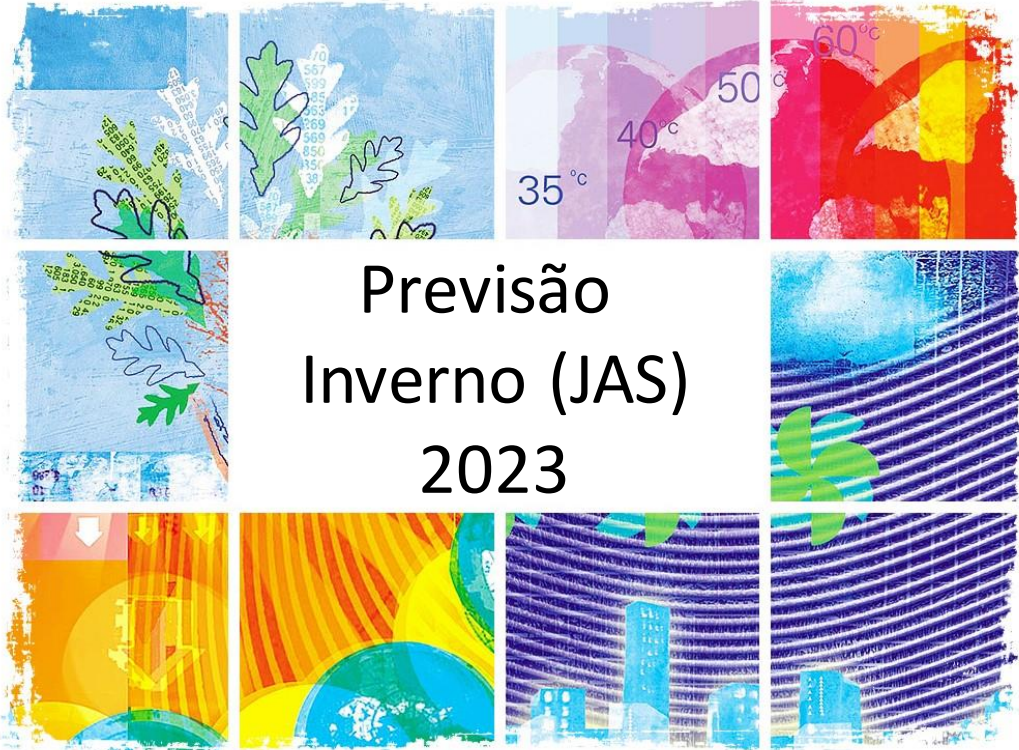


# XI Reunião Climática Mensal



# Verificação da previsão para AMJ

Previsão por consenso realizada em Março de 2023

Precipitação

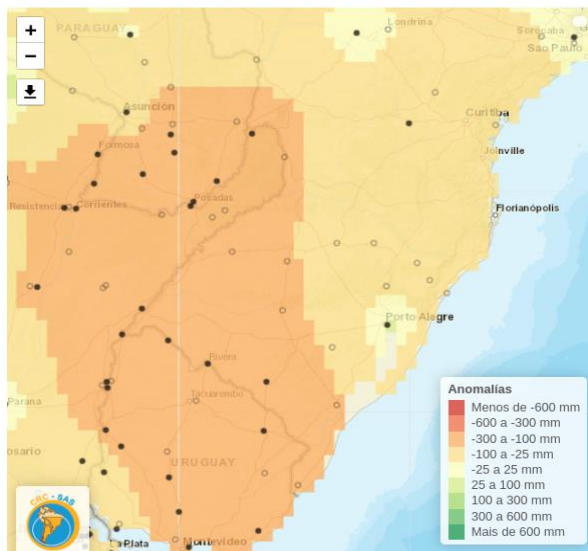
Previsto:



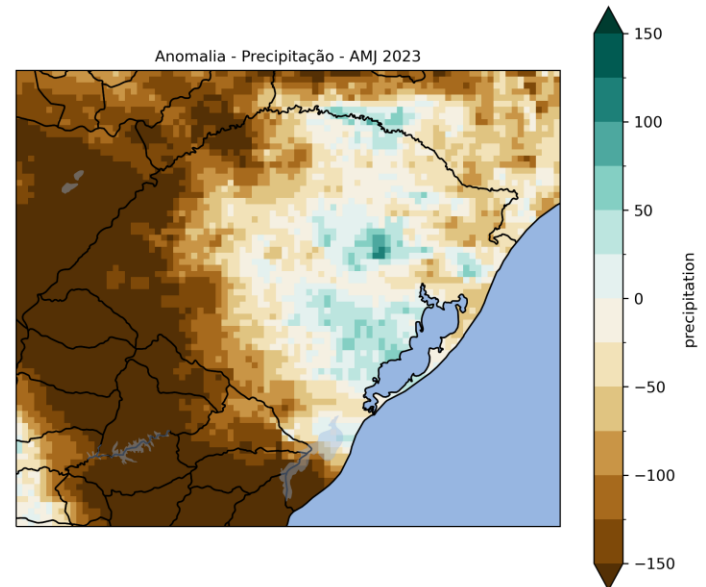
- Alta probabilidade acima da Normal
- Baixa probabilidade acima da Normal
- Entorno da Normal
- Baixa probabilidade abaixo da Normal
- Alta probabilidade abaixo da Normal

Anomalias de precipitação acumulada - 2023-04-01 até 2023-06-30

CRC-SAS:



Observado:

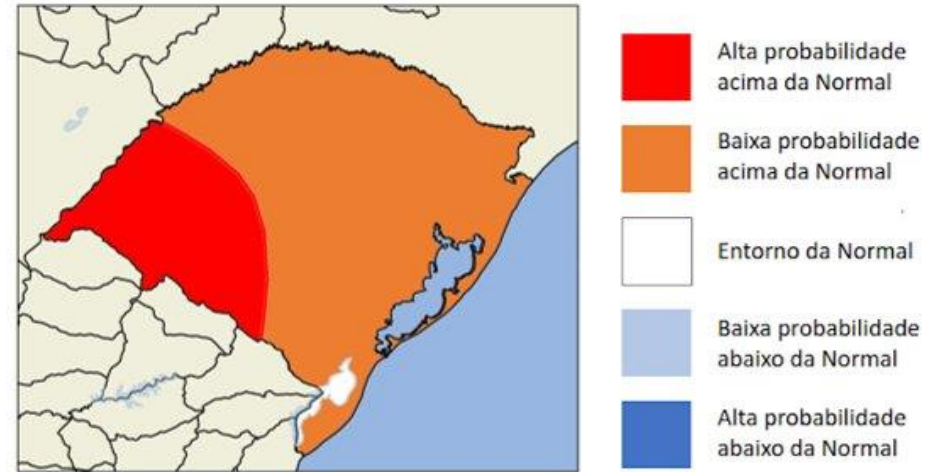


# Verificação da previsão para AMJ

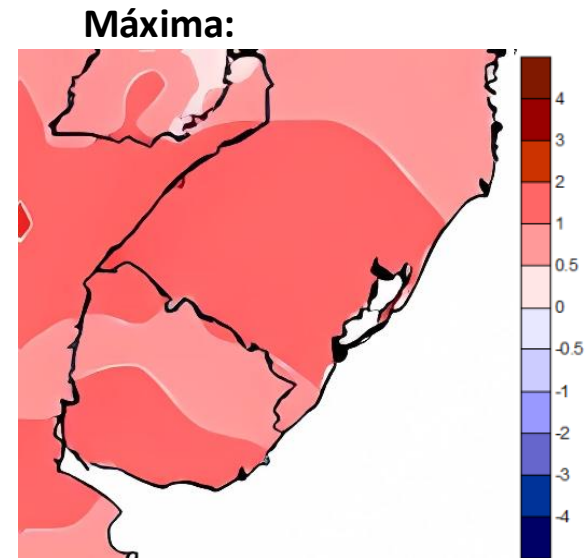
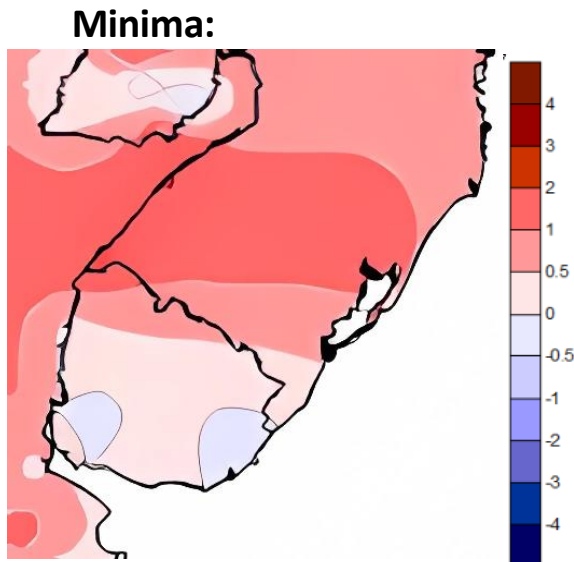
Previsão por consenso realizada em Março de 2023

Temperatura do ar

Previsto:



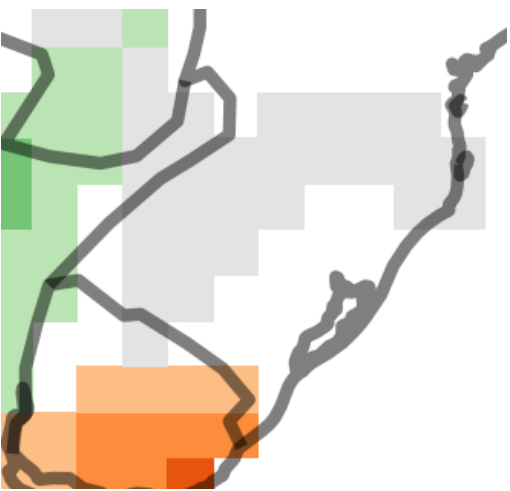
Observado:



# Verificação dos modelos por tempo de antecedência

## Anomalia de Precipitação sazonal NMME-CIMA (AMJ/2023)

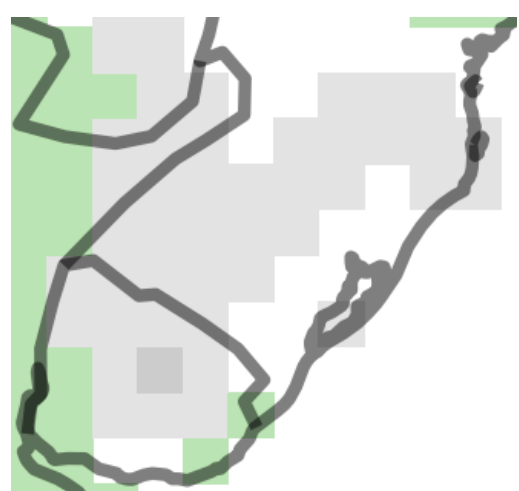
Iniciado em Janeiro/2023



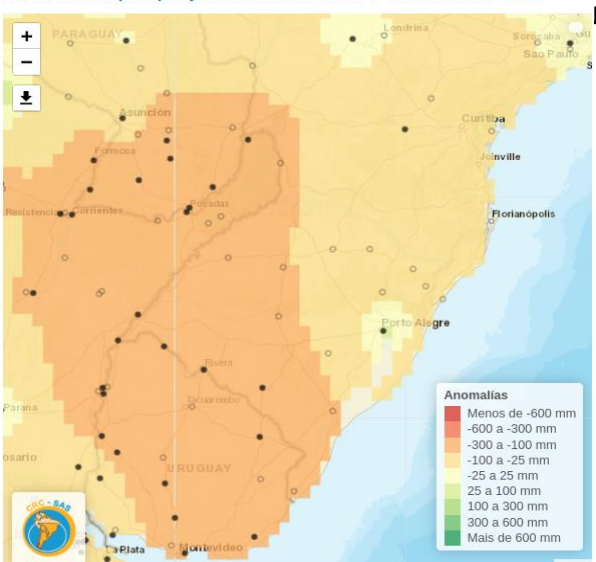
Iniciado em Fevereiro/2023



Iniciado em Março/2023



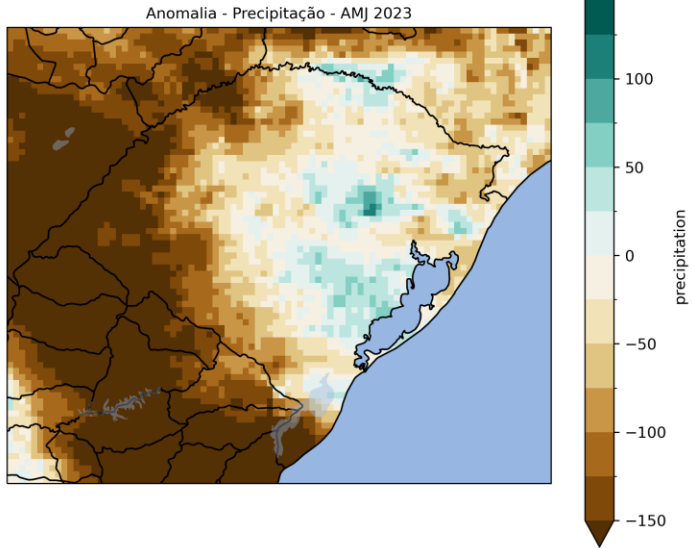
Anomalias de precipitação acumulada - 2023-04-01 até 2023-06-30



CRC-SAS:

Normal

Observado:

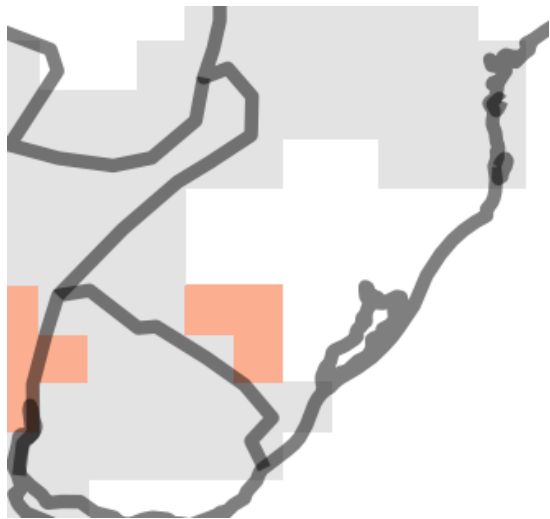


precipitation

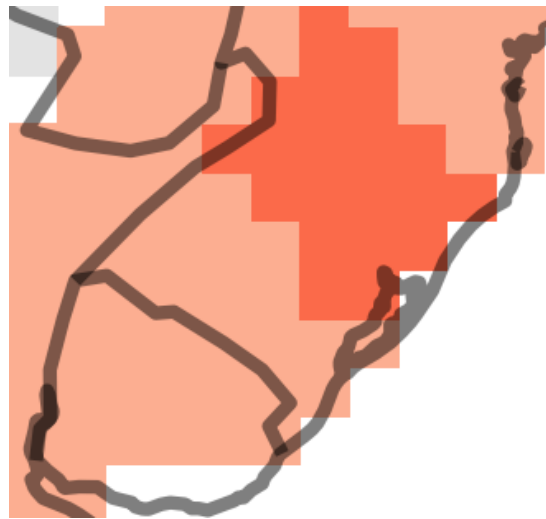
# Verificação dos modelos por tempo de antecedência

## Anomalia de Temperatura sazonal NMME-CIMA (AMJ/2023)

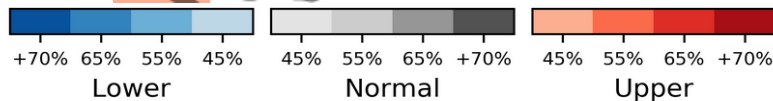
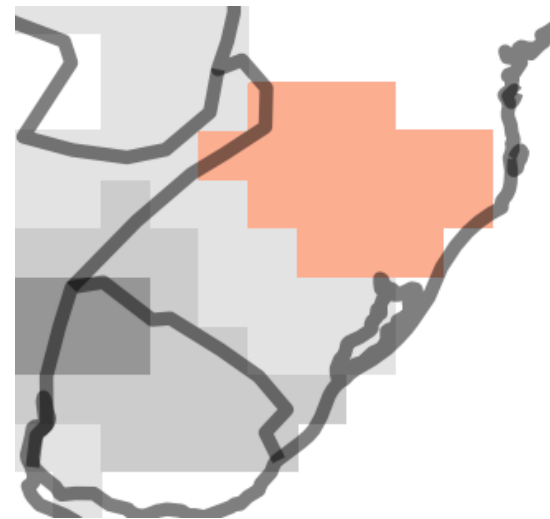
Iniciado em Janeiro/2023



