



Arctic Pacific water dynamics from model intercomparison and observations

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Pacific Water imports heat and fresh water from the northern Pacific in the Arctic Ocean, impacting upper ocean mixing and dynamics, as well as Arctic sea ice. Pathways and the circulation of PW in the central Arctic Ocean are not well known due to the lack of observations. This study uses an ensemble of the sea ice-ocean models integrated with passive tracer released in the Bering Strait to simulate Pacific water spread. We investigate different branches and modes of Pacific water and analyse changes in the water mass distribution through the Arctic Ocean due to changes in the wind and ocean potential vorticity. We focus on seasonal cycle and inter-decadal variations. The first results have been published recently (Aksenov et al., 2015) as a part of Forum for Arctic Ocean Modeling and Observational Synthesis (FAMOS) project. In the present study we extend the examination further and discuss the role of the Pacific water variability in the recent changes in the Arctic heat and fresh water storage. We present insights in the projected future changes to Pacific water dynamics.

Reference

Aksenov, Y., et al. (2015), Arctic pathways of Pacific Water: Arctic Ocean Model Intercomparison experiments, *J. Geophys. Res. Oceans*, 120, doi:10.1002/2015JC011299.