

APE031-01

Room:104

Time:May 25 14:15-14:30

Holocene sea surface temperature variability in the NW subarctic Pacific

Takuya Sagawa^{1*}, Kentaro Tsuruoka¹, Masafumi MURAYAMA², Michinobu Kuwae¹, Hidetaka Takeoka³

¹SRFC, Ehime University, ²CMCR, Kochi University, ³CMES, Ehime University

Multi-centennial to millennial scale climate variability during the Holocene is a key to understand the future climate change. However, the high-resolution Holocene records in the subarctic Pacific are limited. We conducted the Holocene sea surface temperature (SST) reconstruction in the NW subarctic Pacific using oxygen isotope of planktonic foraminifer and discussed about forcing mechanism of SST. High sedimentation rate of the sediment off Shimokita peninsula, approximately 70 cm/kyr, made it possible to reconstruct multi-centennial scale SST variability in the subarctic. The oxygen isotope was analyzed for two planktonic foraminiferal species, *Globigerina bulloides* and *Neogloboquadrina incompta*. Although isotope results showed offset of 1.4‰ between species, long-term trend and short-term variations of two records resembled each other. In order to discuss about multi centennial- to millennial-scale variation, the long-term variation was subtracted from isotope record. The result of spectrum analyses clearly indicated 460, 1000, 2500 yr periodicity in SST. These periodicities are different from observed at Kashima where strongly influenced by the Kuroshio, suggesting that mechanisms that control SST variations in subarctic and subtropical NW Pacific are different. The periodicity and phase of SST variation in the subarctic resembled that of the Siberian High variation deduced from ion concentration in the Greenland ice core. On the basis of modern observation, it is suggested that the decadal-scale SST variation at the west of Tsugaru Strait is closely related with strength of the Siberian High. Thus, we conclude that subarctic SST variation during the Holocene is controlled by millennial-scale variation in the polar atmospheric circulation.

Keywords: Holocene, sea surface temperature, planktonic foraminifer, subarctic NW Pacific