al, 2000). ASD determined from VGPs, which was smaller than expectation in the study area, clarified that remanent magnetization of the Muro Pyroclastic Flow Deposit, Sekibutsu Tuff and Tamateyama Tuff had been acquired in short time that enough not to average paleogeomagnetic secular variation. The Nijo Group included The Tamateyama Tuff as the upper part (Morimoto et al., 1953) was formed after a clockwise rotation of southwest Japan at middle Miocene (Hoshi et al., 2000). The peculiar remanent magnetic direction of the Muro Pyroclastic Flow Deposit, Sekibutsu Tuff and Tamateyama Tuff expected to be recorded in a peculiar timing of the geomagnetic field after clockwise rotation of southwest Japan.