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Surface ocean dynamics in the eastern Nordic seas during MIS 5e

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Stability of interglacial climate strongly depends on the balance of sea surface parameters, e.g. temperature and salinity at high northern latitudes. To examine surface ocean dynamics in this region during the last interglacial (MIS 5e) we have investigated a marine sediment core from the eastern Nordic sea. High sedimentation rates and its geographical position make this core particularly suitable for capturing possible interglacial changes in warm water input. Our investigations are based on planktic foraminiferal census data, sea surface temperature (SST) retrieved from foraminiferal abundances (SIMMAX), benthic and planktic oxygen isotope records, and ice rafted debris (IRD) content. Results of conventional paleoceanographical methods were supported by a newly proposed method of refined foraminiferal counts. This method allows us to consider species with very low abundances which appear in the assemblages due to specific environmental conditions. Usually these rare species are neglected by researchers due to high statistical errors obtained through conventional counts. In the Nordic seas rare species assemblage consists of warm water indicative representatives and can, therefore, serve as a proxy for changes in the intensity of the Norwegian current.

Our multiproxy analyses reveal a complicated and changeable ocean dynamics during MIS 5e. SSTs reached 9-9.5 ˚C, which is close to the modern value, immediately after Termination II, as indicated by a sharp decrease in IRD content and changes in benthic and planktic oxygen isotope records. During MIS 5e, the SST record exhibits two prolonged and relatively stable climate optima, separated by a pronounced cooling event. A SST drop of 5-6˚C indicates an almost complete reversal to glacial conditions during this cold event. However, planktic oxygen isotopes do not change as dramati-

cally as the calculated SSTs probably because of meltwater overprint. A presence of meltwater is corroborated by a marked IRD input which occurred at the beginning of the cold event. Our rare species analysis reveals the occurrence of the two deep water dwellers *Globorotalia scitula* and *Globorotalia inflata* mainly during the second SST optimum. Their deep water habitat may be taken as evidence that the largest volume of Atlantic water advection to the study area also occurred during this second period