Iniciado em Fevereiro/2023

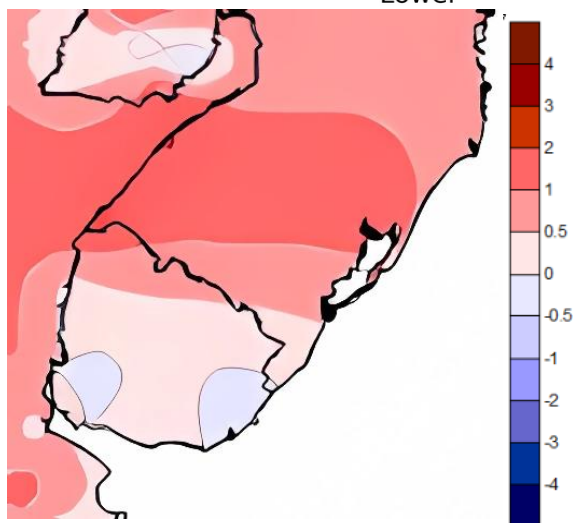


Iniciado em Março/2023

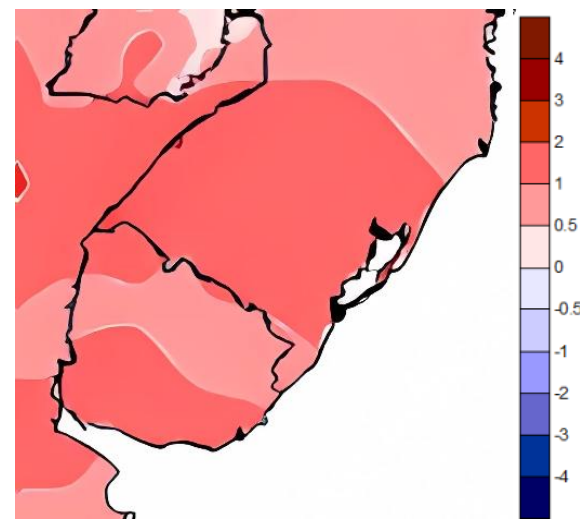


Observado:

Minima:



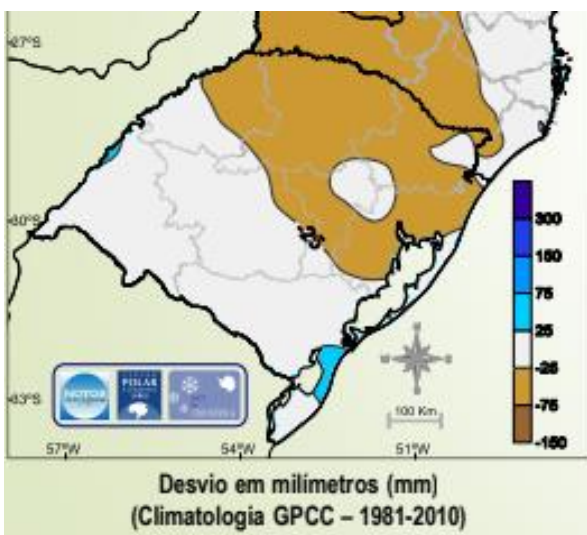
Máxima:



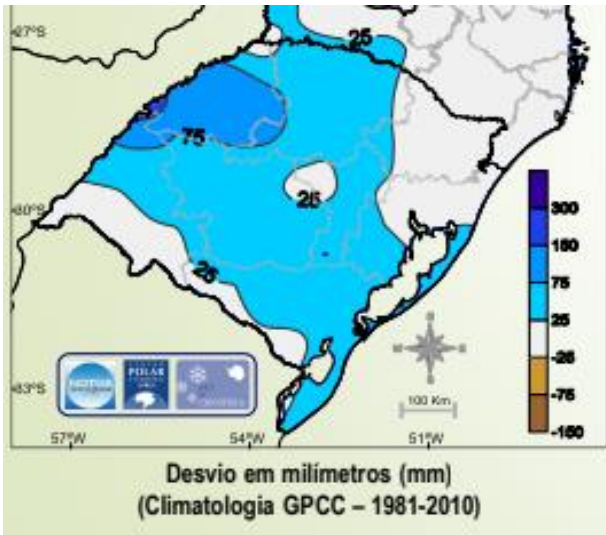
# Verificação dos modelos por tempo de antecedência

## Anomalia de Precipitação MoReClima-SUL (Junho/2023)

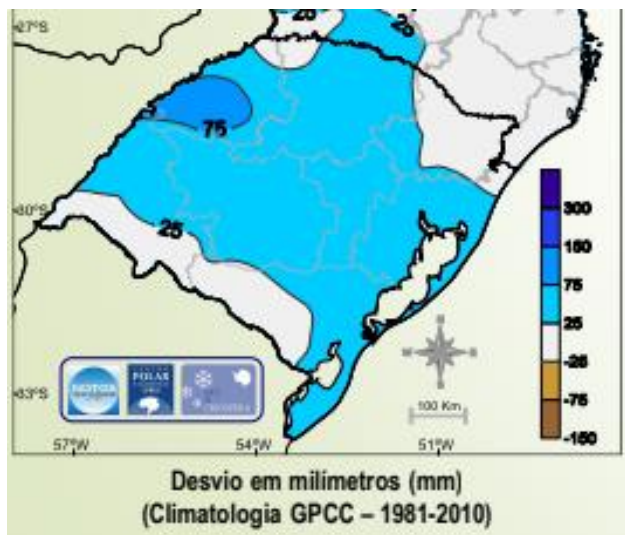
Iniciado em Março/2023



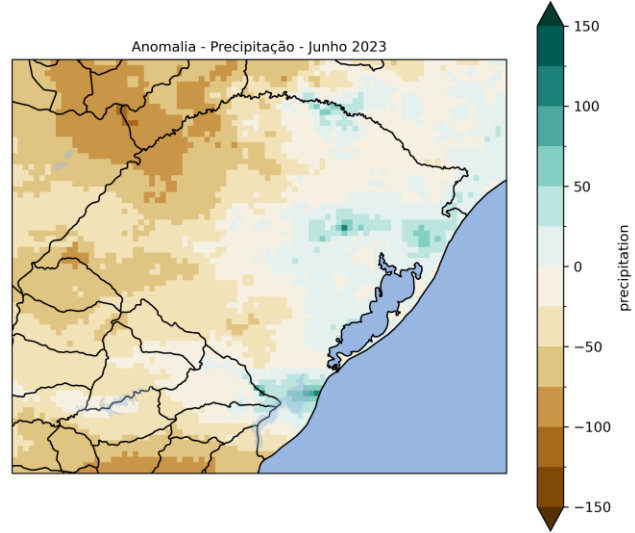
Iniciado em Abril/2023



Iniciado em Maio/2023



Observado:



# Verificação dos modelos por tempo de antecedência

## Anomalia de Precipitação RegCM4 do SIMAGRO (Junho/2023)

Iniciado em Março/2023

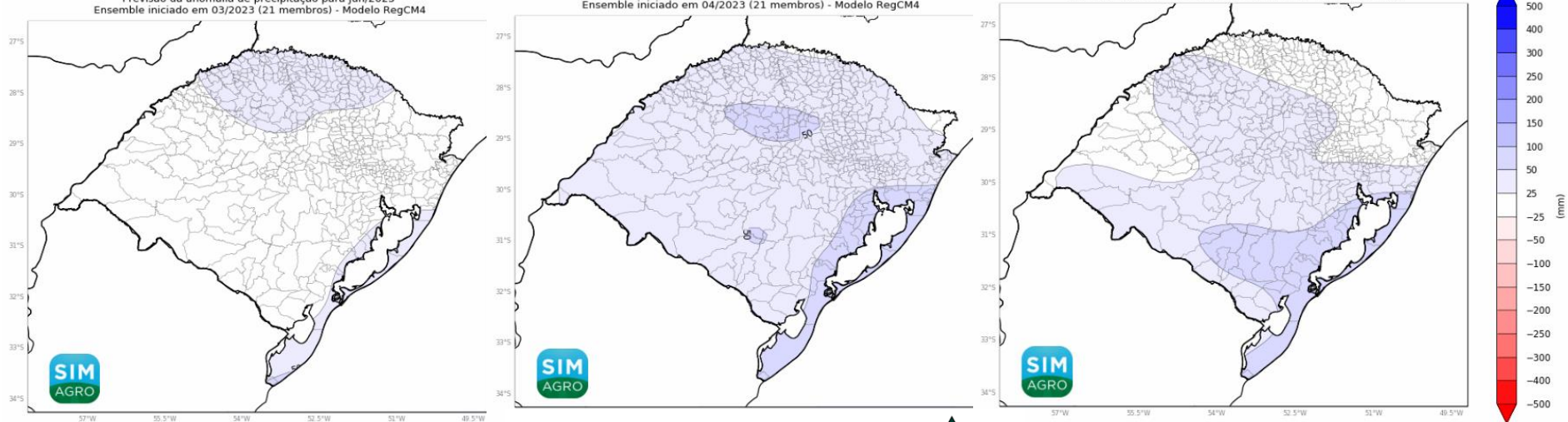
Iniciado em Arbil/2023

Iniciado em Maio/2023

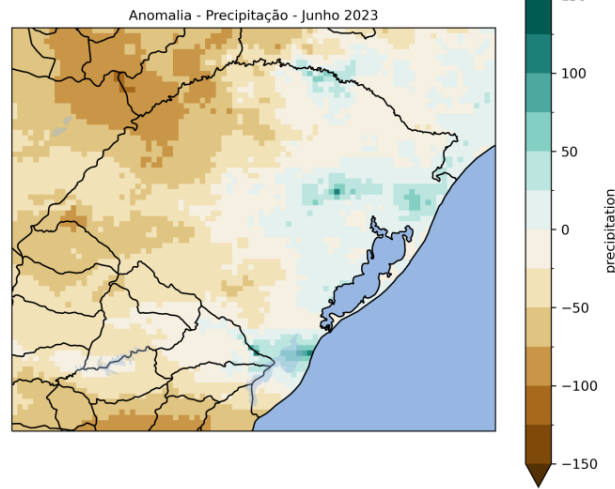
Previsão da anomalia de precipitação para Jun/2023  
Ensemble iniciado em 03/2023 (21 membros) - Modelo RegCM4

Previsão da anomalia de precipitação para Jun/2023  
Ensemble iniciado em 04/2023 (21 membros) - Modelo RegCM4

Previsão da anomalia de precipitação para Jun/2023  
Ensemble iniciado em 05/2023 (21 membros) - Modelo RegCM4



Observado:



# Verificação dos modelos por tempo de antecedência

## Anomalia de Precipitação APCC (Junho/2023)

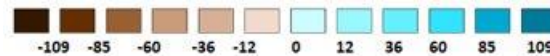
Iniciado em Março/2023



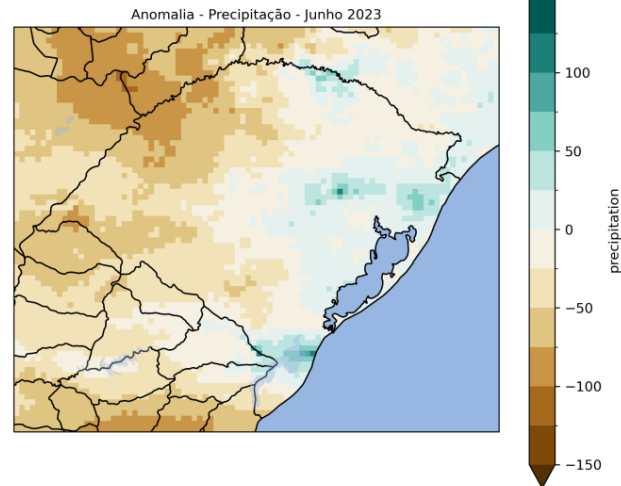
Iniciado em Abril/2023



Iniciado em Maio/2023



Observado:

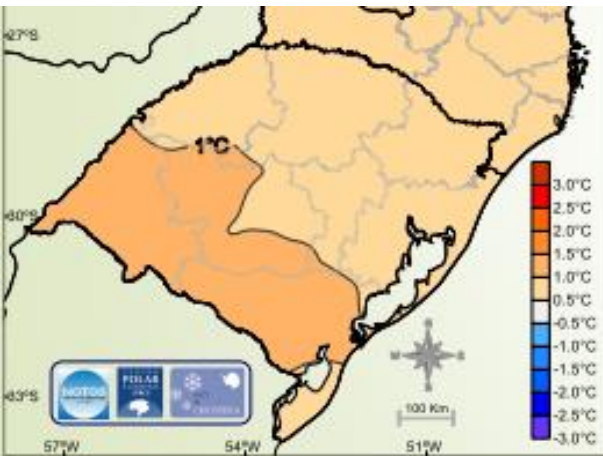




# Verificação dos modelos por tempo de antecedência

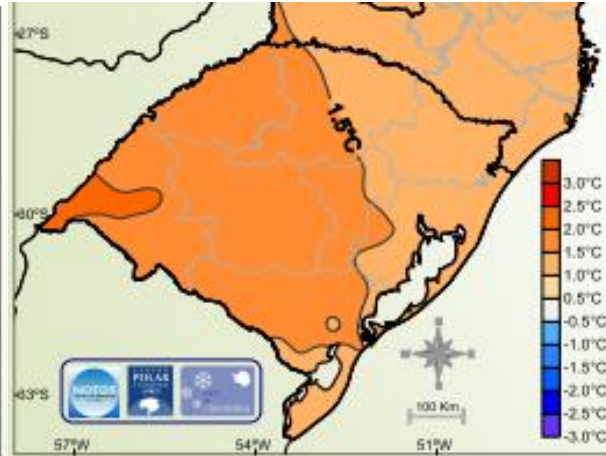
## Anomalia de Temperatura MoReClima-SUL (Junho/2023)

Iniciado em Março/2023



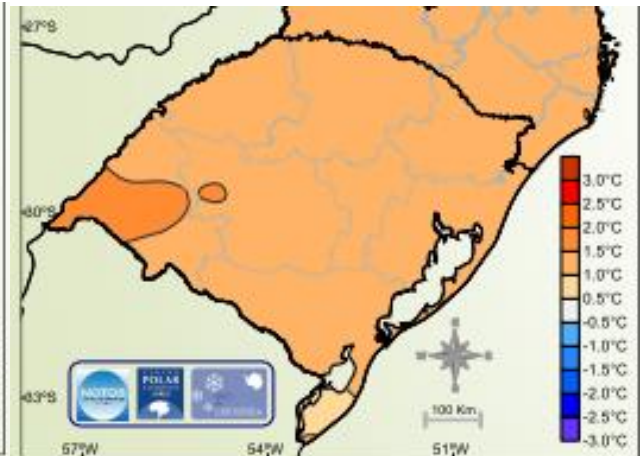
Desvio em graus Celsius (°C)  
(Climatologia CRU – 1981-2010)

Iniciado em Abril/2023



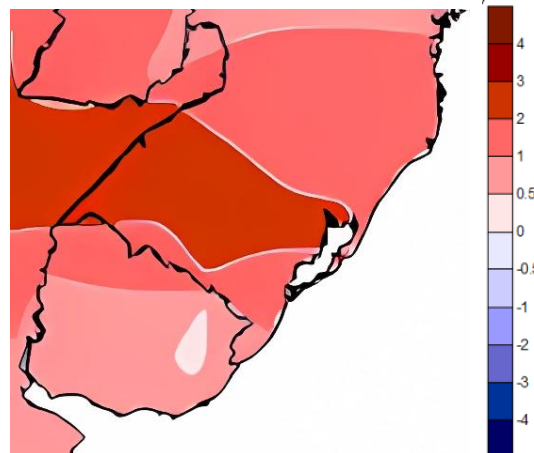
Desvio em graus Celsius (°C)  
(Climatologia CRU – 1981-2010)

Iniciado em Maio/2023



Desvio em graus Celsius (°C)  
(Climatologia CRU – 1981-2010)

Observado:

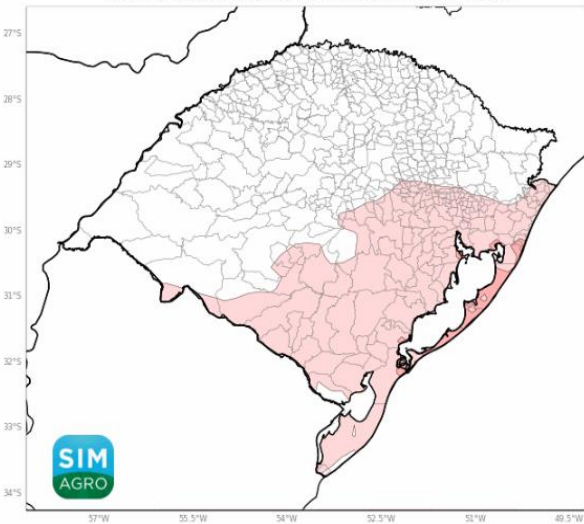


# Verificação dos modelos por tempo de antecedência

## Anomalia de Temperatura RegCM4 do SIMAGRO (Junho/2023)

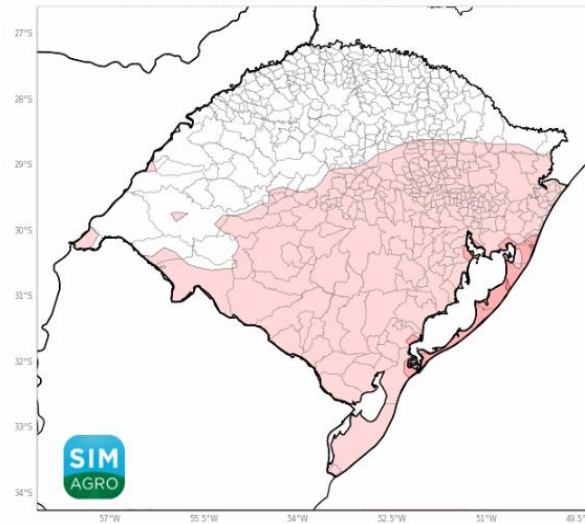
### Iniciado em Março/2023

Previsão da anomalia de temperatura média do ar a 2m para Jun/2023  
Ensemble iniciado em 03/2023 (26 membros) - Modelo RegCM4



