

Some results of three - year investigations on the interannual variability of the Norwegian - Barents confluence zone.

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Abstract: In the years 1987 - 1989, within the frames of the international program „Greeland Sea Project”, the Institute of Oceanology of Polish Academy of Sciences carried out the oceanological investigations in the ergoactive zones of the Northern Atlantic.

The paper presents some results of these investigations, characterizing interannual variability of aero- and hydrophysical fields and the causal connections between hydrological and hydrobiological anomalies. Main results of these investigations indicate that the summer season of 1988 was an anomaly in the region of confluence of Barents and Norwegian Seas. This results is irrefutably confirmed by biological data concerning species, and hydrophysical data, such as light attenuation coefficient, fluorescence, spatial distributions of water temperature, salinity, density and current velocity, as well as mass and heat fluxes. It arises from these information that the southern border of the confluence zone was normally the heat „source”, while in 1988 it was the heat „sink”. The results obtained indicate two reasons responsible for such a situation. The first is the anticyclonic eddy structure of cold Barents Sea waters, penetrating the confluence zone. The second reason seems to be a mechanism blocking the transport of Atlantic water masses through the transect between Faeroe and Shetland Islands.