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## Appearance of the High-Salinity Cold Water In the Pacific Arctic Sector

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### ABSTRACT

In the Pacific sector of the Arctic Ocean, R/V ARAON Arctic summer expeditions have been conducted to investigate the variability of water mass distributions in August since 2010. From the hydrographic survey data of recent 2 years (2017~2018), we confirm that the specific water mass was observed between the Atlantic Water (AW) and the Pacific Winter Water (PWW). This water mass has relatively low potential temperature ( $< -0.7^{\circ}\text{C}$ ) and high salinity (34.2~34.5 psu corresponding to density of  $27.5\sim 27.75\text{ kg m}^{-3}$ ), so-called the high-salinity cold water (HSCW). HSCW is proposed to be derived from the Cold Halocline Water (CHW) found in the Eastern Arctic continental margins, which has similar ranges of salinity (34~34.5 psu) and potential temperature ( $< -0.5^{\circ}\text{C}$ ). Until 2016 HSCW was mainly observed higher than  $78^{\circ}\text{N}$  near the Mendeleev Ridge, but its pathway appears to move south along the continental shelf slope. In this study, we present the distribution and characteristics of HSCW and will discuss on what causes the inflow of HSCW to the Chukchi Sea continental margin as a boundary current.