



*The Eighth Session of the East Asia winter  
Climate Outlook Forum*



**Seasonal Outlook for winter  
2020/2021 over Mongolia**

Kh. Akhmyetali and B. Jargalan

*Research division of General circulation and Long range prediction*

*Information and Research Institute of Meteorology,  
Hydrology and Environment, NAMEM, MONGOLIA*

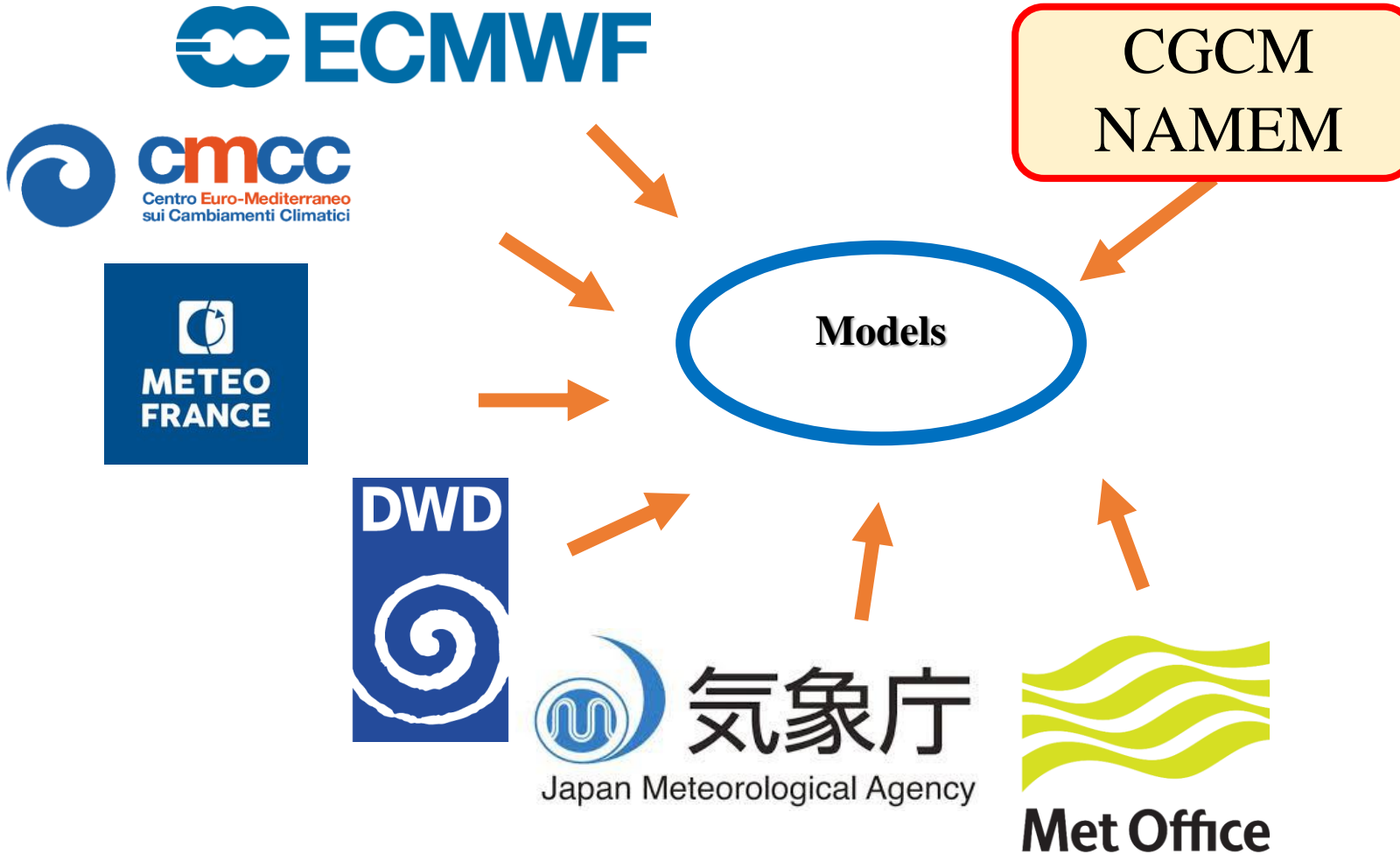
5 November 2020

# OUTLINE

---

- Used models for monthly and seasonal prediction
- Outputs of dynamical models
- Statistical model based on SST and SIC
- Current condition of Arctic sea ice
- Results based on both Statistical and dynamical models
- Outlook for coming winter season

# Used models



Models	Ensemble members	Initial condition
CGCM	10 members	SEP 2020
TCC	51 members	23 OCT 2020
ECMWF	51 members	OCT 2020
CMCC	50 members	OCT 2020
METEO	51 members	OCT 2020
DWD	50 members	OCT 2020
UKMO	2 members	OCT 2020

