

# Frost Impressions O



**Elio Campitelli<sup>1,2</sup>,**

(1) School of Earth, Atmosphere and Environment, Monash University, Australia.  
(2) Securing Antarctica's Environmental Future, Monash University, Australia.

(3) Universidad de Buenos Aires, Facultad de Ciencias Exactas y Naturales. Buenos Aires, Argentina.  
(4) CONICET – Universidad de Buenos Aires. Centro de Investigaciones del Mar y la Atmósfera (CIM)

# ACCESS-S2

The Australian Bureau of Meteorology's current seasonal pre ACCESS-S1 in October 2021. Same model configuration:

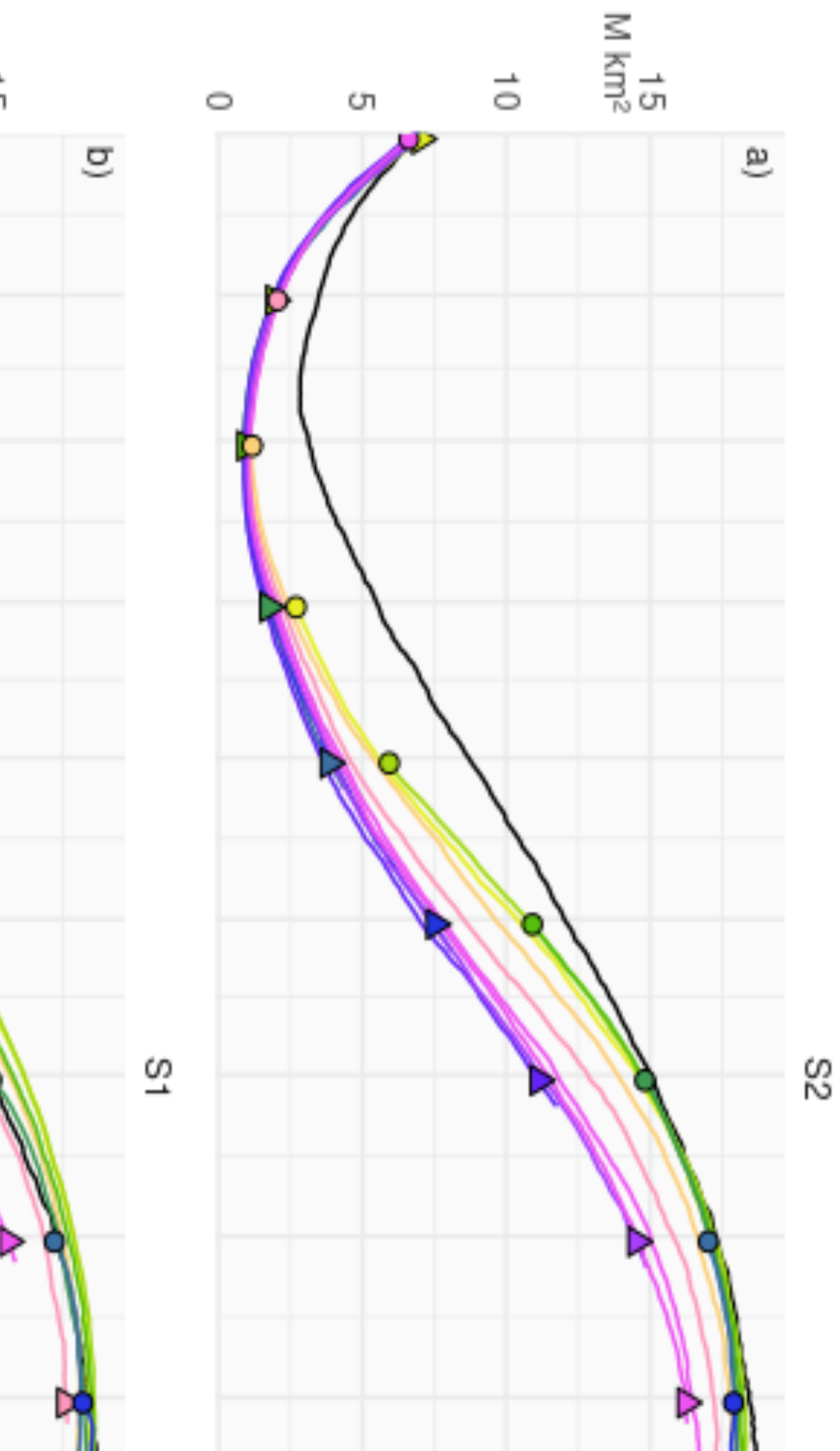
- Global Atmosphere 6.0 (GA6) N216 (~60km) 85 levels.
- Global Land 6.0 N216 4 levels.
- Global Ocean 5.0 1/4° 75 levels.
- Global Sea Ice 6.0 (CICE 4.1) 1/4° 5 ice categories.