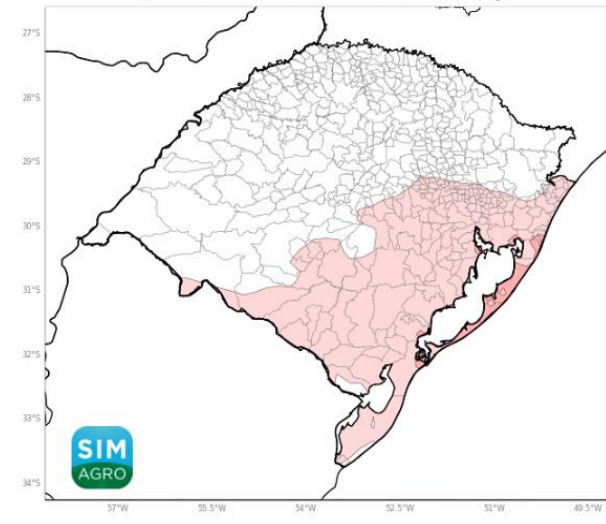
### Iniciado em Abril/2023

Previsão da anomalia de temperatura média do ar a 2m para Jun/2023  
Ensemble iniciado em 04/2023 (26 membros) - Modelo RegCM4

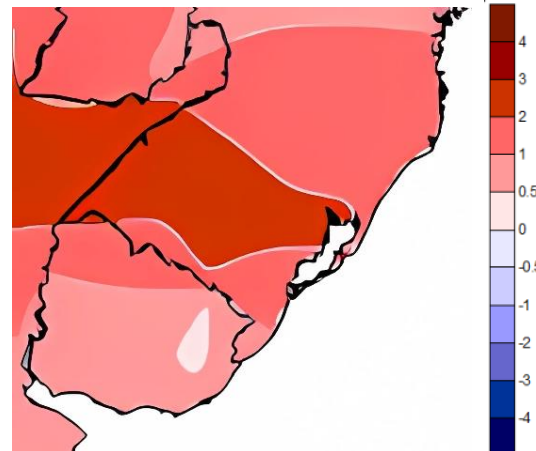


### Iniciado em Maio/2023

Previsão da anomalia de temperatura média do ar a 2m para Jun/2023  
Ensemble iniciado em 03/2023 (26 membros) - Modelo RegCM4



### Observado:



# Verificação dos modelos por tempo de antecedência

## Anomalia de Temperatura APCC (Junho/2023)

Iniciado em Março/2023



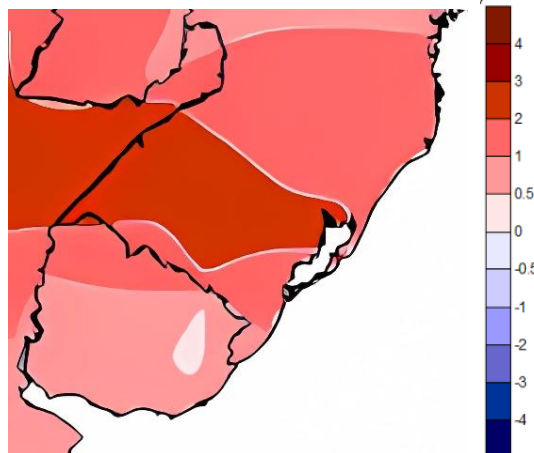
Iniciado em Abril/2023



Iniciado em Maio/2023

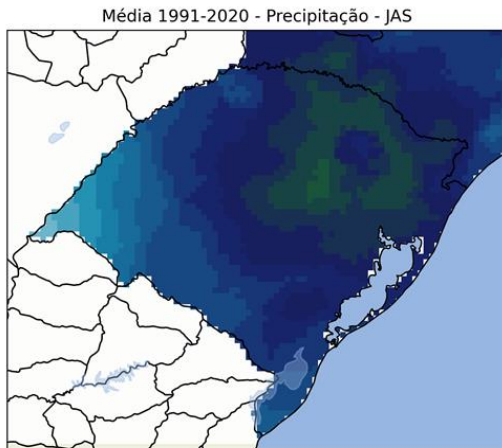


Observado:

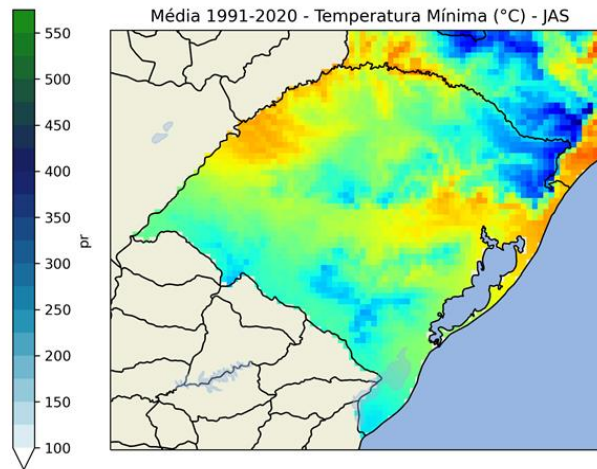


# Climatologia de JAS

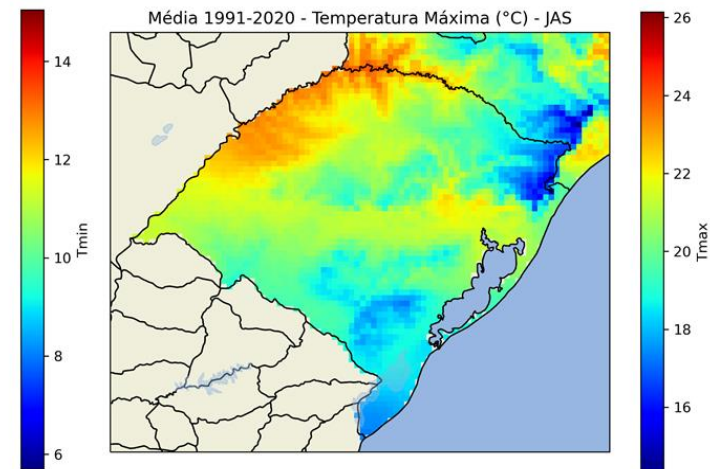
- Neste trimestre o norte/nordeste do RS passa a ser o setor do estado com maiores acumulados de chuva na média (> 500mm). A variação meridional ainda persiste, contudo o sudoeste do RS passa a ter acumulados inferiores a 350 mm.
- As médias de temperatura mínima e máxima são mais altas no noroeste do RS e na faixa central do estado até o litoral norte;



**Precipitação**



**Temperatura mínima**



**Temperatura máxima**

# Condições observadas em AMJ/2023

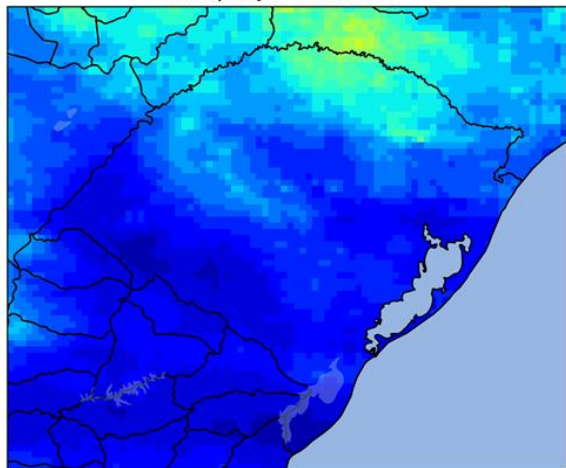
Valores absolutos

Abril

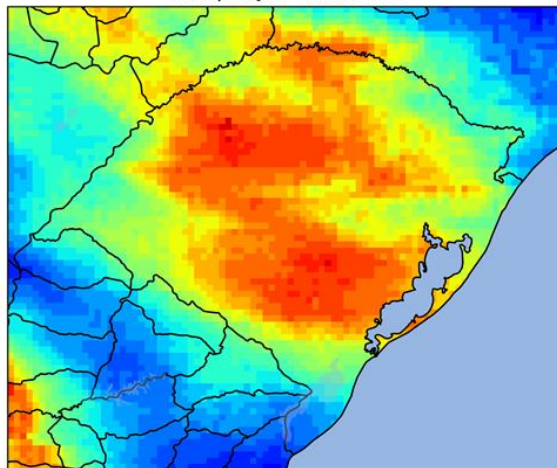
Maio

Junho

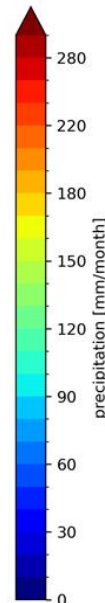
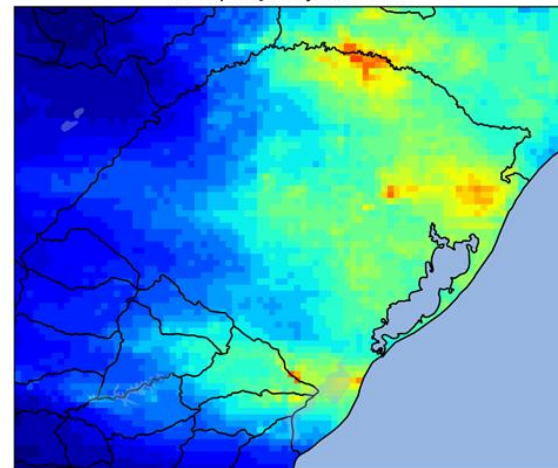
Precipitação - Abril 2023



Precipitação - Maio 2023

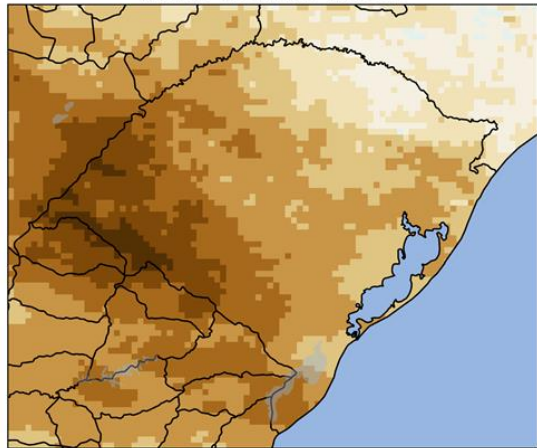


Precipitação - Junho 2023

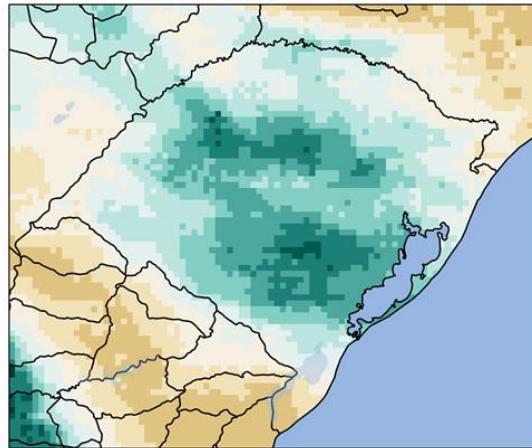


## Anomalias

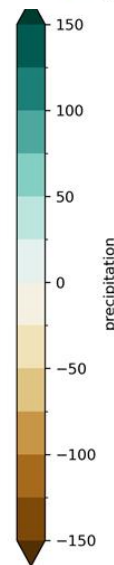
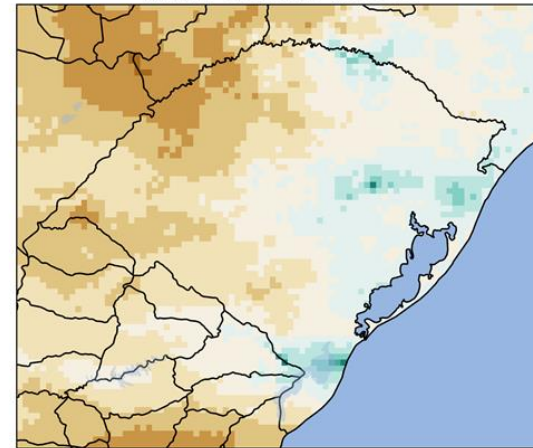
Anomalia - Precipitação - Abril 2023



