PAMIP Webinar Series

Nudging observed winds in the Arctic to quantify associated sea ice loss from 1979 to 2020

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Date: August 30th, 2022
Time: 3:00 pm (GMT)

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Abstract

This work conducts a set of new CESM1 nudging simulations to quantify the impact of the observed evolution of large scale high latitude atmospheric winds on Arctic climate variability over the past four decades. Variations in climate parameters, including sea ice, radiation and atmospheric temperatures are well replicated in the model when observed winds are imposed in the Arctic. By investigating simulated sea ice melting processes in the simulation, we illustrate and estimate how large scale winds in the Arctic help melt sea ice in summer. The nudging method has the potential to make Arctic climate attribution more tangible and to unravel the important physical processes underlying recent abrupt climate change in the Arctic.