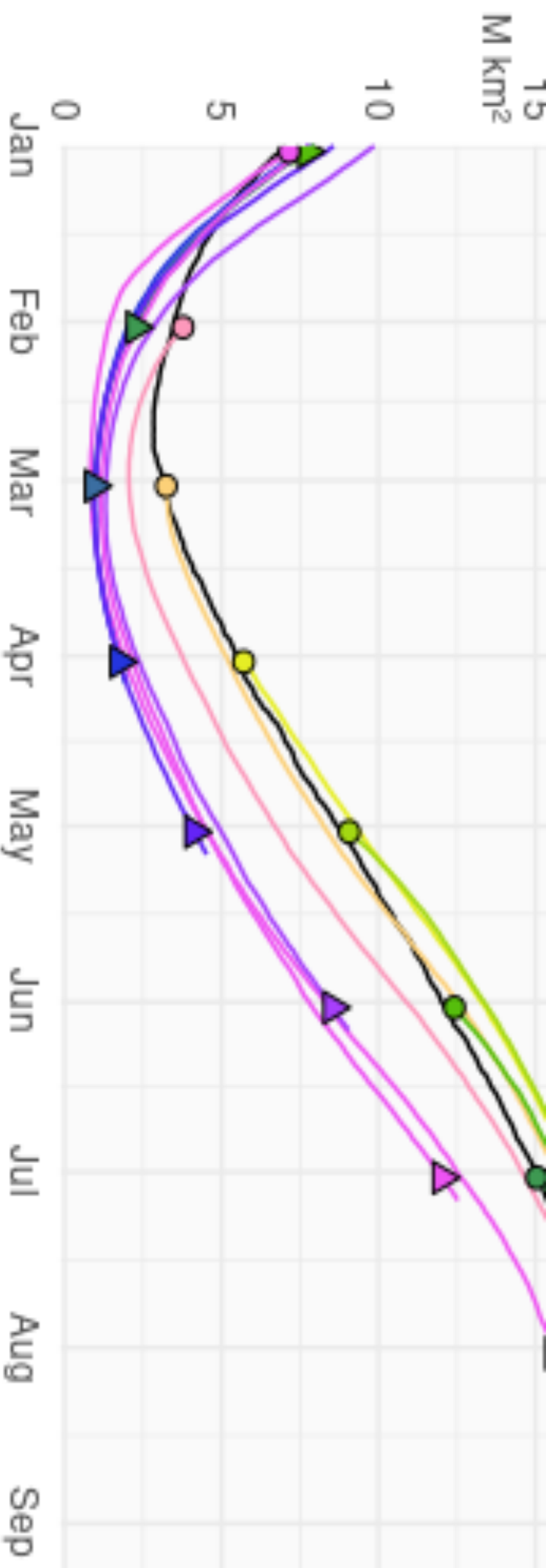
Initial conditions (hindcast):

S1: ERA-interim + Met Office FOAM (includes sea ice)

S2: ERA-interim + BOM analysis (doesn't include sea ice)

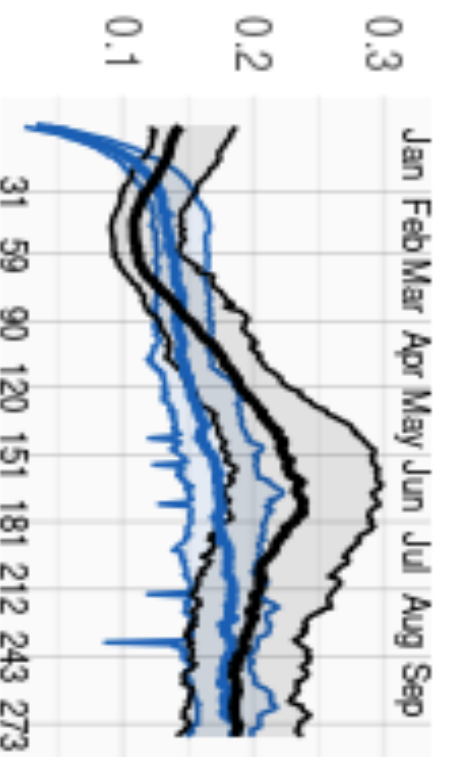
# Results



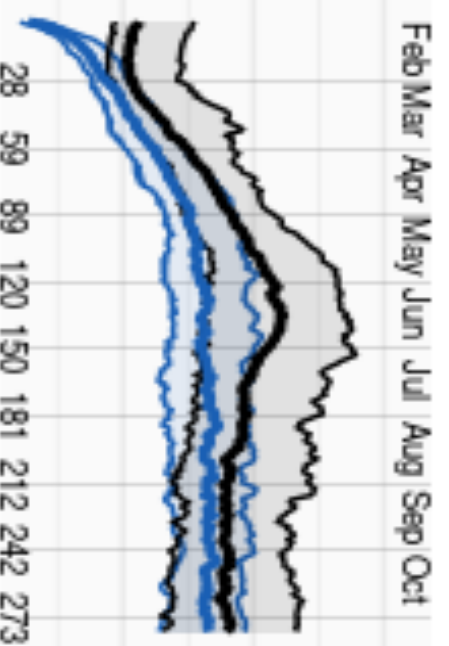


**Figure 1:** Median sea ice extent for all hindcasts initialised the first of the month. ACCESS-S2 and ACCESS-S1 in colours representing the start month. NSIDC CDR median sea ice extent.

