
Oral Presentation

Observation of Cold halocline waters at the Chukchi Sea continental margin

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ABSTRACT

In order to investigate changes in seawater characteristics in the Pacific Arctic region, where sea ice extent has been drastically decreasing recently, hydrographic surveys have been conducted using Araon every summer since 2010. Unlike previous years, in the summers of 2017 and 2018 the cold halocline waters were observed at the Chukchi Sea continental margin. In the summer of 2017, particularly, two different types of cold waters were found: low-salinity (<32.5 psu) cold water and high-salinity (34.2~34.5 psu) cold water. The former had been observed in the summer of 2004 at the same area and the latter was observed around the Mendeleev Ridge (>78oN) prior to 2017. We speculate that high-salinity cold water (HSCW) can be advected from the eastern Arctic Ocean due to the shift to Arctic cyclonic circulation regime in 2017. HSCW has the similar ranges of salinity and potential temperature to those of the Cold Halocline Water (34.0<S<34.5psu, < -0.5oC) found on the Siberian continental margin. In this study, we will present the characteristics of both cold waters and their distributions. Additionally, biogeochemical observations in the summers of 2017 and 2018 will be presented and discussed in context with potential changes in vertical structure of water masses at the Chukchi Sea continental margin.

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