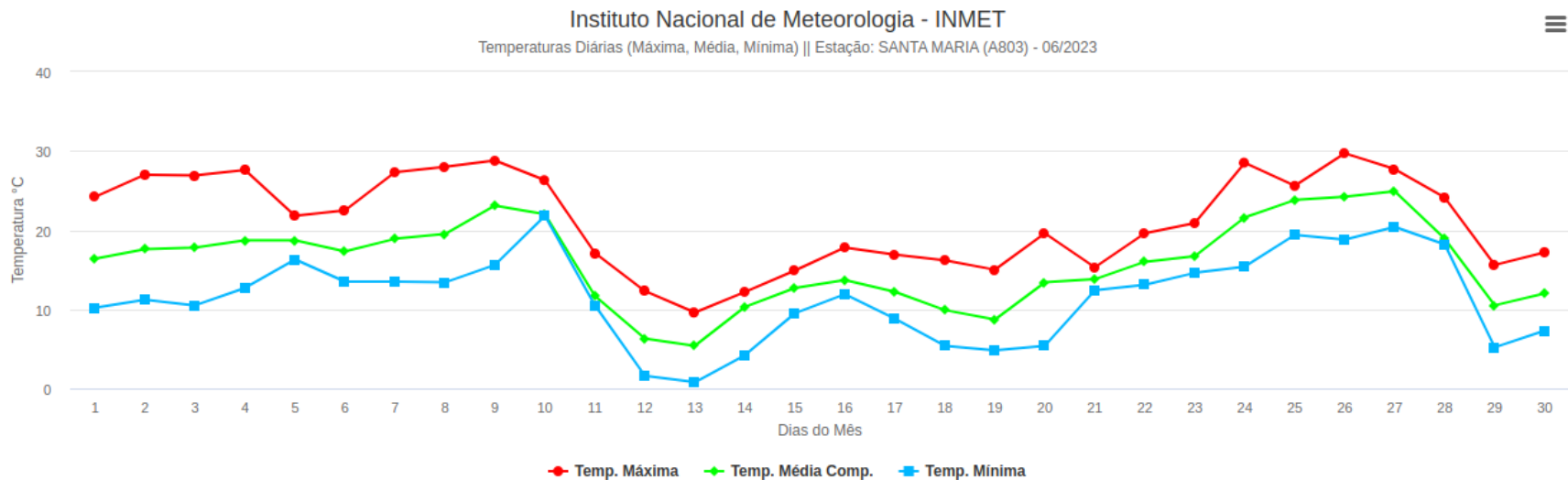
Anomalia - Precipitação - Maio 2023



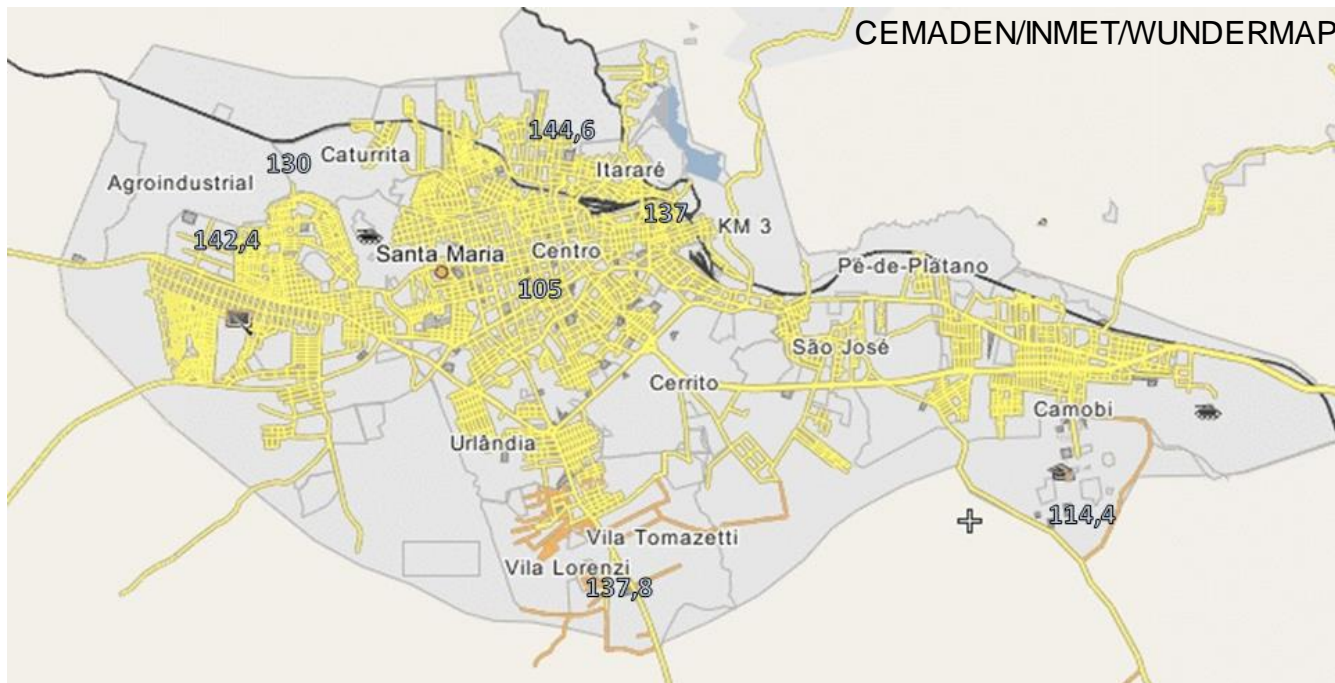
Anomalia - Precipitação - Junho 2023



# Condições observadas em Junho/2023

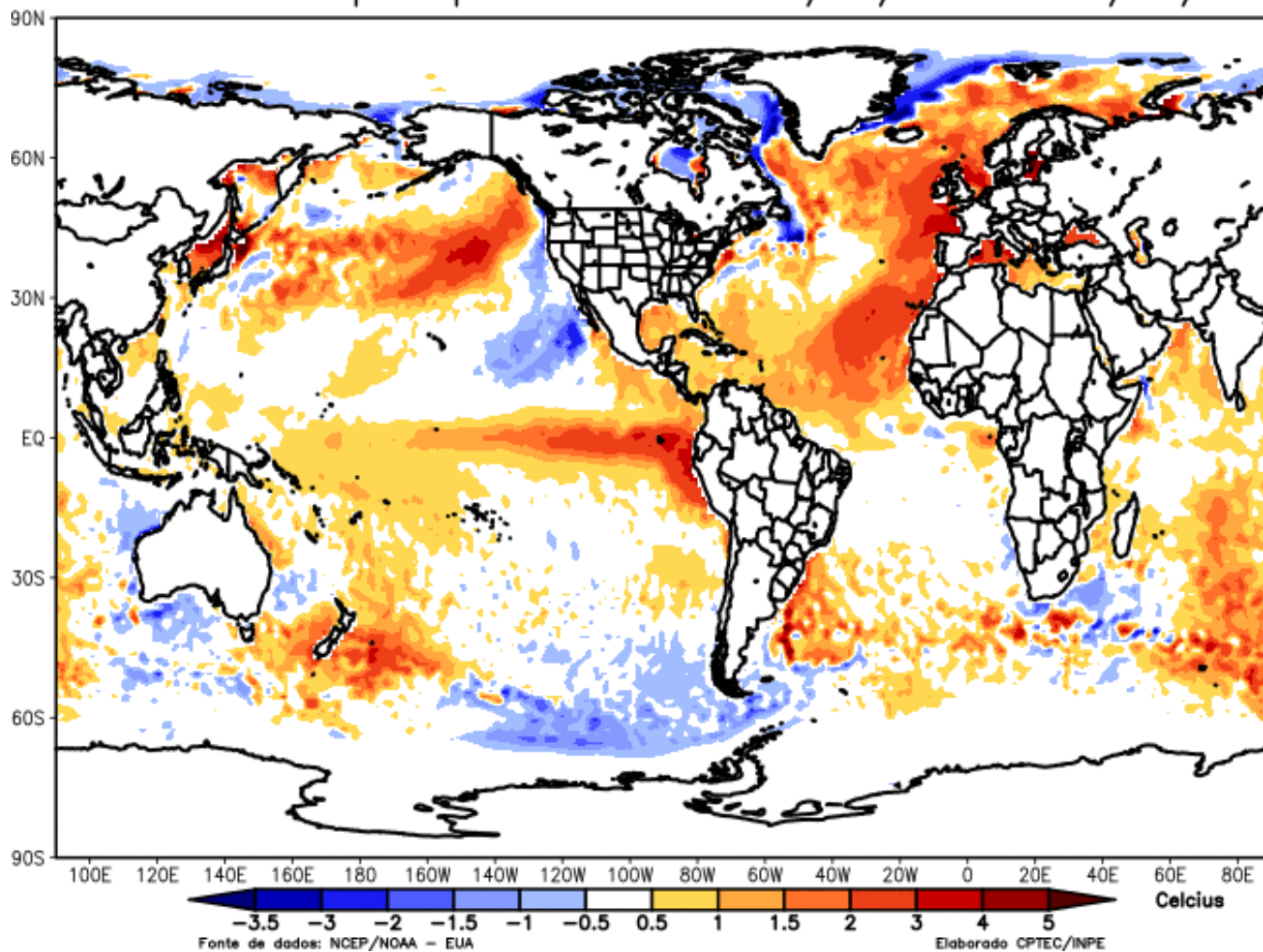


## Precipitação mensal em Junho - Santa Maria



# Condições oceânicas

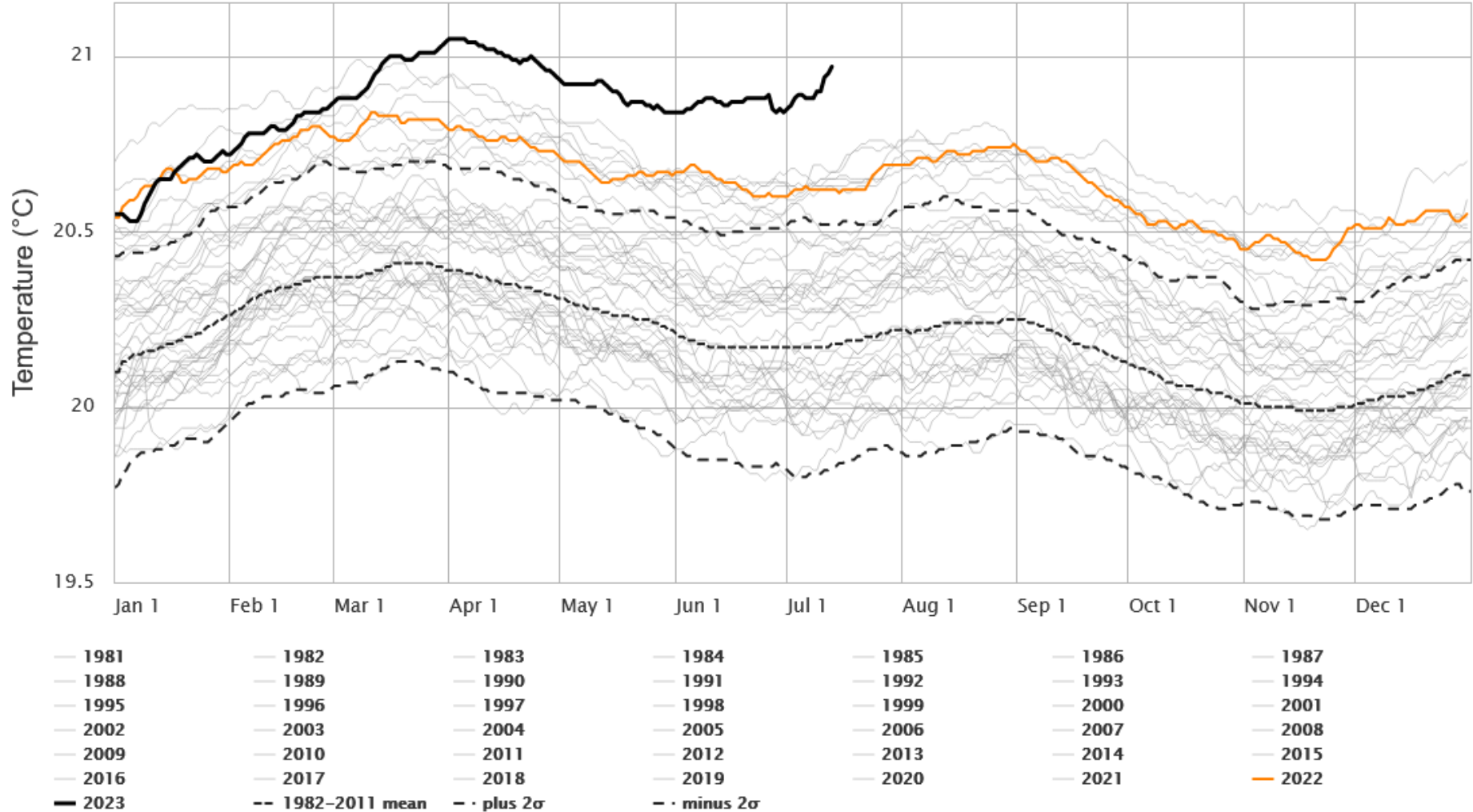
Anomalia de Temp. Superfície do Mar 25/06/2023 a 01/07/2023



# Condições oceânicas

## SST World (60S–60N)

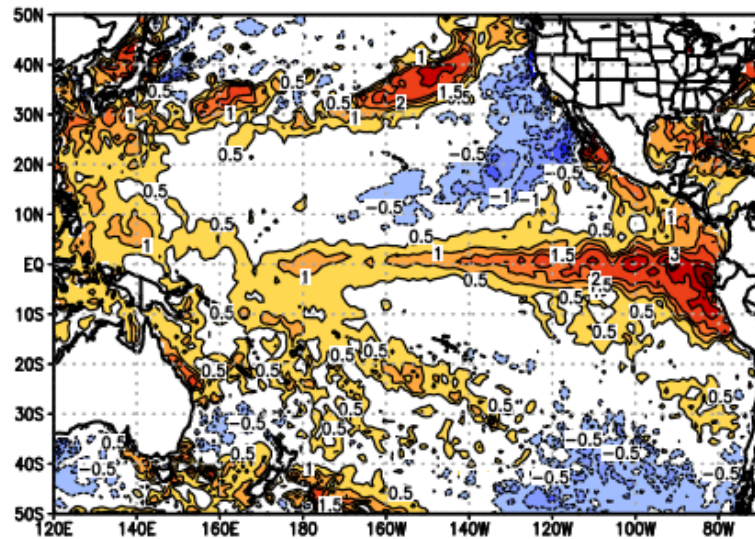
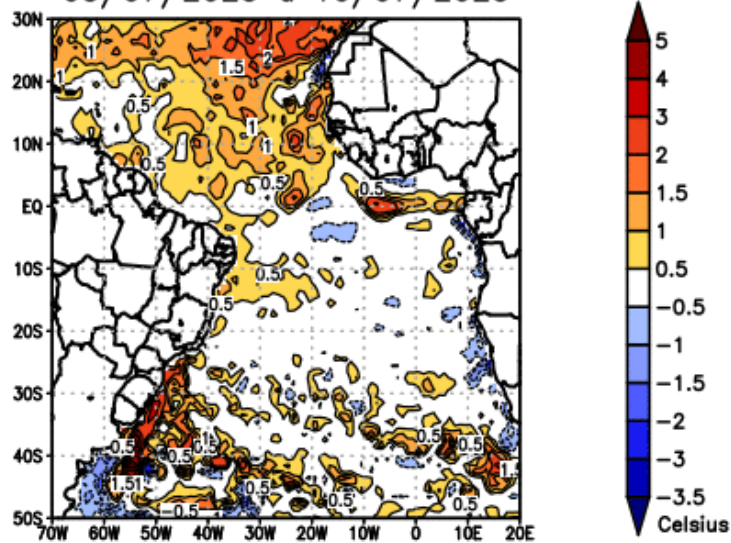
NOAA OISST V2.1 | ClimateReanalyzer.org, Climate Change Institute, University of Maine





# Condições oceânicas

Anomalia de Temperatura da Superfície do Mar  
03/07/2023 a 10/07/2023



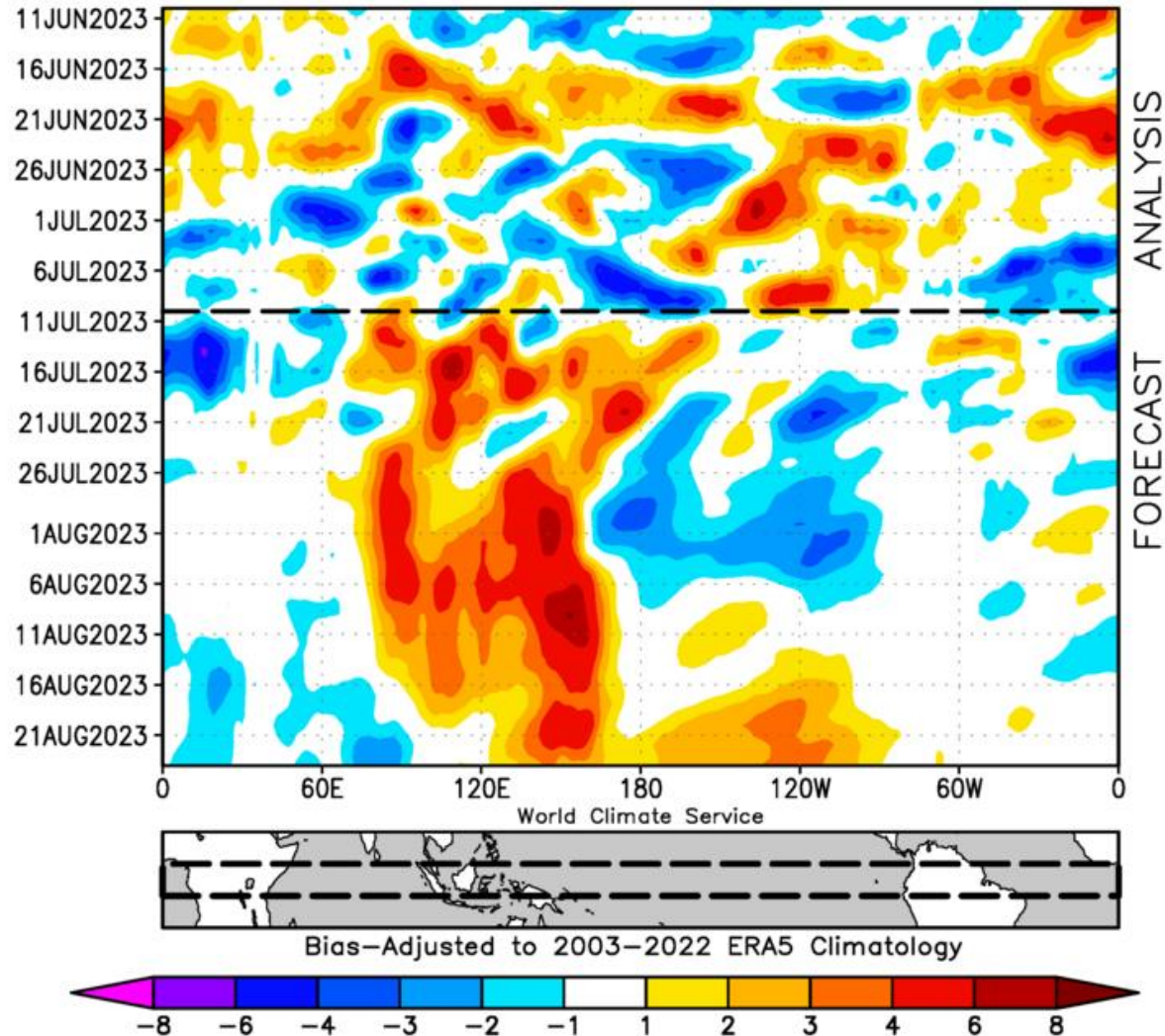
Fonte de dados: NCEP/NOAA – EUA

Elaboracao: CPTEC/INPE

# Condições oceânicas

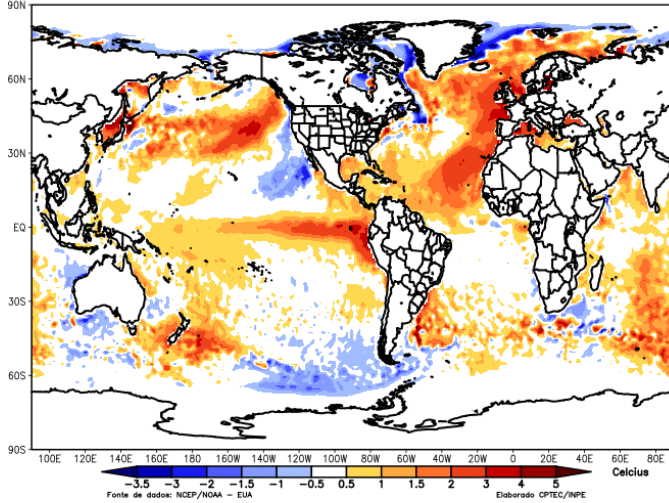
Ensemble Mean 850mb Zonal Wind Anomaly (m/s)  
5°S–5°N Average