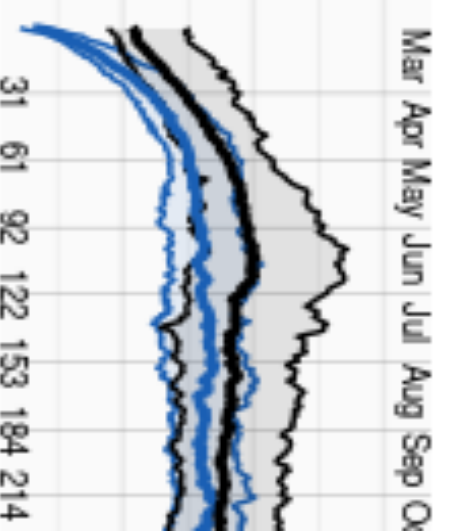
Jan



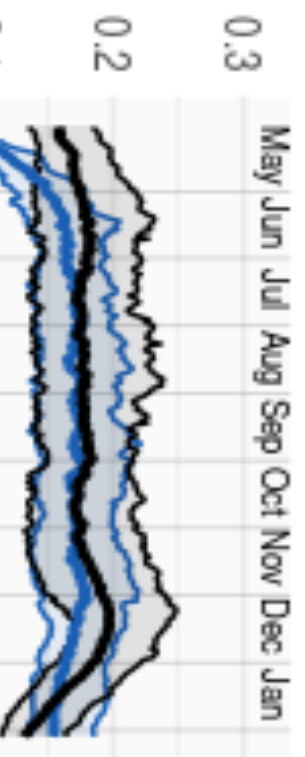
Feb



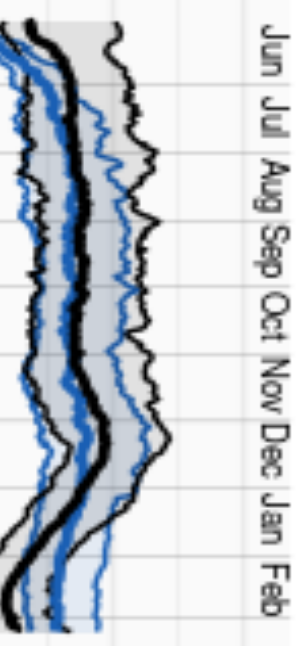
Mar



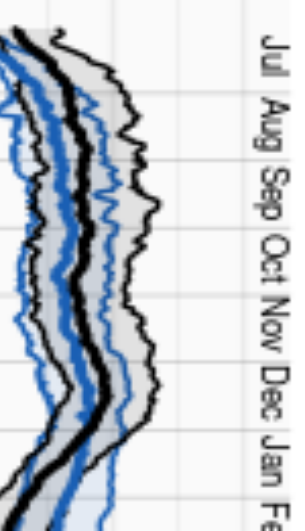
May



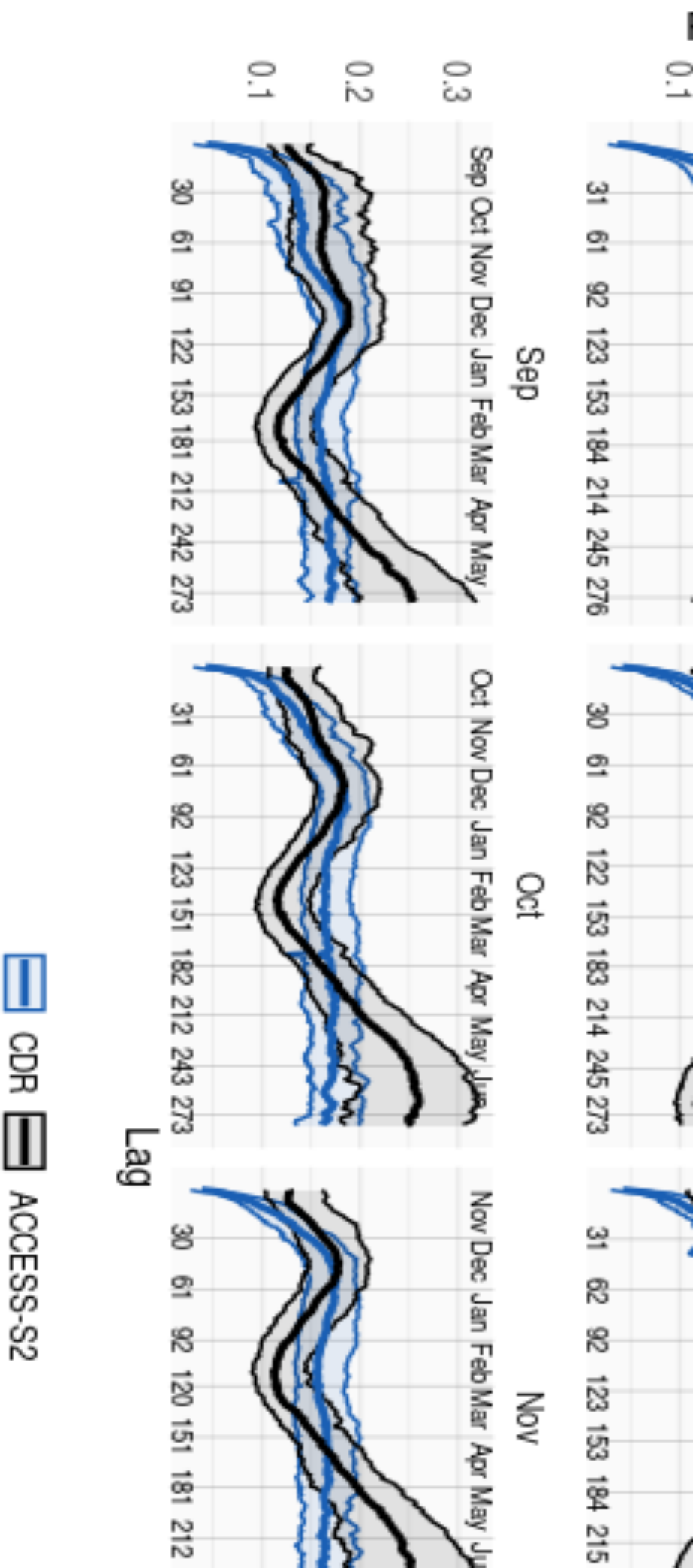
Jun



Jul



RMSE



**Figure 1:** Median and 95% coverage of sea ice concentration as a function of forecast lag for all