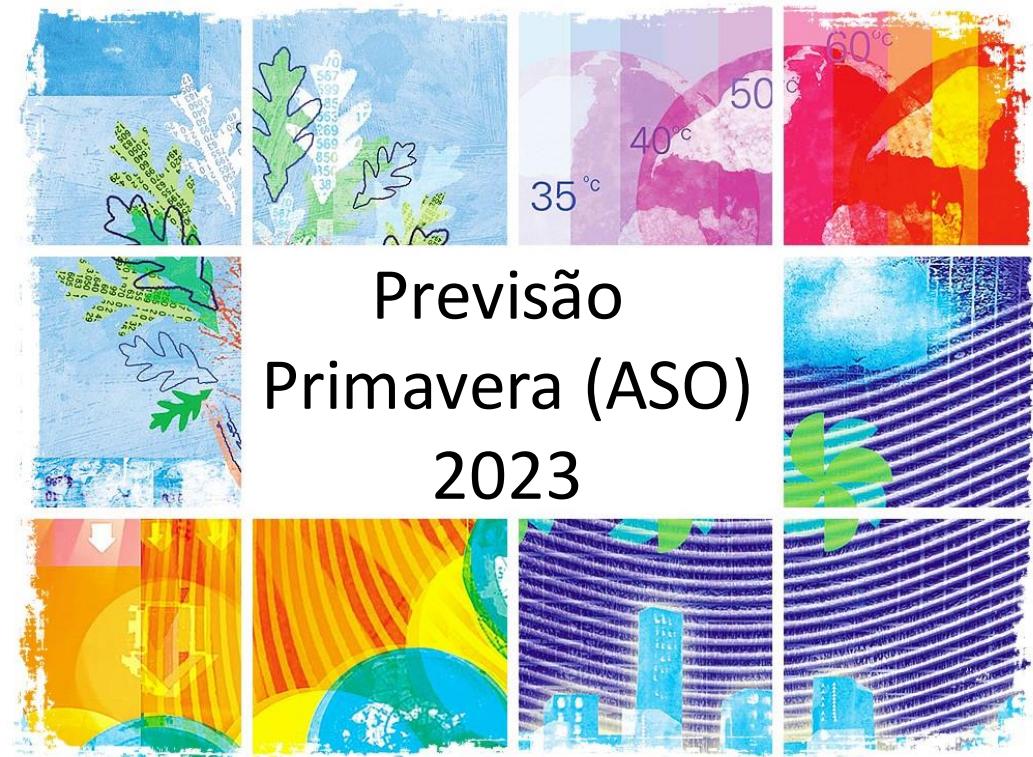


# XII Reunião Climática Mensal



# Verificação da previsão para MJJ

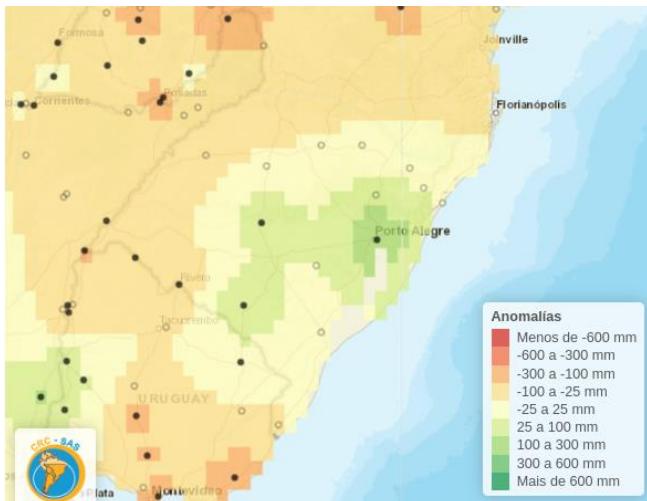
Previsão por consenso realizada em Abril de 2023

Precipitação

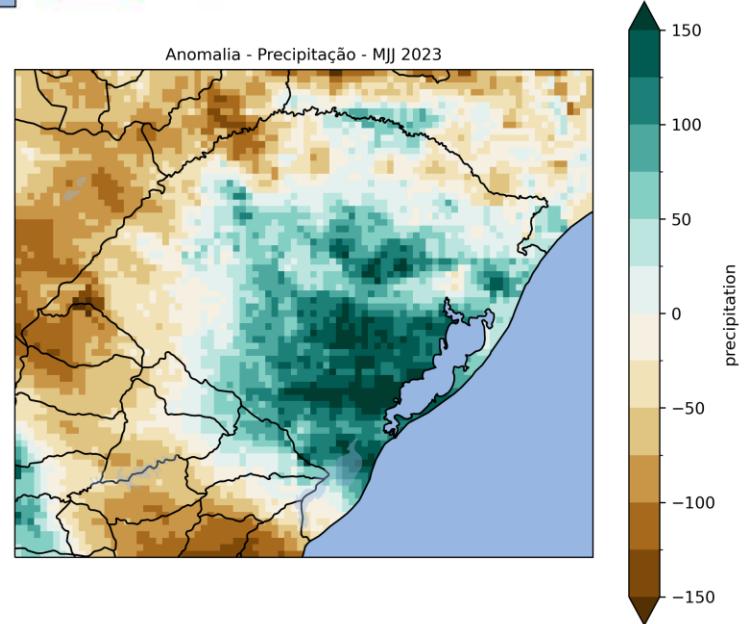
Previsto:



CRC-SAS:



Observado:

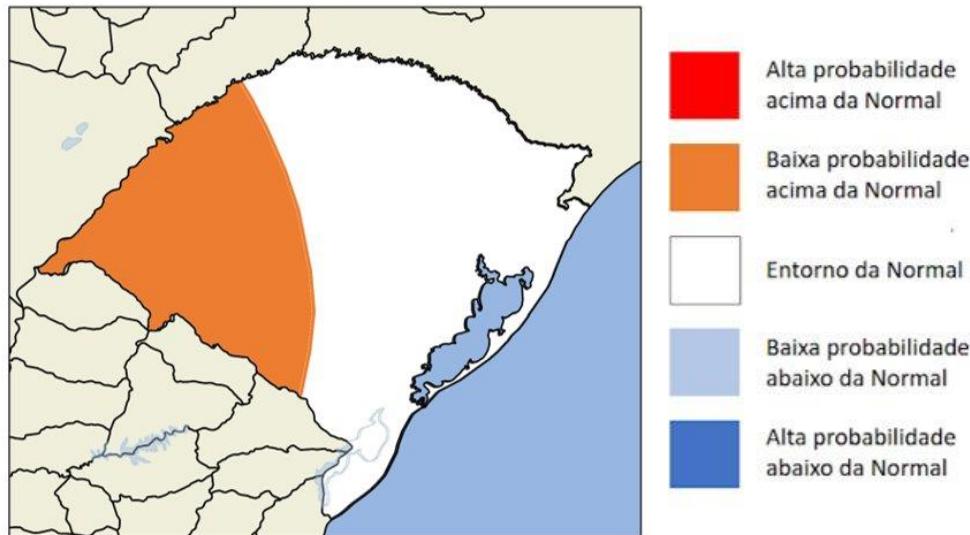


# Verificação da previsão para MJJ

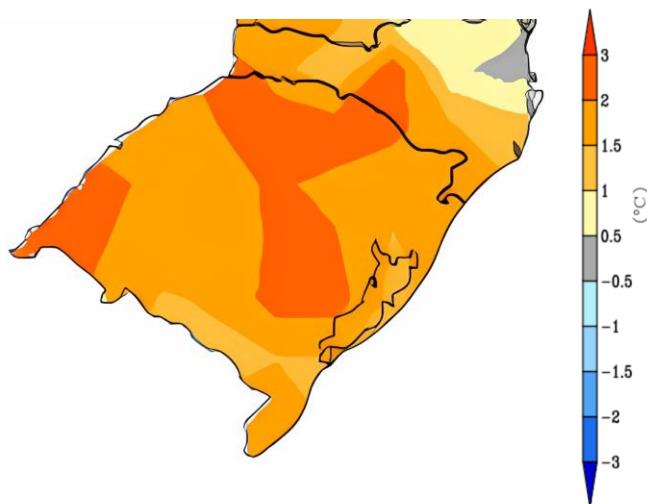
Previsão por consenso realizada em Abril de 2023

Temperatura do ar

Previsto:



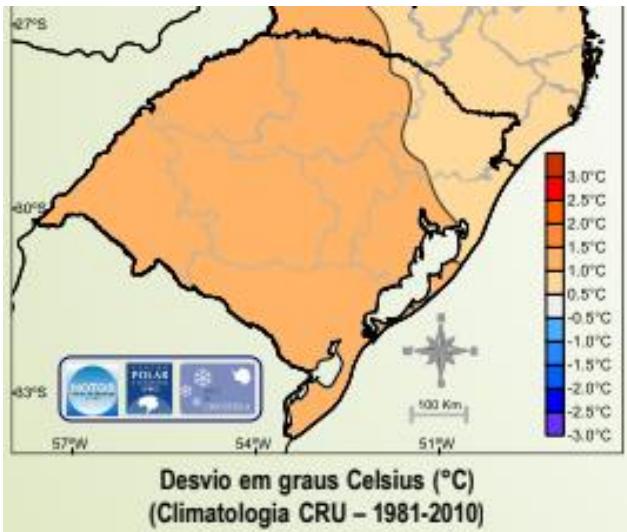
Observado INMET:



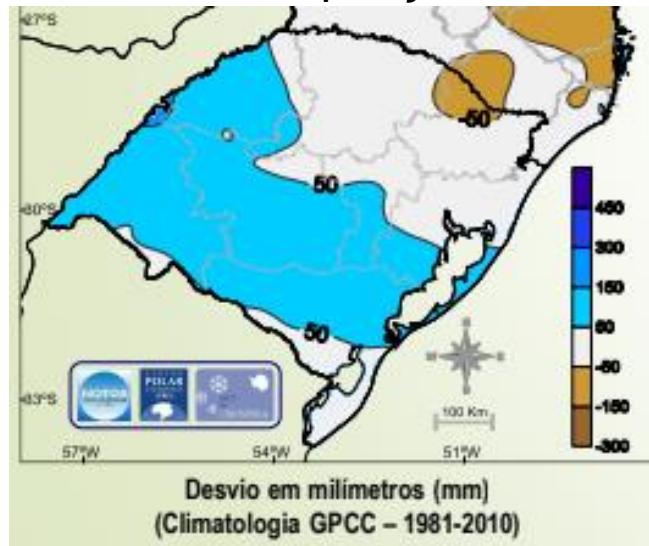
# Verificação da previsão para MJJ

Anomalia de Precipitação sazonal MoReClima (MJJ/2023)

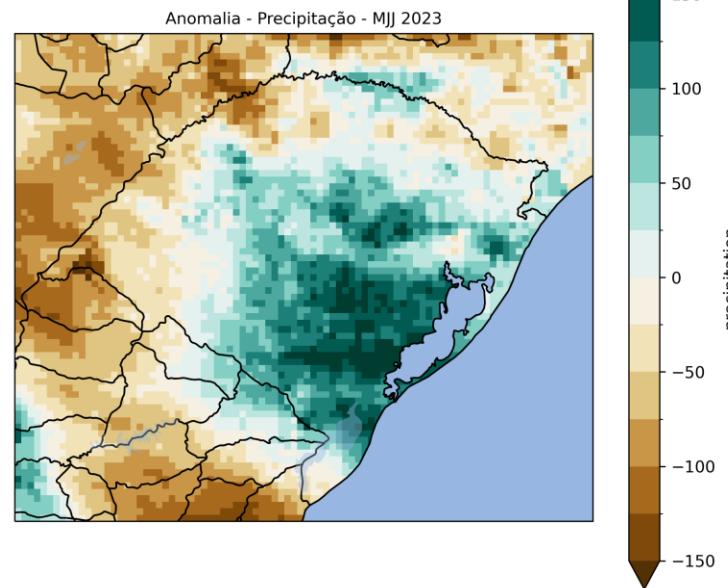
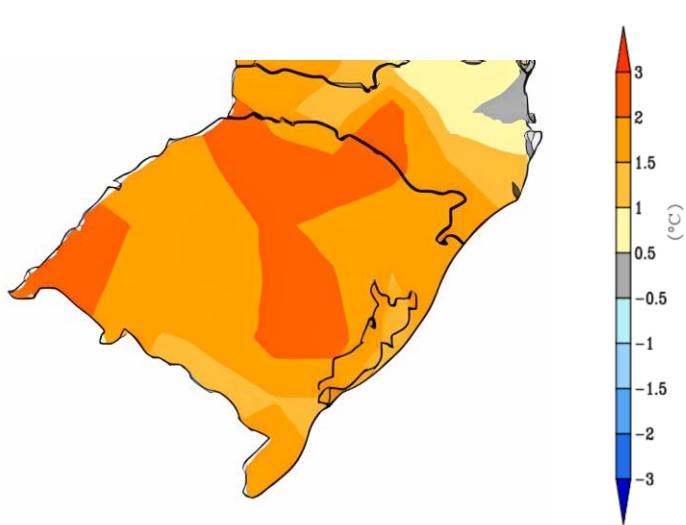
Temperatura



Precipitação



Observado:



# Verificação dos modelos por tempo de antecedência

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

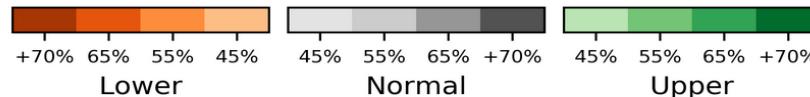
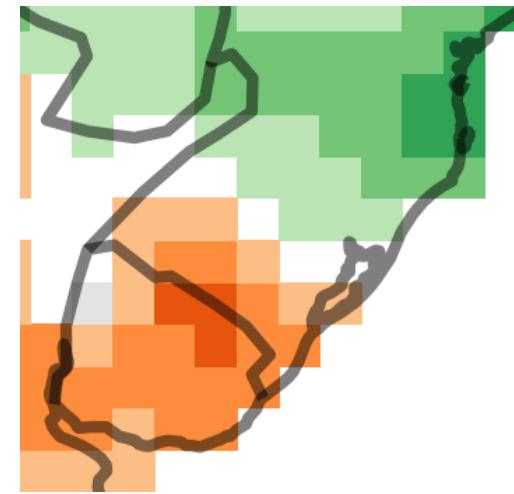
Iniciado em Fevereiro/2023



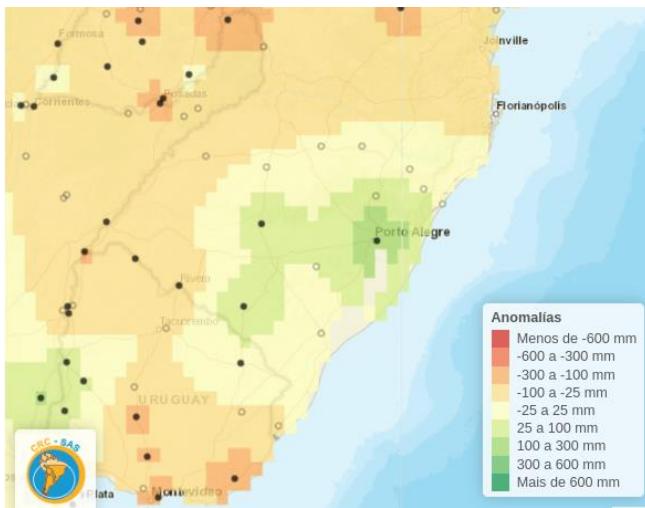
Iniciado em Março/2023



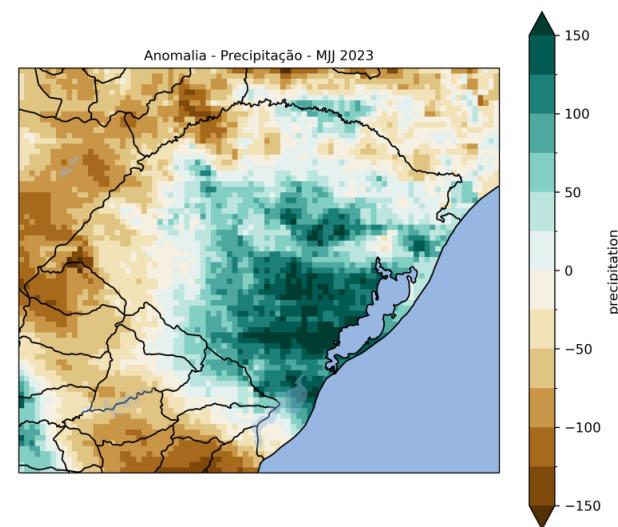
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CRC-SAS:



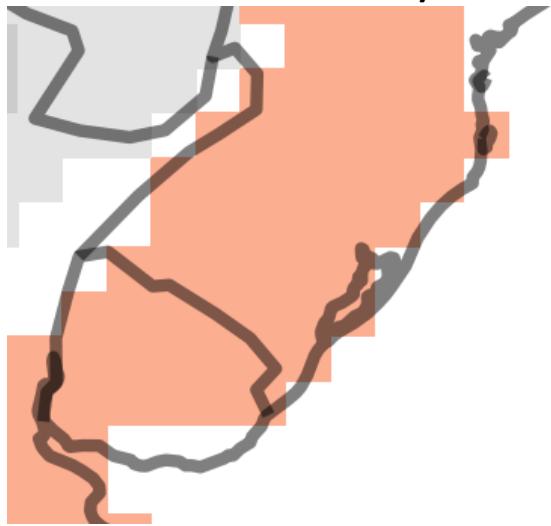
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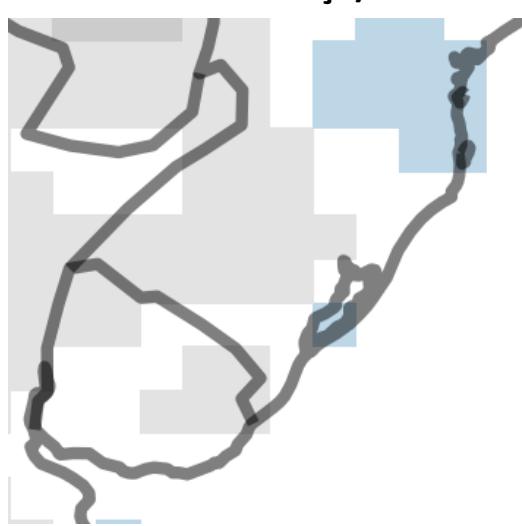
# Verificação dos modelos por tempo de antecedência

