

Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

©2011. Japan Geoscience Union. All Rights Reserved.



APE031-P02

Room:Convention Hall

Time:May 25 10:30-13:00

Provenance of surface sediments to the west of Okinawa Island based on mineral assemblage

Keita Saito^{1*}, Ryuji Tada¹, Takuya Itaki²

¹Earth and Planetary Sci., Univ. of Tokyo, ²Geological Survey of Japan, AIST

A lot of clastic particles are carried into the East China Sea. Their provenance is various, such as Changjiang (Yangtze River), Huanghe (Yellow River), Taiwan Island and inland deserts. Since the contribution of each provenance can be affected by the intensity of wind and river flux, changes in provenances in marine clastic sediments record temporal paleo-environmental changes. Therefore, by analyzing a sediment core in the East China Sea, we can reconstruct the temporal changes in environment around Asia. To interpret the temporal variations in grain size and content of minerals in marine core, it is necessary to know the behavior of present particle transportation in the East China Sea. The objectives of this study are to determine the provenance of ocean surface sediment near the Okinawa Islands and to investigate paleo-environmental changes by applying the results to core samples.

Six surface marine sediments, gravity core sediments (GH10-2008), and riverbed sediments were used in this study. The surface marine sediments and gravity core GH10-2008 were recovered in GH10 cruise around the main Okinawa Island. Riverbed sediments were taken near the river mouth of each site. All the samples were first decalcified with acetic acid. Second, organic matter in samples were dissolved with hydrogen peroxide. After preparation all samples are fractionated by 64 micro meter sieve. For the fine fraction (smaller than 63 micro meter), the sample is fractionated into two fractions, 16-63 micro meter and smaller than 16 micro meter, followed by exploiting Stoke's Law. After fractionated, each samples were dried in an oven at 60C and measured by weight. In order to investigate the spatial variation in mineral composition, the surface sediments and riverbed sediments were analyzed by X-ray diffraction (XRD). Gravity core GH10-2008 was also analyzed to investigate the temporal variation in the mineral composition.