# **Outputs of dynamical models**



# Geopotential height at 500 hPa for DJF, 2020/21

CGCM

ECMWF

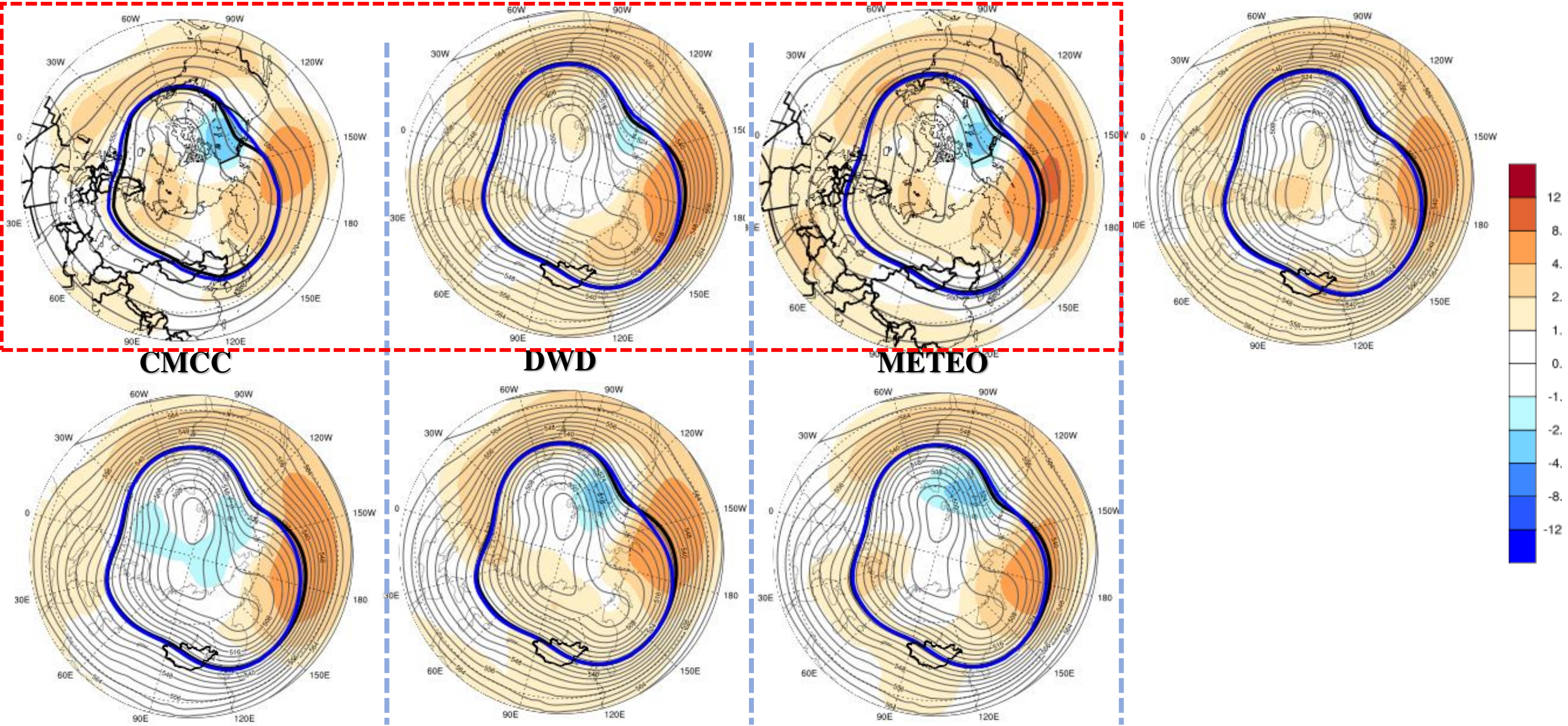
TCC

UKMO

CMCC

DWD

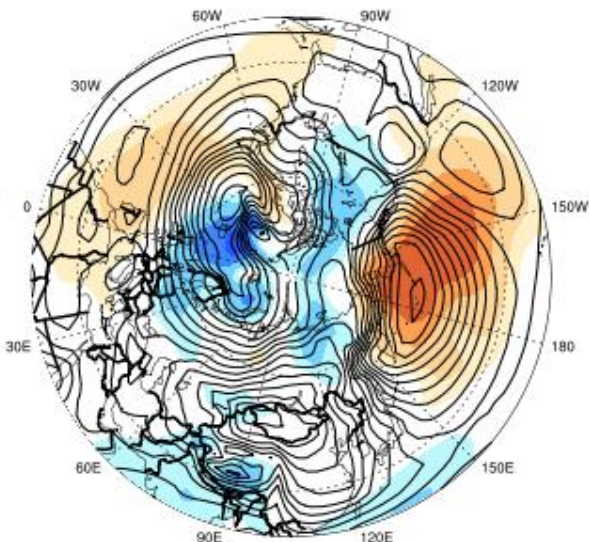
