

Paleomagnetic study of an Archean dyke of south west Greenland: Geomagnetic field intensity at 2.5 Ga (Preliminary report)

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The geomagnetic field intensity study during Archean times was carried out .

For the first step of investigating the geomagnetic field intensity, Paleomagnetic and rockmagnetic measurements have been conducted on the dolerite dyke from Archean craton of southwest Greenland . The K-Ar age of 2752 Ma have been reported from another dolerite dyke in same area [Morimoto et al, 1997].

The mean direction of characteristic high temperature components from 9 samples is $D=242.4$ degrees, $I=67.4$ degrees, $\alpha_{95}=6.3$ degrees. This direction agrees well with that of the previous study, indicating the primary origin of the high temperature component.

IRM acquisition experiments, thermal demagnetization of a three-component IRM and high field thermomagnetic analyses (J_s-T) reveal that the main magnetic mineral is magnetite with Curie temperature of 580 degrees C. PSD grain size is ascertained on the Day-plot of hysteresis parameters.

Observation on thin sections of the dolerite samples was examined by SEM (scanning electron microscope). Titanomagnetite-ilmenite intergrowth and magnetic minerals with a diameter 0.83 micro-m are observed.

Paleointensity experiments using IZZI method [Yu and tause, 2005] were made on 15 samples. Preliminary paleointensity result distribute between 11.88 and 27.33 micro-T.