CHANGES IN THE BOTTOM WATER OXYGENATION CONDITION IN THE JAPAN SEA DURING THE LAST 160 KYS

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The Quaternary Japan Sea sediments are characterized by cm to m scale alternations of organic-poor light layers and organic-rich dark layers. It is considered that deposition of these light-dark layers reflects changes in oxygenation conditions in the deeper part of the Japan Sea which were influenced by regional or global climate fluctuations. However, depositional mechanisms of the individual dark layers are not examined in detail and the causes of oxygen-depleted bottom water environment are not fully understood. In this study, we reconstructed changes in bottom-water oxygenation condition in the Japan Sea over last 160 ka based on detailed observation of sedimentary structures such as degree of lamina preservation and types of bioturbation using two sediment cores collected from different water depths in the sea. The estimated bottom-water oxygenation levels at intermediate(~800m) and deep (~2800m) depths are compared for individual dark layers to distinguish dark layers deposited as a result of increasing surface productivity from those deposited as a result of intensified water column stratification.