ERA5/ECMWF Analysis and CFSv2 Initialized 00–18UTC 10JUL2023

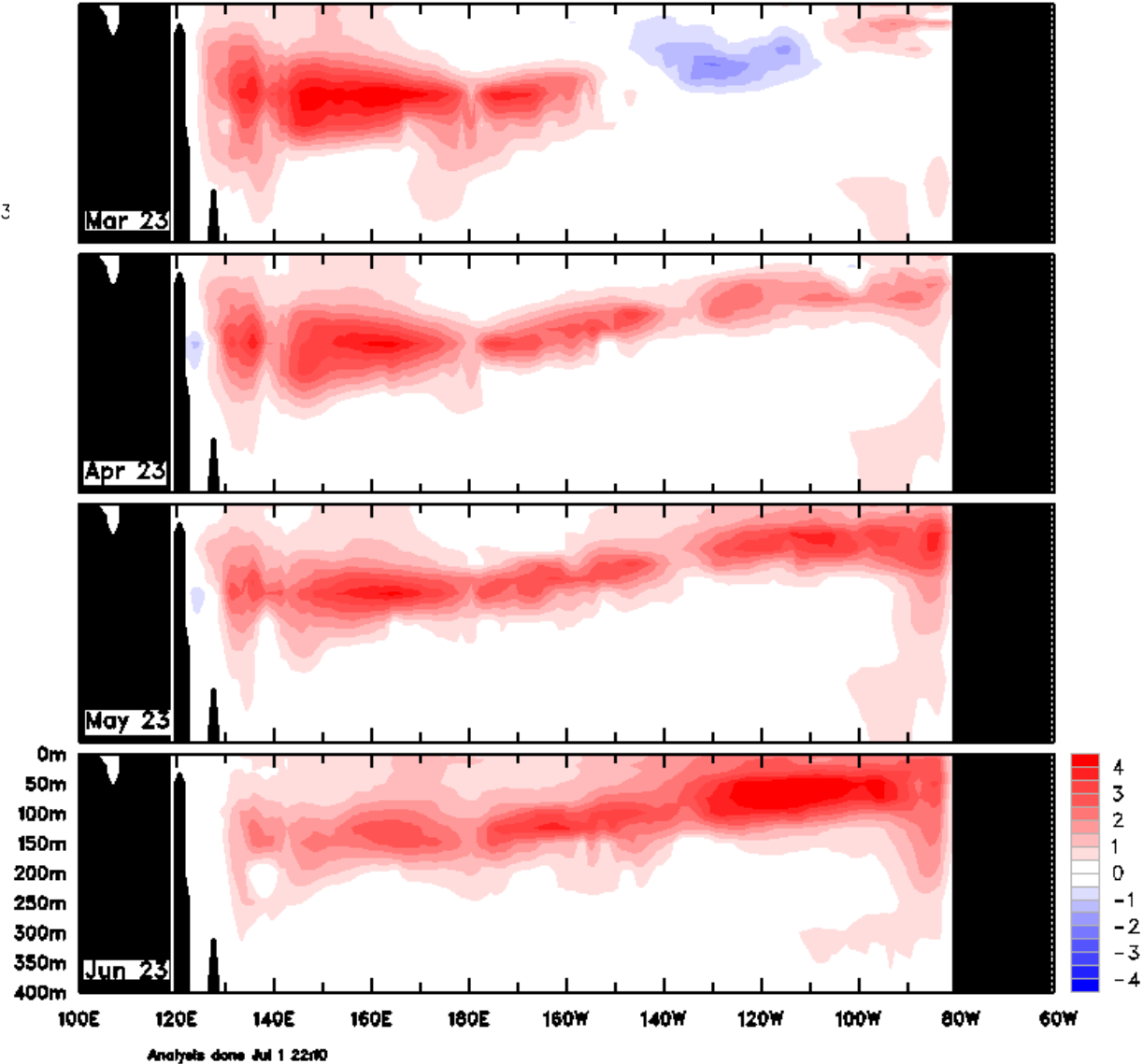


# Condições oceânicas

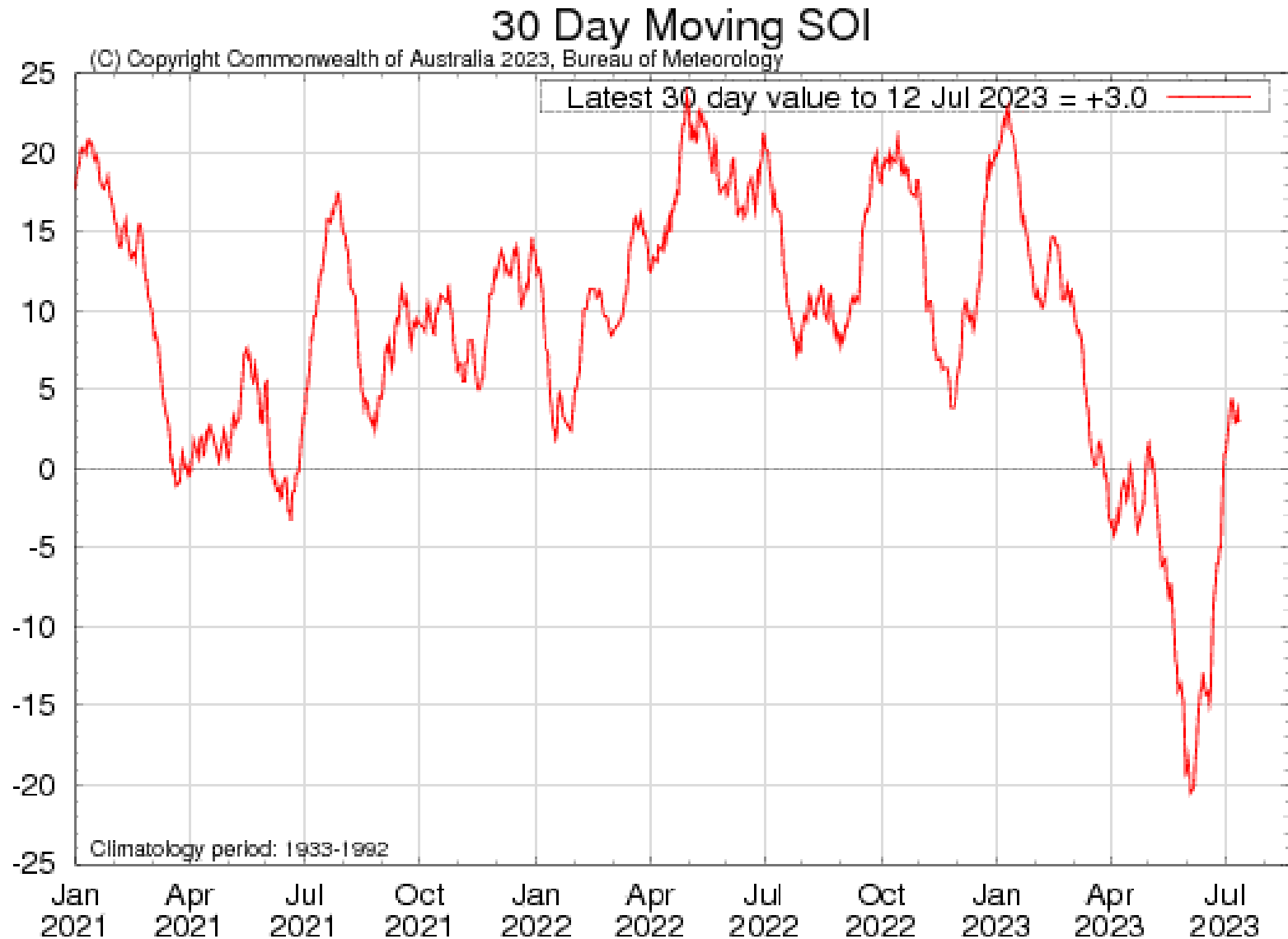
Anomalia de Temp. Superfície do Mar 25/06/2023 a 01/07/2023



Pacific Ocean Eq Anomaly  $\Delta=0.5^\circ\text{C}$

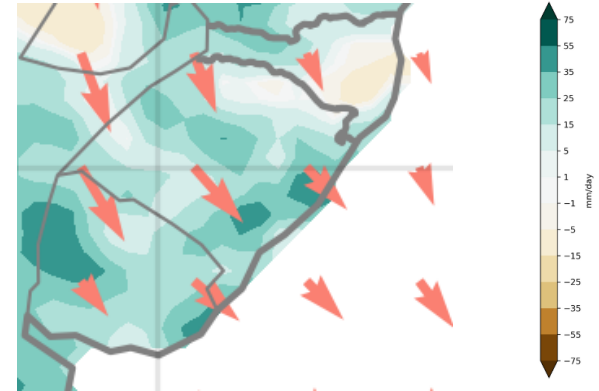
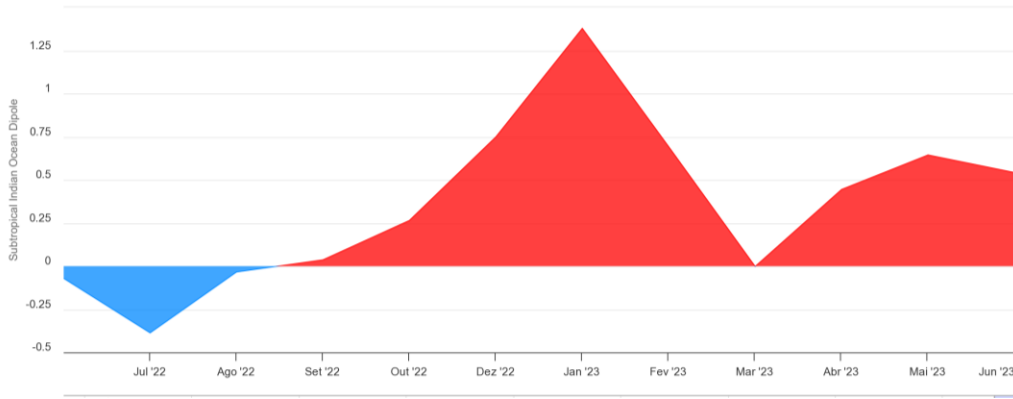


# Condições oceânicas

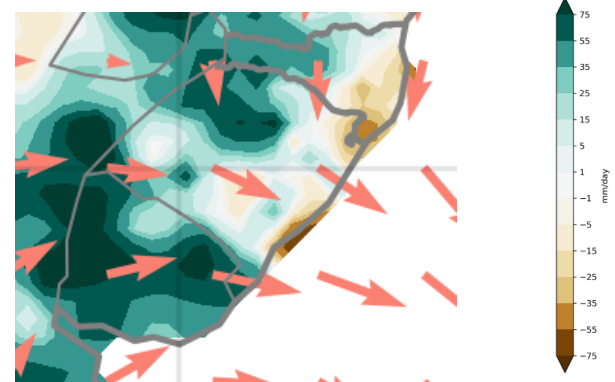
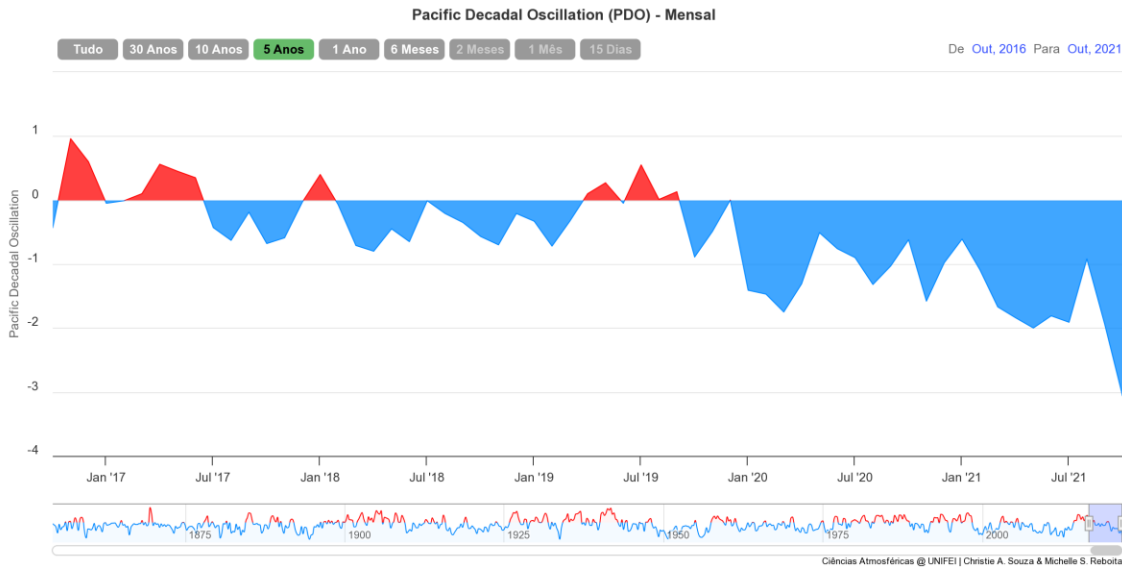


# Índices oceânicos

IOD

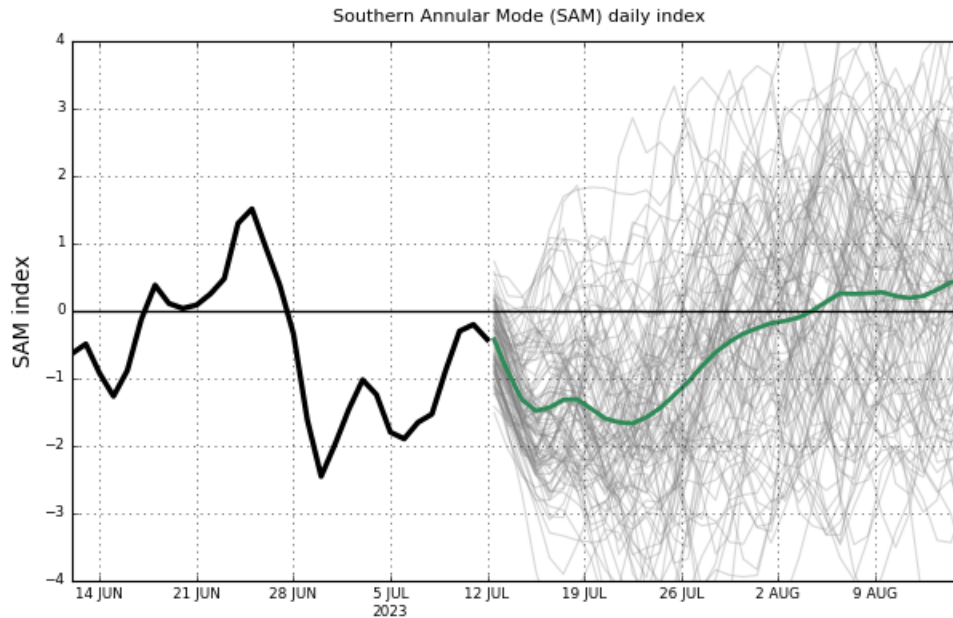
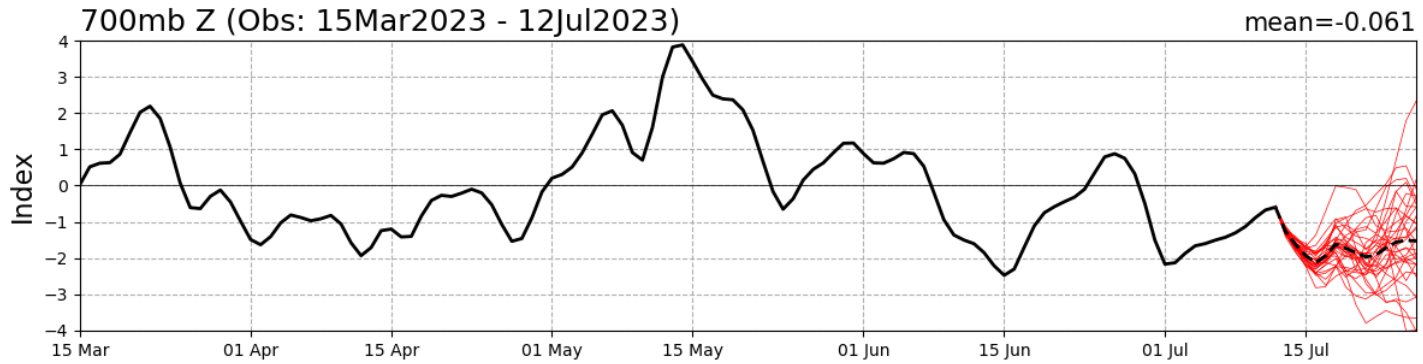