METEO



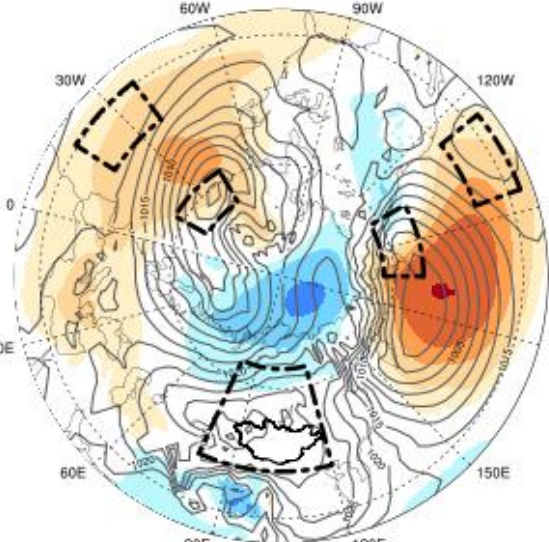


# Sea level pressure for DJF, 2020/21

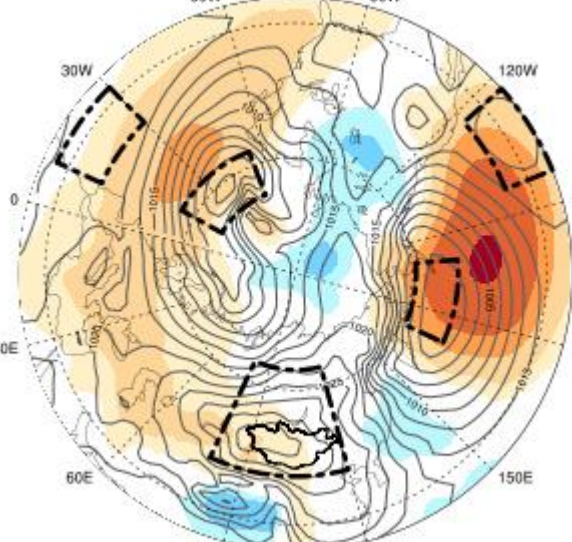
**CGCM**



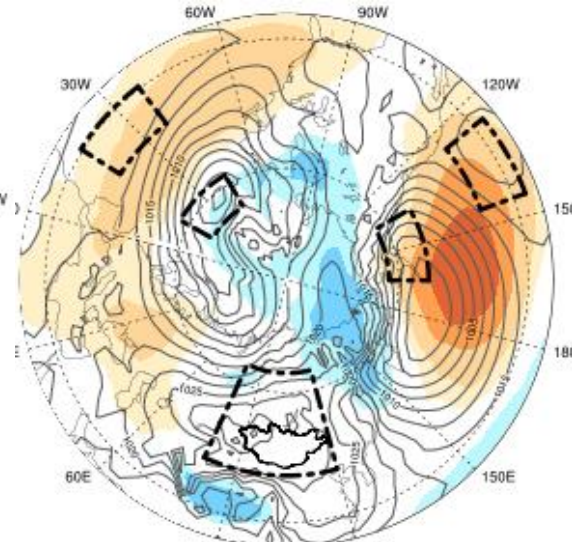
