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THE PACIFIC ARCTIC GROUP CLIMATE OBSERVING SYSTEM: AN INTERNATIONAL EFFORT TO UNDERSTAND THE CAUSES AND CONSEQUENCES OF SEA ICE LOSS IN THE 'HOT SPOT' OF THE ARCTIC OCEAN

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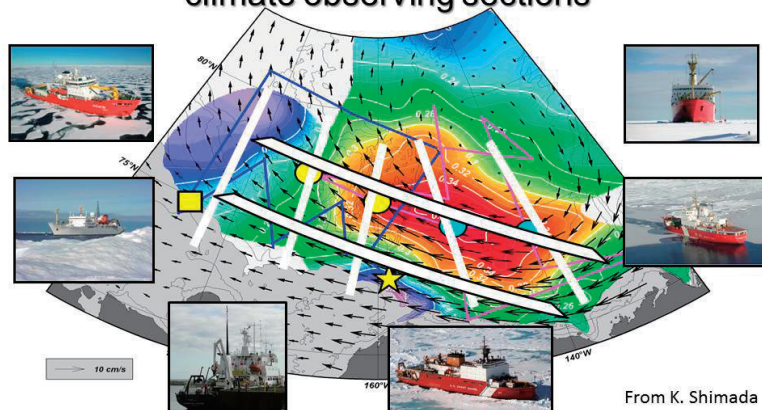
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- The nations of the Pacific Arctic Group are proposing to carry out a series of repeat observations in the Arctic Ocean, north of the Chukchi Sea extending from the Makharov Basin in the West to the Canada Basin in the East.
 - This region has undergone the most extreme loss of sea ice extent and thickness within the Arctic Ocean and yet is very poorly observed. We propose to study the evolution, structure, variability, and heat transport of Atlantic Water in this region and its interaction with northward flowing warm Pacific Water from the Chukchi Sea.
 - We also propose to carry out a census of the ecosystem in this region which is likely in rapid transition due to the extreme physical changes.
 - Repeat observational transects and time-series records from moorings will be planned to reveal year-round the interplay between the amount of heat that is being lost into the atmosphere from this part of the Pacific Arctic Ocean, the enhanced mixing of both surface and intermediate waters in response to increased storms, increased ocean absorption of solar radiation and the consequent impacts on the changing weather and climate of the Northern Hemisphere.
 - The observing period will also incorporate atmospheric observations to support the WMO's Year of Polar Prediction (YOPP).
 - We propose to coordinate this work with the vessels of our respective countries from 2015-2020, which will provide a unique suite of synoptically collected data made available for joint analysis and assessment via the mechanisms already set up within the Pacific Arctic Group.
- www.pag.arcticportal.org

Proposed international Pacific Arctic climate observing sections



From K. Shimada

Background color: dynamic height at 100dbar relative to 800dbar from Mirai and Louis S. St-Laurent 2008 cruises (Oceanic Beaufort Gyre)
Black vectors: average sea ice motion vectors for Nov. 2007- Apr. 2008 (Sea Ice Beaufort Gyre)
Symbols: Mooring array in 2012-2013 (TUMSAT/KOPRI/NIPR & WHOI)