

ROCK MAGNETIC STUDY OF GREIGITE FORMATION AND STABILITY IN ODP HOLE 911A

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Paleomagnetic measurements were planned to support establishing the chronostratigraphy of Ocean Drilling Program (ODP) Hole 911A from the Atlantic-Arctic gateway, the Yermak Plateau. Based on biostratigraphic and paleomagnetic data, the borehole covers the last 3.4 million years. However, the Kaena and Mammoth subchrons during the late Pliocene were not detected due to the lack of paleomagnetic data. Magnetic susceptibility data from shipboard measurements, as well as data from re-measured sections indicate that localized greigite mineralization is abundant in the lowermost 100 m of the core. However, between huge susceptibility peaks, related to these mineral concretions, the magnetic susceptibility is very low, and some remanence from iron-oxide minerals may persist. A set of 400 samples for rock- and paleomagnetic studies was taken from mechanically undisturbed regions of the sediment sequence, avoiding areas with visible greigite mineralization. We here present rock magnetic measurements on these samples and discuss their ability for chronostratigraphy, as well as possible mechanisms for greigite formation and stability in this sediment record.

greigite formation, marine sediments

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