**ECMWF**



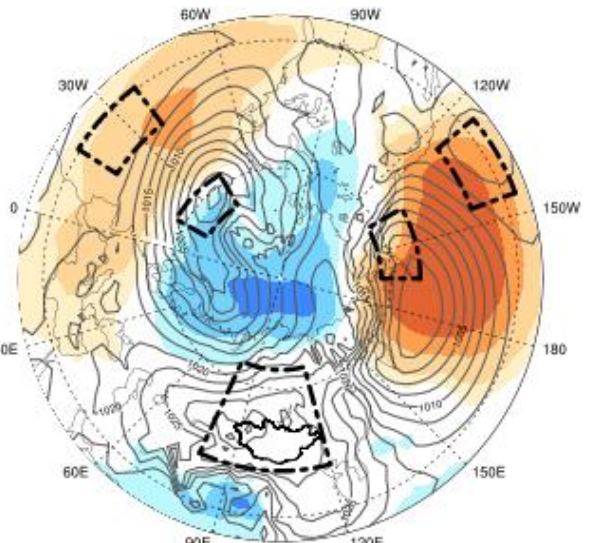
**TCC**



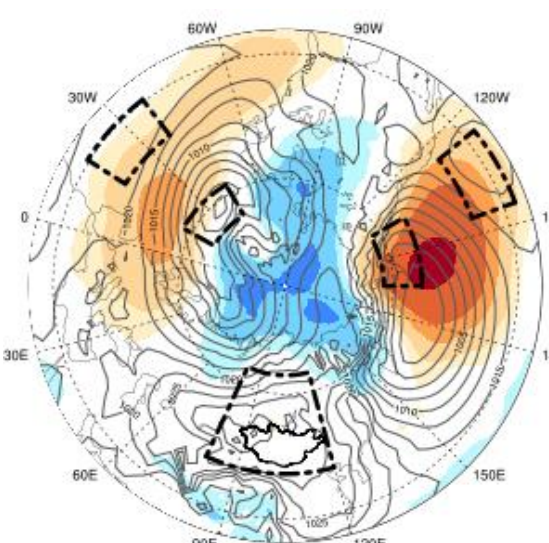
**UKMO**



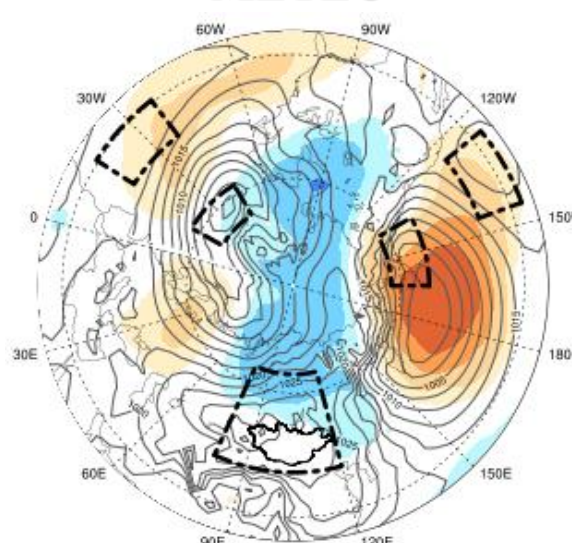
**CMCC**



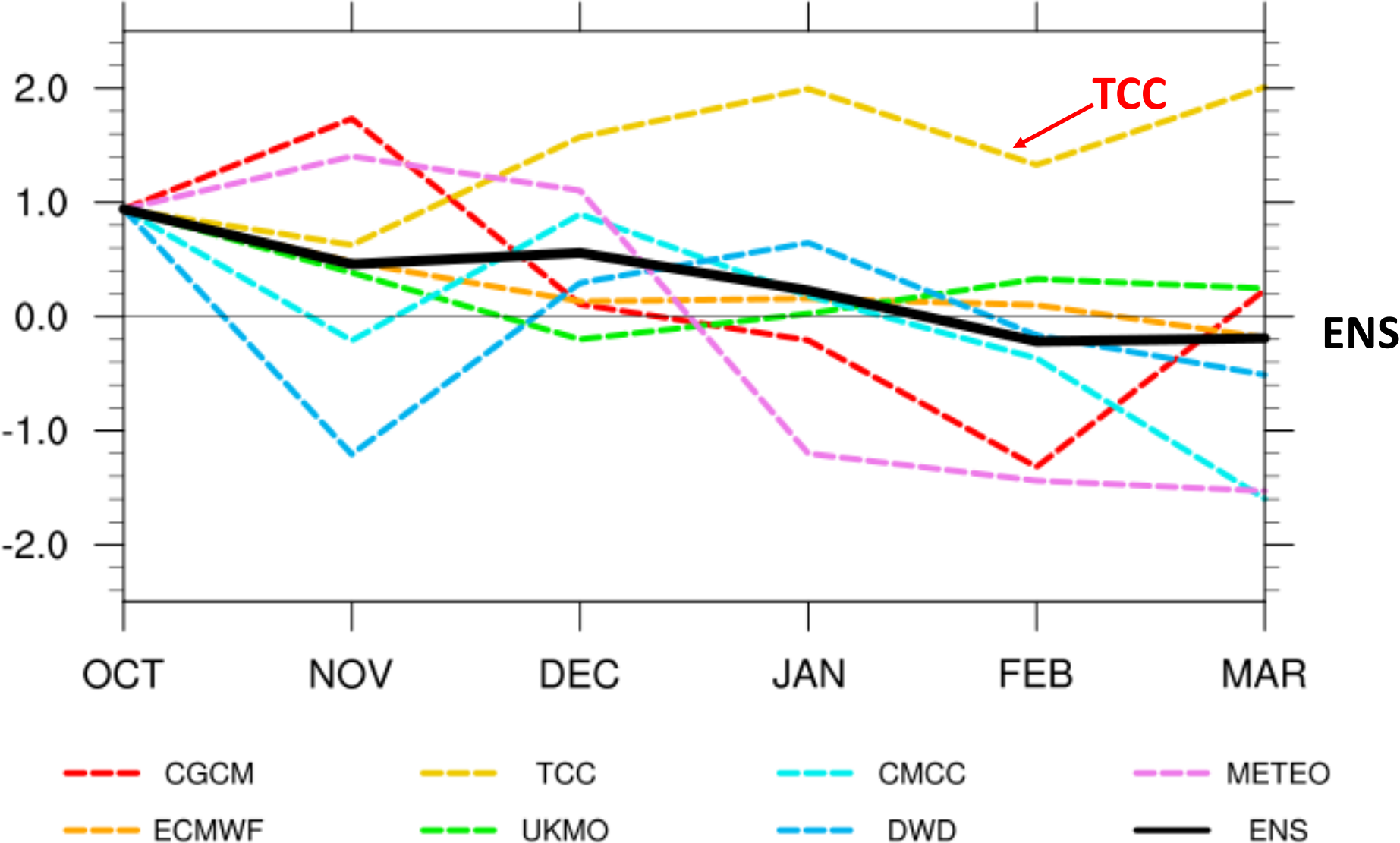
