Flow directions of Miocene pyroclastic flow deposits on the northern Kii Peninsula, Japan, inferred from AMS (anisotropy of magnetic susceptibility) measurements

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The northern part of the Kii Peninsula in central Japan was hit by a massive, widespread pyroclastic flow sometime between 15 and 14 Ma. This is based on the presence of the middle Miocene Muro pyroclastic flow deposit and its correlated deposits. To investigate the flow direction, we measured the anisotropy of magnetic susceptibility (AMS) of rock samples (n = 350) collected from 37 sites in these deposits. The samples are composed of rhyolitic-dacitic tuff (mostly welded). In general, the degree of anisotropy is not so high and the magnetic fabric is dominated by oblate (disk-like) shapes. Magnetic foliation and lineation data for the Muro pyroclastic flow deposit suggest that the flow direction as a whole was south to north but was not uniform on a local scale. Our AMS results imply a source pyroclastic vent (or vents) located to the south of Muro.

Keywords: AMS (anisotropy of magnetic susceptibility), pyroclastic flow deposits, flow direction, Miocene, Kii Peninsula