Name of contributor or name of contributing organization:

Monica Ionita and Klaus Grosfeld

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.

Alfred Wegener Institute Helmholtz Center for Polar and Marine Research

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

Yes automatically include my contributions in August 2017

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.

5.17

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.

18.5

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.

Sea ice in both Polar Regions is an important indicator for the expression of global climate change and its polar amplification. Consequently, a broad information interest exists on sea ice, its coverage, variability and long term change. Knowledge on sea ice requires high quality data on ice extent, thickness and its dynamics. As an institute on polar research we collect data on Arctic and Antarctic sea ice, investigate its physics and role in the climate system and provide model simulations on different time scales. All this data is of interest for science and society. In order to provide insights into the potential development of the seasonal signal, we developed a robust statistical model based on ocean heat content, sea surface temperature and atmospheric variables to calculate an estimate of the September minimum sea ice extent for every year.

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

The forecast scheme for the September sea ice extent is based on a methodology similar to one used for the seasonal prediction of river streamflow (Ionita et al., 2008, 2014). The basic idea of this procedure is to identify regions with stable teleconnections between the predictors and the predictand. The September sea ice extent has been correlated with the potential predictors from previous months, up to 8 months lag, in a moving window of 21 years.

Tell us the dataset used for your initial Sea Ice Concentration (SIC). Include name and date (e.g., "NASA Team, May 2017"). We also encourage you to submit initial fields to the dropbox, see https://www.arcus.org/sipn/sea-ice-outlook/2017/june/call in the section on "Submitting Figures and Gridded Data of Full Spatial Fields (Optional) of Forecasts and Initial Conditions" for detailed instructions. Required if sea Ice concentration is used.

Dataset of 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:

If available from your method for pan-Arctic extent prediction, please provide

a) Uncertainty/probability estimate such as median, ranges, and/or standard deviations (specify what you are providing).

pan-Arctic: lower bound 4.81, upper bound 5.54
pan-Antarctic: lower bound 18.29, upper bound 18.72

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

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