PDO

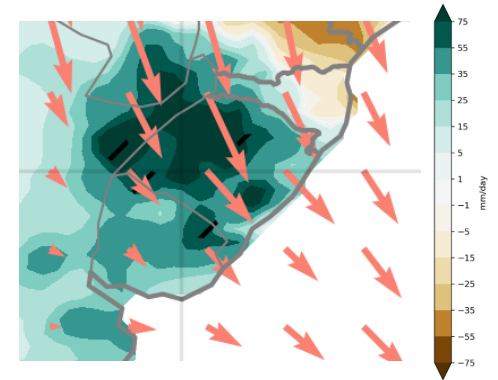


# Índice atmosférico (AAO)

## AAO Index: Observed & GEFS Forecasts

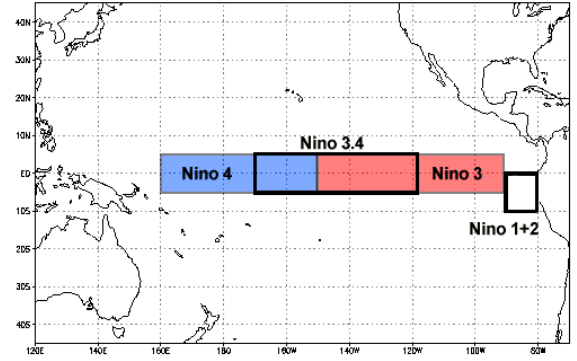
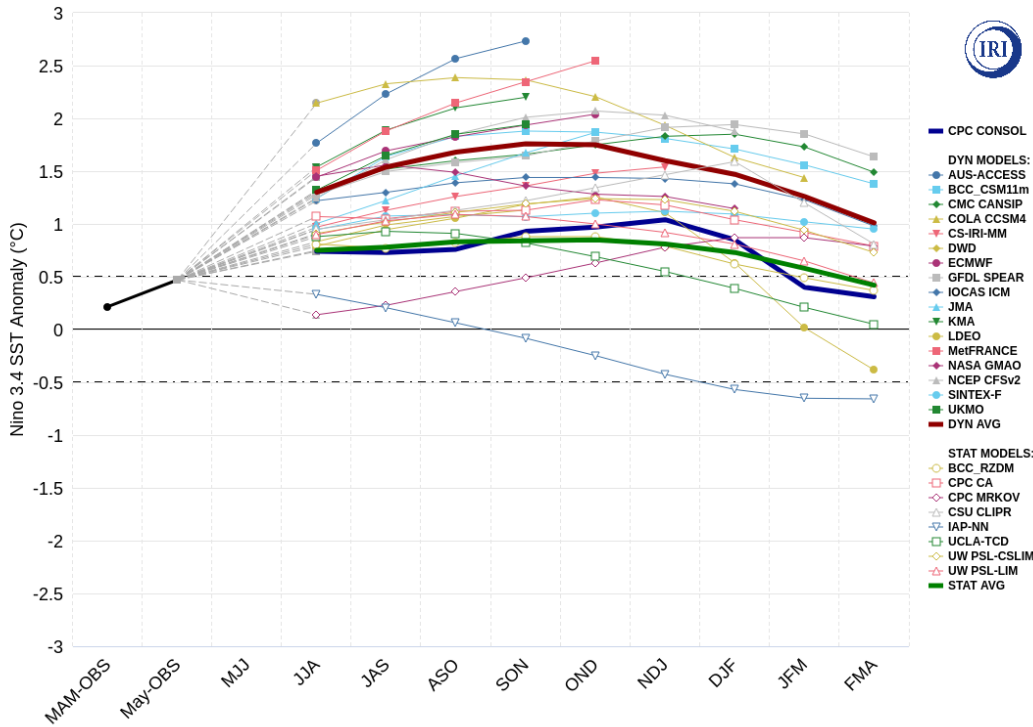


— Past analysis — Forecast ensemble mean — Ensemble member

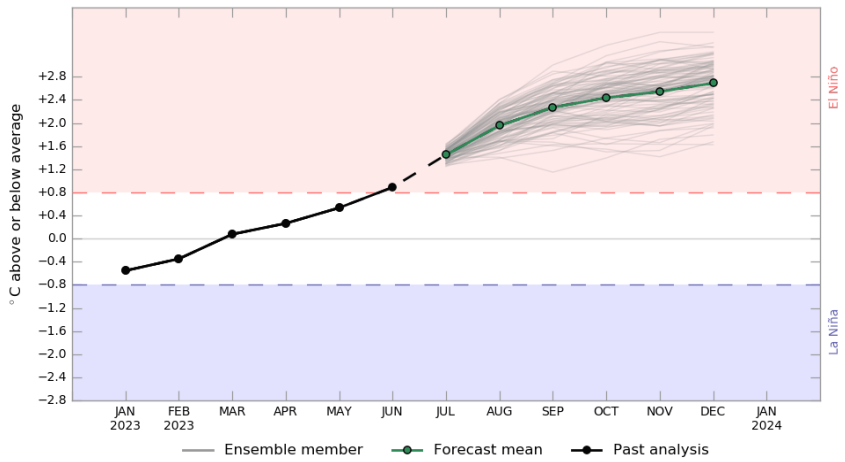


# Previsões do ENOS

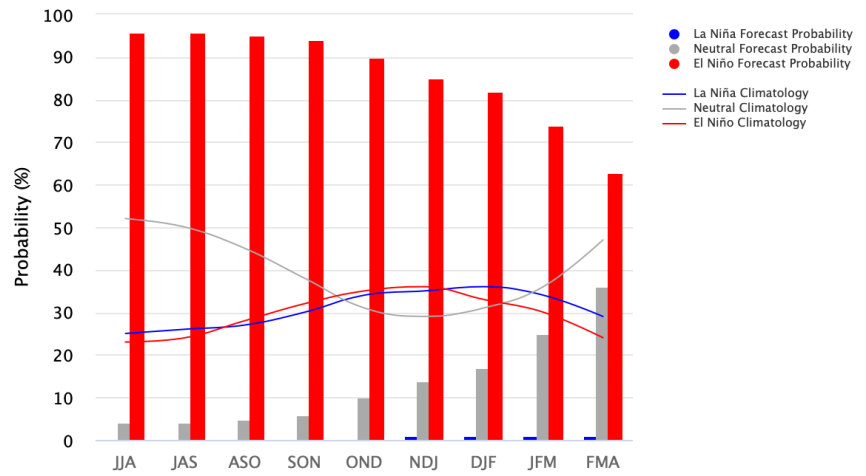
Model Predictions of ENSO from Jun 2023



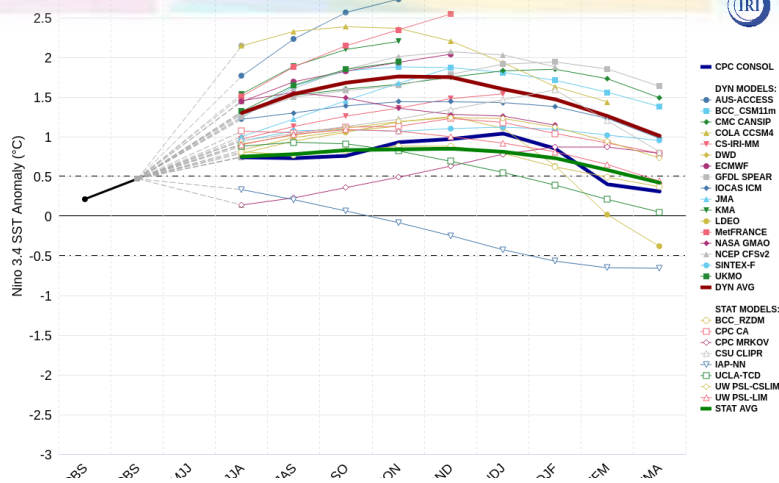
Monthly sea surface temperature anomalies for NINO3.4 region



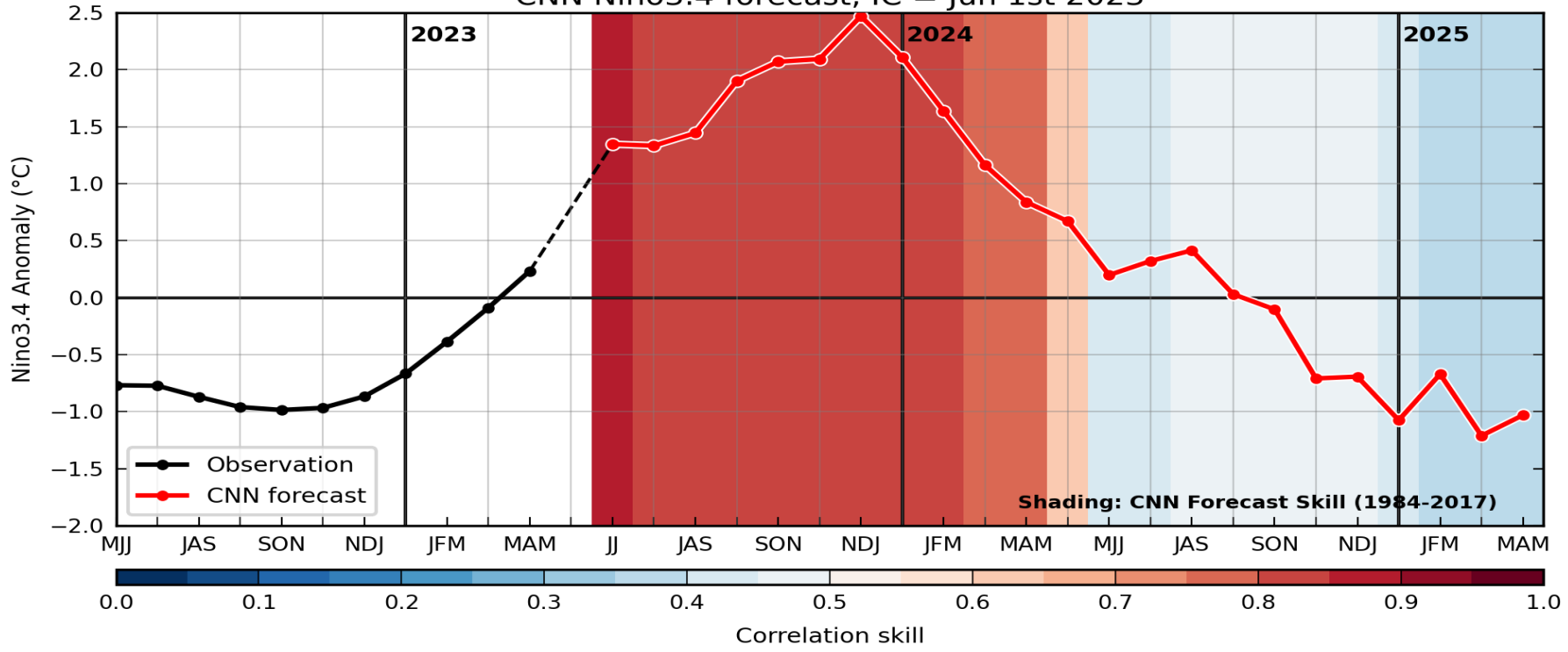
ENSO state based on NINO3.4 SST Anomaly Neutral ENSO: -0.5 °C to 0.5 °C



# Previsões do ENOS

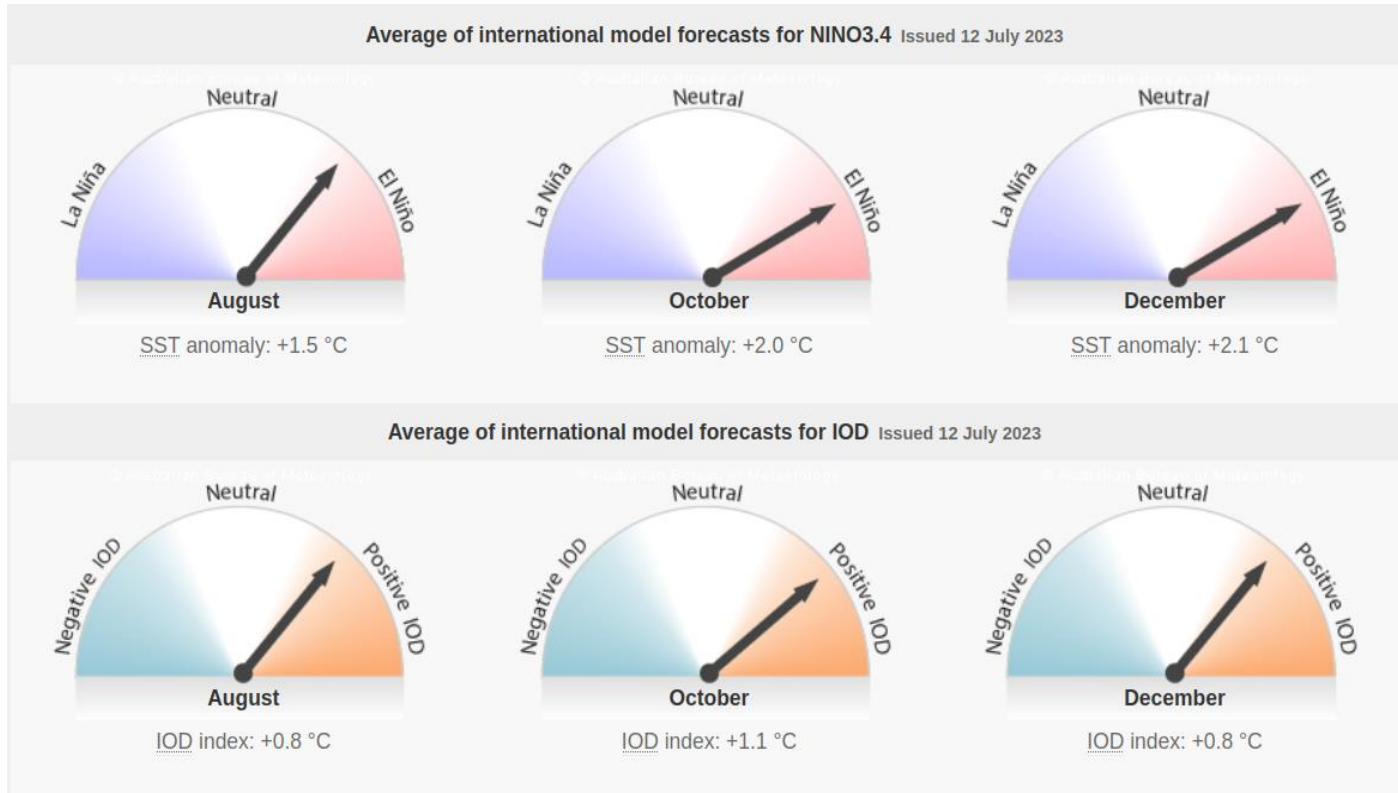


CNN Nino3.4 forecast, IC = Jun 1st 2023





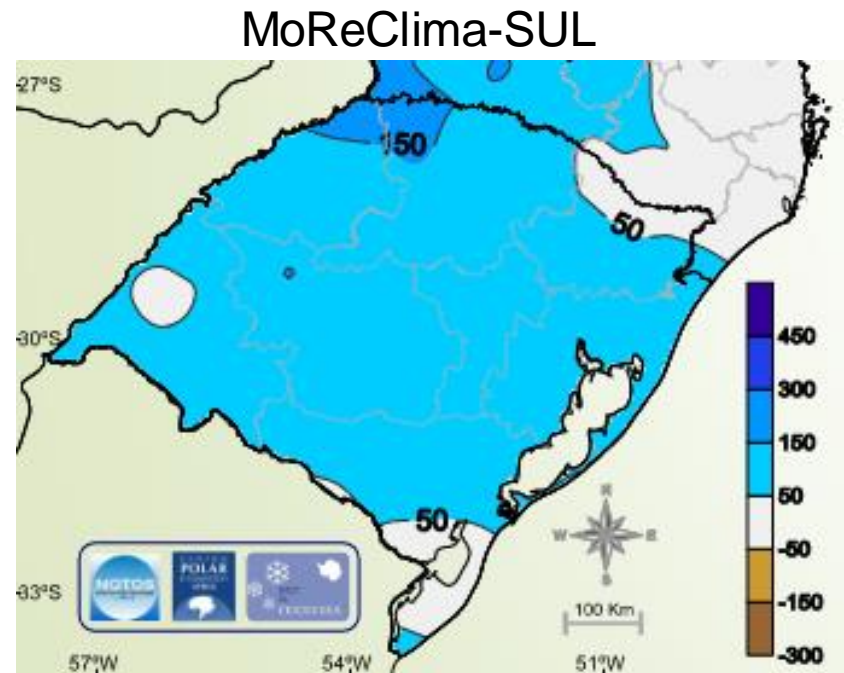
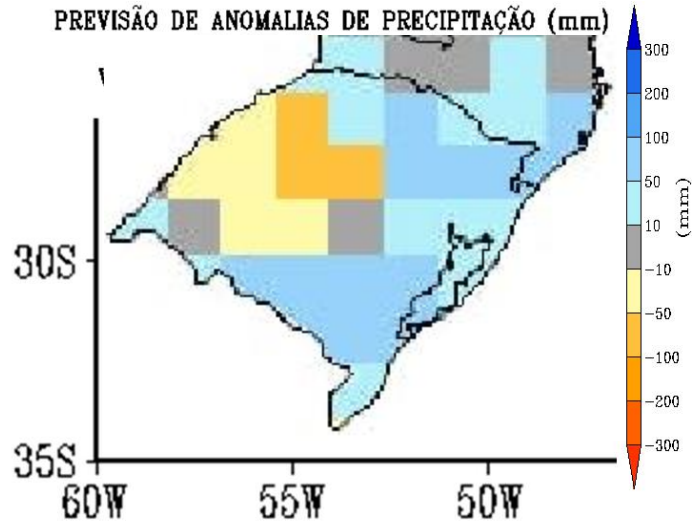
# Previsões do ENOS