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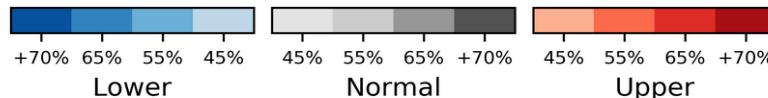
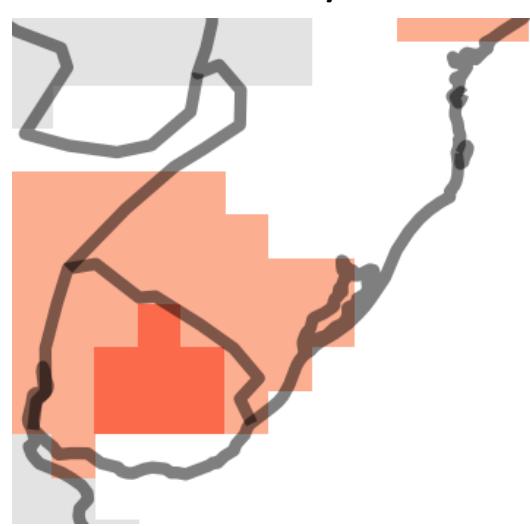
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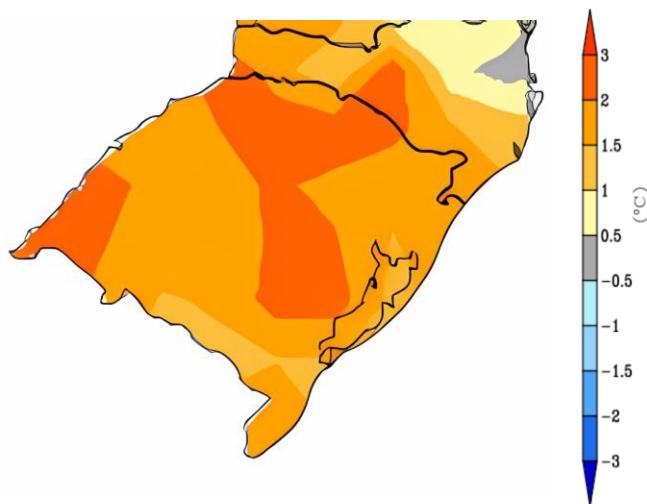
Iniciado em Março/2023



Iniciado em Abril/2023



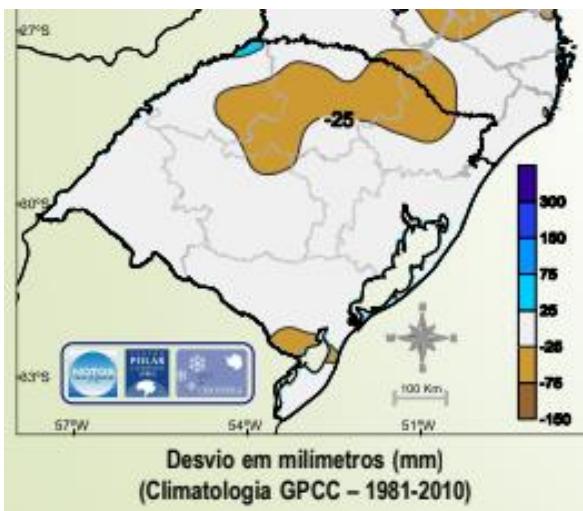
Observado:



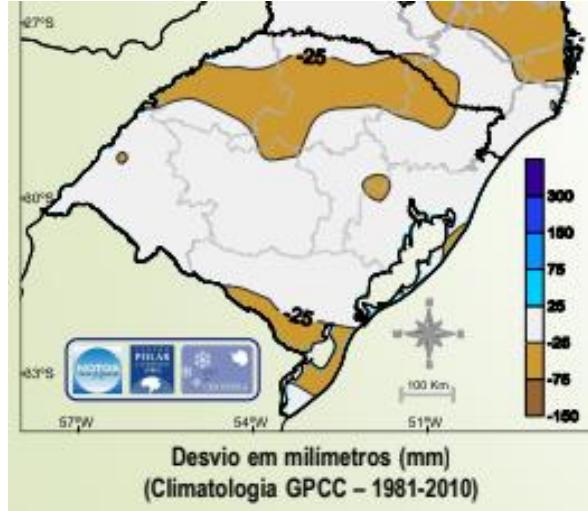
# Verificação dos modelos por tempo de antecedência

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

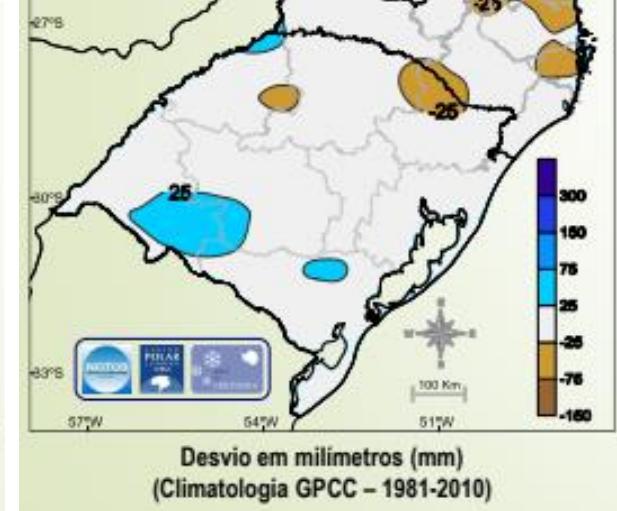
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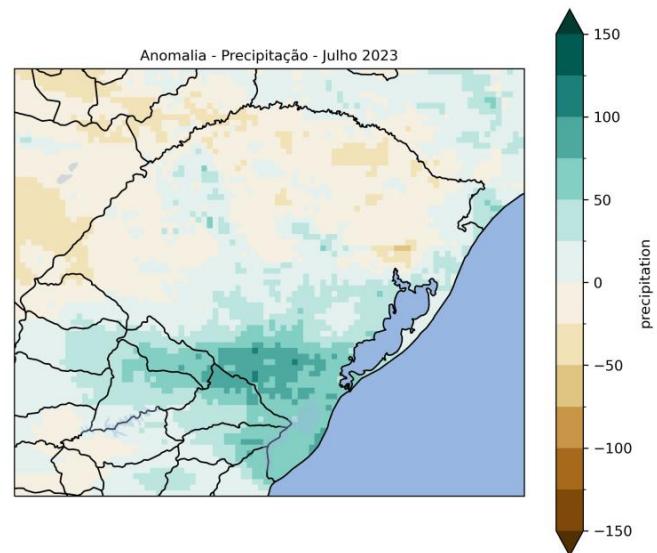
Iniciado em Maio/2023



Iniciado em Junho/2023



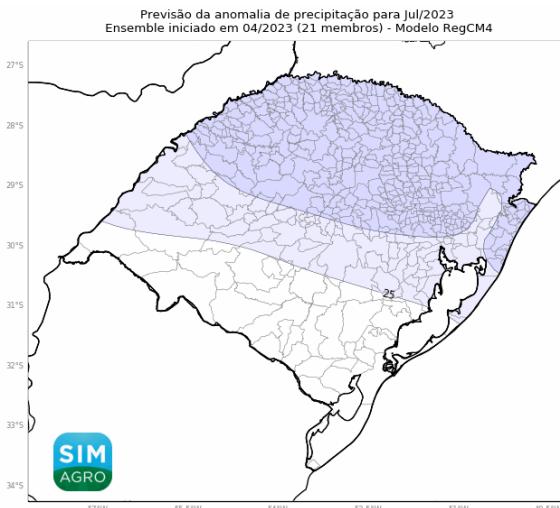
Observado:



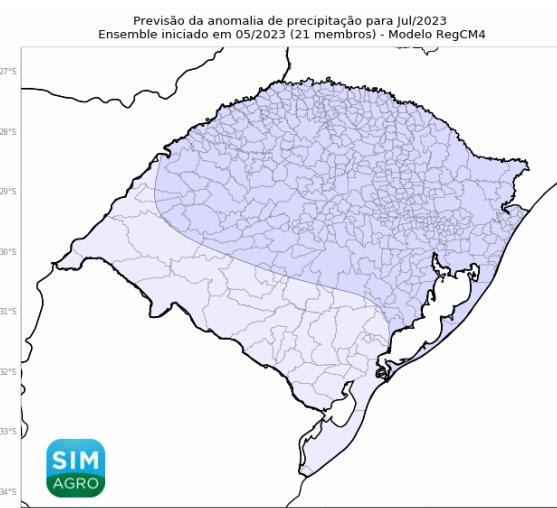
# Verificação dos modelos por tempo de antecedência

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

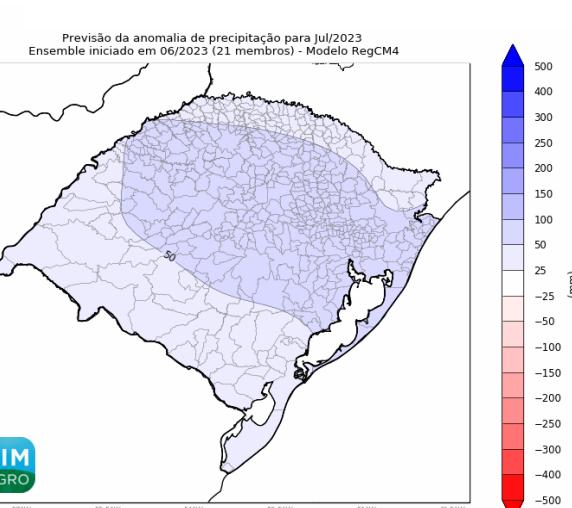
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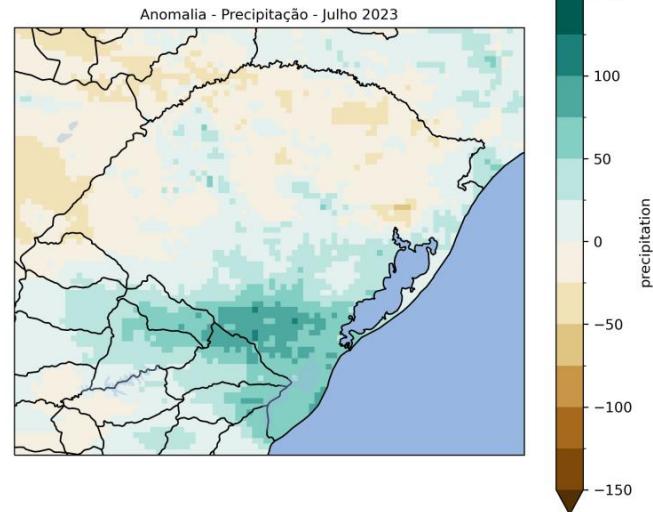
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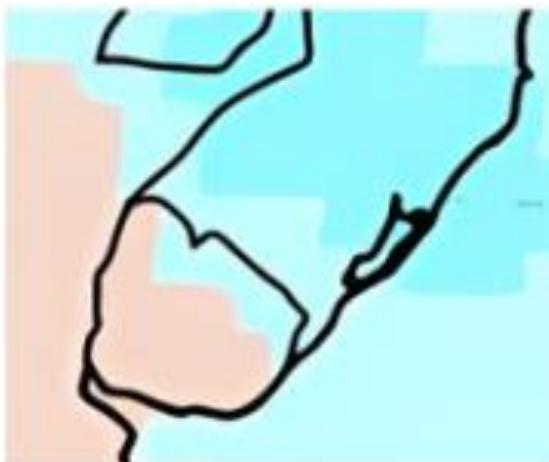
Observado:



# Verificação dos modelos por tempo de antecedência

## Anomalia de Precipitação APCC (Julho/2023)

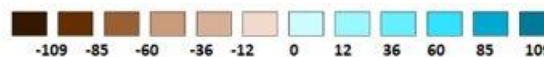
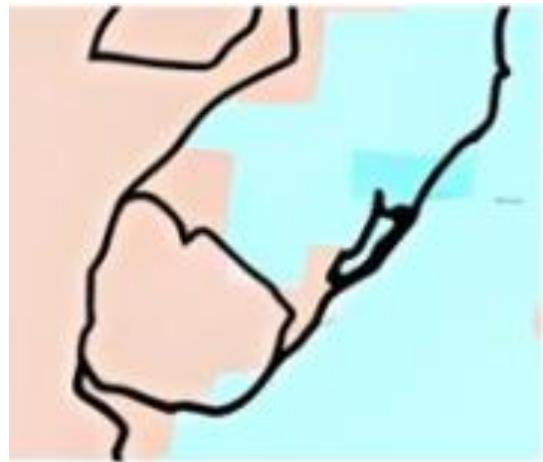
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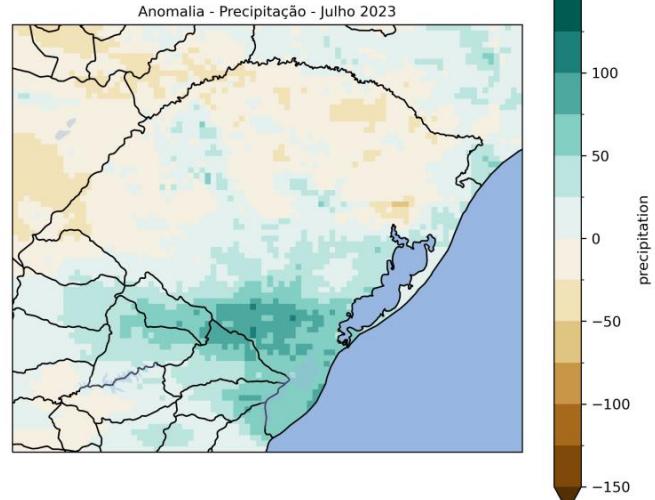
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Iniciado em Junho/2023



Observado:



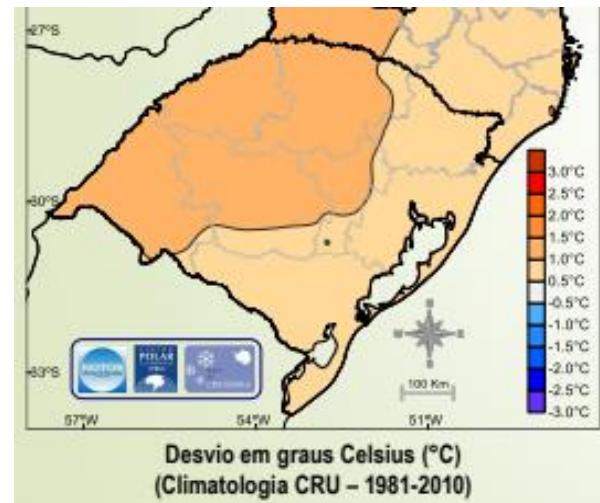
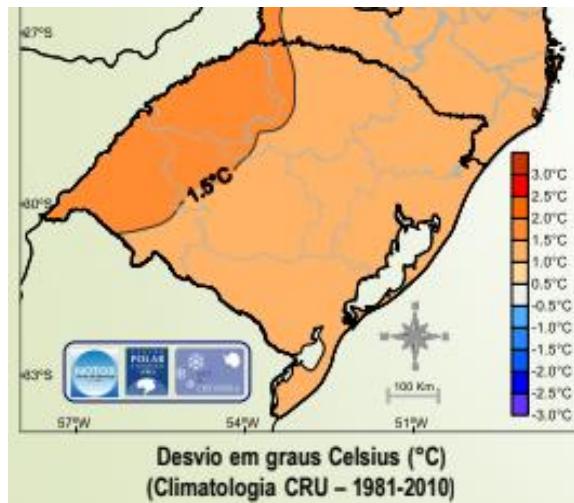
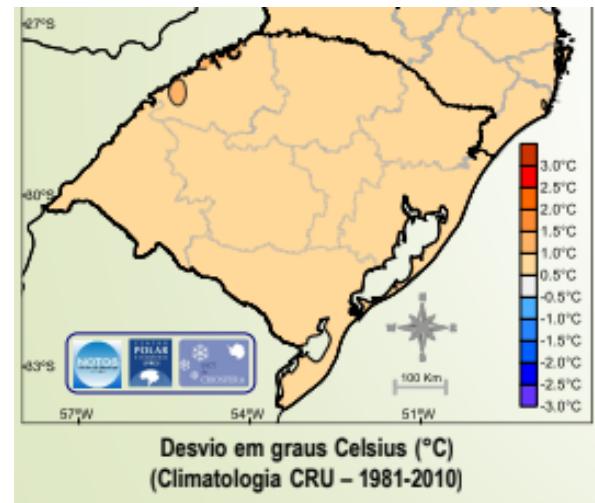
# Verificação dos modelos por tempo de antecedência

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

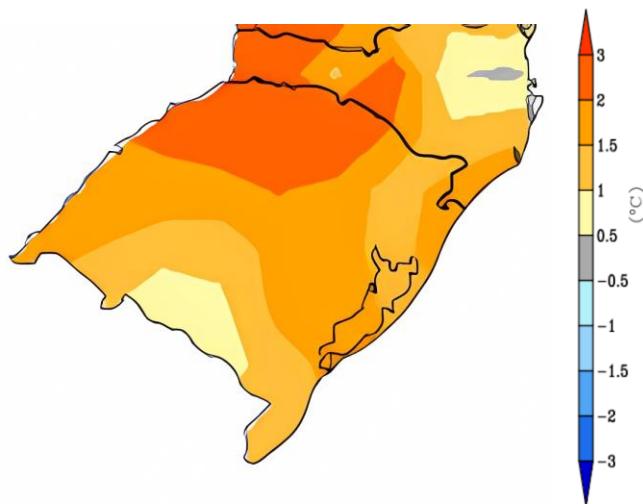
Iniciado em Abril/2023

Iniciado em Maio/2023

Iniciado em Junho/2023



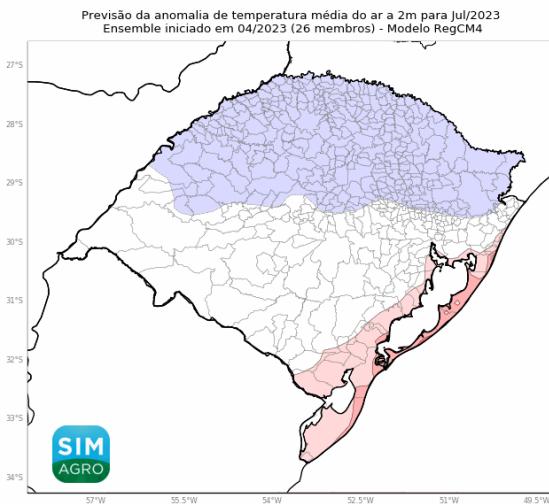
Observado:



