Sea Ice Outlook
2019 July Report
Individual Outlook

Name of contributor or name of contributing organization:

LASG, IAP

Is this contribution from a person or group not affiliated with a research organization?

Name and organization for all contributors. Indicate primary contact and total number of people who may have contributed to your Outlook, even if not included on the author list.

Primary contact ï¼š Qing Bao (LASG, IAP)

LASG, Institute of Atmospheric Physics Chinese Academy of Sciences.

Total number of peopleï¼š5

Bian He

Jinxiao Li

Lei Wang

Xiaofei Wu

Plateau Atmospheric and Environment Key Laboratory of Sichuan Province, School of Atmosphere Sciences, Chengdu University of Information Technology

Do you want your June contribution to automatically be included in subsequent reports? (If yes, you may still update your contribution via the submission form.)

This is a new submission.

What is the type of your Outlook projection?

Dynamic Model

Starting in 2017 we are accepting both pan-Arctic and pan-Antarctic sea ice extent (either one or both) of the September monthly mean. As in 2016, we are also collecting Alaskan regional sea ice extent. To be consistent with the validating sea ice extent index from NSIDC, if possible, please first compute the average sea ice concentration for the month and then compute the extent as the sum of cell areas > 15%.

a) Pan-Arctic September extent prediction in million square kilometers.

4.01

b) same as in (a) but for pan-Antarctic. If your method differs substantially from that for the Arctic, please enter it as a separate submission.

c) same as in (b) but for the Alaskan region. Please also tell us maximum possible extent if every ocean cell in your region were ice covered.

"Executive summary" of your Outlook contribution (using 300 words or less) describe how and why your contribution was formulated. To the extent possible, use non-technical language.

The prediction for the sea ice outlook June 2019 was carried out on China's Tianhe-2 supercomputer, with a dynamic model prediction system CAS FGOALS-f2 S2S V1.3 . The dynamic model prediction system, named FGOALS-f2 (ice-ocean-atmosphere-land model), provides a real-time predictions in the subseasonal-to-seasonal (S2S) timescales. FGOALS-f2 S2S system has been established in 2017 by R&D team of FGOALS-f2 from both LASG Institute of Atmospheric Physics Chinese Academy of Sciences and PAEKL Chengdu University of Information Technology. The FGOALS-f2 S2S prediction results are used in two major national climate operational prediction centers in China. Basing on the 6-month lead dynamic

model prediction from July 1st, 2019 the outlook predictions of Sea Ice Extent are 4.01 million square kilometers for pan-Arctic in September 2019.

Brief explanation of Outlook method (using 300 words or less).

FGOALS-f2 S2S V1.3 is a global coupled dynamic prediction system. The initialization of this prediction system is based on a nudging scheme, which assimilates wind components (U and V), Temperature (T) in atmosphere and potential temperature in ocean from 1 Jan 1980 to 1 June 2019, and 40 ensemble members are generated by a time-lag method. The predictions are available here for 6 months. This real-time S2S prediction system is fully operated on China's Tianhe-2 supercomputer.

Tell us the dataset used for your initial Sea Ice Concentration (SIC).

The sea ice is constrained by atmosphere and ocean initialization

Tell us the dataset used for your initial Sea Ice Thickness (SIT) used. Include name and date.

None

If you use a dynamic model, please specify the name of the model as a whole and each component including version numbers and how the component is initialized:

Not Specified

If available from your method.
a) Uncertainty/probability estimates:

Median

3.98

Ranges

3.67-4.60

Standard Deviations

0.19

b) Brief explanation/assessment of basis for the uncertainty estimate (1-2 sentences).

The uncertainty was estimated by the ensemble member spread.

c) Brief description of any post processing you have done (1-2 sentences).

No bias correction or any other post processing of ensemble member model output is employed.