Sea Ice Outlook
2019 August Report
Individual Outlook

Name of contributor or name of contributing organization:

Lamont (Yuan and Li)

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.

Xiaojun Yuan and Cuihua Li, Lamont-Doherty Earth

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.)

Include this submission in the July report only.

What is the type of your Outlook projection?

Statistical

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.

4.59

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.

18.24

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.

0.6

"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.

A linear Markov model is used to predict monthly Arctic sea ice concentration (SIC) at all grid

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

The linear Markov model has been developed to predict sea ice concentrations in the pan

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

June monthly mean SIC from NSIDC NASA Team

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

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:

[DynamicModelType]

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

Median

Ranges

Standard Deviations

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

The uncertainty of SIC prediction was measured by RMSE. They were estimated based on 34 years cross-validated model experiments.

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

A constant bias correction was applied to Arctic SIC prediction at each grid point. The biases were estimated based on the cross-validated predictions for 1998-2012. The a constant SIE bias was corrected from the Spetember SIE prediction