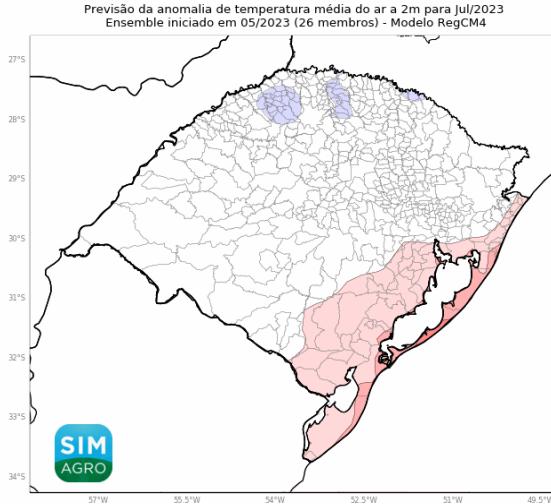
# Verificação dos modelos por tempo de antecedência

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

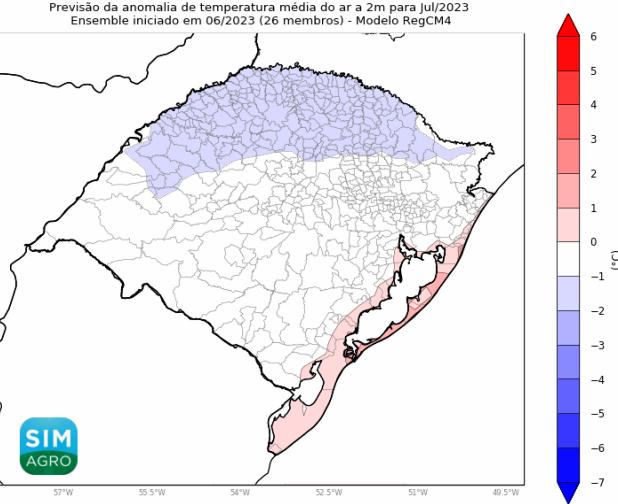
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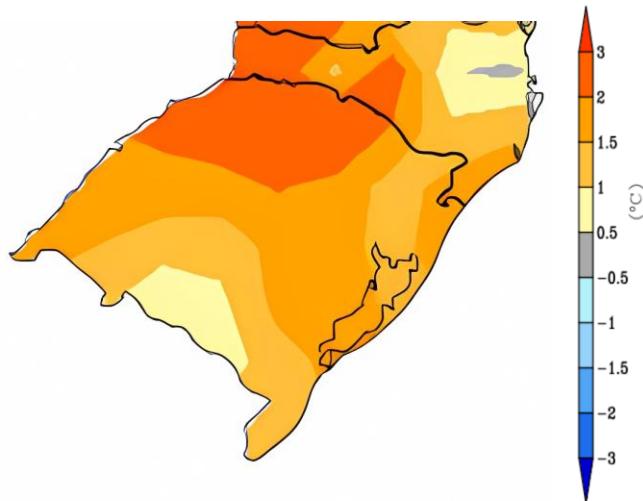
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Iniciado em Junho/2023



Observado:



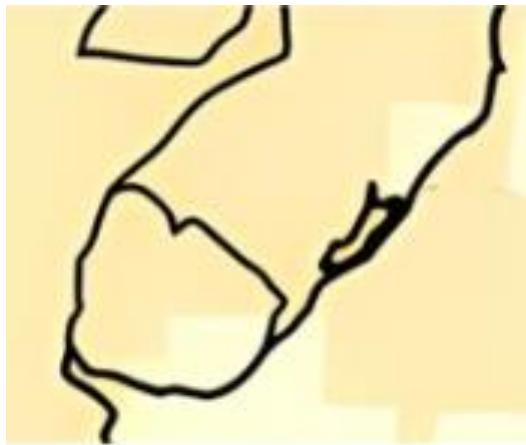
# Verificação dos modelos por tempo de antecedência

## Anomalia de Temperatura APCC (Julho/2023)

Iniciado em Abril/2023



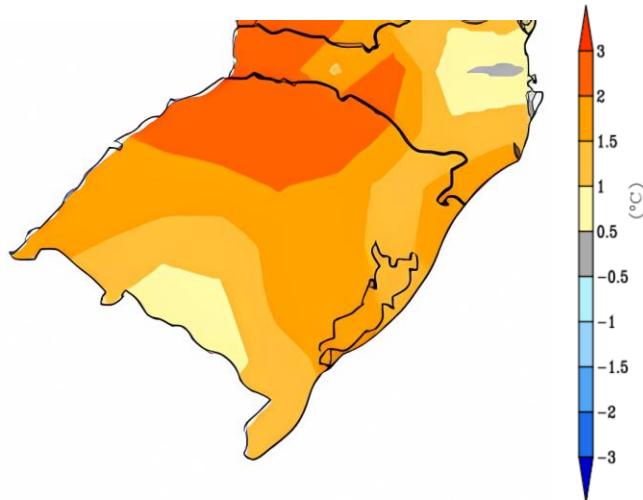
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Iniciado em Junho/2023



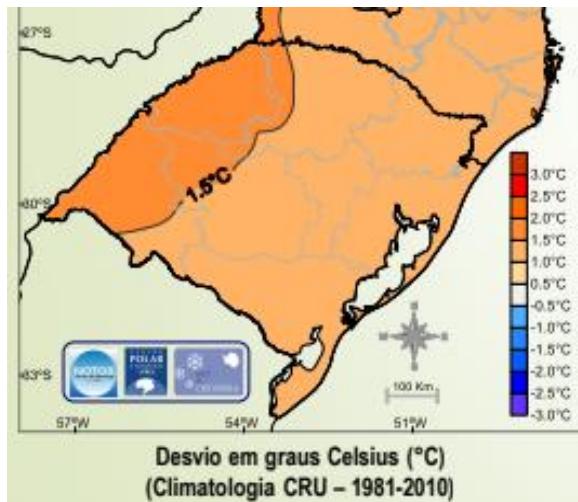
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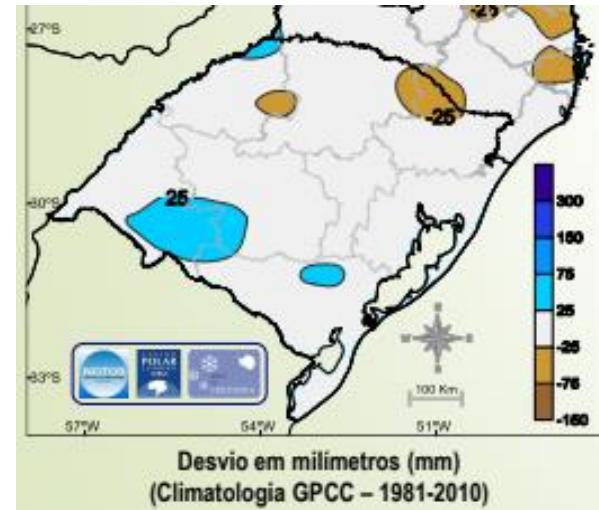
# Verificação dos modelos por tempo de antecedência

Melhor previsão para Julho de 2023

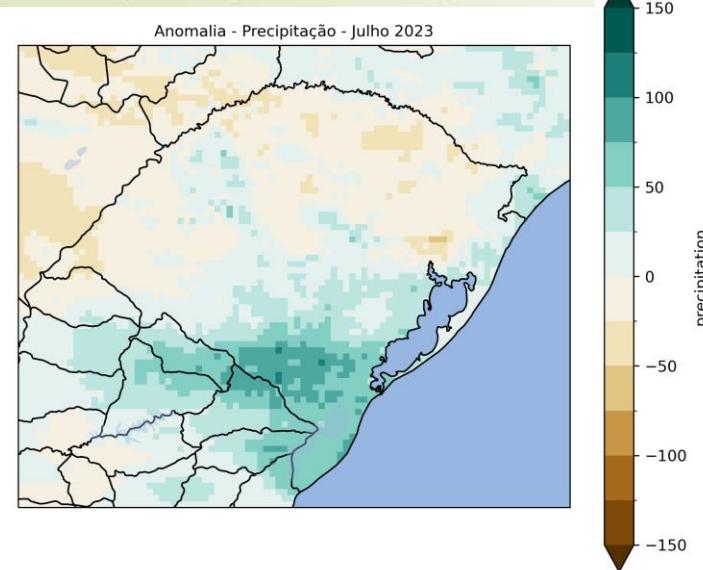
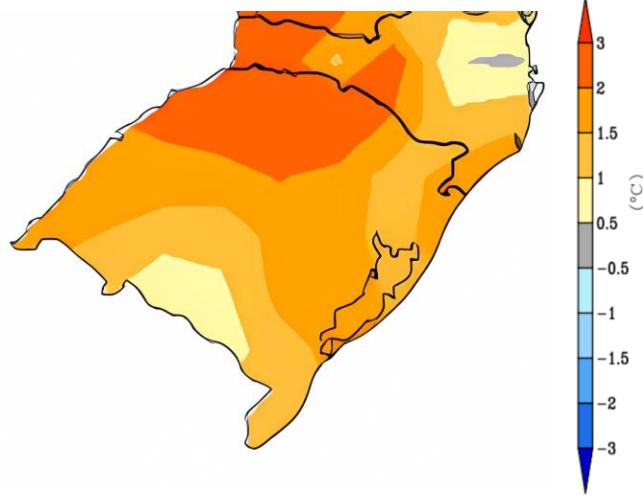
MoReClima-SUL iniciado em Maio



MoReClima-SUL iniciado em Junho

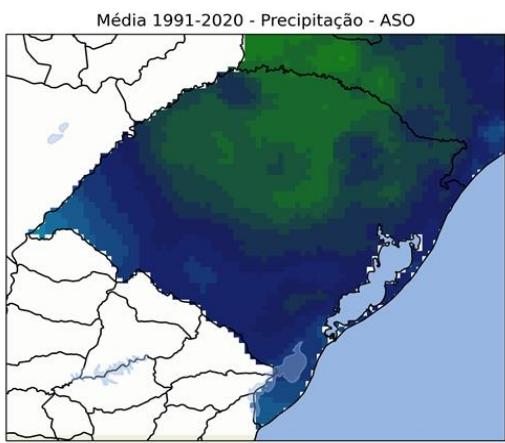


Observado:

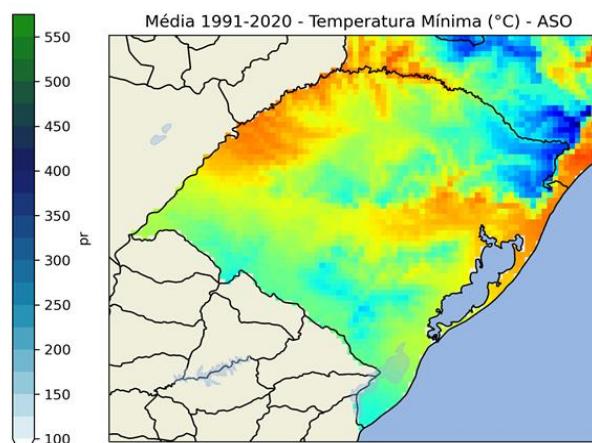


# Climatologia de ASO

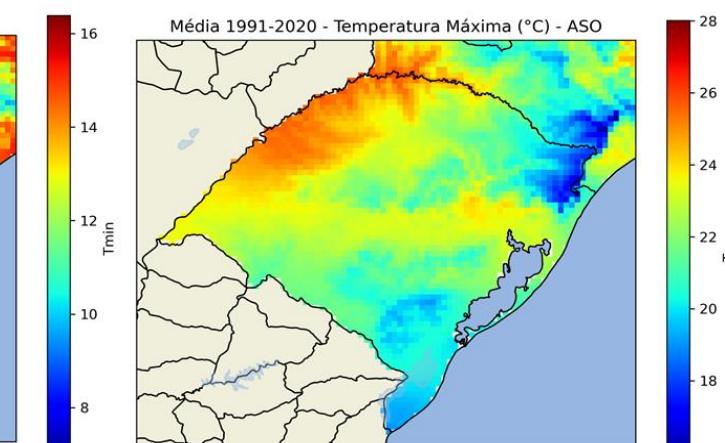
- Neste trimestre o centro-norte do RS é o setor do estado com maiores acumulados de chuva na média ( $> 500\text{mm}$ ). A variação meridional ainda persiste e a porção sudoeste do RS se mantém com acumulados inferiores as demais áreas do estado.
- As médias de temperatura mínima e máxima são mais altas no noroeste do RS e na faixa central do estado até o litoral norte;



Precipitação



Temperatura mínima

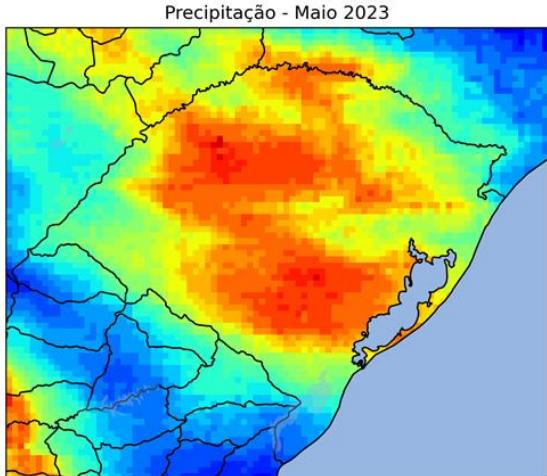


Temperatura máxima

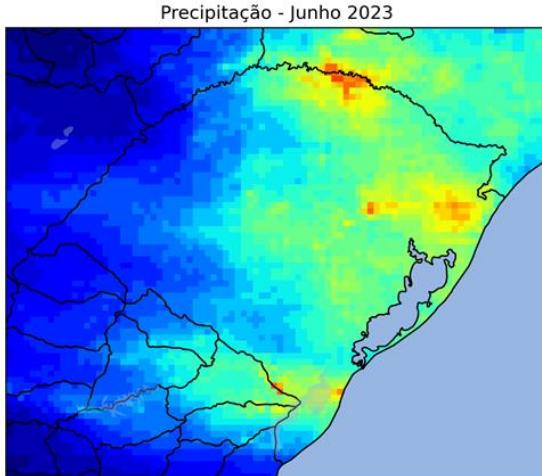
# Condições observadas em MJJ/2023

Valores absolutos

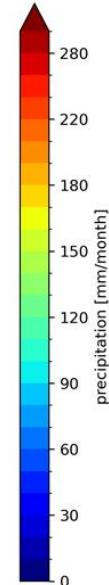
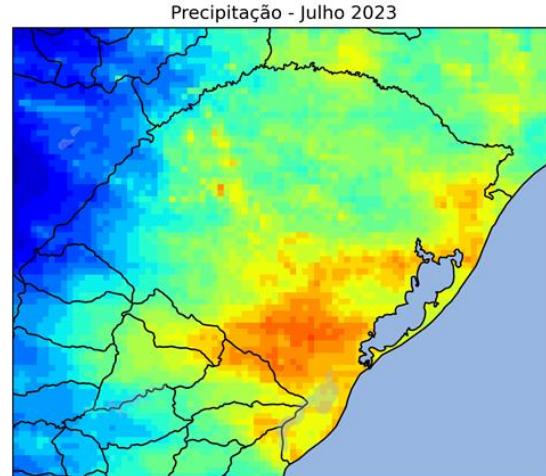
Maio



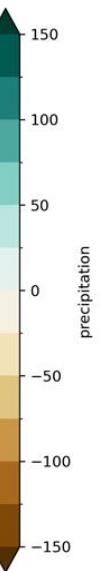
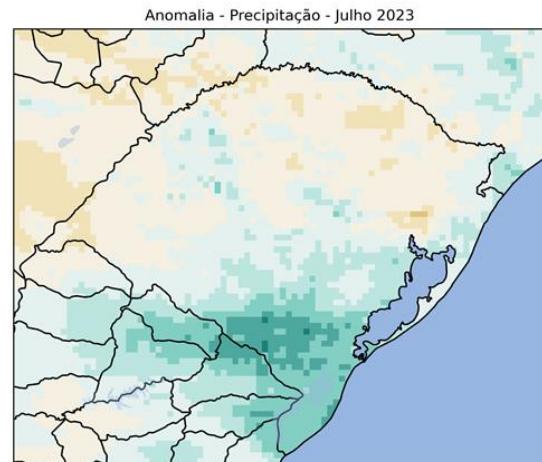
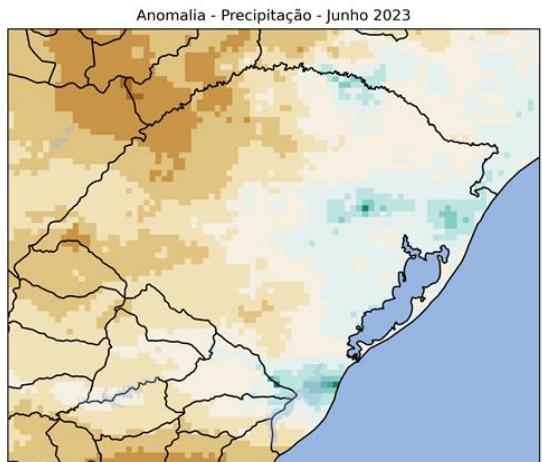
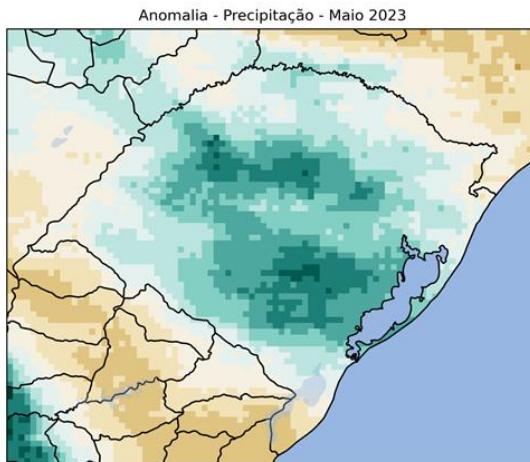
Junho



