

Depositional history of terrigenous materials at ODP Site 797 based on the revised stratigraphy projected from complete records of sediment sequences obtained during IODP Exp. 346

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Detrital fraction contained in marine sediments have been widely used as climate proxies because variations in provenance and mineralogy could be affected by the precipitation distribution and weathering intensity. Element composition of marine sediment is essentially controlled by the mineral composition that is also affected by sorting effect during their transport process. Therefore, these features have been also applied to the variability of provenance and transport pathway of detrital fraction of the sediments at ODP Site 797 in the abyssal part of the Yamato Basin in the Japan Sea. Detrital fraction in this ODP "legacy" core has been regarded as the mixture of aeolian dust and the detritus derived from the Japanese Islands (Irino and Tada, 2000; 2002). This knowledge was utilized to reconstruct the millennial-scale aeolian dust variation in order to clarify the east Asian monsoon variability.

Although sediment sequence collected at ODP Site 797 could be potentially used for the reconstruction of high temporal resolution and long history of Asian monsoon, the sediment sequence was not continuously recovered because no splice record was established at the time of the drilling where the Hole B was deepest and covered the sequence since the late Miocene. On the other hand, the Japan Sea was revisited by IODP Exp. 346 cruise which aimed the long-term paleomonsoon reconstruction, and more than triple APCs technique used during the cruise enabled us to establish nearly completely continuous sediment records since Miocene. Site U1424 close to ODP Site 794 as well as U1425 on the Yamato Rise especially provided excellent continuous records, and their 5 mm resolution brightness and 2.5 cm resolution GRA density profiles can be used to revise the stratigraphy of "legacy" cores collected during the former ODP cruises in the Japan Sea.

In order to establish the detailed occurrence of the central to east Asian monsoon variability during the last 800 kyr, we will re-examine the stratigraphy of Site 797 based on the precise correlation of physical properties to U1424 and U1425. Using the element composition of Site 797 sediments, the temporal variations of detrital subcomponents such as the Asian dust and the detritus derived from Japanese Islands will be reconstructed, which could enable us to calculate the long-term flux variations of these detrital subcomponents. We expect to demonstrate how "legacy" cores may become useful under the light of newly drilled IODP cores, and deepen our understanding of the east Asian monsoon variability during the Pleistocene.

Keywords: ODP Site 797, IODP Exp. 346, revised stratigraphy, terrigenous materials