Untitled

balbalbal

Introduction

{==**Antarctic sea ice general description**. Seasonality, trends.==}

{==**Importance**. Impacts on life. Potential impacts on weather. Impacts on climate. Impacts on ocean circulation.(Justify why it's important to study and understand)==}

{==**Prediction systems.** Why is it important: operations {>>Discuss with Phil<<}; science needs (we need good models). What is available. Discussion on S1 {>>Can we discuss previous S1 results? Laura's paper is not public.<<}==}

{==**Objective.** Evaluate S2.==}

Data and methods

All datasets are regrided using bilinear interpolation to a common grid, which is a polar sterographic grid with approximatedly equal area of 25km².

Description of the model

ACCESS-S2 is the next saeasonal prediction system after ACCESS-S1. It uses virtually the same exact model configuration except for some model versions being different. The main difference are the initial conditions. While S1 used initial conditions from the UK Met Office, S2 uses the Bureau's own system. {== Description of the system ==}{>>Atmosphere and ocean. Highlight no ice data assimilation. Highligh that the hope is that ice will respond to SST/atmosphere DA<<}

For evaluation we use hindcst for the period 1981–2023{>>Check<<}. Anomalies will be taken with respect to the 1981–2011 climatology computed from the reanalysis. Climatology is smoothed with a 11 day running mean.

Verification datasets

There is not a lot of data on sea ice properties, especially for things like thickness, age, etc. However there are relatively reliable satellite-derived estimates of sea ice concentration, which estimates the proportion of each grid area that is covered with ice. These products are not perfect and there still exists a fair bit of observation al uncertainty. To account for this uncertainty we use multiple datasets.

Bootstrap

{>>From https://nsidc.org/data/nsidc-0079/versions/4<<} This sea ice concentration data set was derived using measurements from the Scanning Multichannel Microwave Radiometer (SMMR) on the Nimbus-7 satellite and from the Special Sensor Microwave/Imager (SSM/I) sensors on the Defense Meteorological Satellite Program's (DMSP) -F8, -F11, and -F13 satellites. Measurements from the Special Sensor Microwave Imager/Sounder (SSMIS) aboard DMSP-F17 are also included. The data set has been generated using the Advanced Microwave Scanning Radiometer - Earth Observing System (AMSR-E) Bootstrap Algorithm with daily varying tie-points. Daily (every other day prior to July 1987) and monthly data are available for both the north and south polar regions. Data are gridded on the SSM/I polar stereographic grid (25 x 25 km) and provided in two-byte integer format. Data coverage began on 01 November 1978 and is ongoing through the most current processing, with updated data processed several times annually.

(Comiso 2023)

NASA Team

{==missing==}

CDR

NOAA/NSIDC's Climate Data Record V4 combines the Bootstrap and NASA Team estimates in an attempt to overcome each algorithm's weaknesses. {>>More detail on how are they combined and their properties.<<} As such, it is is not a truly independent dataset.

Meier, W. N., F. Fetterer, A. K. Windnagel, and S. Stewart. 2021. NOAA/NSIDC Climate Data Record of Passive Microwave Sea Ice Concentration, Version 4. [Indicate subset used]. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center https://doi.org/10.7265/efmz-2t65. [Date Accessed] {>>Add to zotero<<}