

統合国際深海掘削計画 (IODP) 346 次航海で採取された縁海海底堆積物の高精度年代決定 Precise age determination of the marginal sea sediments recovered by IODP Expedition 346 "Asian Monsoon"

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High quality sediment sequences are recovered from seven sites in the marginal sea surrounded by the Eurasian Continent, Japanese islands, and Korean Peninsula during the Integrated Ocean Drilling Program Expedition 346 "Asian Monsoon." The sediment sequences from deeper sites are characterized by alternation of dark-light color layers of varied thickness from centimeter to tens of centimeter. Because the dark-light alternation pattern is common to all sites, correlations of the dark-light alternation among sites will provide us precise isochronous surfaces on millennial time-scale. We are trying to construct high precision age model by combining correlations of sediment sequences and several kinds of age constraints, i.e. magnetostratigraphy, biostratigraphy, and tephrochronology. When this is achieved, the well-dated sedimentary records along depth and latitudinal transects will tell us a new insight concerning the East Asian monsoon system during the Quaternary.

Time relationship between the dark layer deposition in the marginal sea and well-dated paleoclimate records is also a key to understand the climate system in terms of the cause-and-effect relationship. In order to investigate this, we propose to construct precise age model by correlating marine sediment off the Wakasa Bay and the varve sediment of Lake Suigetsu using tephra layers as well as invisible "micro tephra" preserved in both sediments. Recently, macrofossil radiocarbon data from the varve sediment of Lake Suigetsu is adopted into the calibration curve IntCal13. Therefore, the correlation between marine and Suigetsu sediments will allow us to investigate time relationship of the dark layer deposition with Dansgaard-Oeschger cycles.

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