forecast initialisation month compared with a reference forecast of persistence

# f ACCESS-S2 Antarctic Sea Ice

a.

A). Buenos Aires, Argentina.

# Data

diction system. Replaced

ACCESS-S2 and S1 hindcasts (1981–201st of every month.

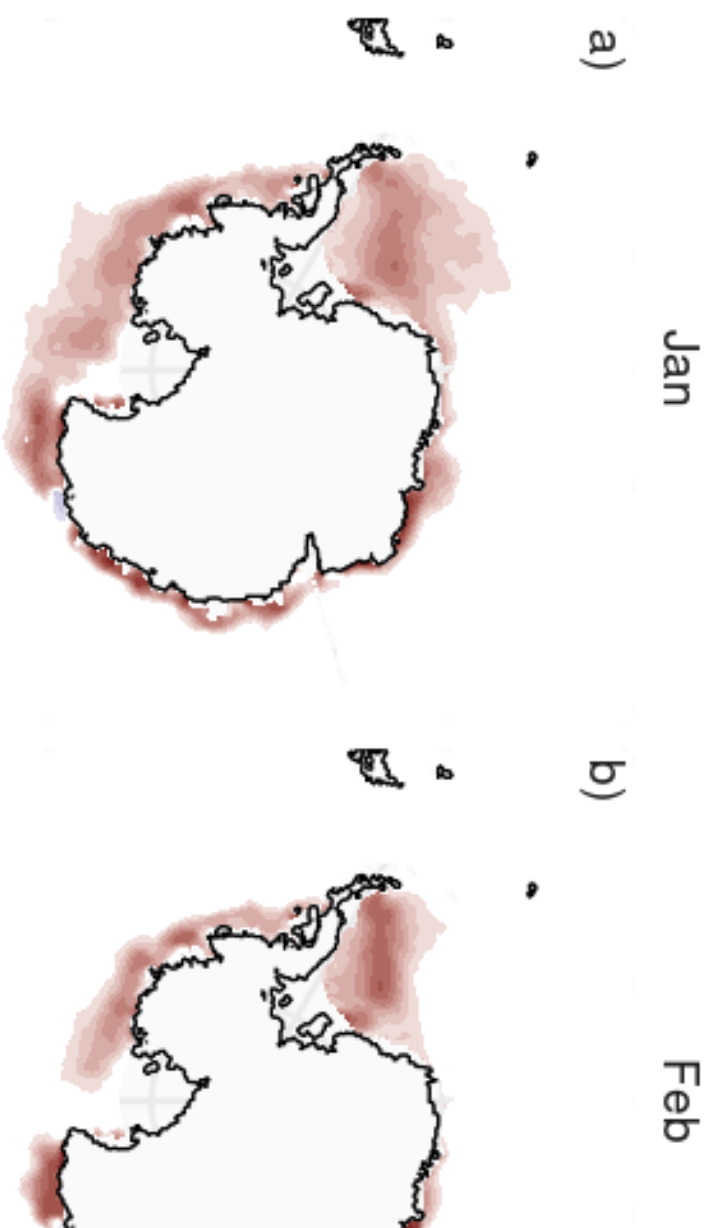
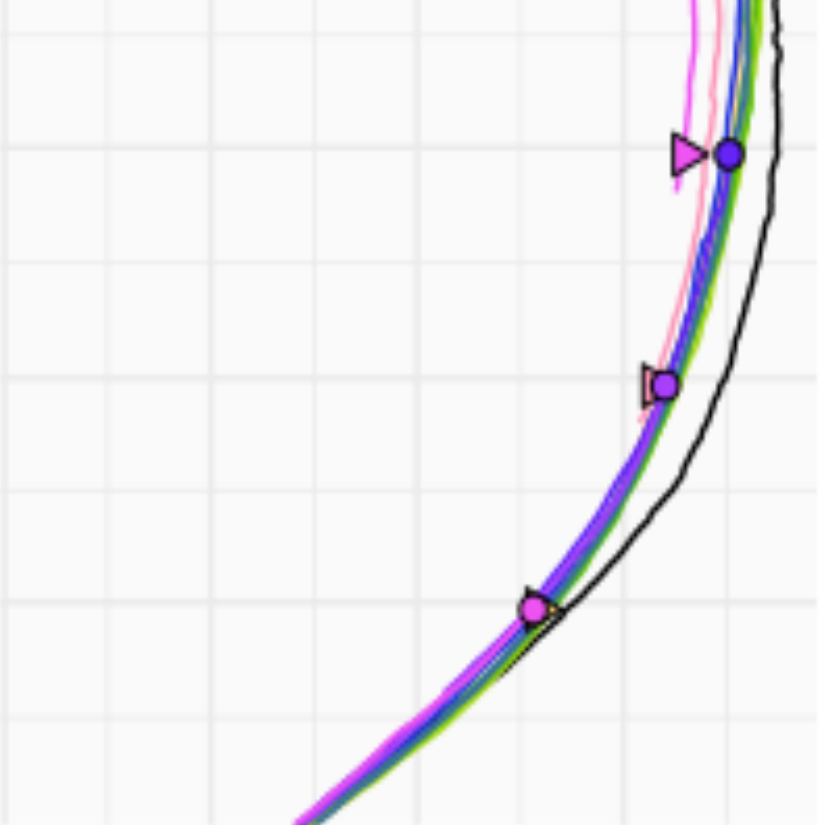
Observations: NSIDC CDRv4 sea ice co