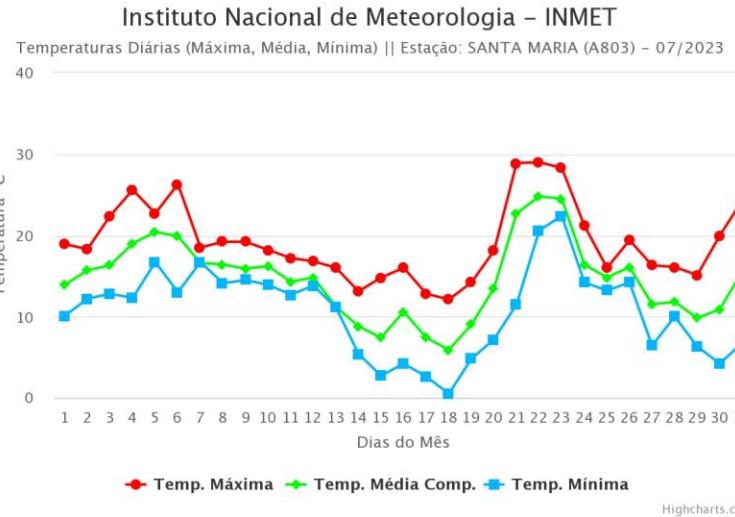
Julho



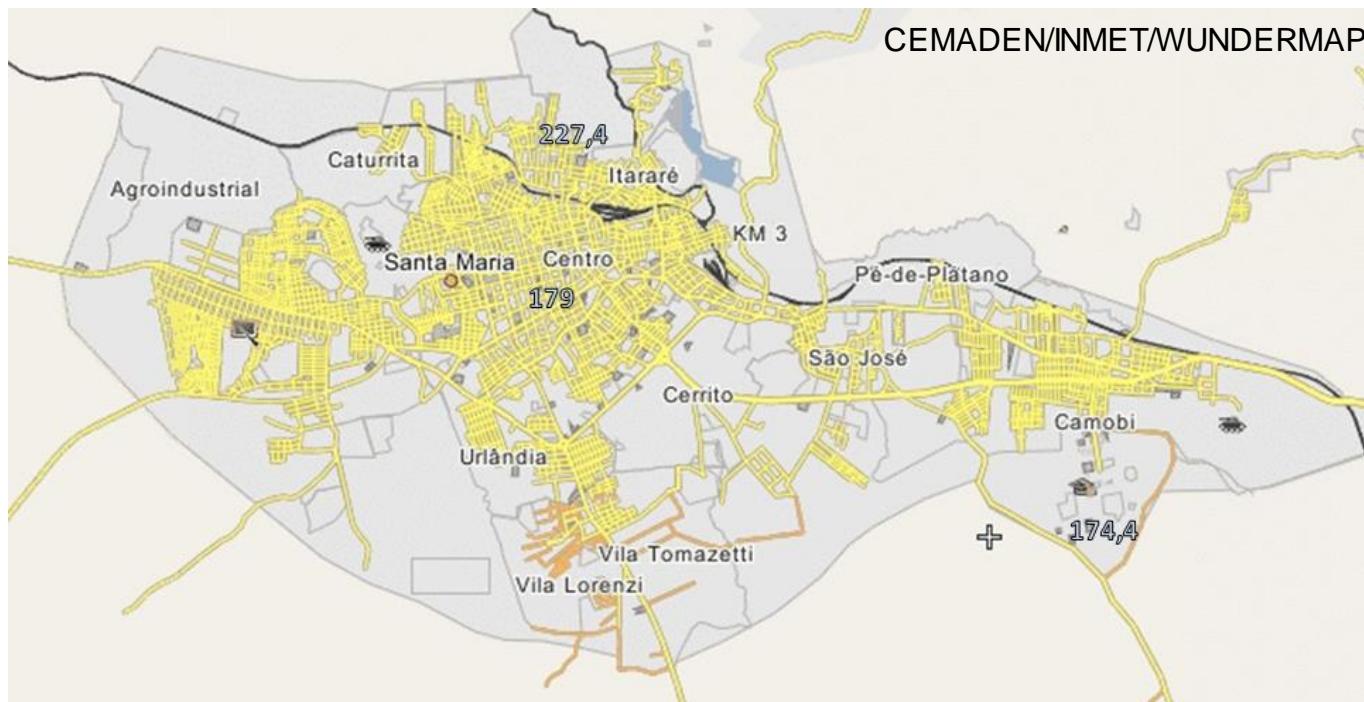
Anomalias



# Condições observadas em Julho/2023



## Precipitação mensal em Julho - Santa Maria



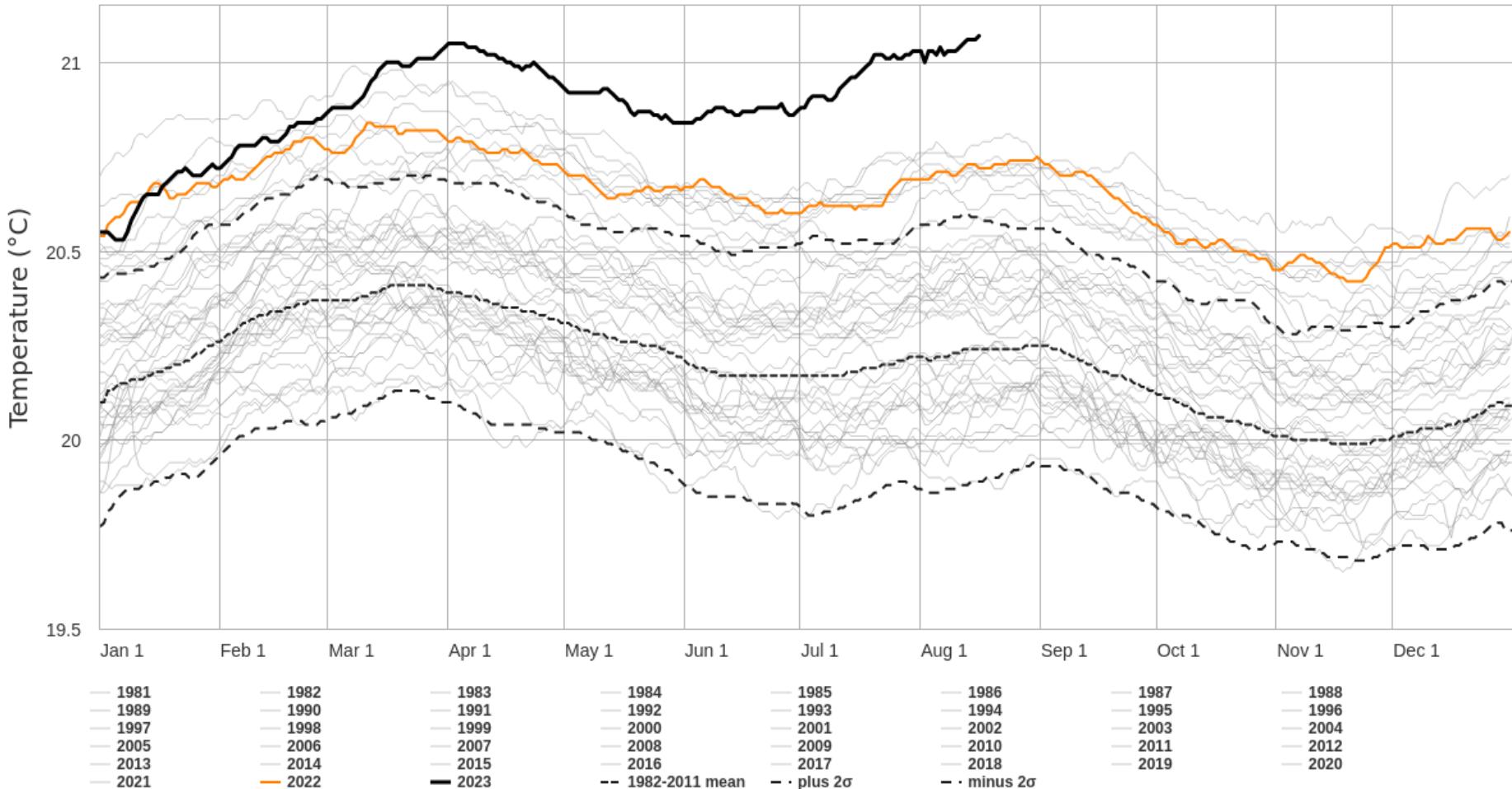
# Condições oceânicas

World (60S-60N)

SST World (60S-60N)

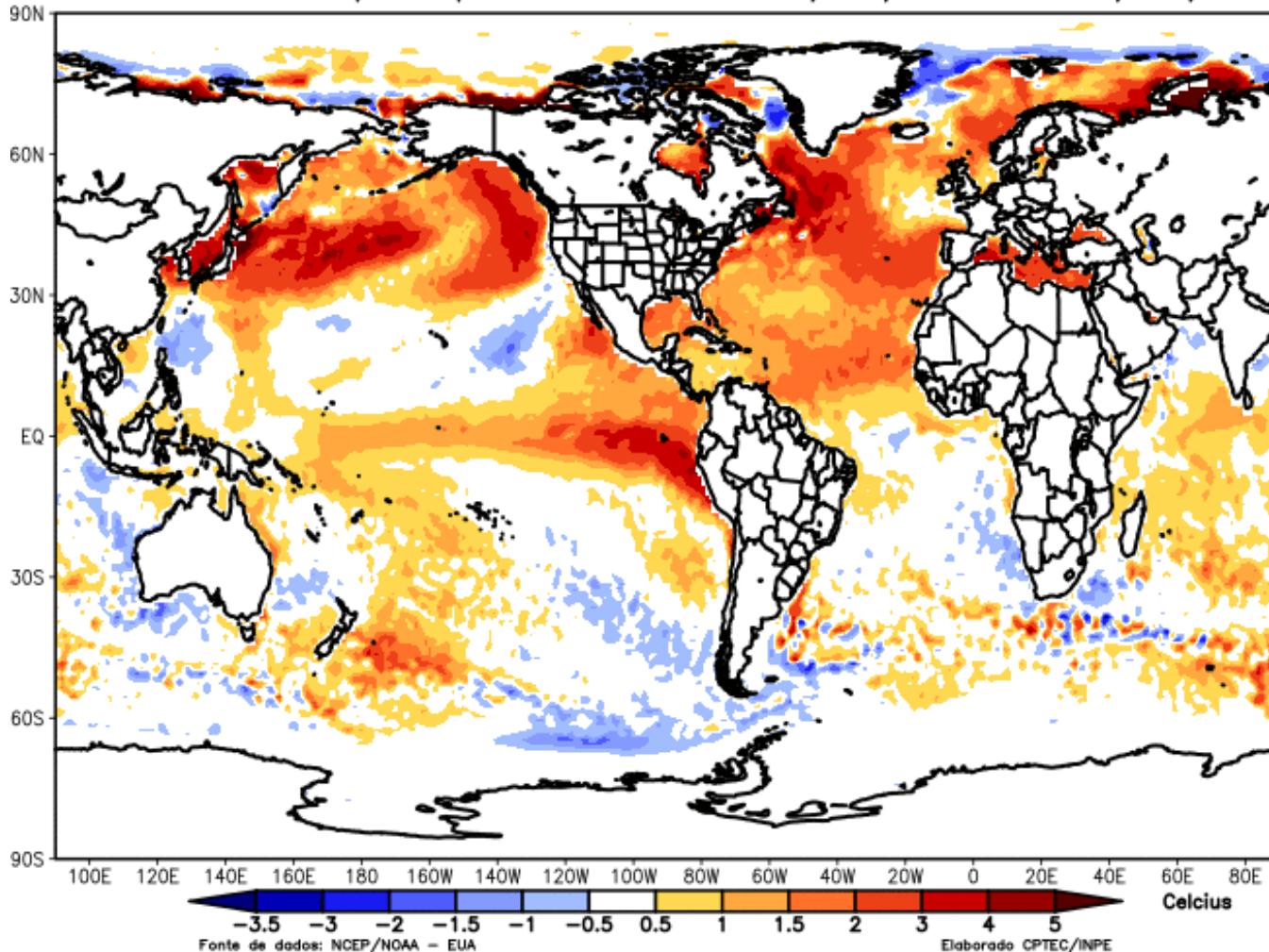
≡ Export Chart

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



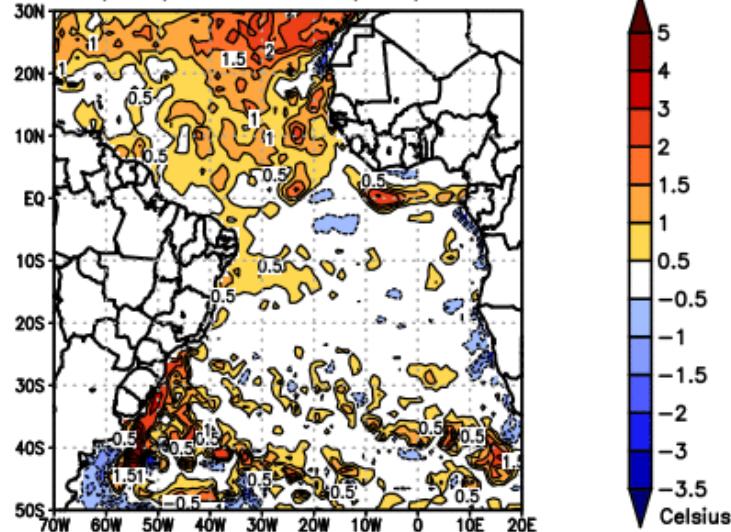
# Condições oceânicas

Anomalia de Temp. Superfície do Mar 30/07/2023 a 05/08/2023

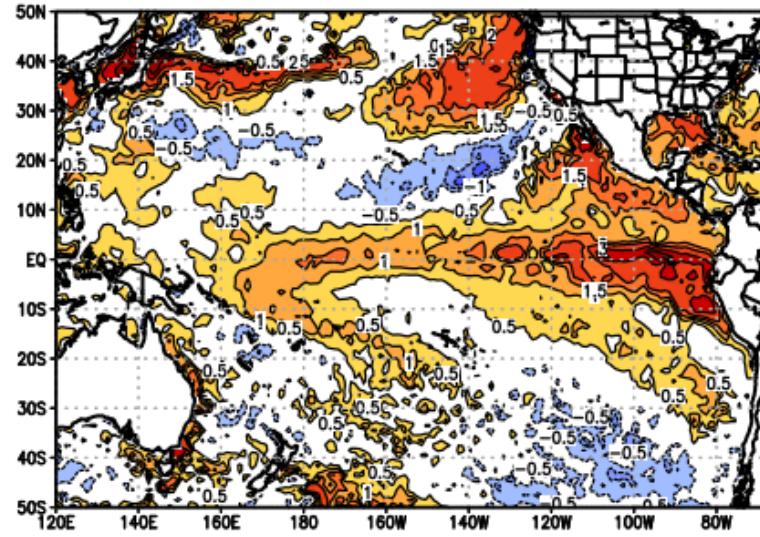
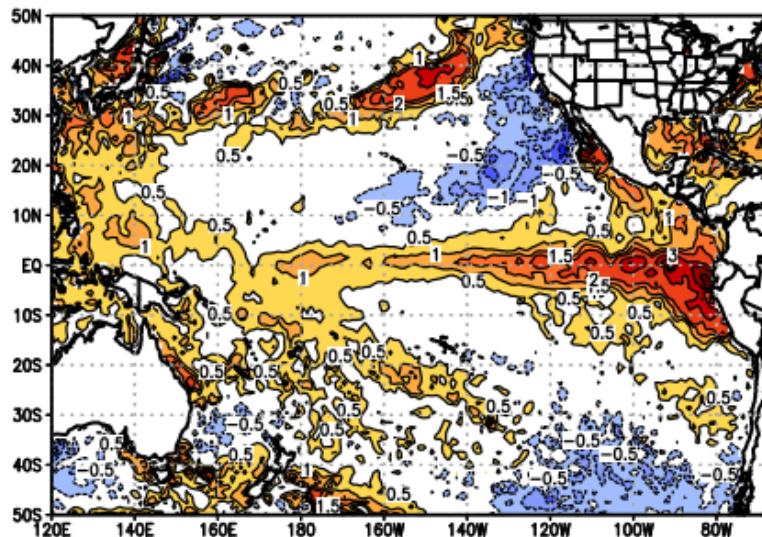
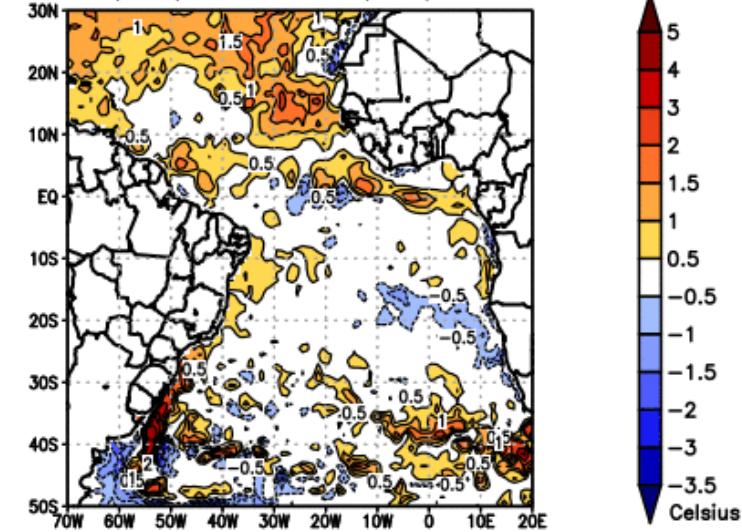


