Name of contributor or name of contributing organization:

CNRM

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

No

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.

Matthieu Chevallier (primary contact), Lauriane Batté, Constantin Ardilouze, Michel Déqué, Laurent Dorel, Jean-François Guérémy, David Salas y Mélia, Aurore Voldoire (CNRM, Météo France/CNRS UMR 3589, Toulouse, France)
Clotilde Dubois (Mercator Océan, Ramonville-Saint Agne, France)

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.)

Yes

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.

4.66

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.

17.2

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.

This outlook has been run with Meteo France "System 6" global seasonal forecasting system. This system is based on CNRM-CM6 global climate model developed by CNRM and CERFACS and on ocean-sea ice initial conditions produced by Mercator Ocean.

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

This outlook is a model estimate based on a dynamical ensemble forecast with CNRM-CM global coupled model, initialized from atmospheric states from ECMWF operational analysis and ocean-sea ice states derived from Mercator Ocean operational analysis for a few days before 1 June 2018.
A 51-member ensemble is generated by adding statistical perturbations during the simulation.

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

Initial conditions for the ocean and sea ice (including concentration and thickness) are provided by Mercator Ocean. Basis is the Mercator Ocean operational analysis (NEMO-LIM2+SAM ocean data assimilation system, 1/4° resolution).

The 1/4° analysis is upscaled to the 1° horizontal grid of CNRM-CM model. These fields are used to nudge the ocean-sea ice component of CNRM-CM (NEMO-GELATO6, 1° resolution) run in forced mode (driven by ECMWF operational analysis).

Sea ice fields (SIC, SIT,...) from this 1° "initialization run" are used to initialize the coupled model (as well as ocean fields from this run).

A strong restoring is applied near the surface, though no sea ice concentration data is assimilated in this initialization run.

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

Sea above (same as SIC).

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:

Coupled dynamical models

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

Median

Arctic : 4.67 ; Antarctic : 17.22

Ranges

Arctic min-max : 4.09-5.38 ; Arctic 25%-75% : 4.37-4.95 ; Antarctic min-max : 16.50-17.76 ; Antarctic 25%-75% : 16.94-17.46

Standard Deviations

Arctic : 0.33 ; Antarctic : 0.34

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

Statistics are based on the 51-member ensemble.

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

For the sea ice extent, data are corrected for bias and (linear) trend, using the hindcast only (run over 1993-2016).