



Fram Strait – Stratigraphy and paleoenvironmental reconstructions from the late Pleistocene

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The Fram Strait is a key gateway connecting Arctic and Nordic basins, and thus controlling water-masse exchanges between those basins with a northward penetration of warm and salty waters from the Atlantic and a southward of cold and fresher Arctic water masses. Here we present results obtained on a sediment core retrieved from the central part of the Fram Strait, which has been studied with a multiproxy approach to determine paleoceanographical and climatological changes over this area during the late Pleistocene. As shown by the data obtained on foraminifera assemblages, coccolithophorids, Ice-Rafted Detritus (IRD), oxygen isotope values (measured in *Neogloboquadrina pachyderma* shells), and XRF elemental ratio (bulk sediment measurements), the recovered deposits span a time interval covering MIS 7 to MIS 2. Several muddy beds marked by the absence of microfossils and high IRD contents were observed recurrently in this core, implying a repeated occurrence of harsh conditions, that we attributed to nearly perennial sea-ice covers over the Fram Strait. Conversely, recurrent muddy beds of high microfossil concentrations together often rich in IRD contents suggest a repeated occurrence of seasonally ice-free waters. A tentative correlation, done on the basis of oxygen stable isotopic ratios with the reference core PS1243 (e.g., Helmke et al., 2003), provides a preliminary stratigraphical frame detailing the last 250 ka.