# Condições oceânicas

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

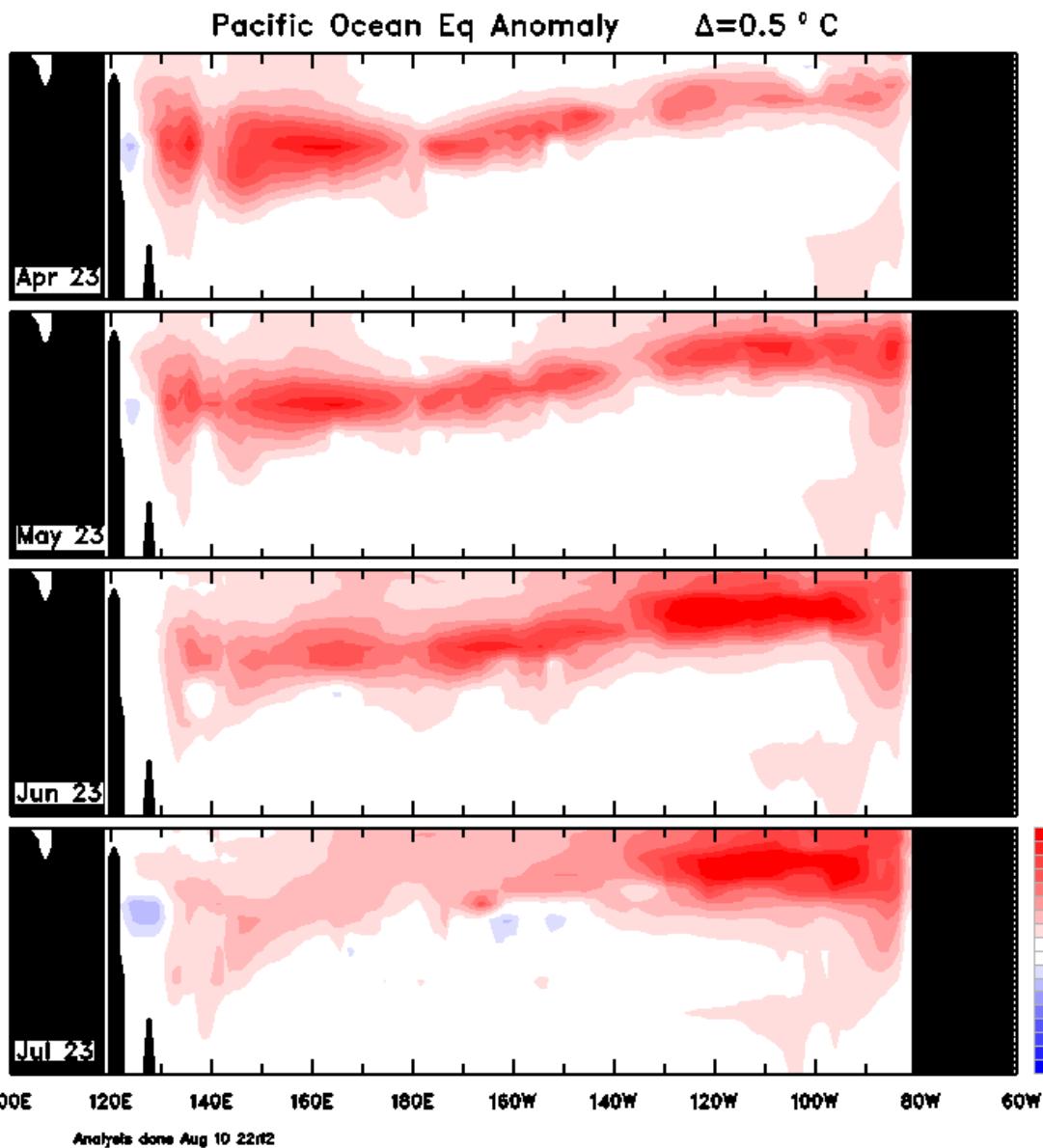
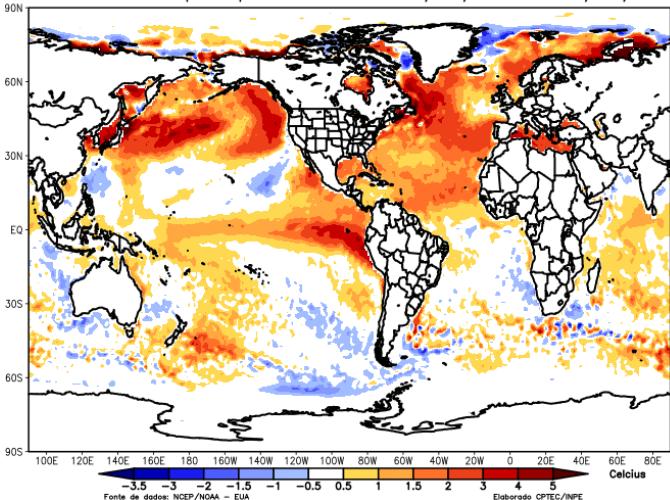


Anomalia de Temperatura da Superfície do Mar  
07/08/2023 a 14/08/2023



# Condições oceânicas

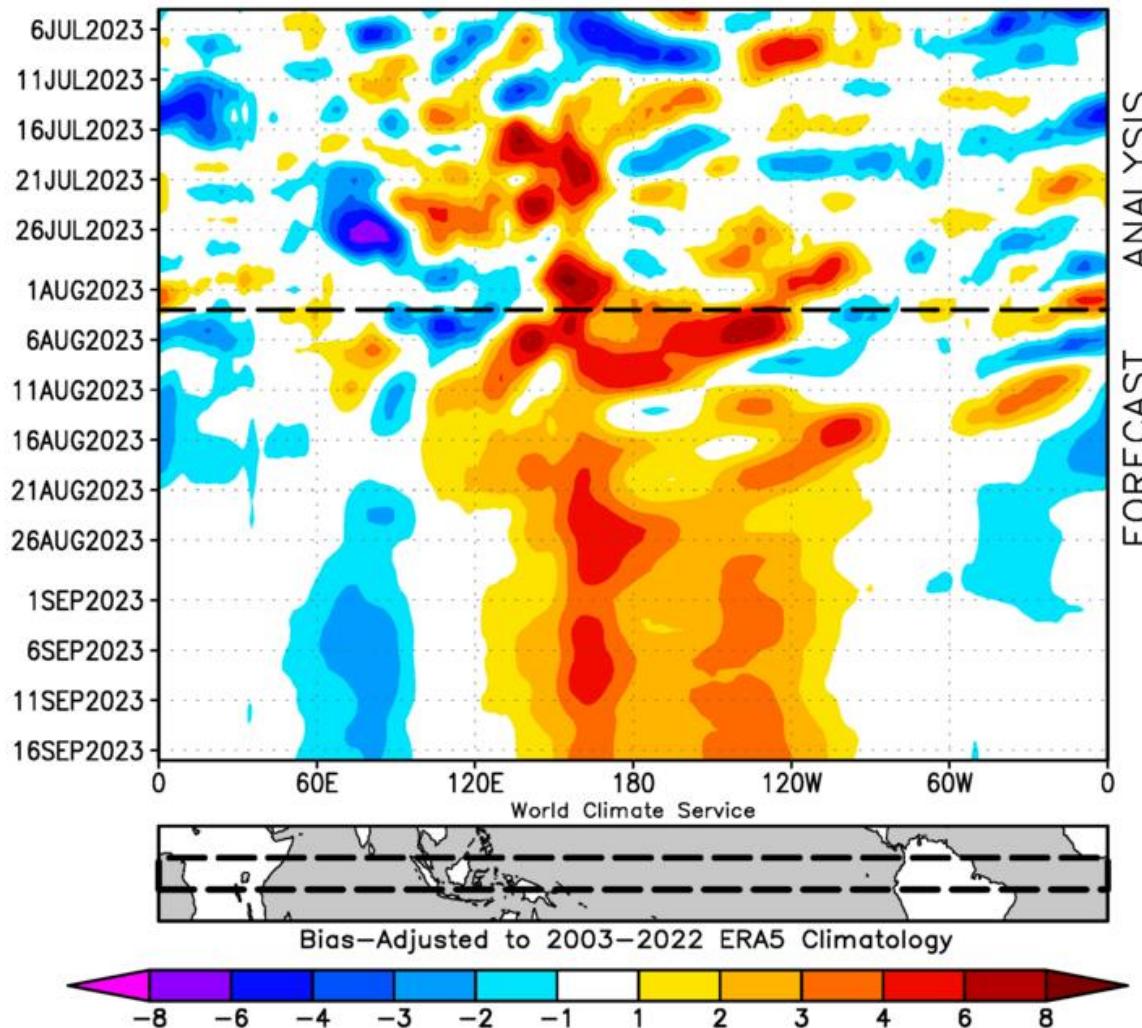
Anomalia de Temp. Superfície do Mar 30/07/2023 a 05/08/2023



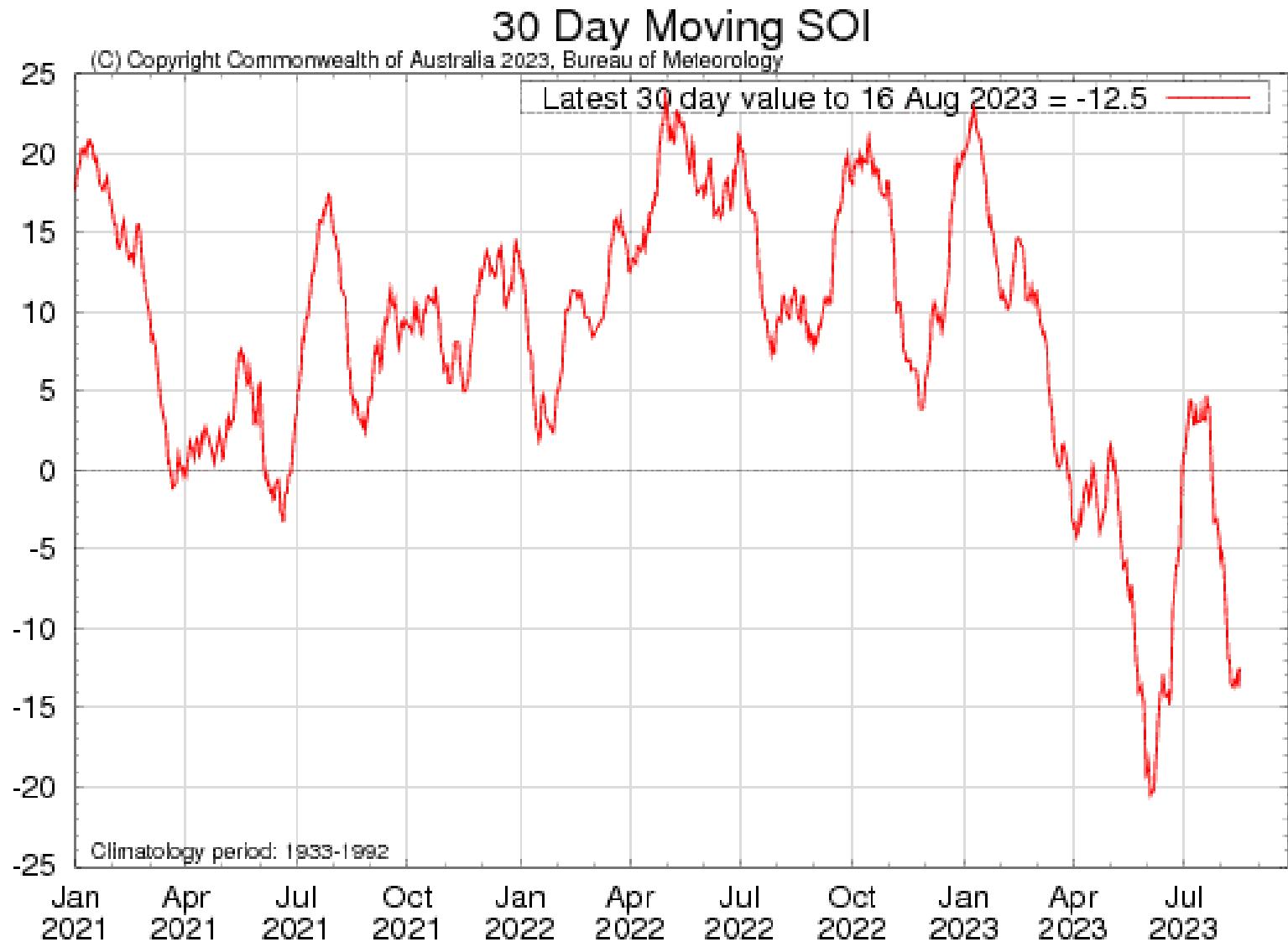
# Condições oceânicas

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

ERA5/ECMWF Analysis and ECMWF Initialized 00UTC 03AUG2023

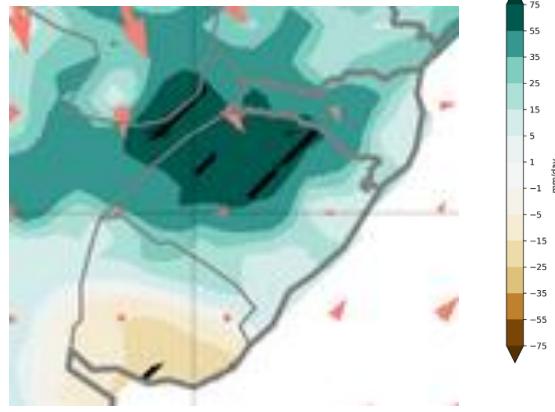
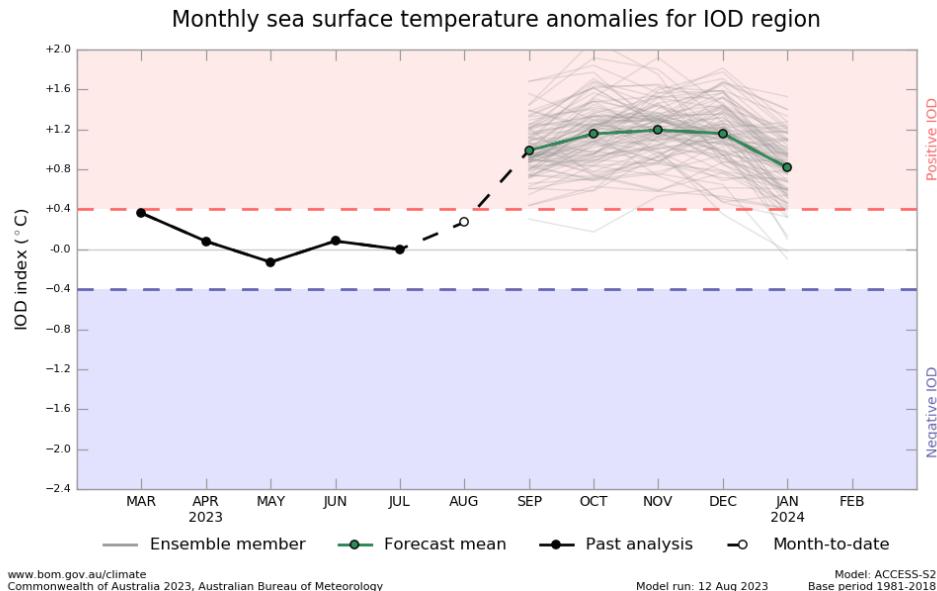


# Condições oceânicas

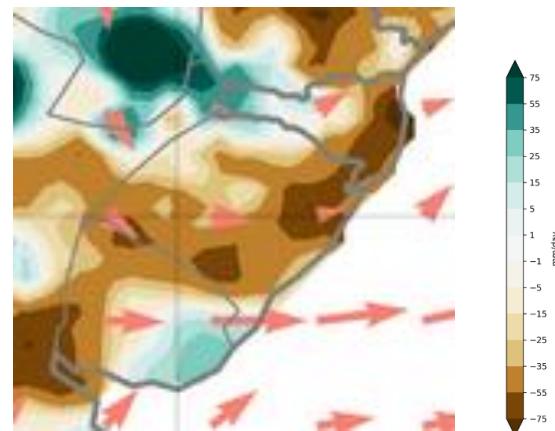
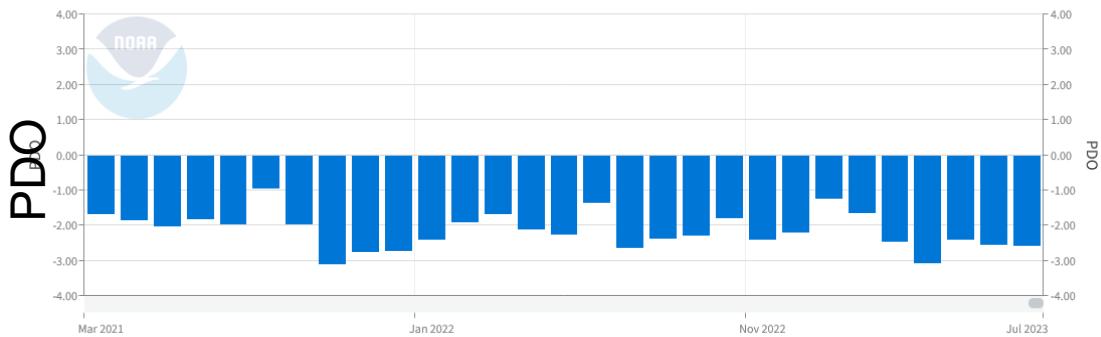


# Índices oceânicos

IOD

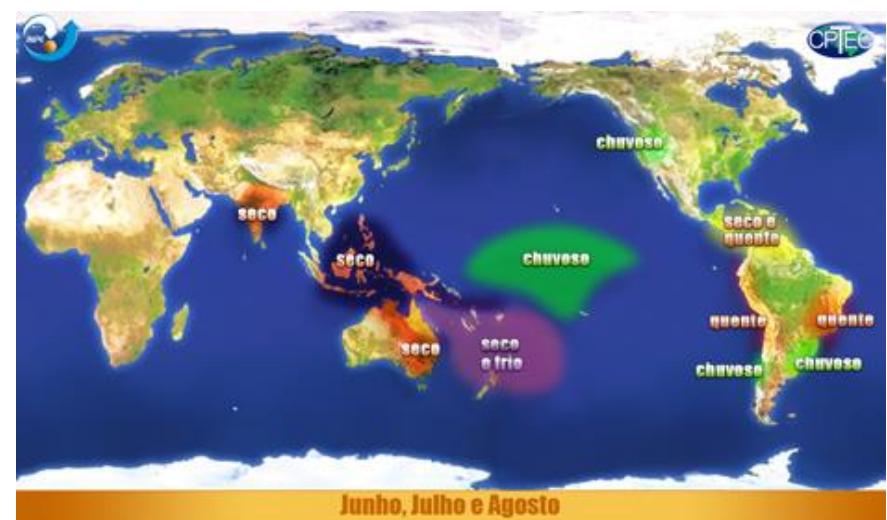
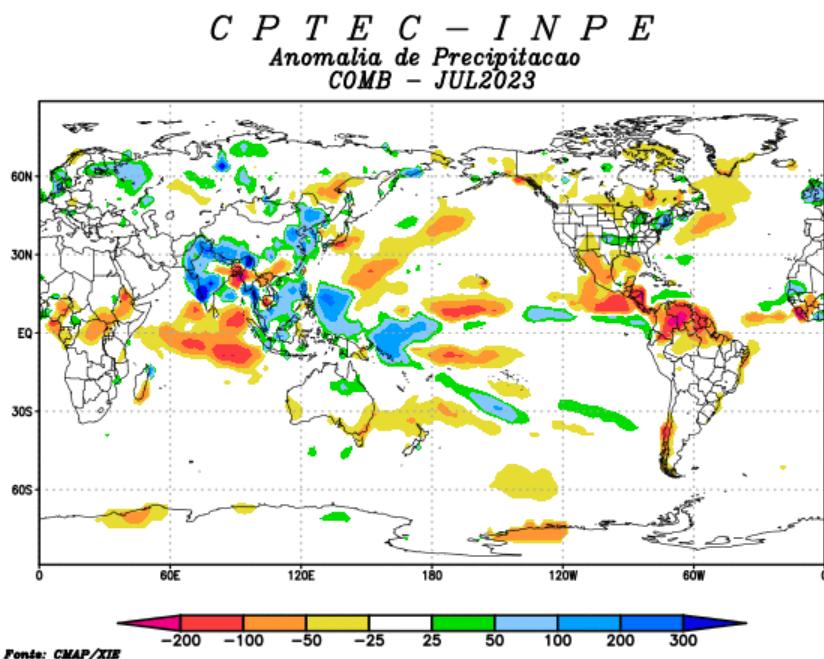


