



## **Neogene and Pleistocene Paleoenvironmental History of the Arctic Ocean**

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The paleoenvironmental evolution of the Arctic Ocean in the Pleistocene and Neogene, in particular the spatial and temporal variability of the sea-ice cover, is largely unknown. Numerous sediment cores were collected in the past 50 years that can be used to reconstruct the paleoceanography of the Arctic Ocean and the timing of glaciations on the surrounding continents in the late Pleistocene but relatively few cores recovered sequences that cover possibly the late Pliocene to Recent. However, the chronostratigraphy of these cores is still a matter of intense debate and distinctly different age models have been proposed for the same records. In this respect, Leg 302 (ACEX) presents a major breakthrough in unravelling the paleoclimate history of the Central Arctic Ocean because it drilled through a nearly 410 m thick latest Paleocene to Pleistocene sediment section on the Lomonosov Ridge near 88°N at about 1200 m water depth. A combination of paleomagnetic, biostratigraphic and <sup>10</sup>Be data allows, for the first time, to establish a chronostratigraphic framework for the Central Arctic Ocean showing that the paleoenvironmental history can be resolved at a higher resolution than previously thought. Although the Neogene to Pleistocene basically consists of siliciclastic sediments, initial studies revealed a pronounced variability in the paleoenvironmental conditions. Here, we present some selected results of our investigations.