

## Centennial scale variations of surface ocean in the Disko Bugt, west Greenland

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Palynological analyses of the sediment core MSM343310 from Disko Bugt document decadal-centennial variations of surface waters during the last 3600 years. The dinocyst assemblages dominated by *Islandinium minutum*, *Brigantidinium* spp., *Islandinium? cezare* and the cyst of *Pentapharsodinium dalei* indicate large seasonal gradients of temperature due to stratified surface waters. The high dinocysts concentrations ( $>10^5$  cysts/cm<sup>3</sup>) and fluxes ( $>10^4$  cysts/cm<sup>2</sup>year<sup>1</sup>) correspond to an extremely high productivity. The application of the modern analogue technique to dinocyst assemblages indicates centennial scale variation of sea-surface salinity in phase with fluctuation of the  $\delta^{18}\text{O}$  in the Camp Century ice core, thus highlighting the importance of ocean/atmosphere exchanges on regional proxy-climate records. The seasonal sea ice cover also records large amplitude variations, with a main change of regime at about 500 AD, from winter only sea ice of about 2 months/year to more unstable conditions marked by successive cooling pulses with up to 8 months/year of ice coverage.