Name of contributor or name of contributing organization:

AWI Consortium

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.

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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?

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.

4.03

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.

Scientific curiosity.

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

For the present outlook the coupled sea ice-ocean model NAOSIM has been forced with atmospheric surface data from January 1948 to July 9th 2020 (combination of NCEP-CFSR andNCEP-CFSv2). All ensemble model experiments have been started from the same initial conditions on July 9th 2020. The model setup has changed compared to the SIO in 2019 with respect to the resolution of the forecasting model (now about 25km) and the forecasting model's parameters have been optimized with a generic algorithm (Sumata et al, 2019, https://doi.org/10.1175/MWR-D-18-0360.1). We used atmospheric forcing data from each of the years 2010 to 2019 for the ensemble prediction and thus obtain 10 different realizations of potential sea ice evolution for the summer of 2020. The use of an ensemble allows to estimate probabilities of sea-ice extent predictions for September 2019. A variational assimilation system around NAOSIM has been used to initialize the model using the Alfred Wegener Institute'sCryoSat-2 ice thickness product and the OSI SAF ice concentration. In contrast to previous years no snow depth and sea surface temperature are assimilated due to the lack of these data streams. Observations from March and April were used. The assimilation system (Kauker et al, 2015,http://www.the-cryosphere-discuss.net/tc-2015-171) is unchanged to with respect to previous years but no bias correction is applied any more to the CryoSat-2 ice thickness - this is not necessary any more due to the optimization of the forecasting model.

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

OSI SAF EUMETSAT OSI-401b March and April 2020
(http://osisaf.met.no/docs/osisaf_cdop3_ss2_pum_ice conc_v1p6.pdf)

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

CryoSat-2 SIT from Alfred Wegener Institute of March and April 2020 (Hendricks, S. and Ricker, R. (2019): Product User Guide & Algorithm Specification: AWI CryoSat-2 Sea Ice Thickness (version 2.1), Technical Report, hdl:10013/epic.7dacf2fe-bead-4a1b-a266-c4fdd022877f,https://epic.awi.de/id/eprint/49542/).

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

0.23

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

Ensemble spread.

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

No post processing