Geophysical Research Abstracts
Vol. 16, EGU2014-9688, 2014
EGU General Assembly 2014

Paleomagnetic record and sediments flux since middle Miocene in the NE equatorial Pacific

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Deep-sea sediments in the Northeast equatorial Pacific have been gathered scientific interests as a vast reservoir of manganese nodule and rare earth elements, however their sedimentation environments through the geologic time are poorly understood. A 570 cm long sediment core was retrieved at 9˚57'N and 131˚42'W in 5,080 m water depth. To identify sedimentation age and periodical difference in sediments flux, paleomagnetic and rock-magnetic studies were carried out. Age constraints made by a combination of ^{10}Be and paleomagnetic measurements. Successive AF demagnetization reveals eight times geomagnetic field reversals. In the reference geologic time scale, the eight reversal events correspond to the age of about 4.5 Ma. However, ^{10}Be based age correction shows 13.4 Ma at 465 cm below seafloor (cmbsf). In addition, calculated sedimentation rates are changed in the range of 0.1 – 2.44 mm/kyr. Since 110 cmbsf, showing sedimentation rate of about 0.1 mm/kyr, ancient geomagnetic field reversal events of at least 1.8 Myr time span are not recorded. Above 76 cmbsf horizon, an abrupt increase of sedimentation rate is identified to 2.44 mm/kyr. A dramatic change is also observed in the rock-magnetic properties. Throughout a core concentration and grain-size of magnetic minerals are changed continuously and show an upward decreasing trend, except in the sediments of 110 – 15 cmbsf. With a boundary at 76 and 75 cmbsf, lower and upper sediments contain rock-magnetic properties of varying toward opposite. Such separation after the lowest sediment flux (0.1 mm/kyr) is probably connected to the sedimentation hiatus.