Pacific Decadal Oscillation (PDO)



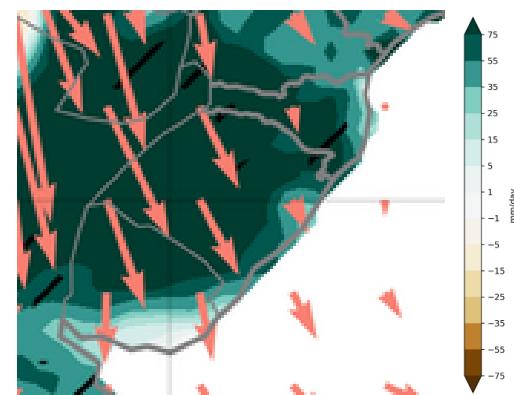
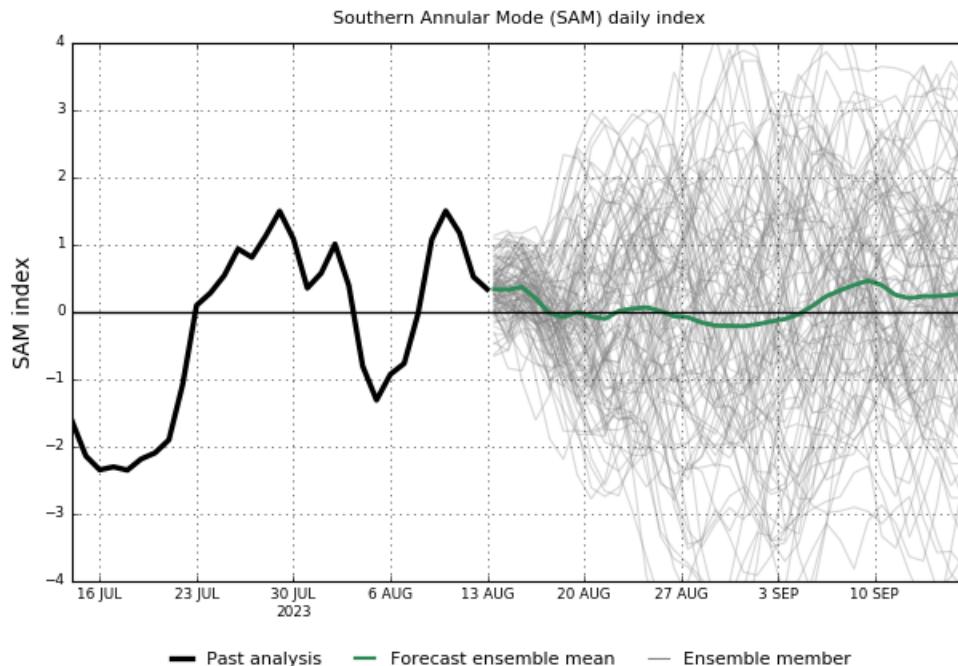
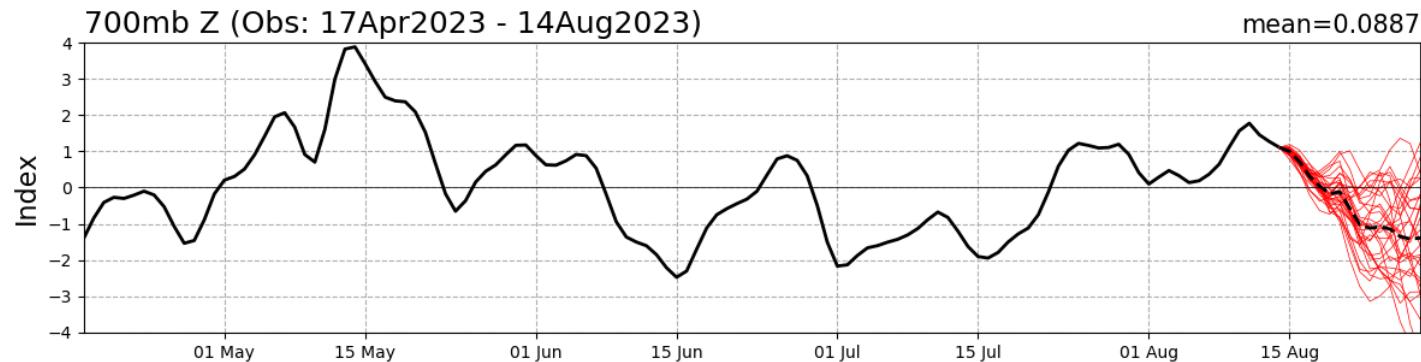
# Observado x Efeito El Niño

Bacia Amazônica mais seca  
Pacífico Equatorial mais úmido



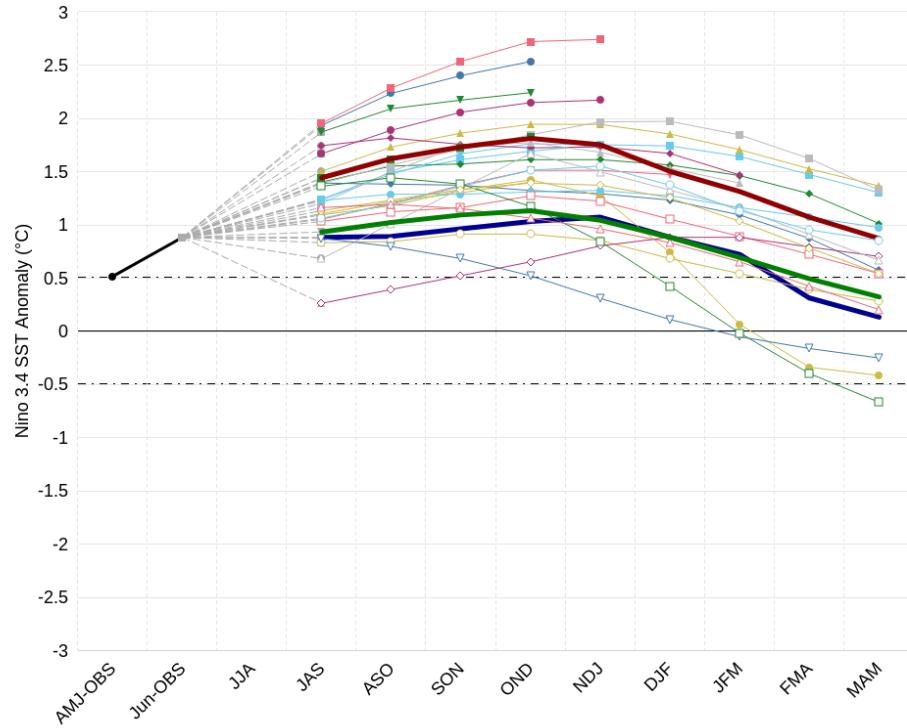
# Índice atmosférico (AAO)

## AAO Index: Observed & GEFS Forecasts



# Previsões do ENOS

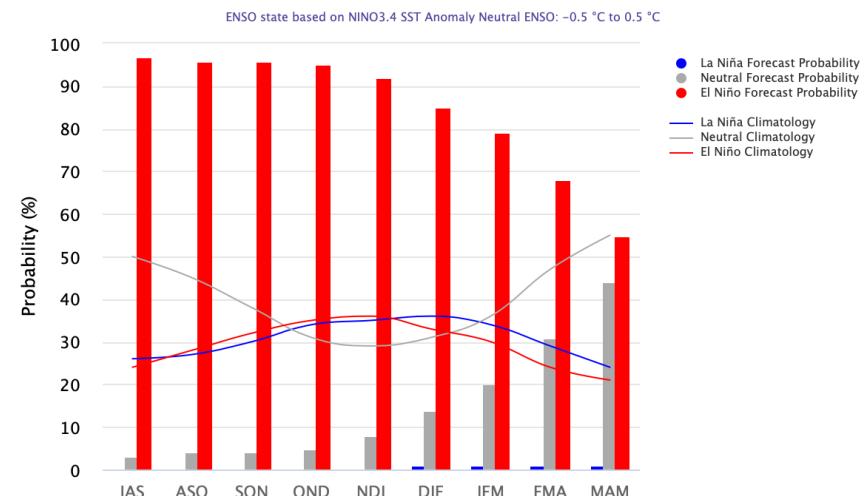
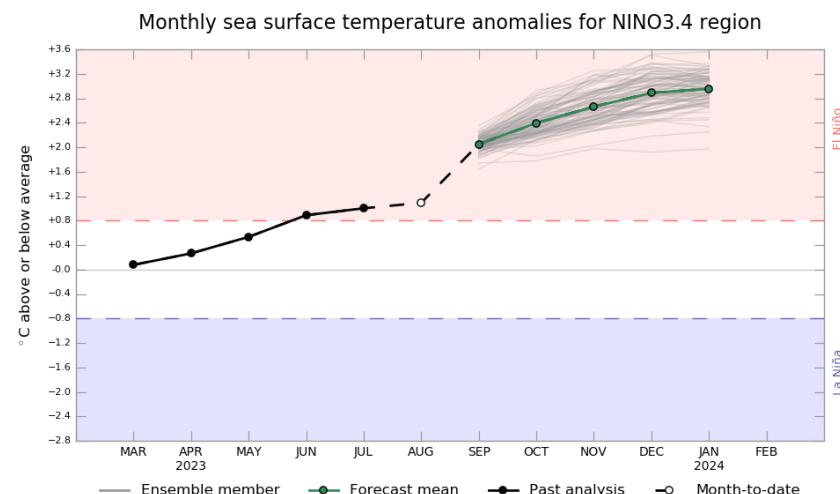
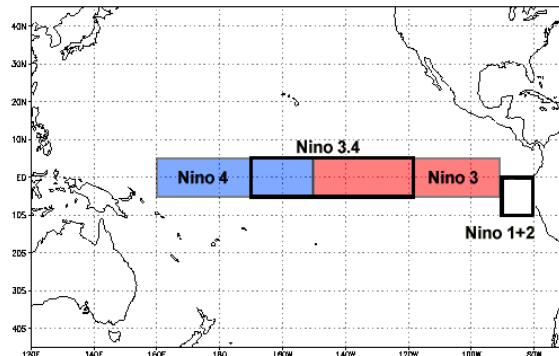
Model Predictions of ENSO from Jul 2023



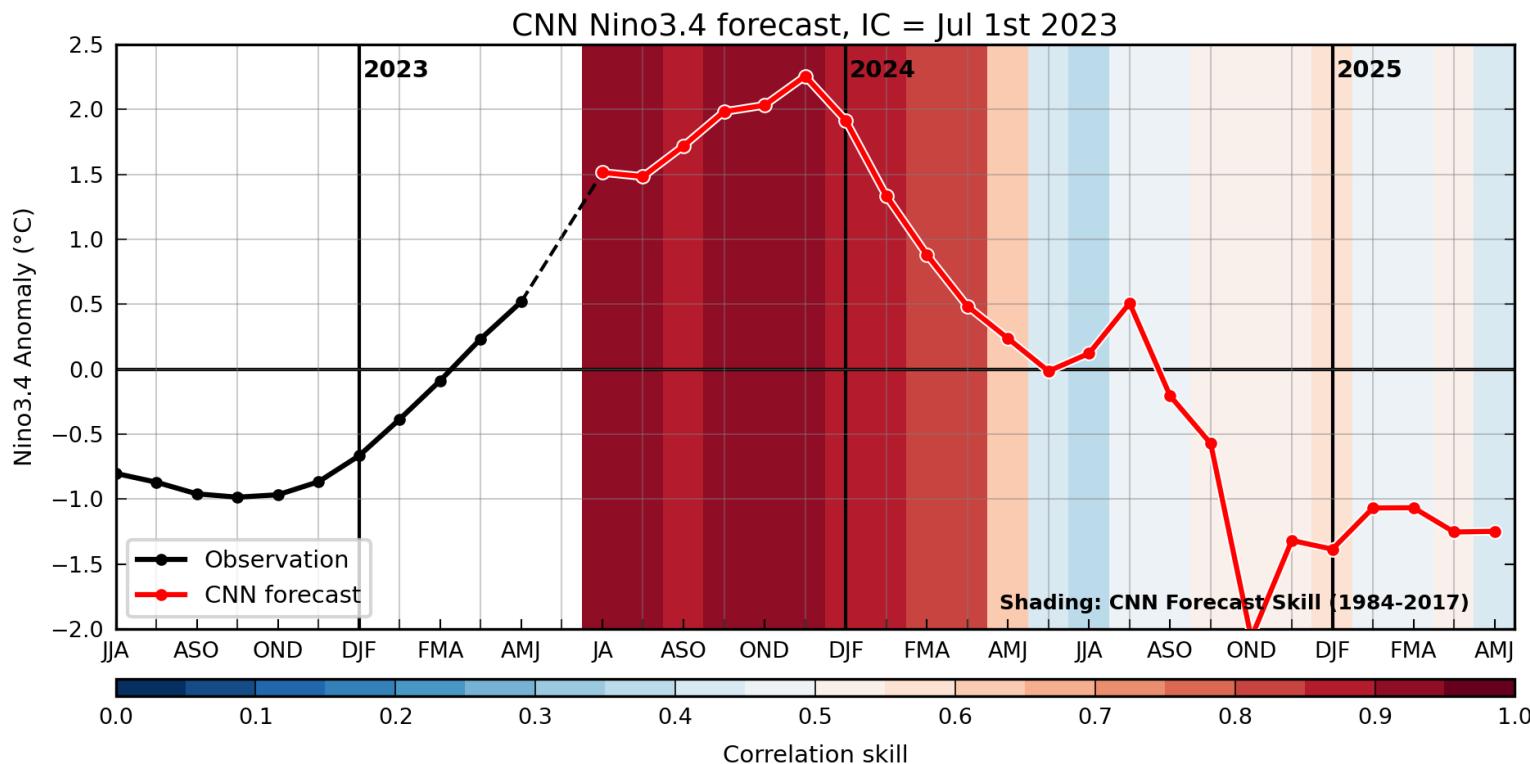
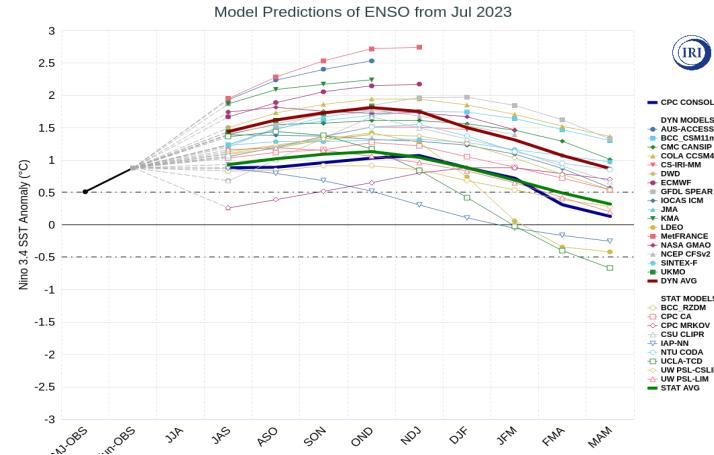
CPC CONSOL

DYN MODELS:  
 ● AUS-ACCESS  
 ■ BCC CSM1m  
 ▲ CMC CANIP  
 ▲ COLA CCSM4  
 ▲ CS-IRI-MM  
 ▲ DWD  
 ▲ ECMWF  
 ▲ GFDL SPEAR  
 ▲ IOCAS ICM  
 ▲ JMA  
 ▲ KMA  
 ▲ LDEO  
 ▲ MetFRANCE  
 ▲ NASA GMAO  
 ▲ NCEP CFSv2  
 ▲ SINTEX-F  
 ▲ UKMO  
 ■ DYN AVG

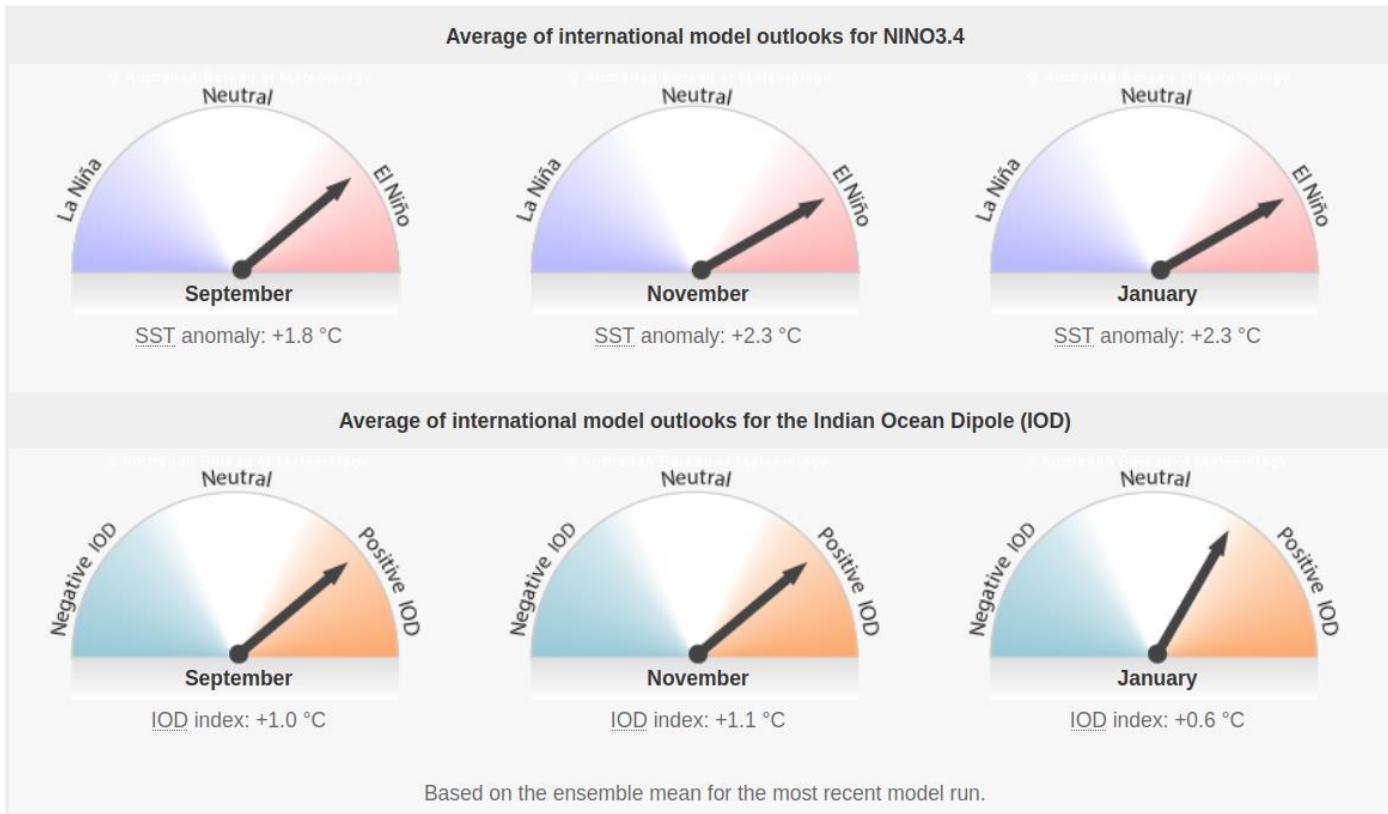
STAT MODELS:  
 ▲ BCC\_RZDM  
 ▲ CPC CA  
 ▲ CPC MRKOV  
 ▲ CSU CLIPR  
 ▲ IAP-NN  
 ▲ NTU CODA  
 ▲ UCLA-TCD  
 ▲ UW PSL-CSLIM  
 ▲ UW PSL-LIM  
 ■ STAT AVG