**DWD**



**METEO**



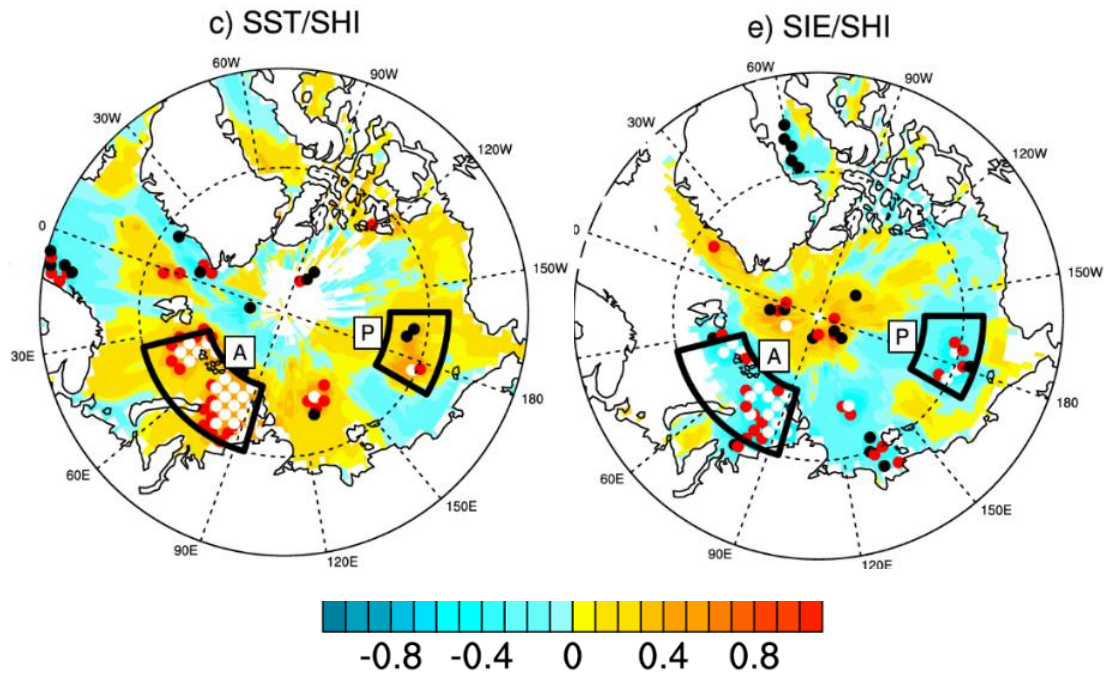
# Prediction for SHI



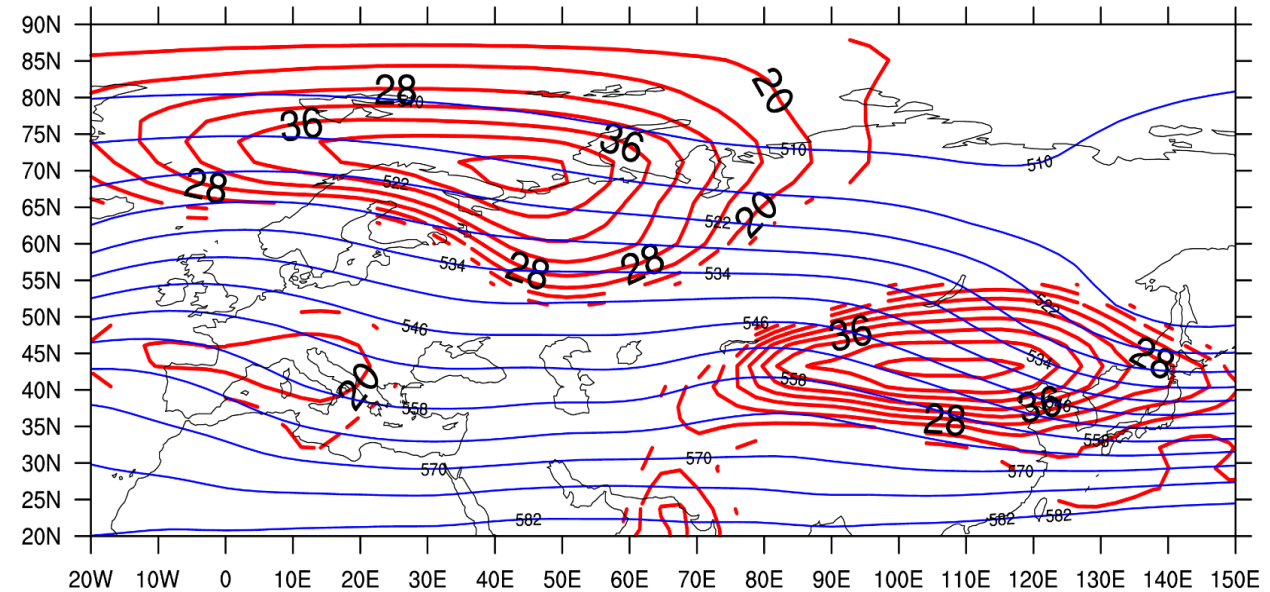
# **Statistical model based on SST and SIC**



