

Preliminary results of magnetostratigraphic investigations of the Kurehayama gravel formation in Toyama, Japan.

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The Kurehayama Hills is located within the Toyama sedimentary basin that consists of late Pliocene to late Pleistocene clastic sediments. In the hills, the middle-late Pleistocene Kurehayama gravel formation unconformably overlays the Chokeiji sand formation. Two tephra layers were previously reported in the area: a) ~2.2 Ma Taniguchi tephra from the Chokeiji sand formation; and, b) ~0.6 Ma Kamitakara tephra from the uppermost part of the Kurehayama gravel formation. Paleomagnetic analyses were carried out on three boring cores from the Kurehayama Hills to estimate deposition ages of the sand layers in the Kurehayama gravel formation. Alternating field step demagnetization isolates a stable characteristic remanent magnetization (ChRM) component after the removal of unstable remanences by ~20 mT. Rock magnetic measurements indicates that the major ChRM carrier of the sand is single to pseudosingle domain magnetite. Most ChRM directions obtained from the sand layers of three cores show positive inclination. However, negative inclination is found at all cores between ~26 m and ~29 m in depth with 10-30 cm thickness. Lithological facies of the core No. 1 are similar to those of the core No. 3 within this depth. In addition, the observed magnetic susceptibilities of the core No. 1 show similar in trend to the ones of the core No. 3, indicating that the negative inclination found in the cores No. 1 and 3 is comparable. Based on the ~0.6 Ma Kamitakara tephra found at the uppermost part of the Kurehayama gravel formation, the observed positive and negative inclination are likely one of four subschrons in the Matuyama Chron. The above layer of the studied sand layer consists of gravels and therefore detailed magnetostratigraphy of the whole core is not clear. However, the observed magnetostratigraphic information could help to constrain the deposition ages of the Kurehayama gravel formation.

Keywords: Magnetostratigraphy, Kurehayama gravel formation, Toyama