



17 November 2017

CALL FOR CONTRIBUTIONS

Summer 2018 sea ice prediction experiment

Submission deadline: December 15th, 2017

Overview and objectives

The Sea Ice Prediction Network South (SIPN South) is pleased to invite contributors to participate to the first coordinated sea ice prediction experiment in the Southern Ocean. SIPN South is an international project endorsed by the Year of Polar Prediction (YOPP). Its goal is to make an initial assessment of the ability of forecasting systems to predict circumpolar-average, regional-average, and local Antarctic sea ice conditions, with a focus on the summer season. More information on the project can be found at <http://apps3.awi.de/YPP/pdf/stream/106>.

This document outlines the protocol for the summer 2018 experiment and how groups can contribute. All groups are invited to participate regardless of the approach they follow.

Diagnostics requested

Participants are kindly asked to issue one, two or three of the following diagnostics, ordered by descending priority. The submission process is described at the end of this document. The diagnostics are:

1. High priority

Diagnostic: February total Antarctic (circumpolar) daily mean sea ice area¹.

Format: One text file with one row and 28 comma-separated values, each expressing daily sea ice area for the 28 days of February 2018. Units must be 10⁶ km². Numbers are rounded to two decimal digits, trailing zeroes are included.

File name: <group-name>_<forecast-id>_total-area.txt

- <group-name> is the name of the participating group (University, Research Center, Institution)
- <forecast-id> is a 3-digit identifier for the forecast (001, 002, ...)

Remarks: Ensemble forecasts can be submitted and are welcome. Please keep one file per forecast and increment each time the <forecast-id> by one unit: 001 for the first forecast, 002 for the second, etc. If only one forecast is submitted, set <forecast-id> to 001.

Example: A fictitious example is given here for a group named "ucl" contributing three forecasts <http://goo.gl/C1QXeF>.

¹ Sea ice area is defined as the oceanic surface covered by sea ice.

2. Medium priority

Diagnostic: February Antarctic daily mean sea ice area per 10° longitude bin.

Format: A text file with 36 rows each displaying 28 comma-separated values following the same requirements as diagnostic 1. Each row corresponds to a 10° longitude bin. First row: $0^\circ \leq \text{longitude} < 10^\circ$, second row, $10^\circ \leq \text{longitude} < 20^\circ$, ..., 36th row: $350^\circ \leq \text{longitude} < 360^\circ$.

File name: <group-name>_<forecast-id>_regional-area.txt

Example: A fictitious example is given here for a group named "udl" contributing three forecasts: <http://goo.gl/C1QXeF>

3. Low priority

Diagnostic: February Antarctic daily mean sea ice concentration

Format: A NetCDF file with 28 time steps (one per day in February 2018). Each time step displays the spatial field of sea ice concentration. The file format must follow the CMIP6 conventions:

- Sea ice concentration is defined as the fraction of the grid cell covered by sea ice, is named `siconc`, and is expressed in %.
- Longitude and latitude must be reported under variables `longitude` and `latitude`.
- A land-sea mask must be provided through a variable named `sftof` that expresses the percentage of the grid cell covered by ocean (units %).
- Areas of grid cells must be provided through a variable named `areacello` that expresses the area of the grid cell in m².

File name: <group-name>_<forecast-id>_concentration.nc

Example: A fictitious example is given here for a group named "udl" contributing three forecasts: <http://goo.gl/C1QXeF>

Verification products

The forecasts will be assessed against two observational references:

- The Near-Real-Time DMSP SSMIS Daily Polar Gridded Sea Ice Concentrations, Version 1 (Data Set ID: NSIDC-0081; <http://nsidc.org/data/nsidc-0081>).
- The OSI SAF SSMIS Sea Ice Concentration Maps on 10 km Polar Stereographic Grid (Data Set ID: OSI-401-b; <http://osisaf.met.no/p/ice/index.html#conc-ssmis>).

Both data sets are publicly available. Sea ice areas will be computed directly from the sea ice concentration fields.

Submission process

The submission of a forecast by a group is done in two steps.

1. First, the contributing group gathers the diagnostics (see “Diagnostics Requested” above) in an online archive of its choice. The archive must be accessible with a simple URL, so that the SIPN South leadership team can easily retrieve the information. A Google Drive, a Dropbox archive or a public FTP are fine.
2. Then, the groups fill in an online form (<https://goo.gl/6RnnMQ>) where they provide meta-data such as forecasting method, contact information but also the link where their data can be retrieved from.

Groups are invited to send an e-mail to francois.massonnet@uclouvain.be upon completion of the submission process to ensure that the data and meta-data has been well received.

The deadline for submitting the online form (containing the link pointing towards the data) is the **15th of December 2017**.

Outcome

The SIPN Leadership Team will analyze the forecasts after February 2018 and produce a report that will be publicly available on the 1st of May. A poster will be presented at the Polar 2018 meeting in Davos, Switzerland (June 2018). All participating groups will be invited as co-authors on the poster.

Contact and questions

Any question, comment or feedback should be addressed to François Massonnet (francois.massonnet@uclouvain.be).

Good luck, and enjoy!

The SIPN South Leadership team
F. Massonnet, P. Reid, J. L. Lieser, C. M. Bitz, J. Fyfe, W. Hobbs, K. Kusahara