# Relationship between ASO SST/SIE and DJF TI/SHI



## Geopotential height at 500mb derived from MRL



### P index (PI):

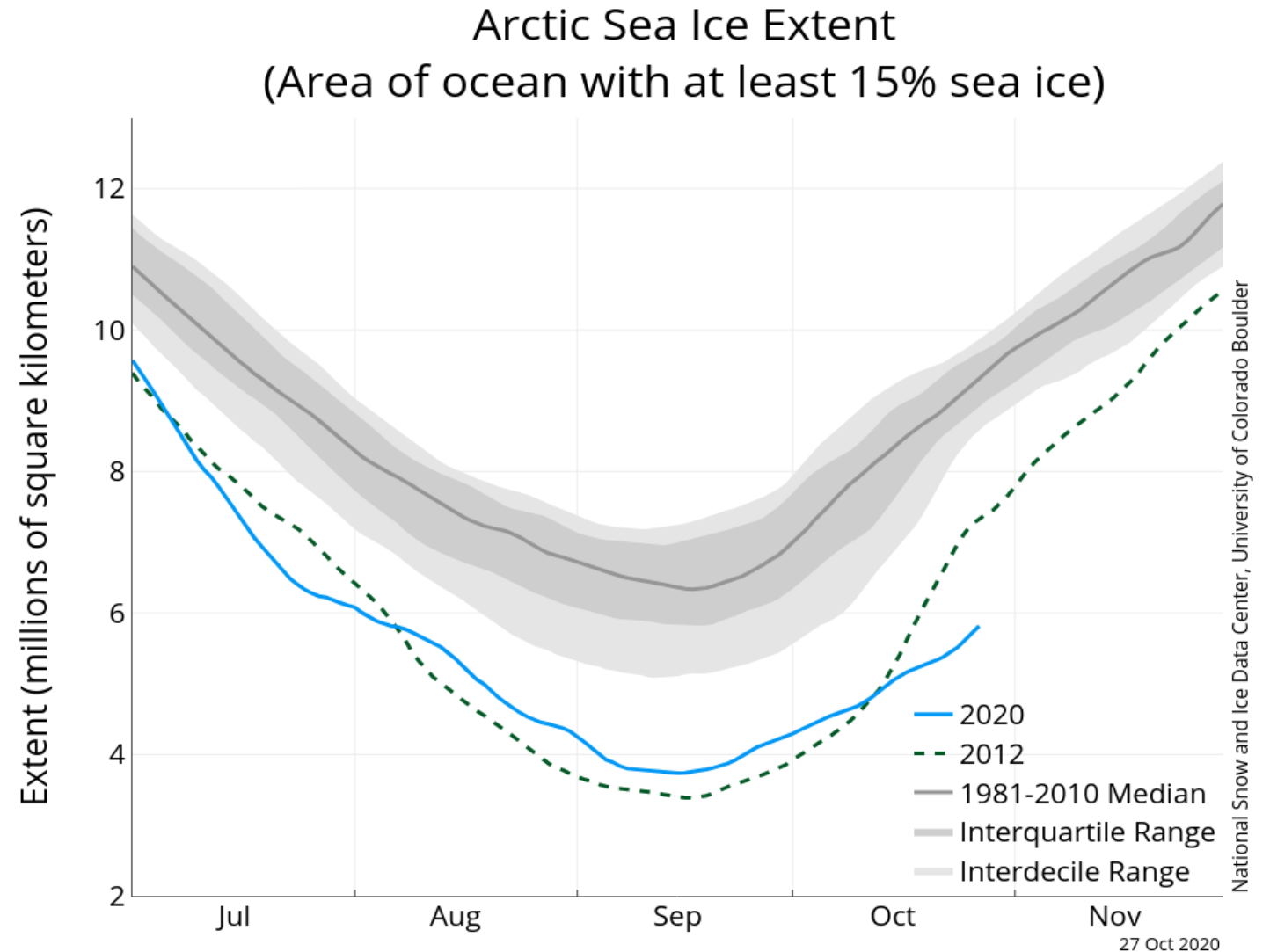
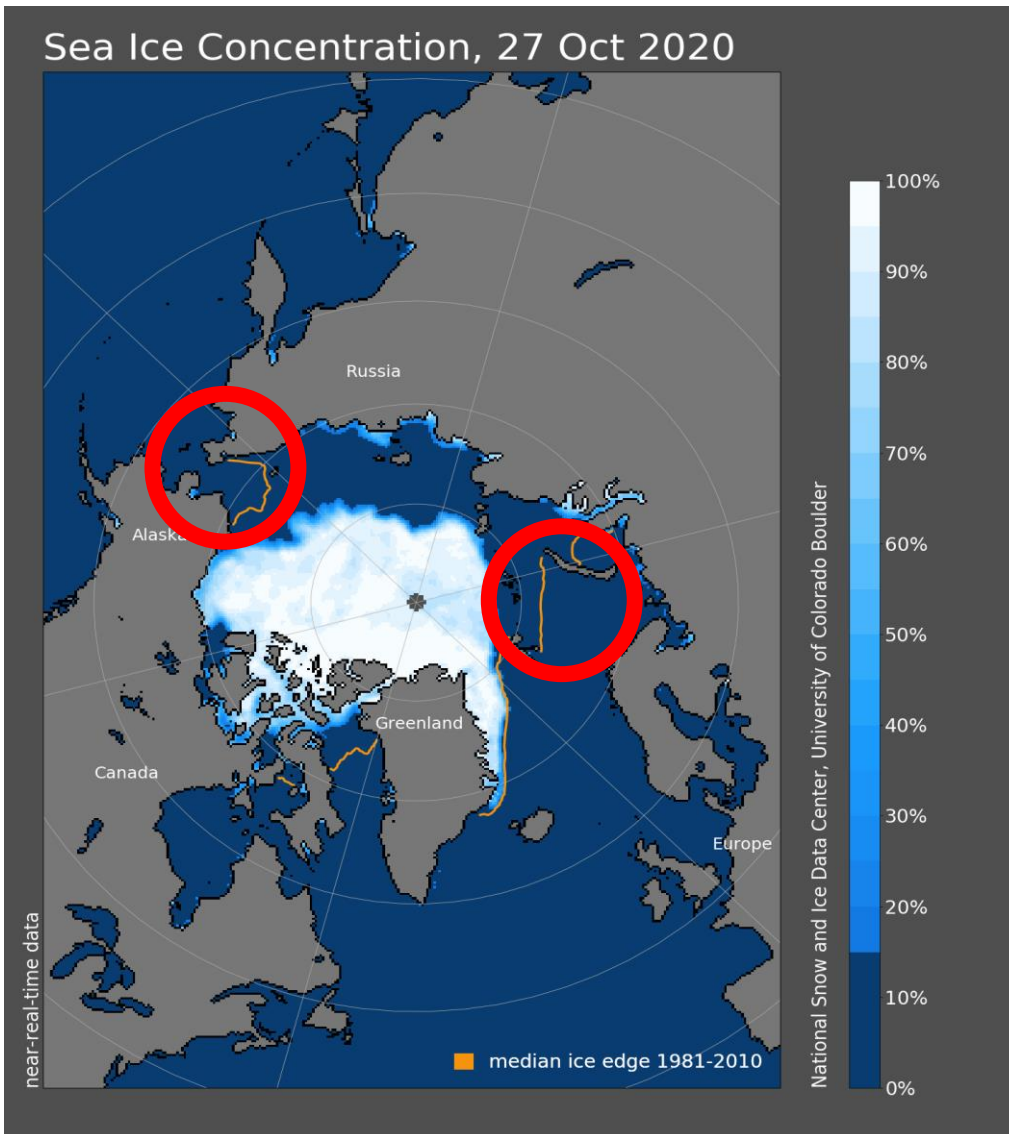
PI is defined as area averaged (170E-160W, 73-79N) ASO SIE from Research Data Archive at NCAR.

