



## **Neogloboquadrina pachyderma in the modern Arctic Ocean: a potential for its morphological variation for paleoceanographic reconstruction**

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In the Arctic Ocean, nearly entire planktic foraminifers are comprised of cold-water species *Neogloboquadrina pachyderma* sin. Its extreme dominance prevents extracting past environmental condition in the Arctic Ocean from planktic foraminiferal assemblages. Though potential usability of *N. pachyderma*'s morphological variation for paleoceanographic reconstruction has been presented by recent studies, its application is still limited within a certain region (e.g., N. Atlantic side of the Arctic Ocean), leading requirement for further testing on the Pacific side of the Arctic Ocean. In this presentation, we will present the modern distribution of morphological variations of *N. pachyderma*, using 82 surface sediment samples collected in the western Arctic Ocean. Within investigated surface sediment samples, we have encountered total of seven morphological variations of *N. pachyderma*, compromising their description by previous study (Eynaund et al., 2010). Clear geographic distribution of "Large-sized (>250  $\mu\text{m}$ )" *N. pachyderma* along the offshore of Northern Alaskan margin suggests its preferences in the relatively warm and low-salinity condition. Using the distribution pattern of morphological variations of *N. pachyderma*, we have succeeded to establish transfer functions for salinity and temperature. Application of those functions at down-core foraminiferal assemblages at the Northwind Ridge (ARA01B-MUC05: 75 °N, 160°W) showed general warming of  $\sim 0.5$  °C and freshening of  $\sim 1.0$  ‰ during Holocene.