



The records of terrestrial and marine biomarkers in South China Sea EXP349 Sites U1432C and U1433A, B: Implications for East Asian monsoon variability and paleoceanographic variations.

Sangmin hyun (1) and Songyi kim (1)

(1) Korean Seas Geosystem Research Center, Korea Institute of Ocean Science and Technology (KIOST), Korea, Republic Of (smhyun@kiost.ac.kr), (2) Korean Seas Geosystem Research Center, Korea Institute of Ocean Science and Technology (KIOST), Korea, Republic Of (sykim92@kiost.ac.kr)

Marine and terrestrial biomarkers, alkenones and n-alkanes compound, were investigated in sediment taken from the South China Sea (SCS) IODP Sites Exp. U1432C, U1433A and U1433B to evaluate Asian monsoon variability and paleoceanographic variations. Alkenone-based sea surface temperature (SSTalk) from the northern Site (U1432C) ranges from approximately 18.2oC to 28.3oC with an average of 24.4oC (n=65). Estimated SSTalk were slightly higher in the southern Site U1433A than at U1432C. SSTalk in Site U1433A ranges from 24.3oC to 27.4oC with an average 26.1oC (n=32), showing as much as 1.7oC higher SSTs than at U1432C. High concentrations of n-alkanes (nC21-35) are present throughout the Site SC1432C with strong fluctuations in the upper part (average = 496ug/g, n=140). The much higher records at U1433A and U1433B show long-range variations, but the concentration of n-alkanes remains constant below 244mbsf in Site 1433B (less than 200ug/g), suggesting an important change occurred at this horizon, dividing two different environmental domains. These differences in SSTalk and n-alkane concentration between two Sites might not only link with latitudinal location but also the influx of terrestrial biomarker due to the Asian monsoon variability and local oceanographic variations since the last approximately 1.5 Ma. Several indices of Average Chain Length (ACL) and Carbon Preferences Index (ICP) showed large shifts and fluctuations in both Sites. In particular, one of the paleo-plant proxy, Paq, also shows time-dependent large fluctuations in both Sites suggesting long time-scale variations in the flux of terrestrial organic compound as well as paleoclimatic changes in the East Asian area.