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## ABSTRACT

### **Analysis of long term variability of thermohaline characteristics of water masses near Greenland cyclonic gyre**

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This work is dedicated to study of long term variability of water temperature and salinity near Greenland cyclonic gyre in 1950-2012. As one of the main areas of deep water formation, the Greenland Sea is an important part of the global ocean conveyor. Interest to chosen area is actual due to wide discussed problems of global climate change.

The visual representation of temporal variability of water thermohaline characteristics and linear trends were obtained. The analysis of the autocorrelation functions and spectral density data was carried, which allowed to identify the main periods of temperature and salinity variability in each study area. The area of "dome" of bottom and deep waters is dealt with in details. TS analysis and analysis of spatial sections were done to study comprehensively the processes of salinization and water warming occurring in the last two decades. The possible causes of the observed variability of the thermohaline characteristics in the area of bottom waters formation were considered: the influence of advection - connection with the North Atlantic current and the Norwegian current and interrelation with atmospheric processes, for which the air temperature on Jan Mayen Island, Arctic Oscillation and North Atlantic Oscillation indexes have been used. Cross-correlation and wavelet analysis were conducted, which revealed the possible relationship at different time shifts and similar variability periods. Main conclusions about Greenland "dome" water are that since 1991 was observed increase of top water layer temperature and salinity which leads to blocking of convection processes. Structure of "dome" limited by -1C isotherm degraded since 1996. And the reason of this blocking is probably the increase in temperature, not the freshening as it was in previous periods