



Environmental Magnetic Study of Core MD01-2414 from Central of Okhotsk Sea: Significance of Environmental Changes since 1.8 Ma

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The Okhotsk Sea is an important marginal sea at northeast Asia due to that it represents the lowest latitude and the largest region with seasonal sea-ice cover, which play a very significant role in the climatic and environmental changes. This study used environmental magnetic analyses to study the marine sediment core, MD01-2414, taken from the central of Okhotsk Sea. The age model was set up mainly by the paleomagnetic records in addition to the correlation of magnetic susceptibility with the other cores, which implied an age interval since 1.8 Ma. The variations of magnetic susceptibility and ARM/c of this core show that high abundant but relative coarse grain of magnetic minerals appeared in the glacial periods, while low abundance with finer grain appeared in the interglacial periods. This suggests that the different sources and transportation pathways of sediments could be influenced by sea-ice cover condition in the area of studied. In addition, high ARM/SIRM indicated that very fine grain magnetic minerals was found in some interglacial periods, FORC diagram results of those samples show obviously biogenic magnetite dominates the magnetic mineral assemblages. This suggests ARM/SIRM ratio could be a suitable index of biogenic productivity of magnetic bacteria in the sea floor sediment. To compare the ARM/SIRM ratio with primary productivity index of diatom abundance, total biogenic productivity index of opal, Mg/Al, and Ca/Al, the results show sea-ice condition could influence the ocean productivity of surface water even bottom water.