# Metrics

**Sea Ice Extent:** Area covered with at l

**RMSE:** Root Mean Squared Error of sea

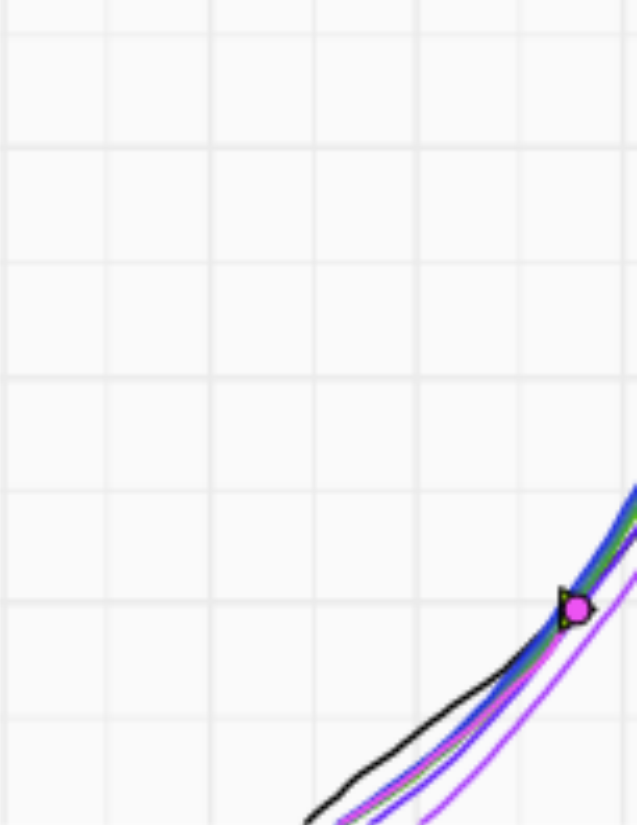
**IIEE** (Integrated Ice Edge Error): Area presence or absence of sea ice (conce