### A index (AI):

AI is defined as area averaged (34-94E, 75-82N) ASO SST from Research Data Archive at NCAR.

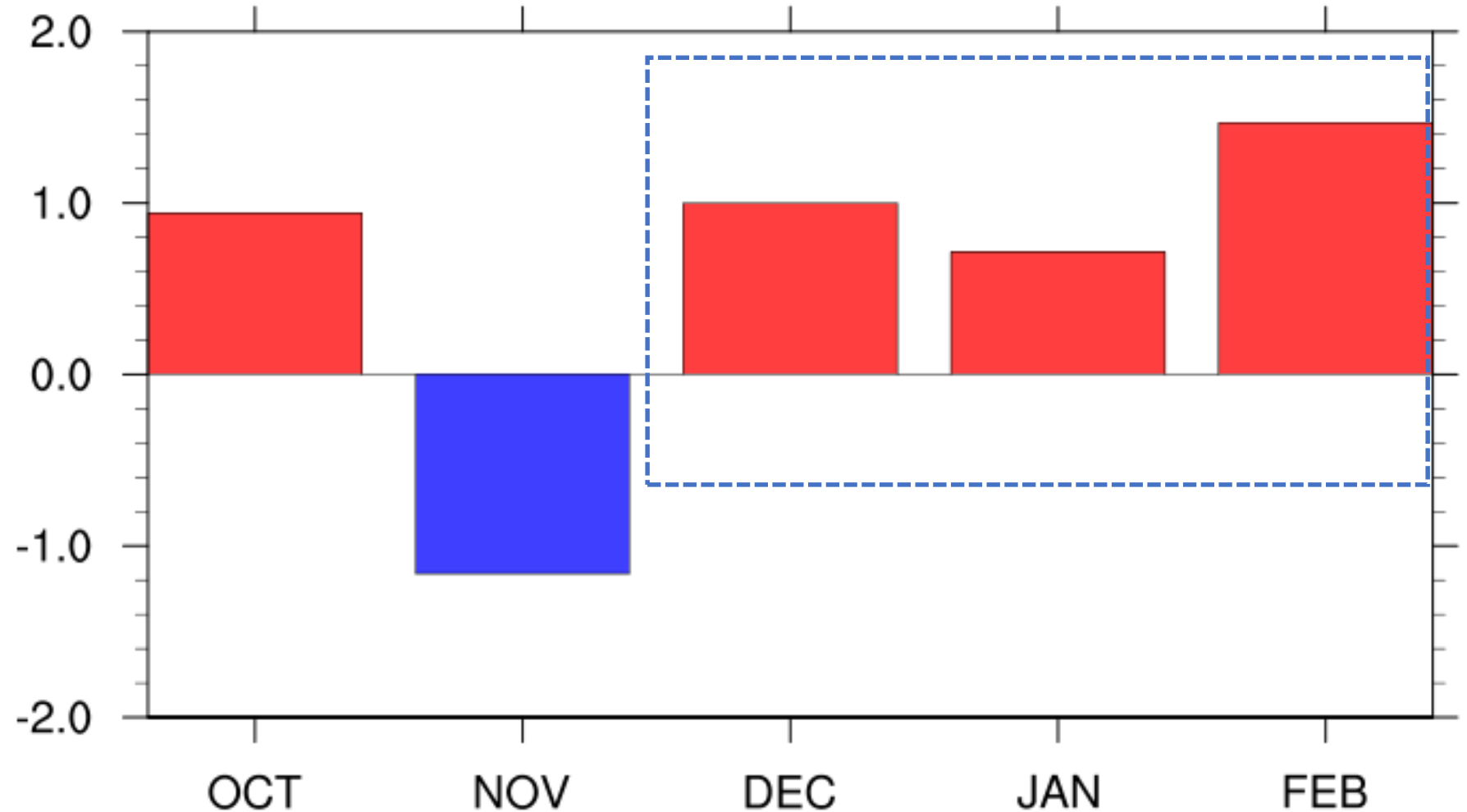
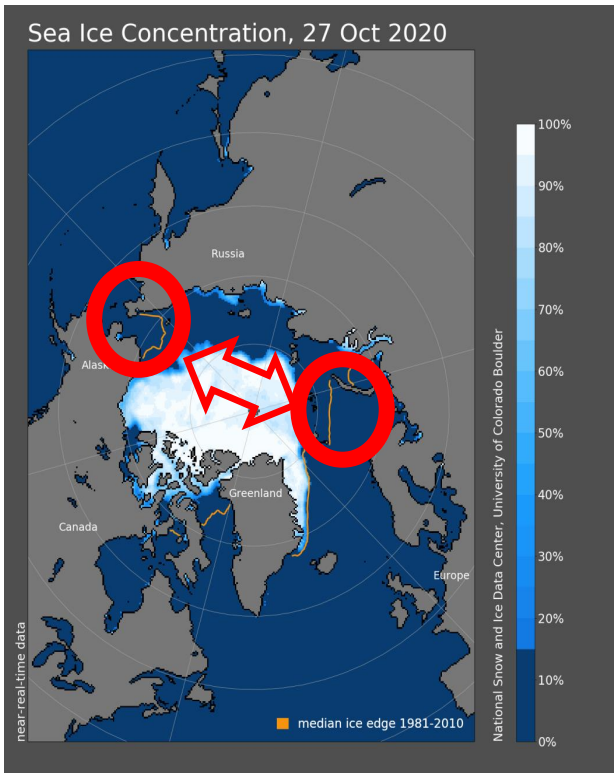
Source: <https://www.researchgate.net/publication/327798111> Seasonal prediction of high-resolution temperature at 2m height over Mongolia during boreal winter using both coupled general circulation model and artificial neural network

