SEA ICE OUTLOOK

2020 July Report

By UTokyo (Kimura et al.)

Contributor

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Executive summary

Monthly mean ice extent in September will be about 3.95 million square kilometers. Our estimate is based on a statistical way using data from satellite microwave sensor. We used the ice thickness in December and ice movement from December 1 to June 15. Predicted ice concentration map from July to September is available in our website: http://ccsr.aori.u-tokyo.ac.jp/~kimura_n/arctic/2020-2e.html

Type of Outlook method:

statistical

Dataset

1. Sea ice concentration on December 1 distributed by ADS/NIPR (https://ads.nipr.ac.jp).
2. Daily sea ice velocity of Kimura Dataset (Kimura et al., 2013), during December 1 and June 15 for all AMSR-E/AMSR2 years.

Prediction of September pan-Arctic extent as monthly average in million square kilometers.

3.95 million square kilometer

Short explanation of Outlook method.

We predicted the Arctic sea-ice cover from coming July 1 to September 30, using the data from satellite microwave sensors, AMSR-E (2002/03-2010/11) and AMSR2 (2012/13-2019/20). The analysis method is based on our recent research (Kimura et al., 2013). First, we expect the ice thickness distribution in June 15 from redistribution (divergence/convergence) of sea ice during December and June, based on the daily ice velocity data. Then, we predict the summer ice area depending on an assumption that thick ice remains later and thin ice melts sooner than the average.

Reference

Kimura, N., A. Nishimura, Y. Tanaka and H. Yamaguchi, Influence of winter sea ice motion on summer ice cover in the Arctic, Polar Research, 32, 20193, 2013.

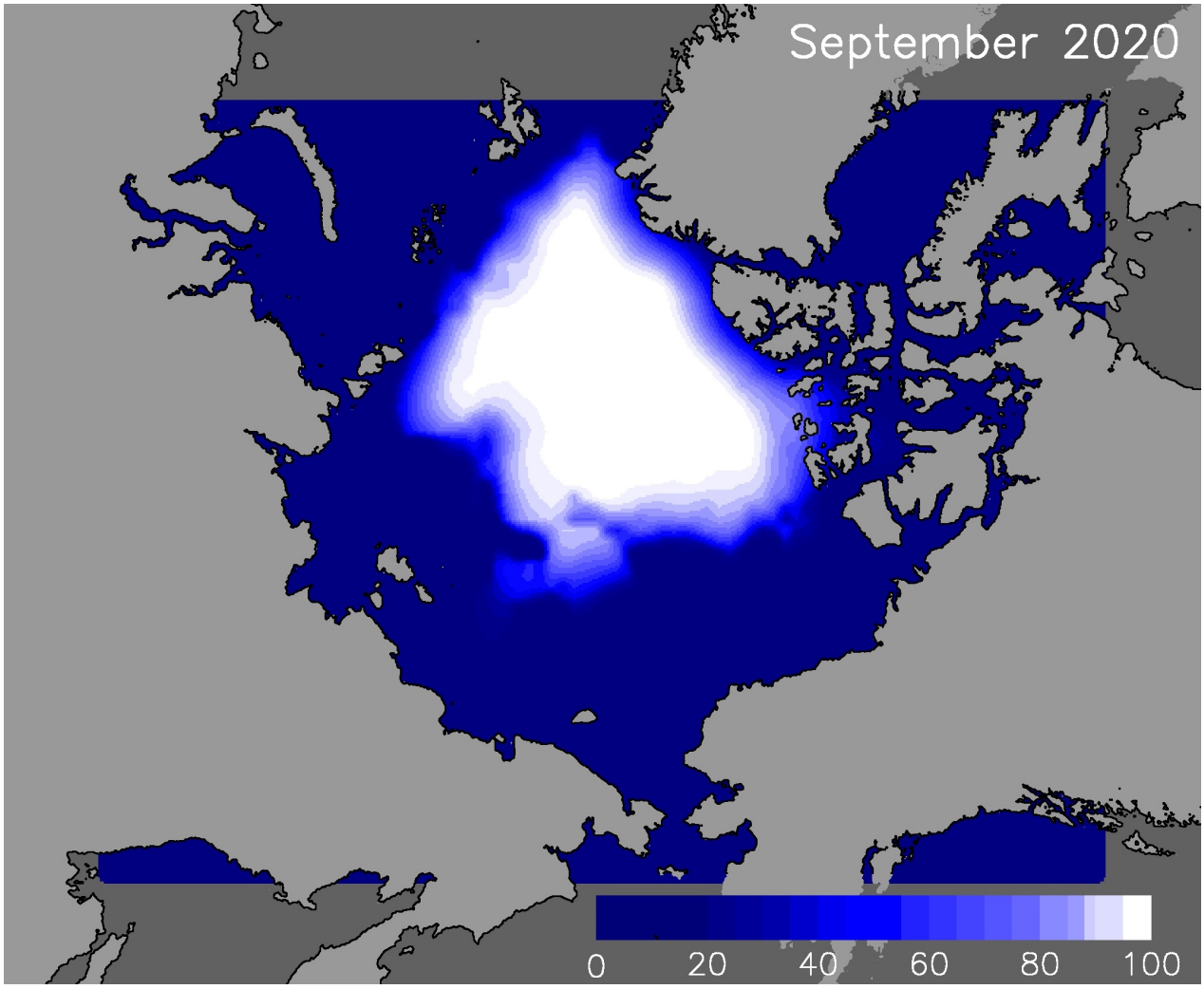

Fig: Predicted monthly mean ice concentration in September 2020.