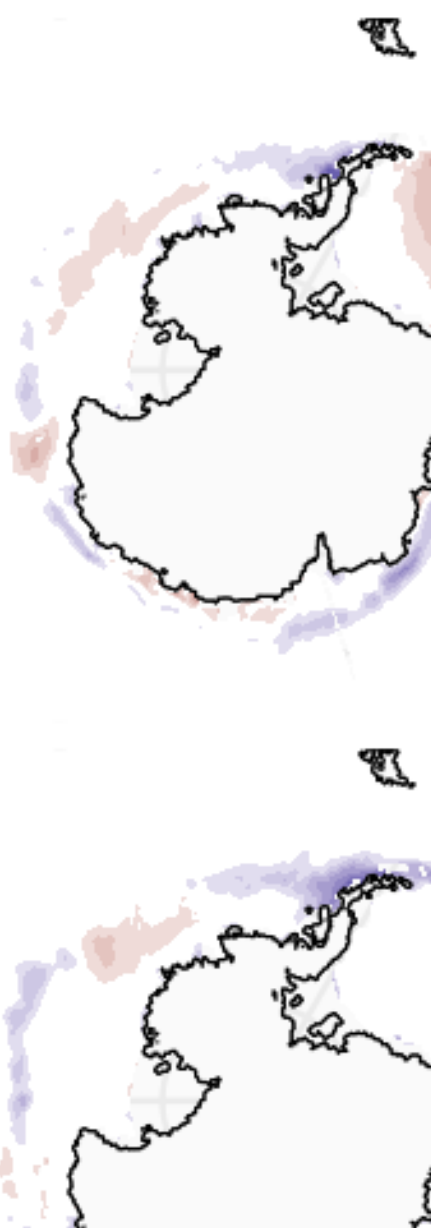
May

Jun

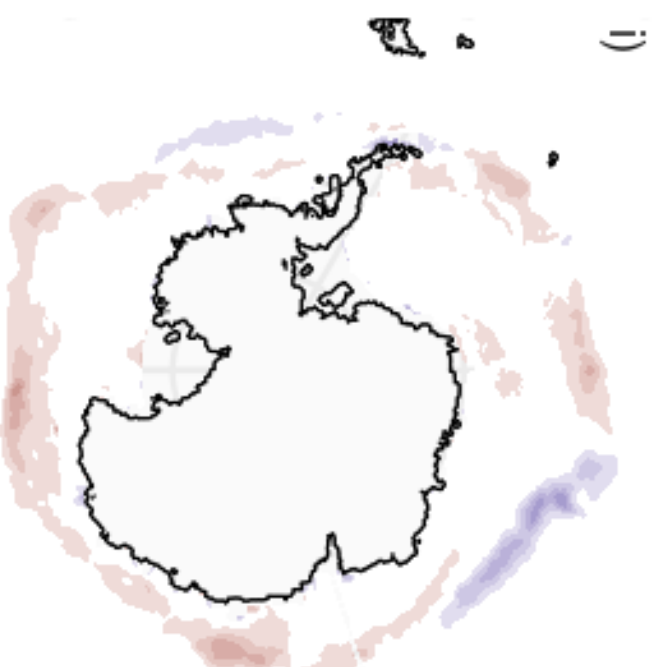




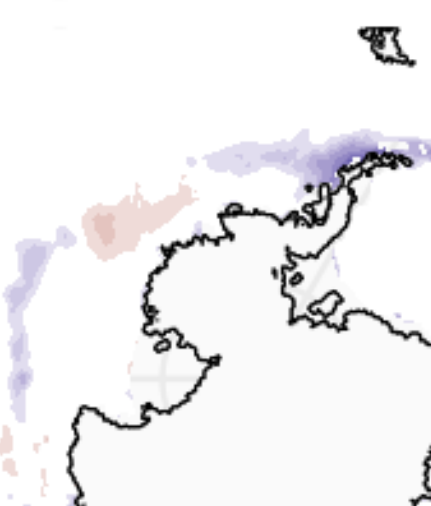
the month for  
in black, the



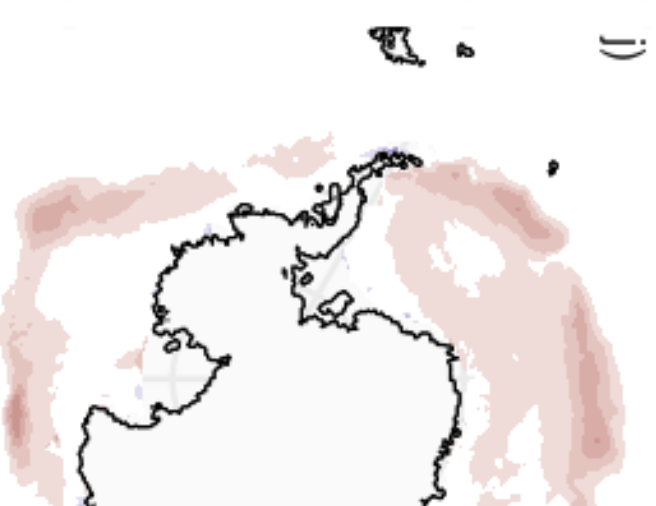
Sep



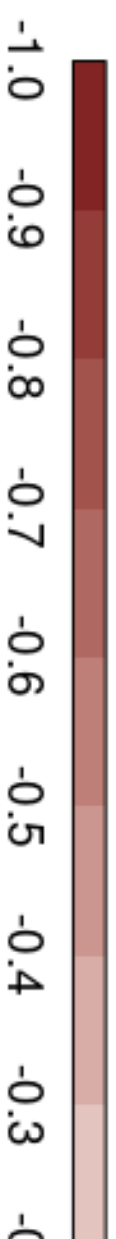
i)