# Current condition of Arctic sea ice



Data source: [https://nsidc.org/data/seaice\\_index](https://nsidc.org/data/seaice_index)

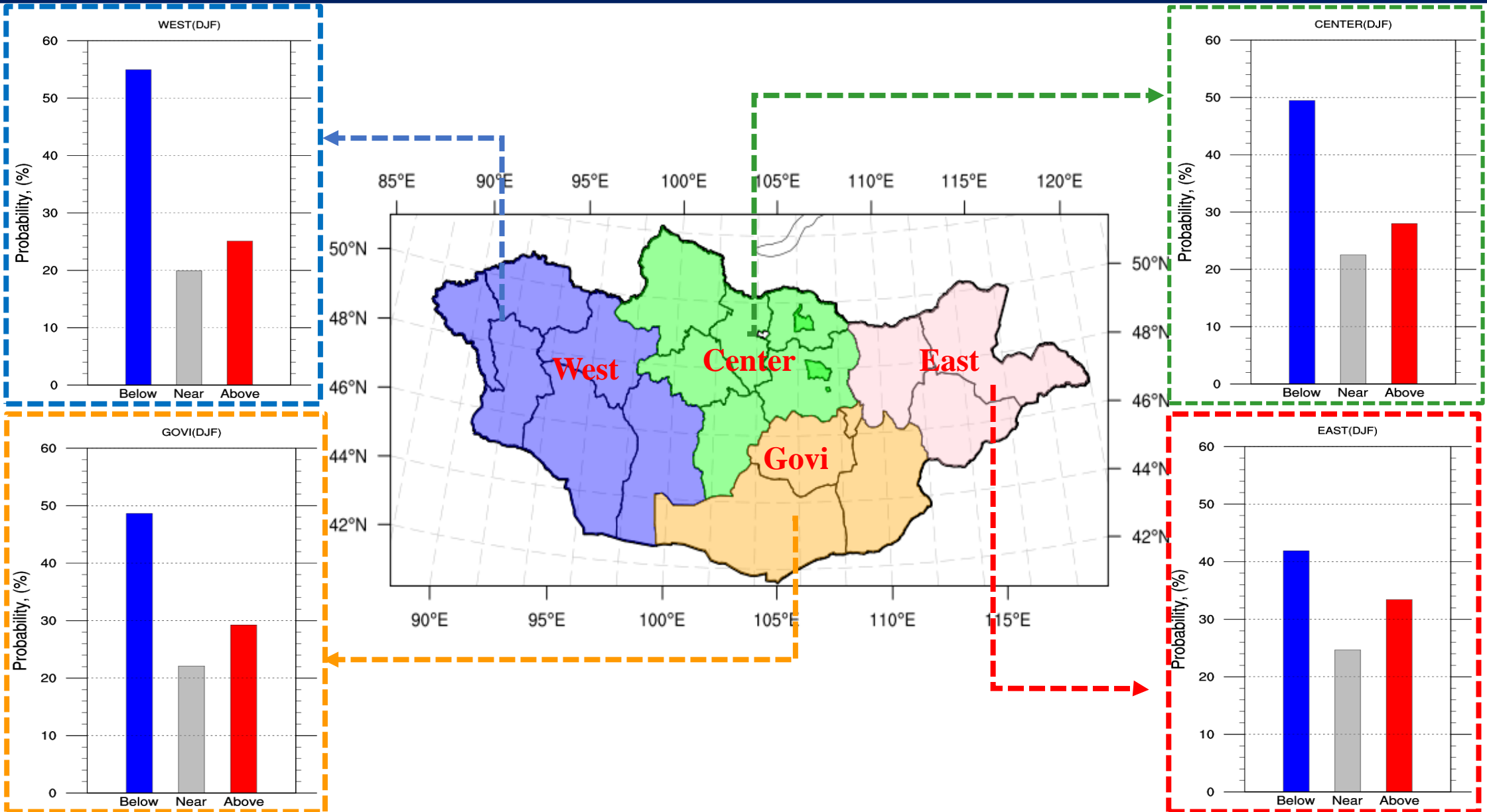
# Statistical model result for SH based on Arctic impact





**Results based on both Statistical and dynamical models**

# Probability for temperature



# Outlook for coming winter season

---

	TEMPERATURE	PRECIPITATION
<b>WEST</b>	<b>B/N</b>	<b>B/N</b>
<b>CENTER</b>	<b>B/N</b>	<b>N</b>
<b>EAST</b>	<b>N</b>	<b>N</b>
<b>GOVI</b>	<b>N</b>	<b>N</b>



**Thank you for your attention**