# Previsões do ENOS



# Previsões do ENOS

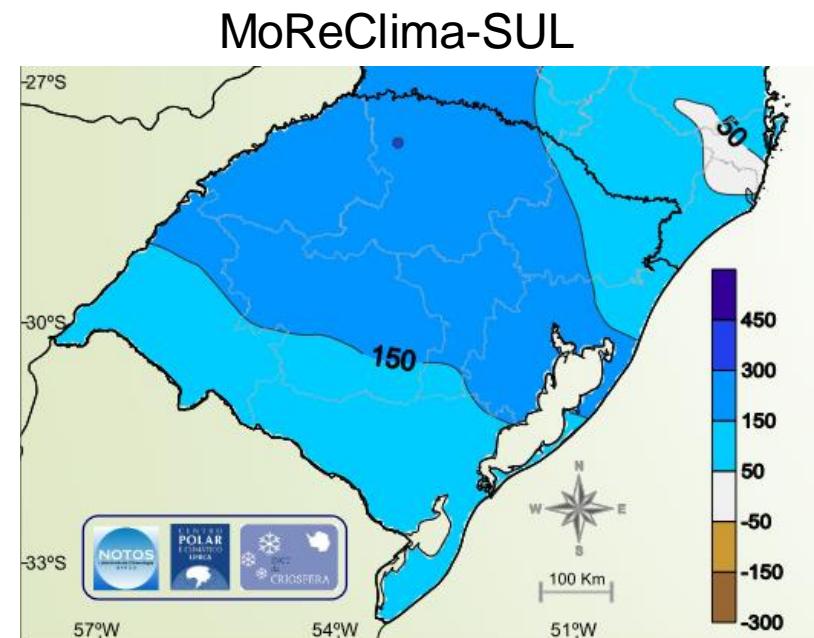
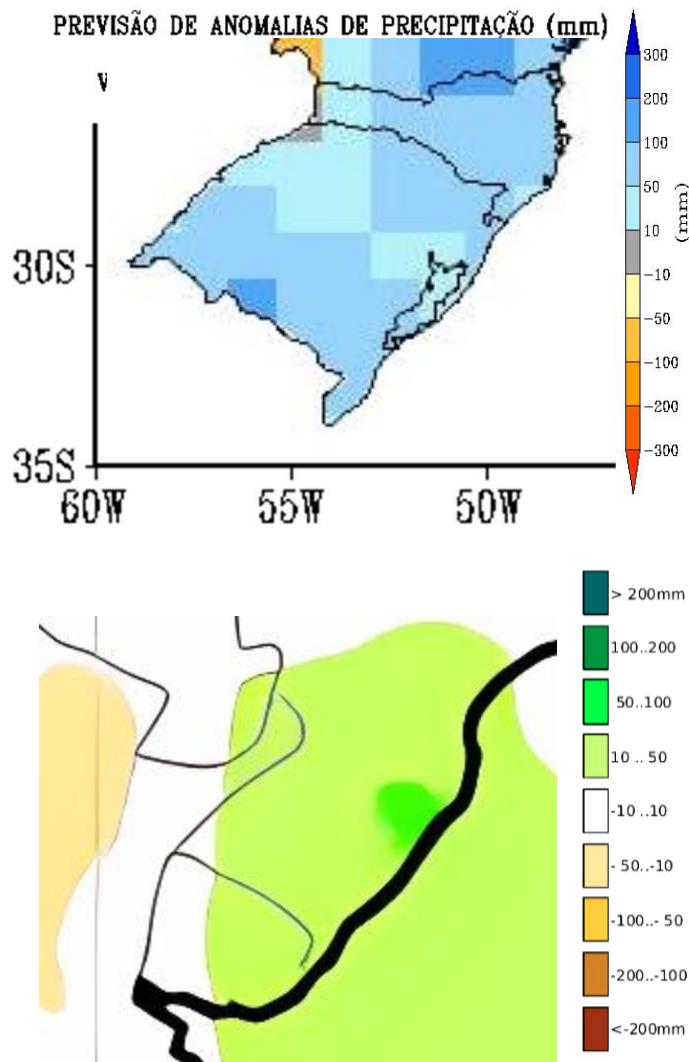


The arrows on the dials indicate the combined average of monthly outlooks from a survey of international global climate models. Note that the individual model runs vary around the average.

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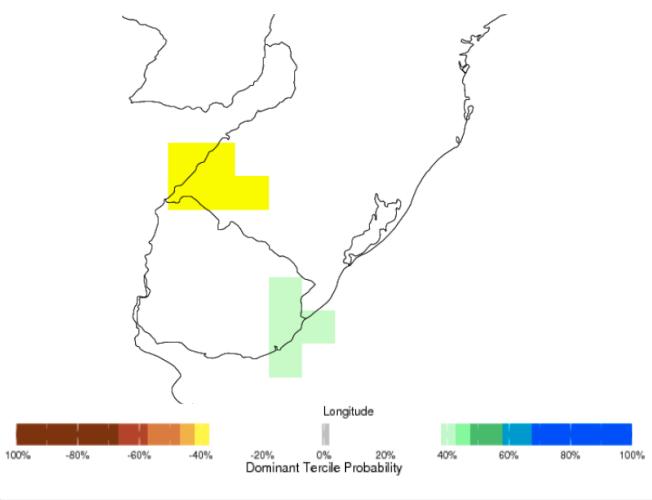
# Previsões sazonais

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

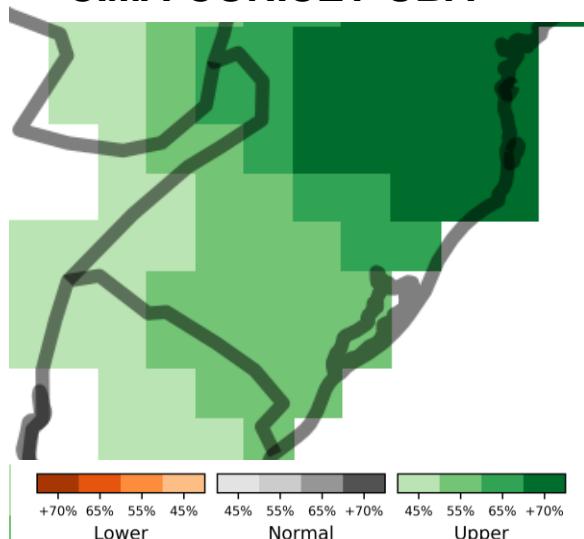


# Previsões sazonais (ASO) - Precipitação (probabilística)

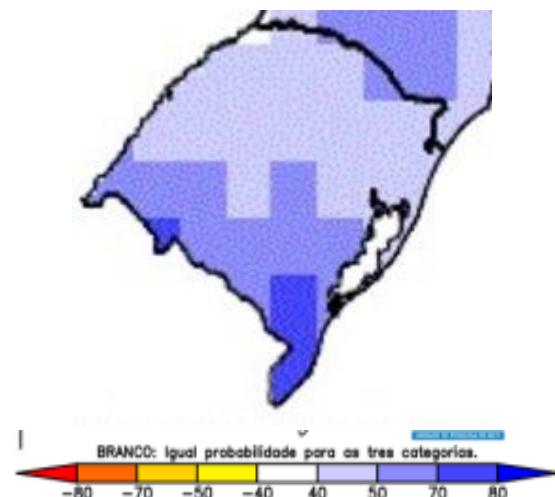
Mutimodelo IRI



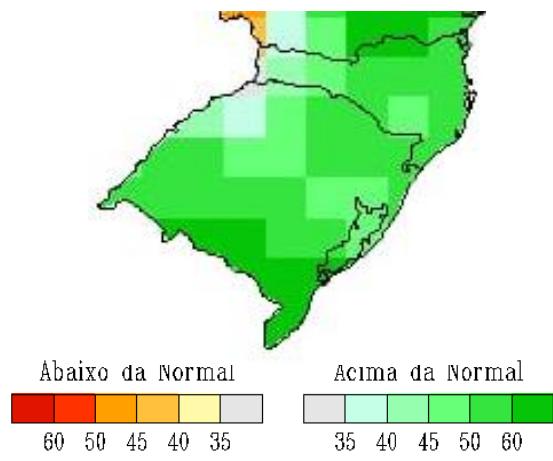
**CIMA-CONICET-UBA**



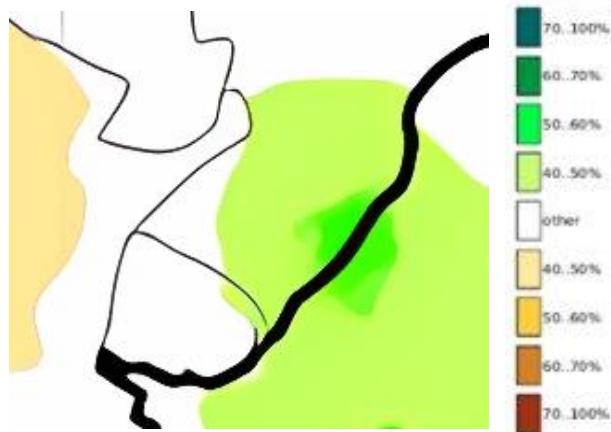
Multimodelo [CPTEC/INMET/FUNCeme](#)



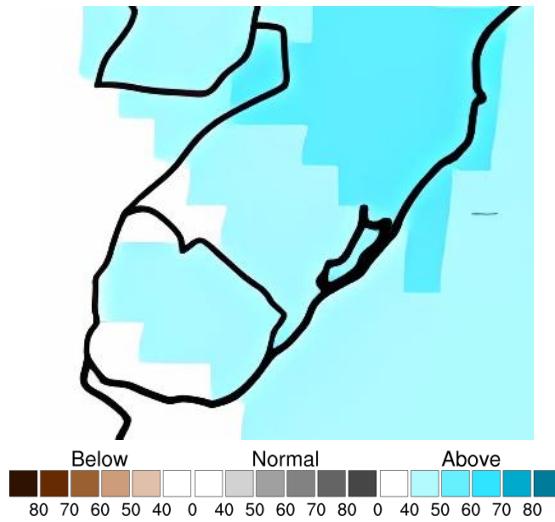
**INMET**



**Multissistema C3S  
(ECMWF)**

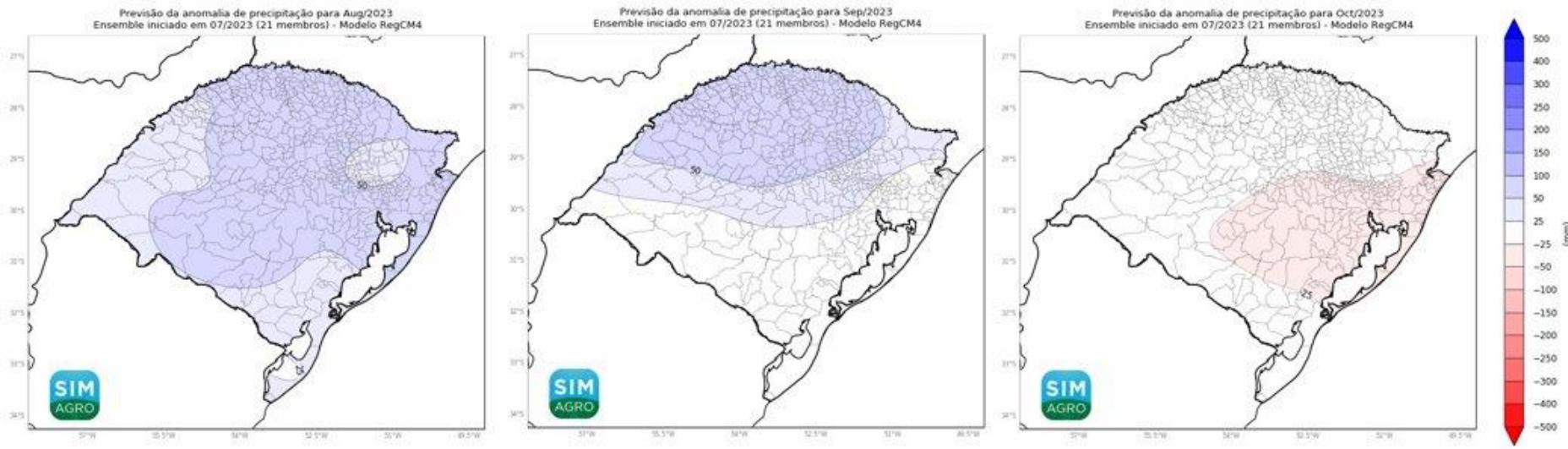


**APCC**

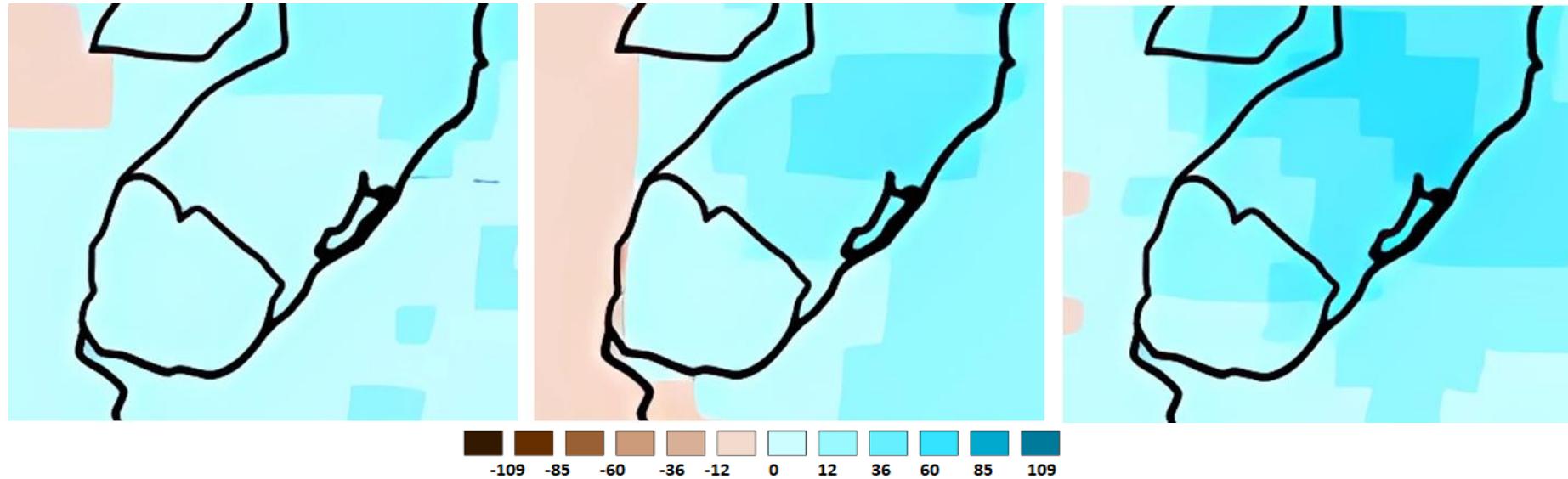


# Previsões mensais - Precipitação (mm)

RegCM4

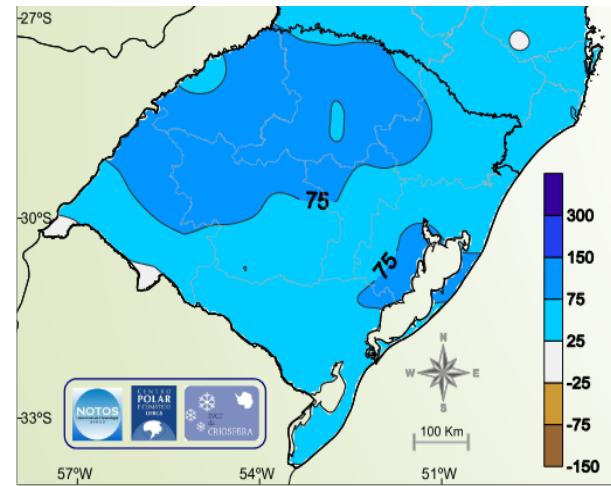
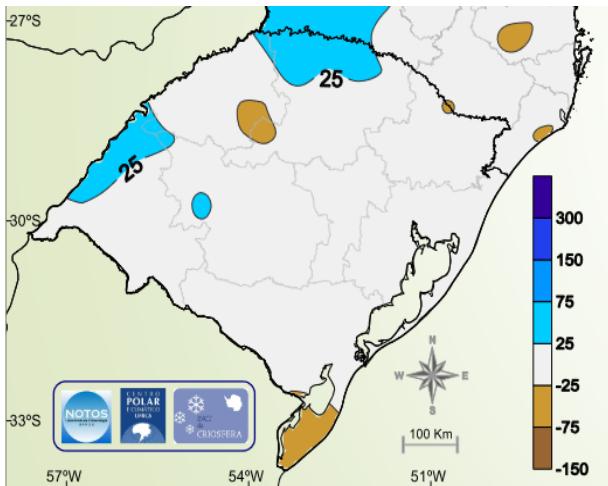
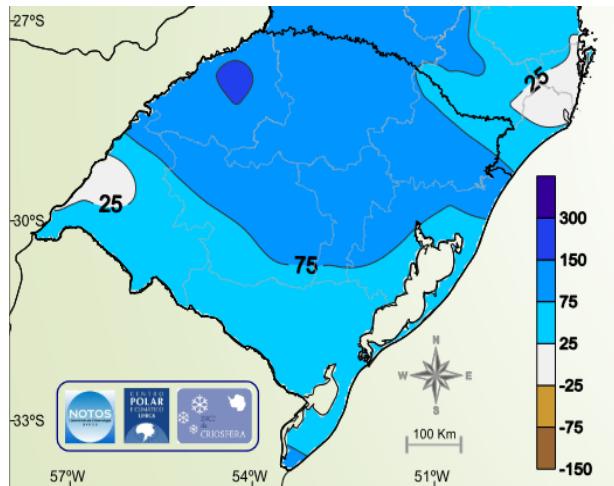


