VARIABILITY OF WATER MASS DISTRIBUTION ON THE NORTHERN CHUKCHI REGIONS IN THE ARCTIC

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ABSTRACT

To reveal the relationship between sea ice loss and Pacific-origin waters in the Pacific Arctic Sector, we utilized historical data from hydrographic surveys conducted by the Korea Polar Research Institute (KOPRI) and yearlong mooring data provided by the Tokyo University of Marine Science and Technology (TUMSAT). From 2010 to 2016, the anomaly of Pacific Summer Water (PSW) temperature is negatively correlated with the anomaly of sea ice extent. Consequently, the anomaly of surface mixed layer (SML) salinity is positively correlated with the anomaly of sea ice extent. Yearlong temperature and water velocity data show spatial and temporal variations of PSW over the northern Chukchi region. At the western Chukchi Plateau, PSW appeared around the mid of March and was strongly sustained until August. We will also discuss these temporal and spatial variations of PSW and water mass distribution in terms of physical-chemical view point.