

OCEAN OPTICS XXIV

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Monday, October 8

Poster Session 1

16:00–18:00

Poster 85

ERROR ASSESSMENT OF MULTI-SOURCE SATELLITE-DERIVED SEA ICE LEADS PRODUCTS

Arctic sea ice is undergoing dramatic changes in the context of global climate change. Satellite observation data shows a decreasing Arctic sea ice extent about 13% every decade in recent years, accompany with an accelerate thinning. Sea ice leads as a dynamics and thermodynamic driven sea ice features, it is the important heat flux window for the ocean and atmosphere, especially during wintertime. Poor performance of model simulation and the lack of long series satellite observation data with high resolution limited our focus on characterizing and understanding the variability of Arctic sea ice leads. Hence there is a rising demand for high resolution and accuracy sea ice leads product. A daily AMSRE based product with 6.25 km spatial resolution from 2002 to 2011 and a daily MODIS based product with 1.5 km spatial resolution from 2003 to 2015 and a daily Advanced-MODIS based product with 1 km spatial resolution from 2002 to 2017 have been introduced in this passage. In this context, Synthetic Aperture Radar images are employed to quantify these three kinds of sea ice leads products. Our results highlight that the AMSRE product has a consistent overestimation in pan-Arctic, the MODIS product has a significant omission in Beaufort Sea and a remarkable misclassification in GIN (Greenland, Iceland and Norway), and the A-MODIS product adjusts the accuracy of leads discrimination and can be useful to apply in forecast model.

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