APCC



# Previsões mensais - Precipitação (mm)

MoreClima



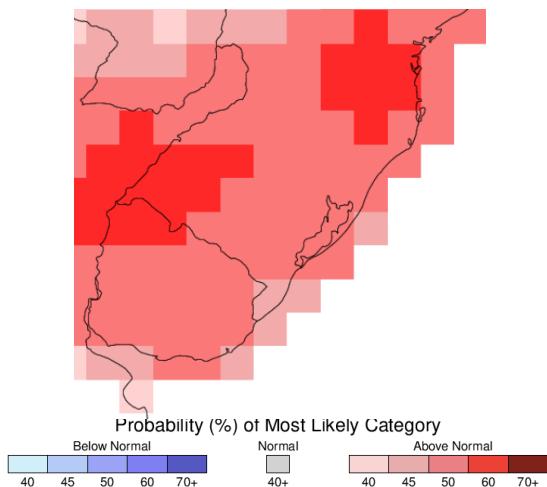
APCC



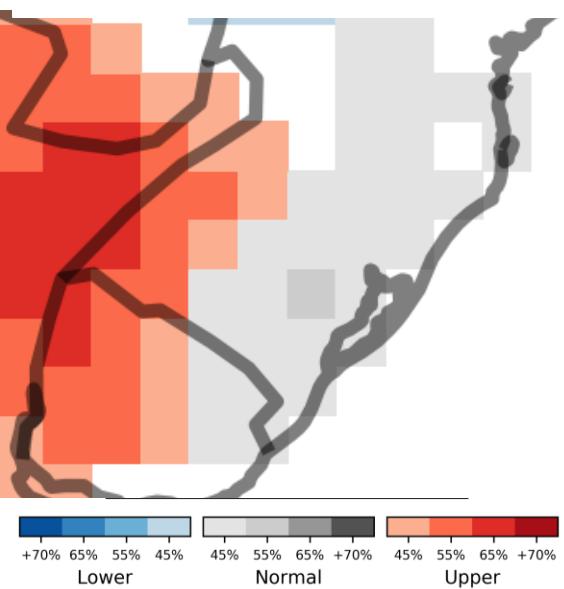
-109 -85 -60 -36 -12 0 12 36 60 85 109

# Previsões sazonais (ASO) - Temperatura (probabilística)

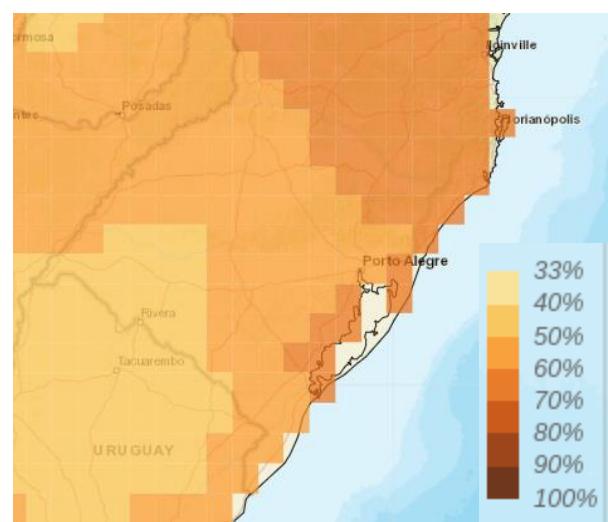
Mutimodelo IRI



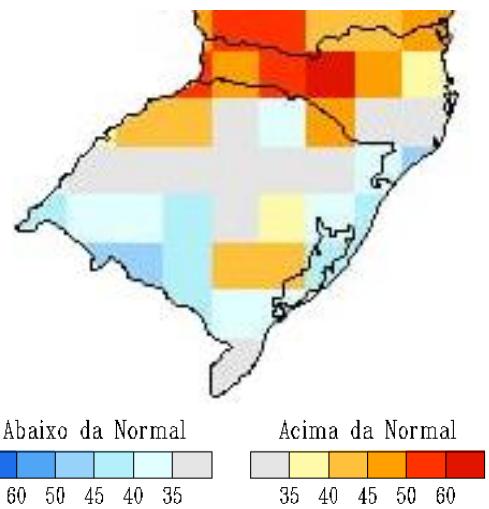
CIMA-CONICET-UBA



CRC-SAS (Ensemble NMME)



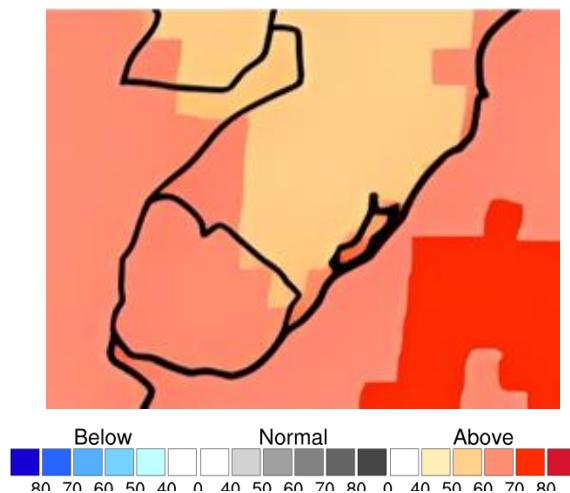
INMET



Multissistema C3S  
(ECMWF)

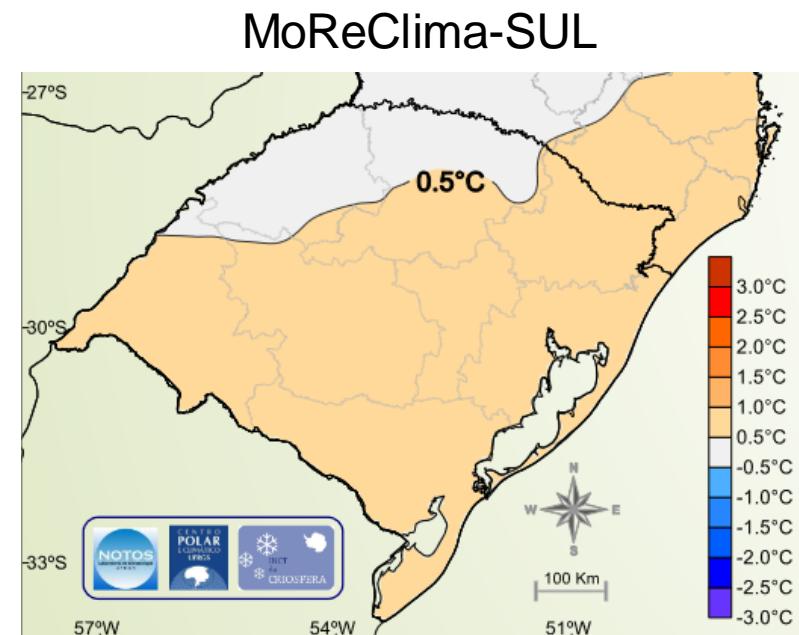
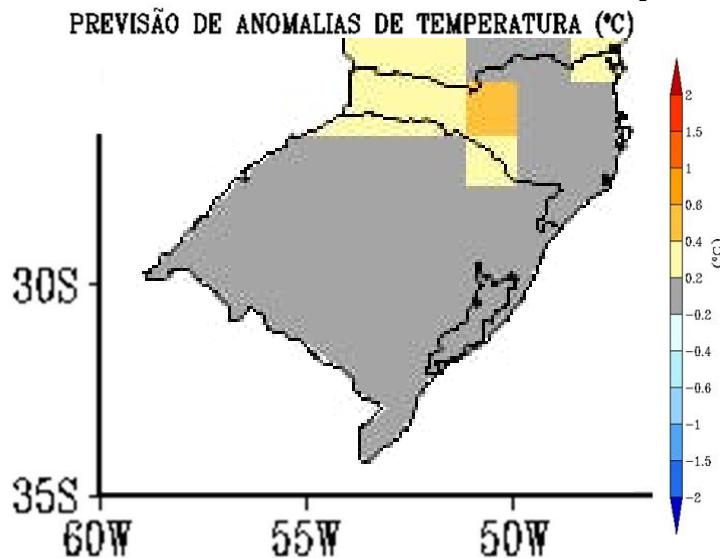


APCC



# Previsões sazonais

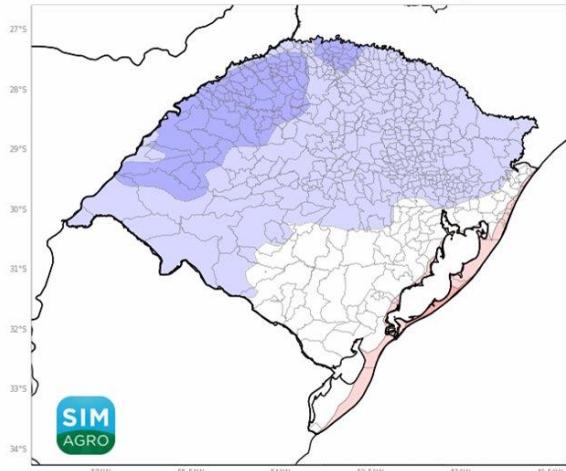
## Previsões sazonais (ASO) - Temperatura (anomalias)



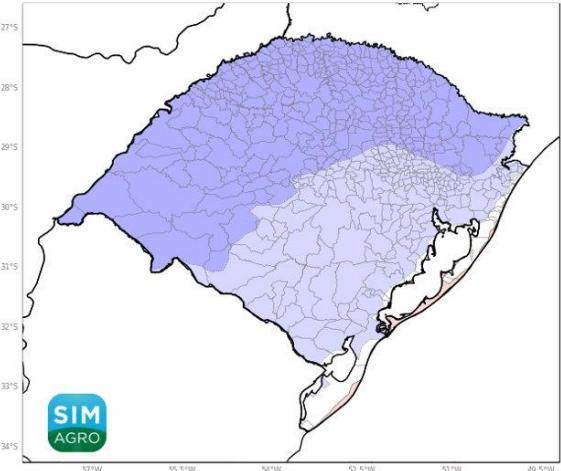
# Previsões mensais – Temperatura (°C)

## RegCM4

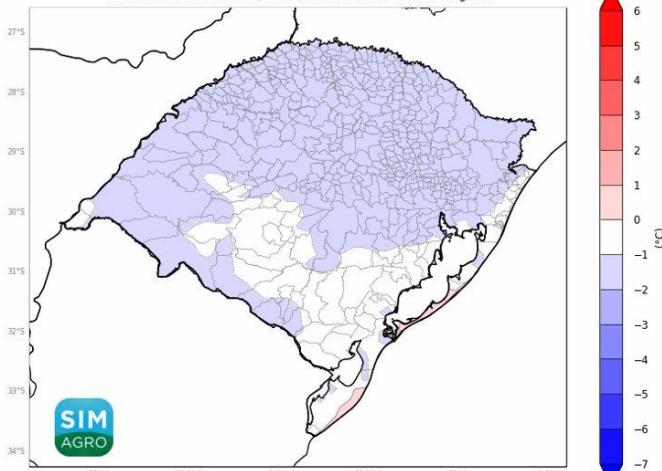
Previsão da anomalia de temperatura média do ar a 2m para Aug/2023  
Ensemble iniciado em 07/2023 (26 membros) - Modelo RegCM4



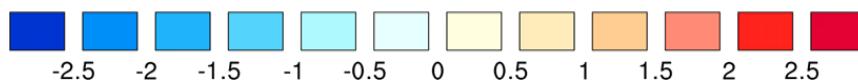
Previsão da anomalia de temperatura média do ar a 2m para Sep/2023  
Ensemble iniciado em 07/2023 (26 membros) - Modelo RegCM4



Previsão da anomalia de temperatura média do ar a 2m para Oct/2023  
Ensemble iniciado em 07/2023 (26 membros) - Modelo RegCM4

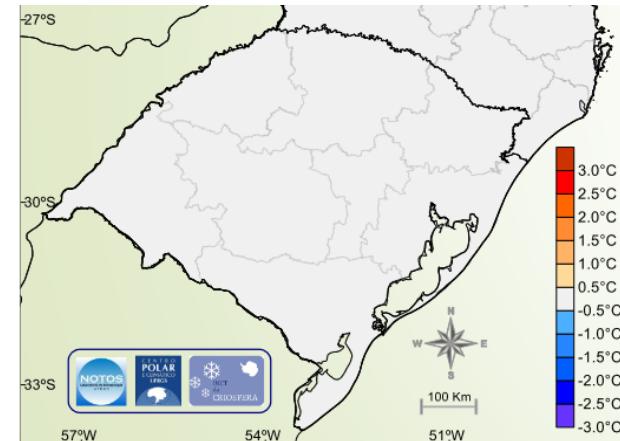
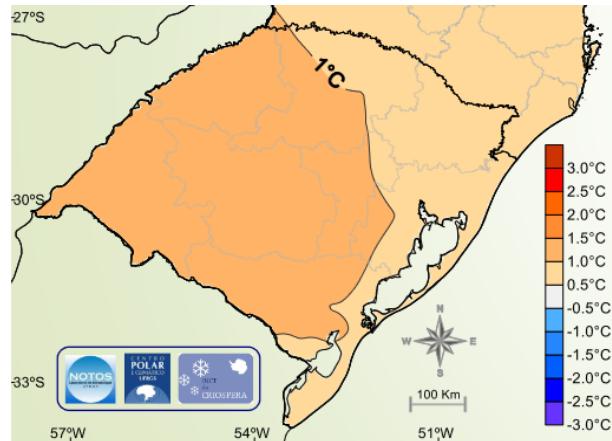
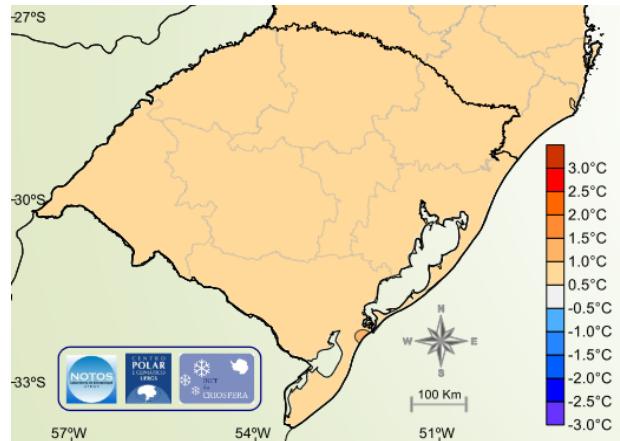


## APCC

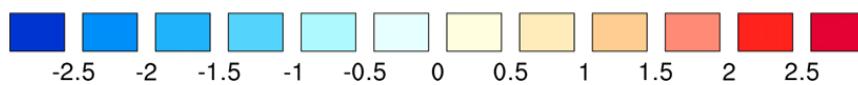


# Previsões mensais – Temperatura (°C)

# MoreClima

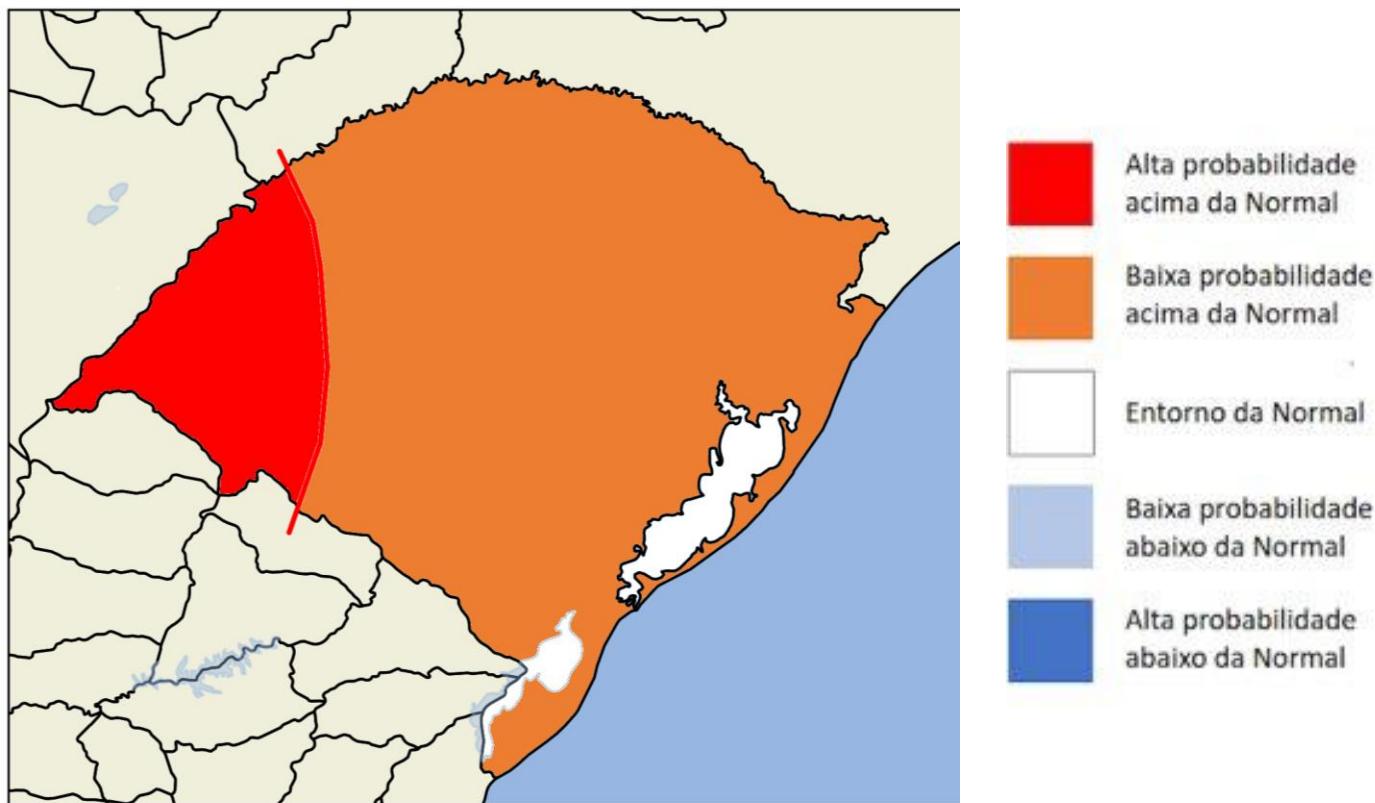


APCC



# Previsão por consenso

## Temperatura (ASO)



# Previsão por consenso

## Precipitação (ASO)