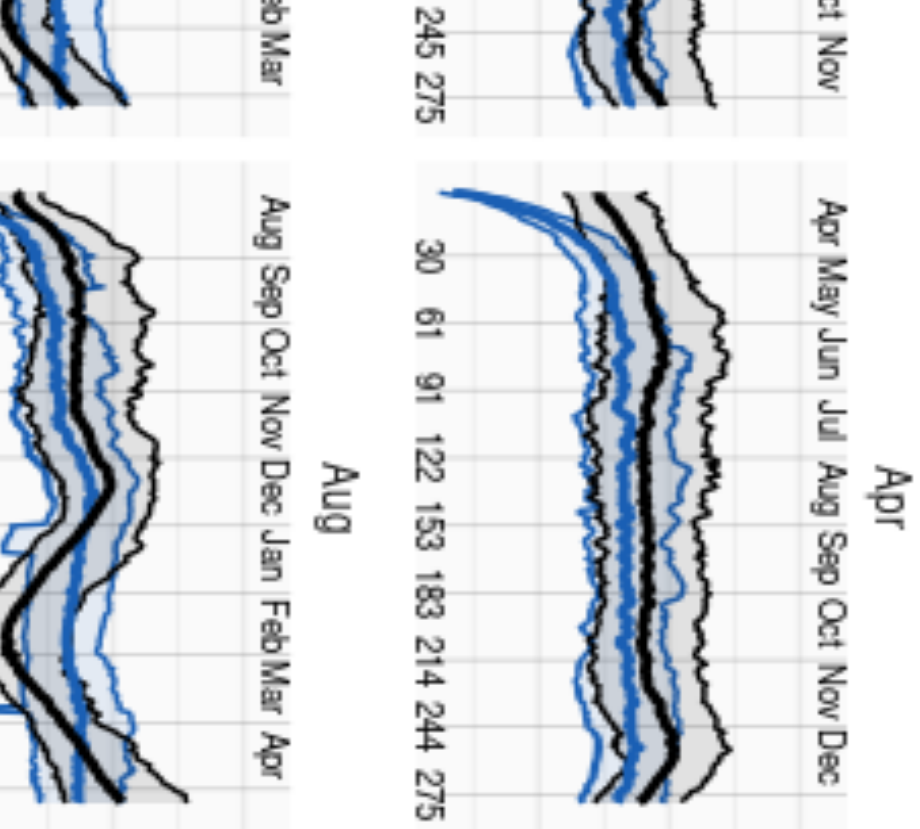
Oct

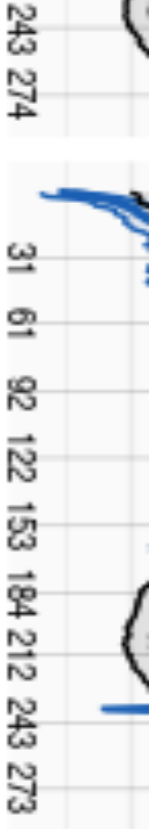


j)

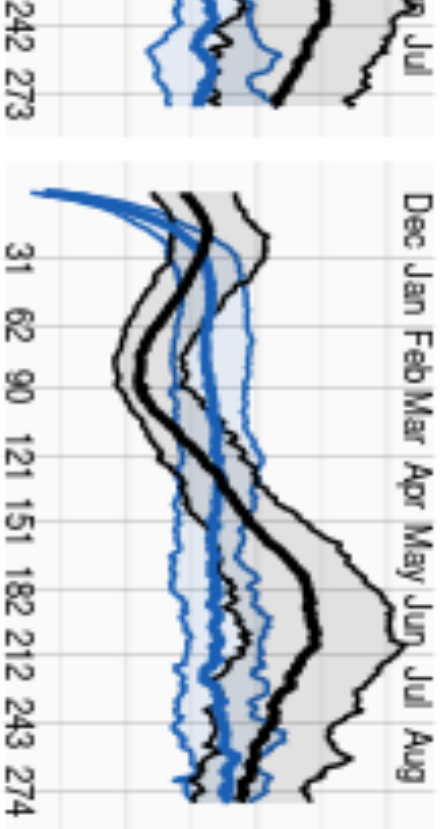


**Figure 1: ACCESS-S2 sea ice conc**





Dec



ation anomalies RMSE  
d on the first of each  
ce of anomalies.

# se Forecast



Securing Antarctica's  
Environmental Future

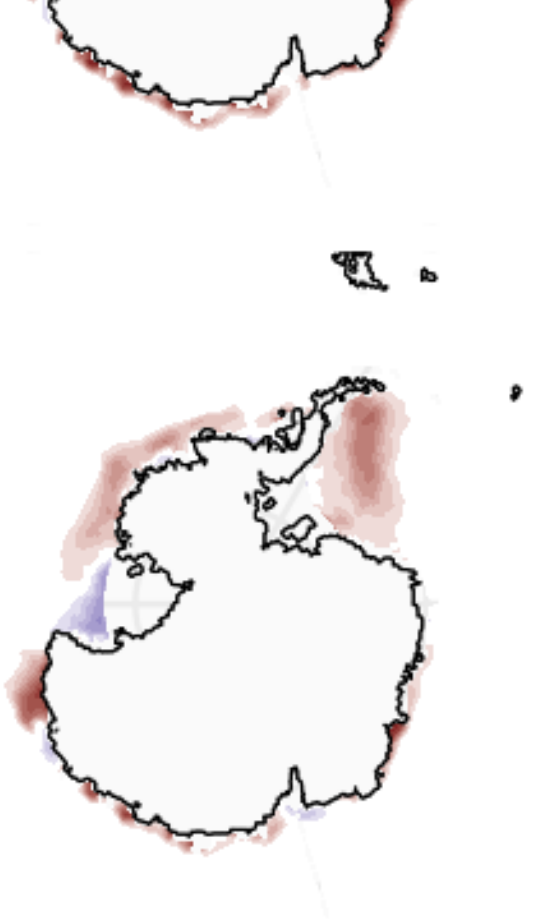
[elio.campitelli@monash.edu](mailto:elio.campitelli@monash.edu)

14 and 1990–2012, respectively). Initialised at the  
concentrations.

east 15% sea ice.  
a ice concentration anomalies.  
a in which model and observations disagree on the  
concentration >15%).

