



Late Quaternary Events of Atlantic Water Inflow and terrigenous Supply to the Sophia Basin north of Spitsbergen, Arctic Ocean

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Here we present a suite of new sediment cores from the Sophia Basin north of Svalbard that recorded a consistent climate history. The records can be directly correlated to Greenland's ice core data and give evidence for fluctuations in terrigenous input into the Sophia Basin. By application of combined parameters (Sr/Ca, C/N, IRD etc.) we identified a number of terrigenous input events throughout the last 240 kyr. BP. These events can be considered synchronous and used as time markers. Inflow of Atlantic water is documented as higher bulk sediment Sr contents in this region. The good correlation of Sr to planktic $\delta^{13}\text{C}$ of *N. Pachyderma sin.* can be used for fast establishments of age models. Based on a newly proposed conceptual circulation model, the North Atlantic climate system changed between circulation controlled and solar forced modes during the last 240 kyr. BP. Peak glaciations of the Late Saalian (MIS6.2) and Late Weichselian (33-18 kyr. BP) occurred during and probably due to a circulation driven mode. The Early Weichselian glaciation is not documented in our sediment cores. Thus, we conclude that Svalbard was probably not experiencing an extensive glaciation between 115-100 kyr. BP (Glaciation C of the Svalbard glaciation curve; cf. Mangerud et al., 1998), perhaps due to remnant glacial inundation.