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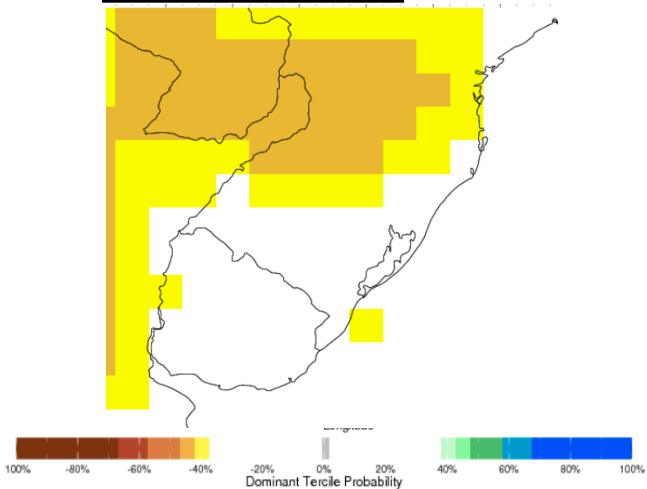
# Previsões sazonais

## Previsões sazonais (JJA) - Precipitação (anomalias)

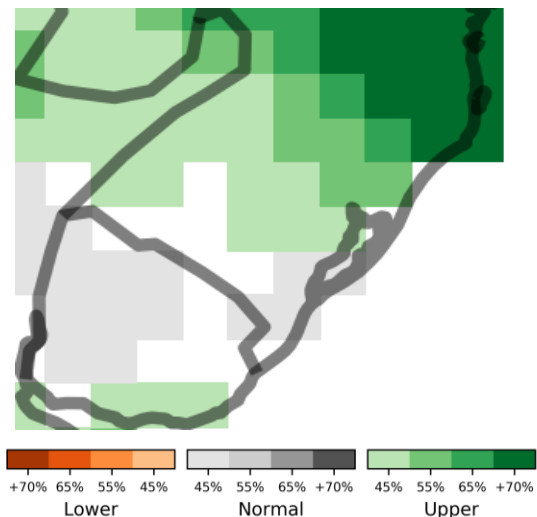


# Previsões sazonais (JAS) - Precipitação (probabilística)

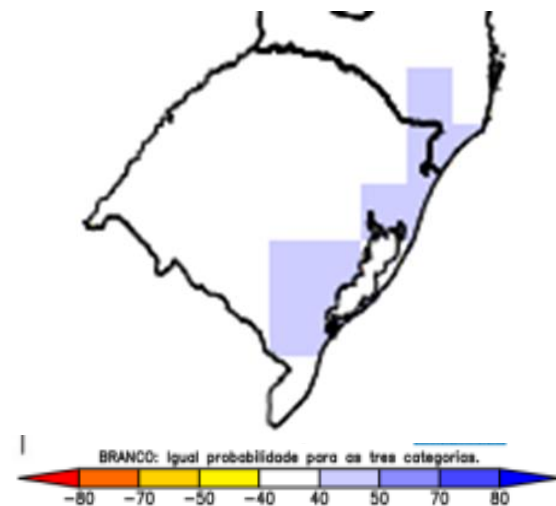
**Mutimodelo IRI**



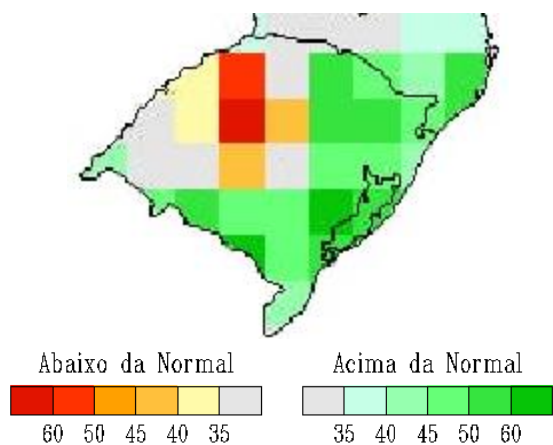
**CIMA-CONICET-UBA**



Multimodelo [CPTEC/INMET/FUNCEME](#)



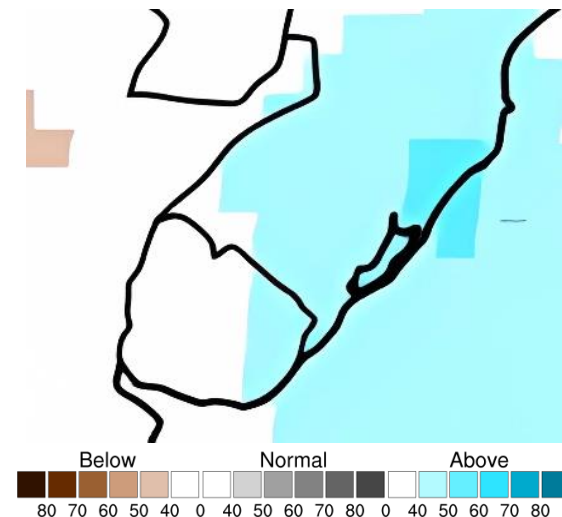
**INMET**



**Multissistema C3S (ECMWF)**

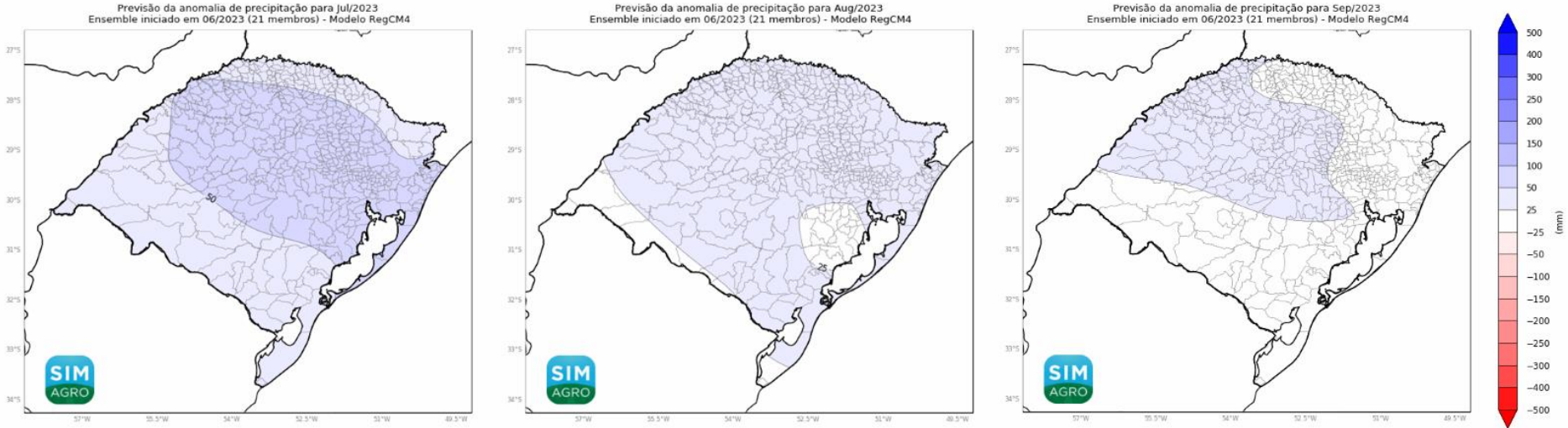


**APCC**

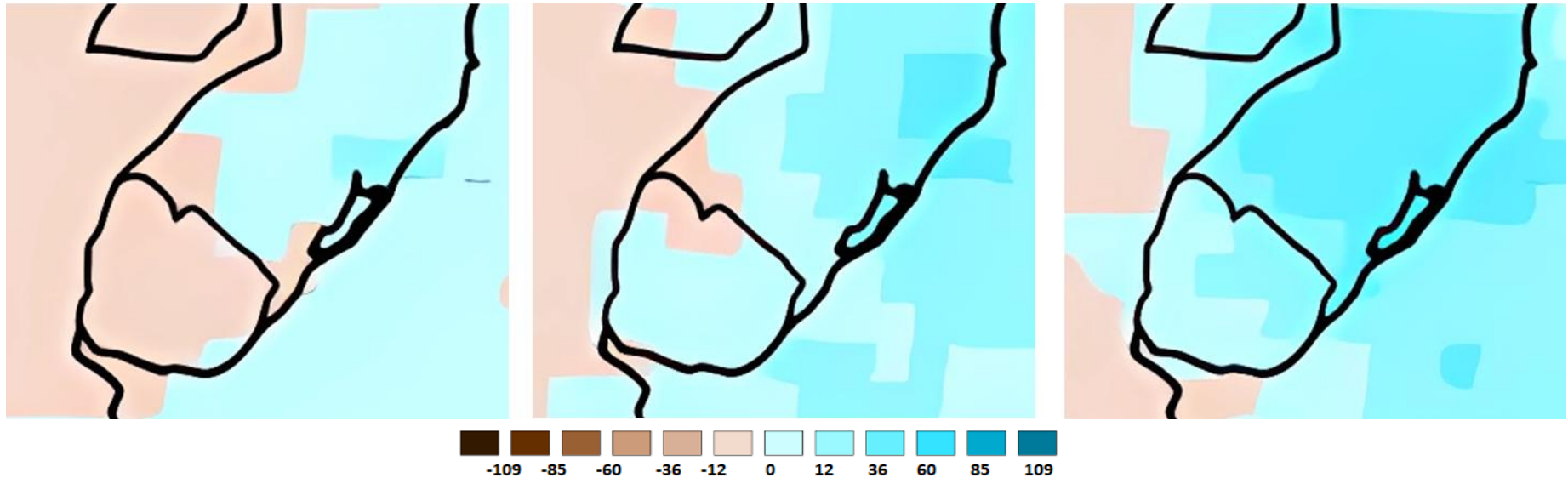


# Previsões mensais - Precipitação (mm)

## RegCM4

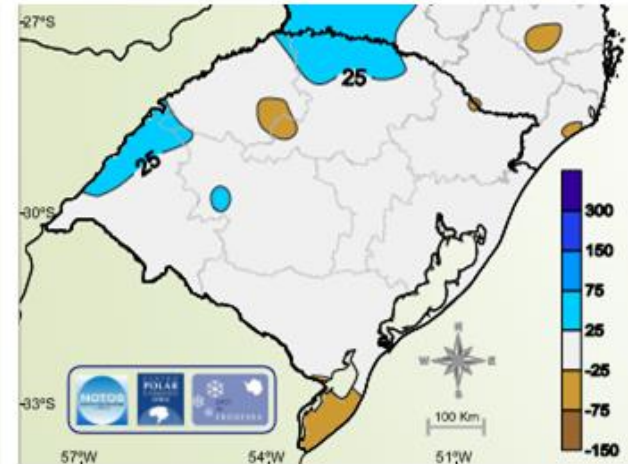
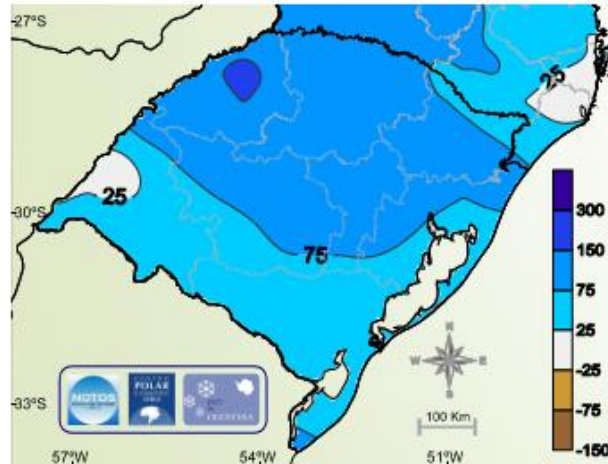
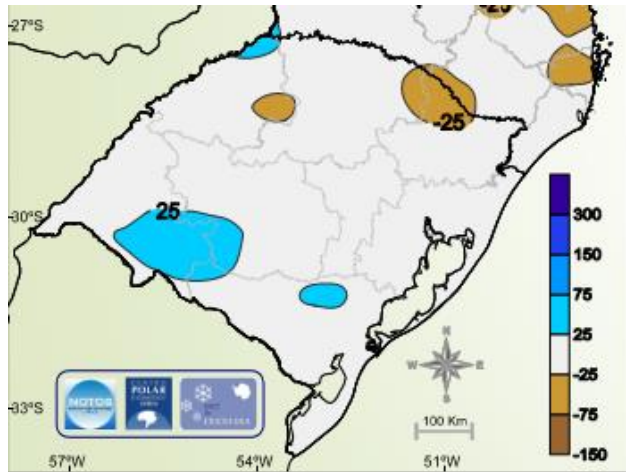