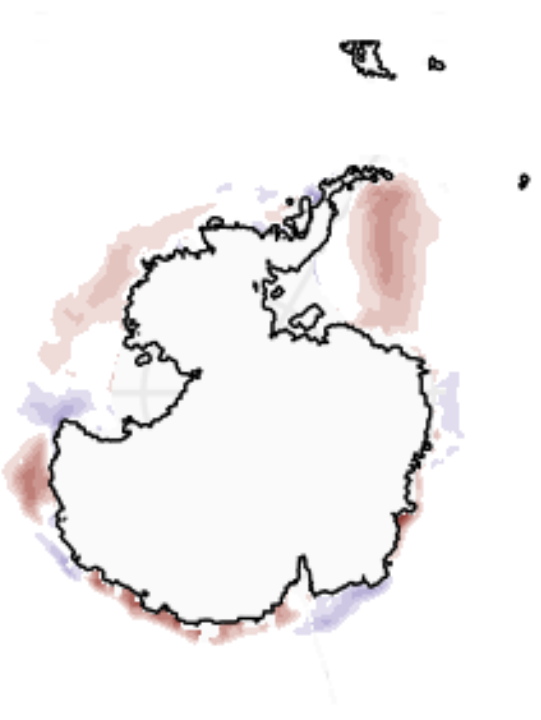
Mar

c)



Apr

d)



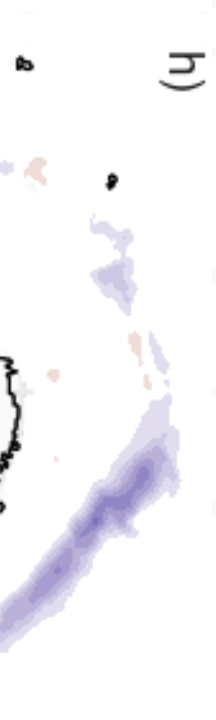
Jul

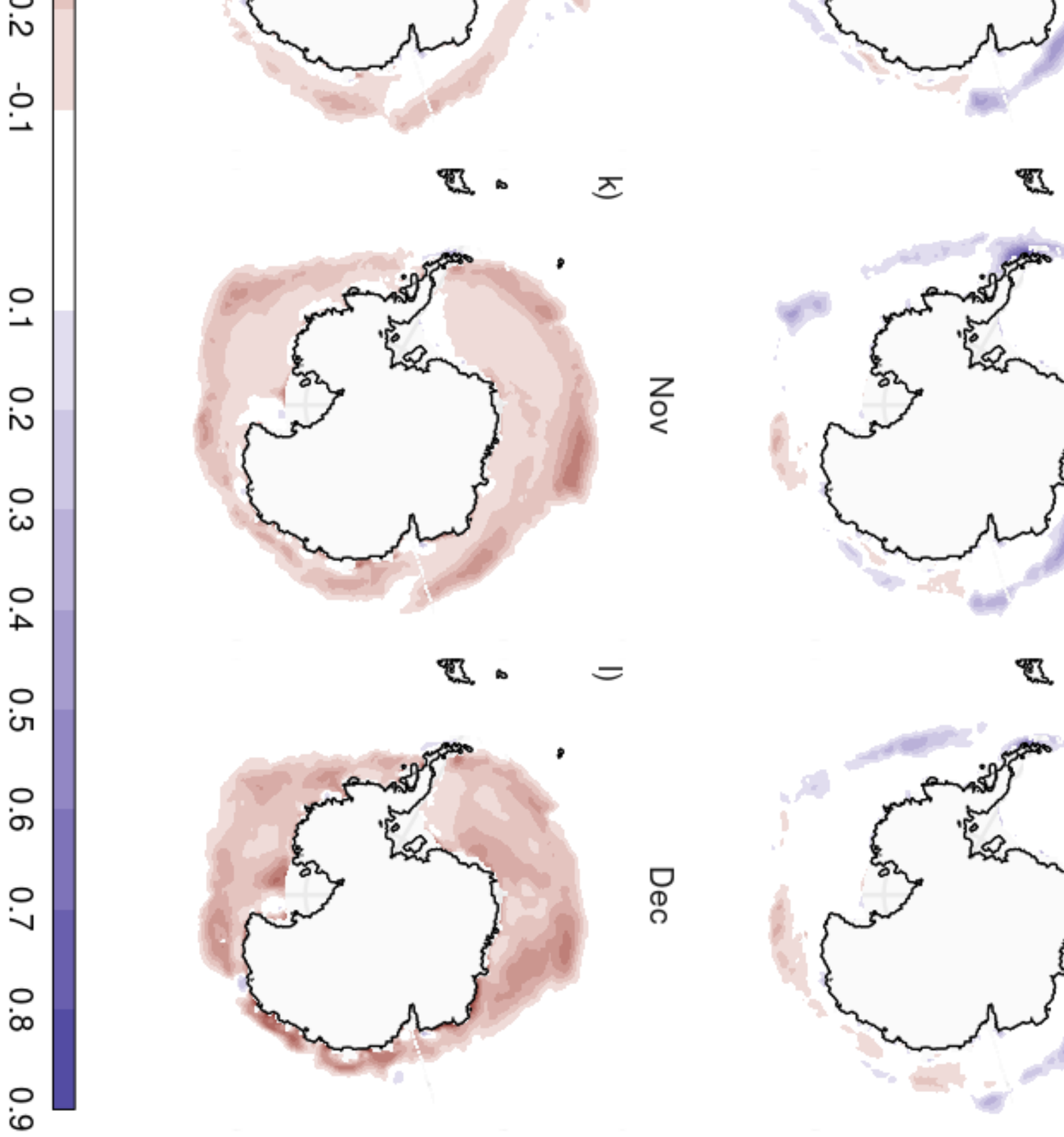
g)



Aug

h)





entration bias with NSIDC sea ice concentration.

