Lead Author e-mail: *mtelesinski@geomar.de*

Title: *Late Holocene changes in the Greenland Sea – local or regional phenomenon?*

Maciej M. Telesiński[1], Robert F. Spielhagen[1,2]
[1]***GEOMAR Helmholtz Centre for Ocean Research Kiel, Wischhofstrasse 1-3, 24148 Kiel, Germany***
[2]*Academy of Sciences, Humanities, and Literature, 53151 Mainz, Germany*

Various marine, terrestrial and ice-core records of the last 2-3 thousand years indicate at least temporary reversal of the Neoglacial cooling trend in the circum-Nordic Seas region. These changes are concurrent with a major North Atlantic Oscillation (NAO) transition from intermittently negative to generally positive conditions that resulted in more intense inflow of Atlantic Water (AW) into the Nordic Seas. Our foraminiferal and stable isotope data from a central Greenland Sea sediment core of unprecedented multicentennial resolution match this pattern, suggesting a regional character of the phenomenon. However, changes observed in our record seem to be more pronounced than at other sites in the region and suggest a warming of the surface waters comparable to that of the Holocene Thermal Maximum (HTM). Under modern conditions, open-ocean deep convection occurs in the proximity of our site. We argue that the decrease in the rate of deep water formation around 3 ka led to stronger stratification of the water column and amplified the warming effect of the subsequent increase of the AW inflow.