## APCC

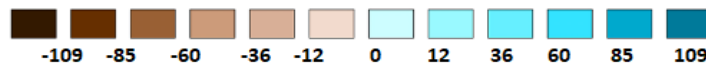


# Previsões mensais - Precipitação (mm)

MoreClima

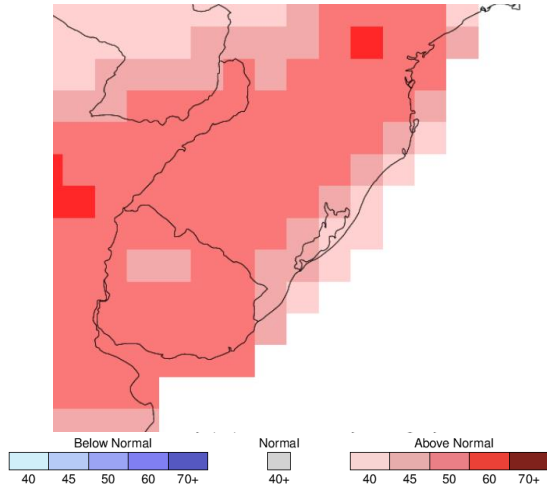


APCC

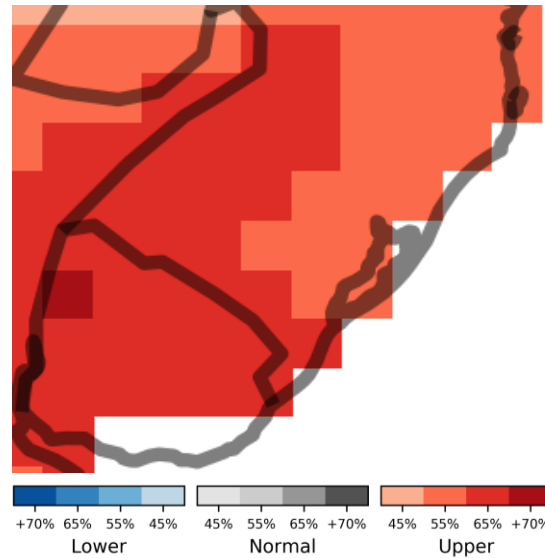


# Previsões sazonais (JAS) - Temperatura (probabilística)

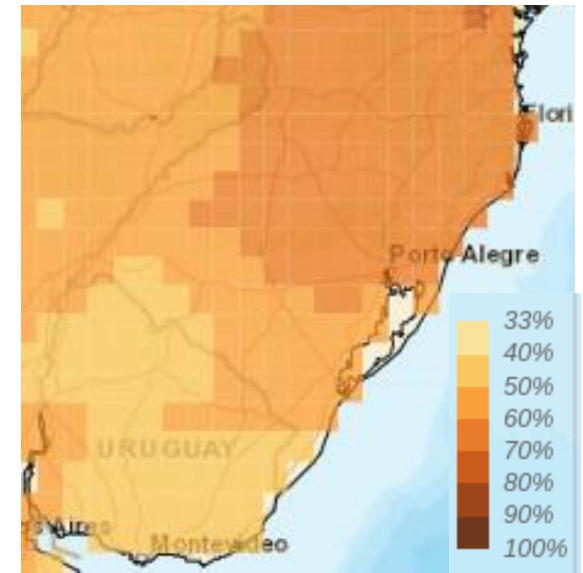
**Mutimodelo IRI**



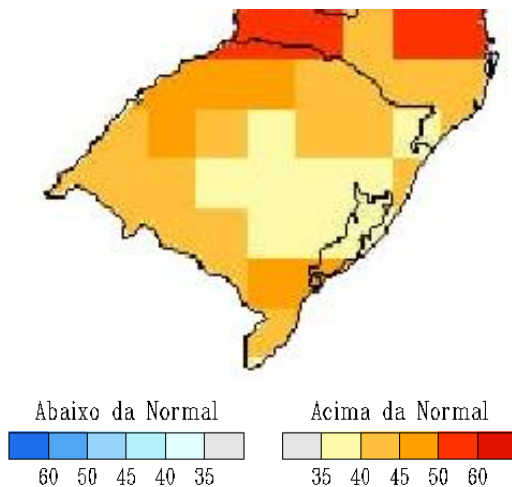
**CIMA-CONICET-UBA**



**CRC-SAS (Ensemble NMME)**



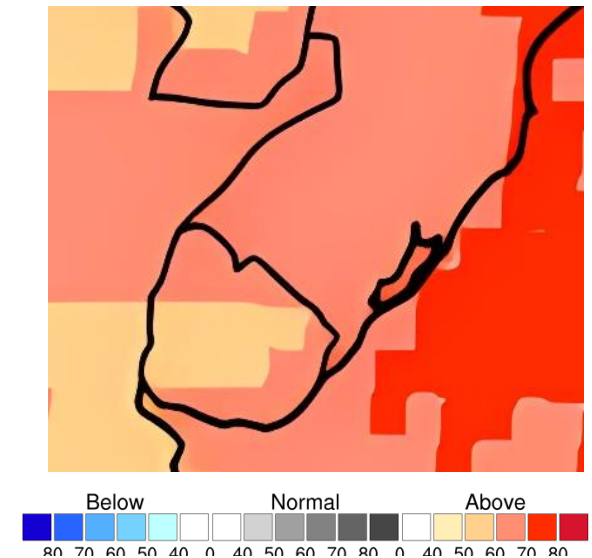
**INMET**



**Multissistema C3S (ECMWF)**



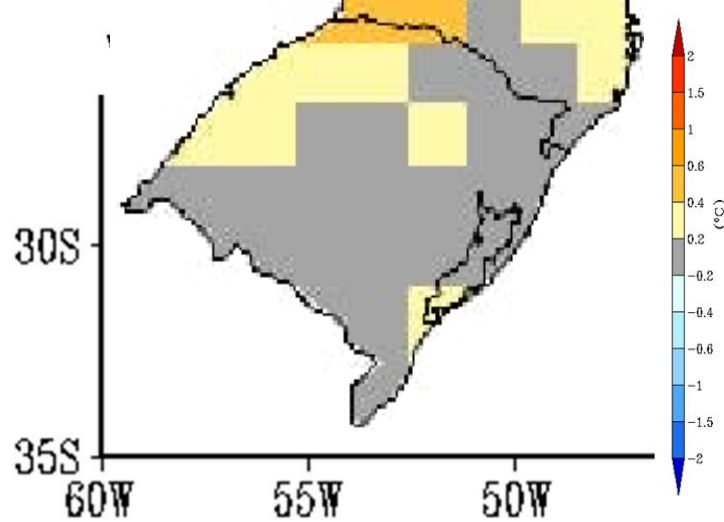
**APCC**



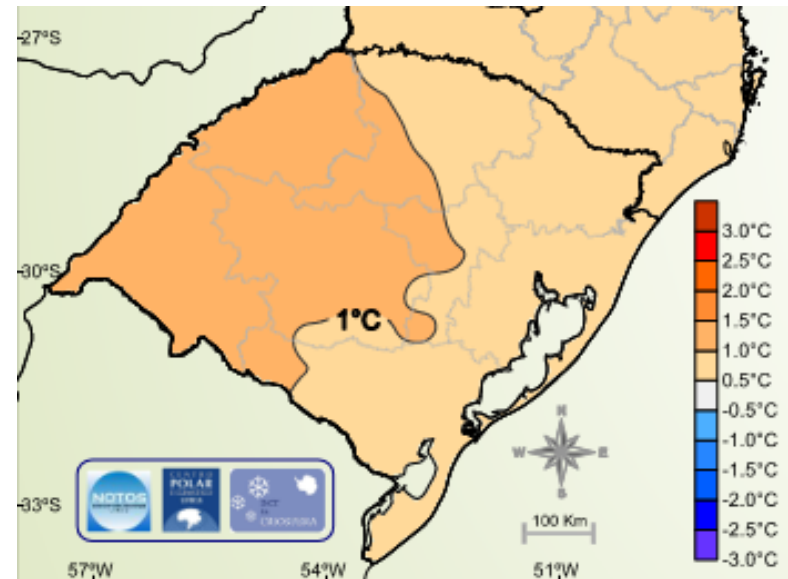
# Previsões sazonais

## Previsões sazonais (JAS) - Temperatura (anomalias)

PREVISÃO DE ANOMALIAS DE TEMPERATURA (°C)



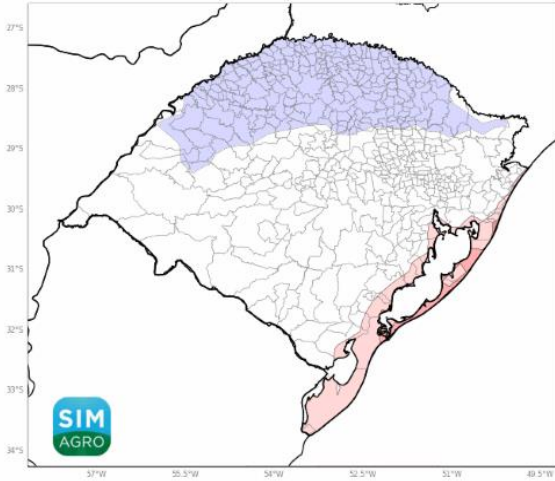
MoReClima-SUL



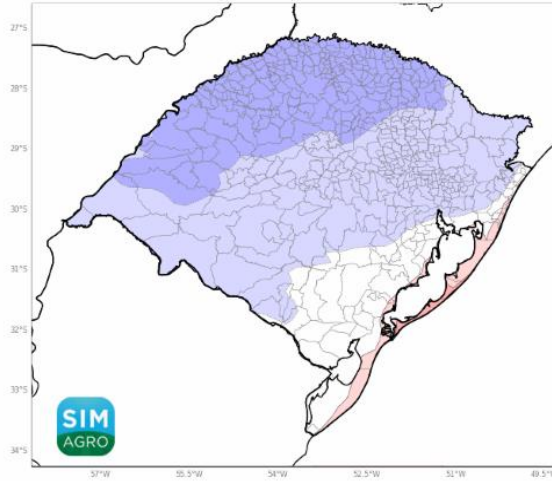
# Previsões mensais – Temperatura (°C)

## RegCM4

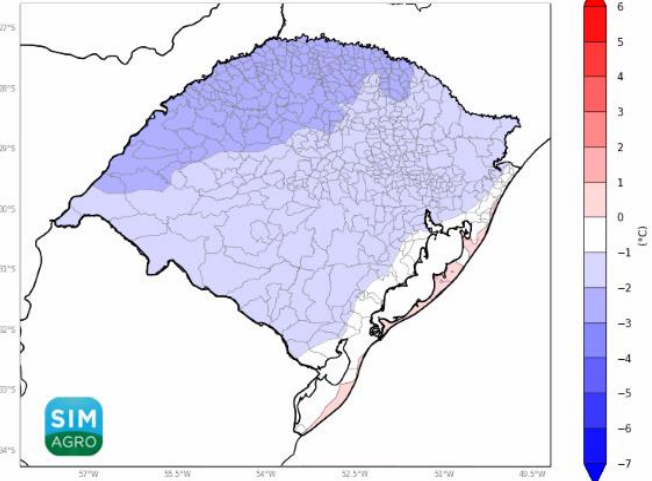
Previsão da anomalia de temperatura média do ar a 2m para Jul/2023  
Ensemble iniciado em 06/2023 (26 membros) - Modelo RegCM4



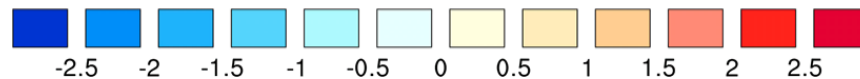
Previsão da anomalia de temperatura média do ar a 2m para Aug/2023  
Ensemble iniciado em 06/2023 (26 membros) - Modelo RegCM4



Previsão da anomalia de temperatura média do ar a 2m para Sep/2023  
Ensemble iniciado em 06/2023 (26 membros) - Modelo RegCM4



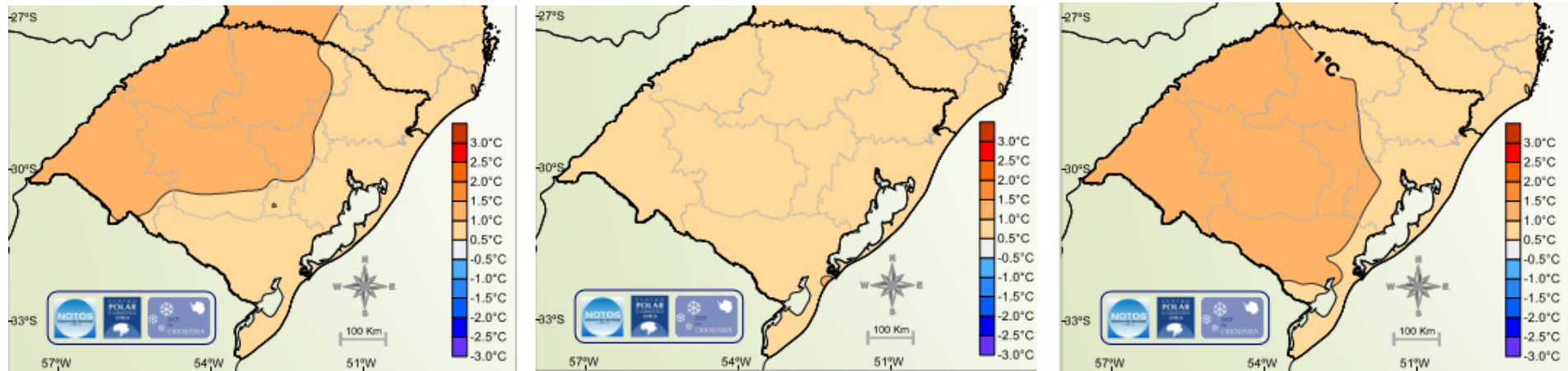
## APCC



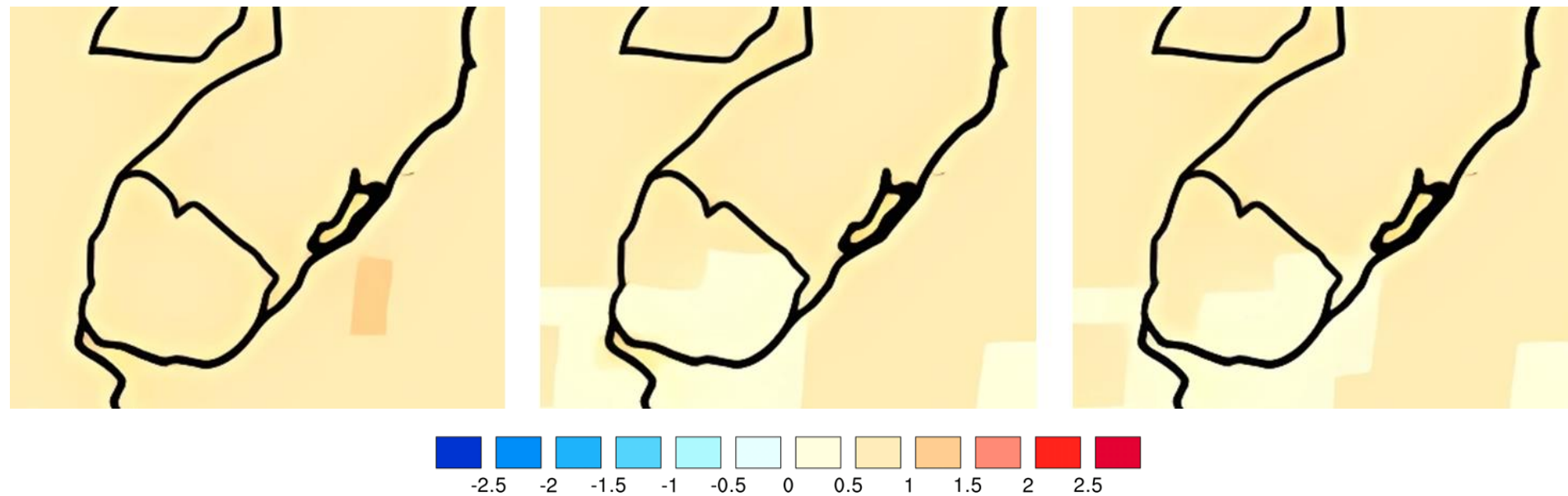


# Previsões mensais – Temperatura (°C)

## MoreClima

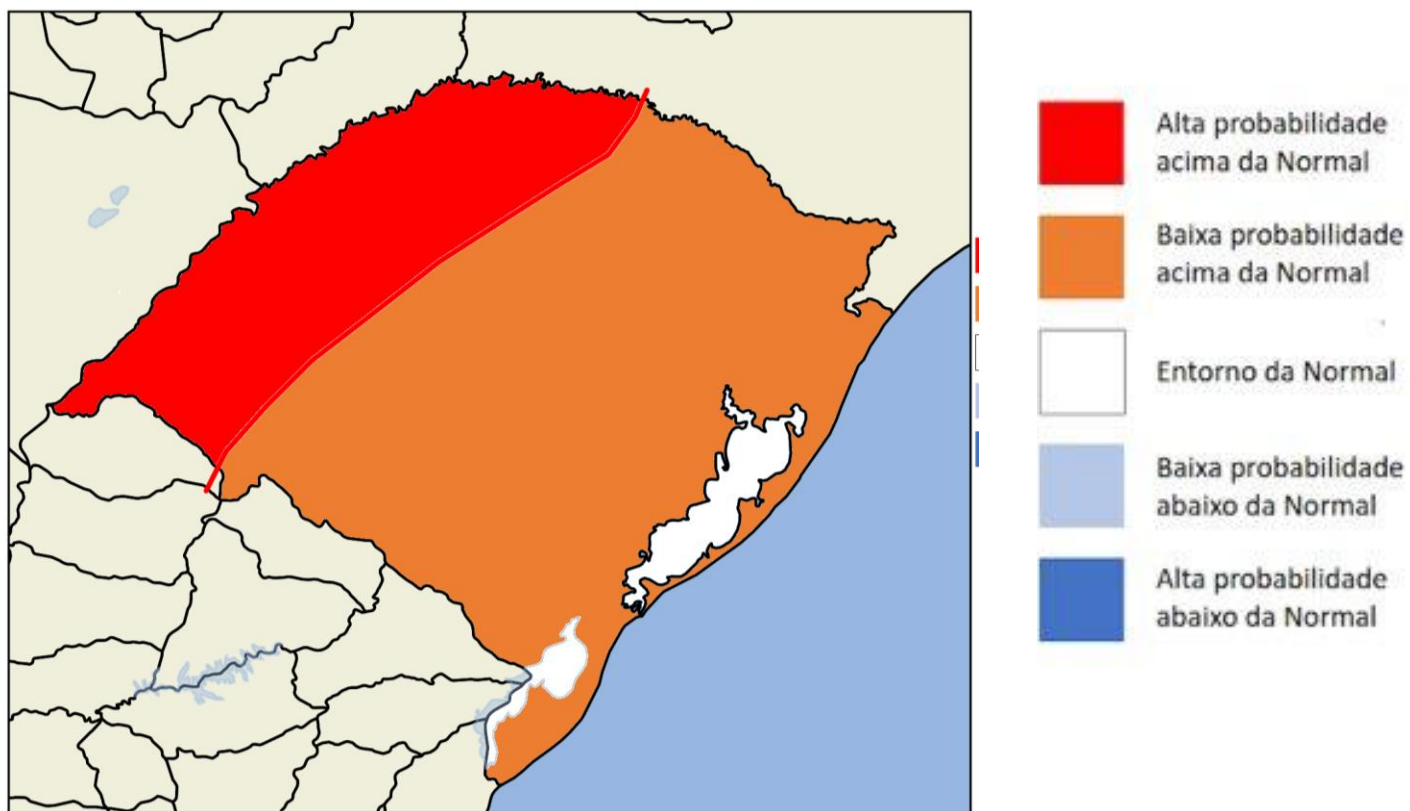


## APCC



# Previsão por consenso

## Temperatura (JAS)



# Previsão por consenso

## Precipitação (JAS)

