

Estimation of organic content in the Quaternary hemipelagic sediment from Yamato Ridge based on Br intensity by XRF core scanner

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Quaternary hemipelagic sediments of the Yamato Ridge [YR] are characterized by dark and light layers, which reflect millennial scale variability of productivity and/or bottom water condition. Previous studies proposed two mechanisms for deposition of the dark layers, oceanic stratification and intensified upwelling. The former tends to result in euxinic bottom water conditions characterized by lower organic carbon and pyrite sulphur C/S ratios, whereas the latter tends to result in high surface productivity with normal C/S ratio. Thus, the C/S ratio could be a good proxy for euxinic bottom-water condition.

Scientific drilling results from IODP Expedition 346 have shown that dark and light layers become distinct around 1.5 Ma. If we want to reconstruct C/S ratio changes during the last 1.5 Mys with a 100-yr resolution, we need to analyse 15,000 samples, which is unrealistic. Consequently, a high-resolution, high-speed analytical method is necessary. In this study, we use XRF core scanner to measure elemental variability of the sediment recovered from the YR (IODP Site U1425) including S and Br. Br shows good correlation with C content (Ziegler et al., 2008), therefore we use Br to estimate C to reconstruct variability of C/S ratio.

In this presentation, we show the results of C/S reconstruction during the last 1.5Myr.

[1] Ziegler et al., (2008), *G-cubed*, **9**, Q05009.