

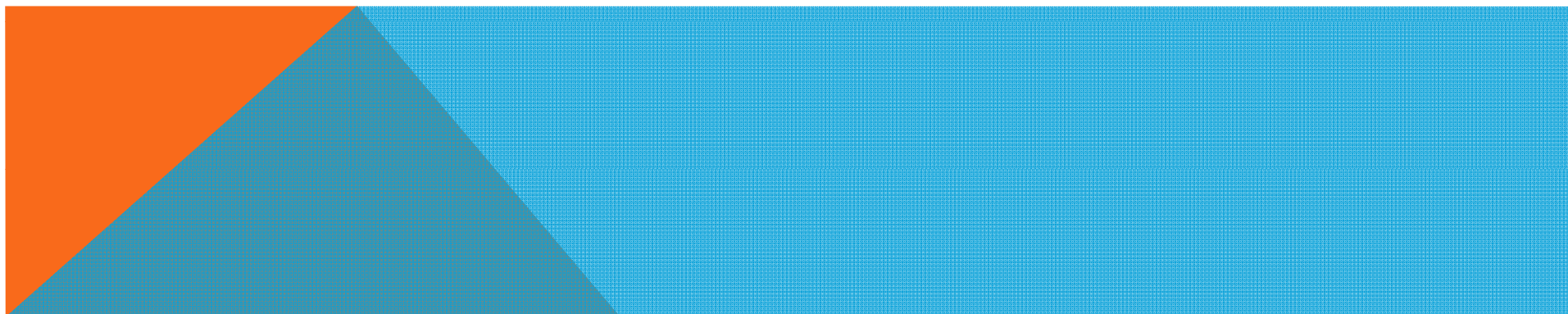


# PRONÓSTICO CLIMÁTICO CAMPAÑA 2013

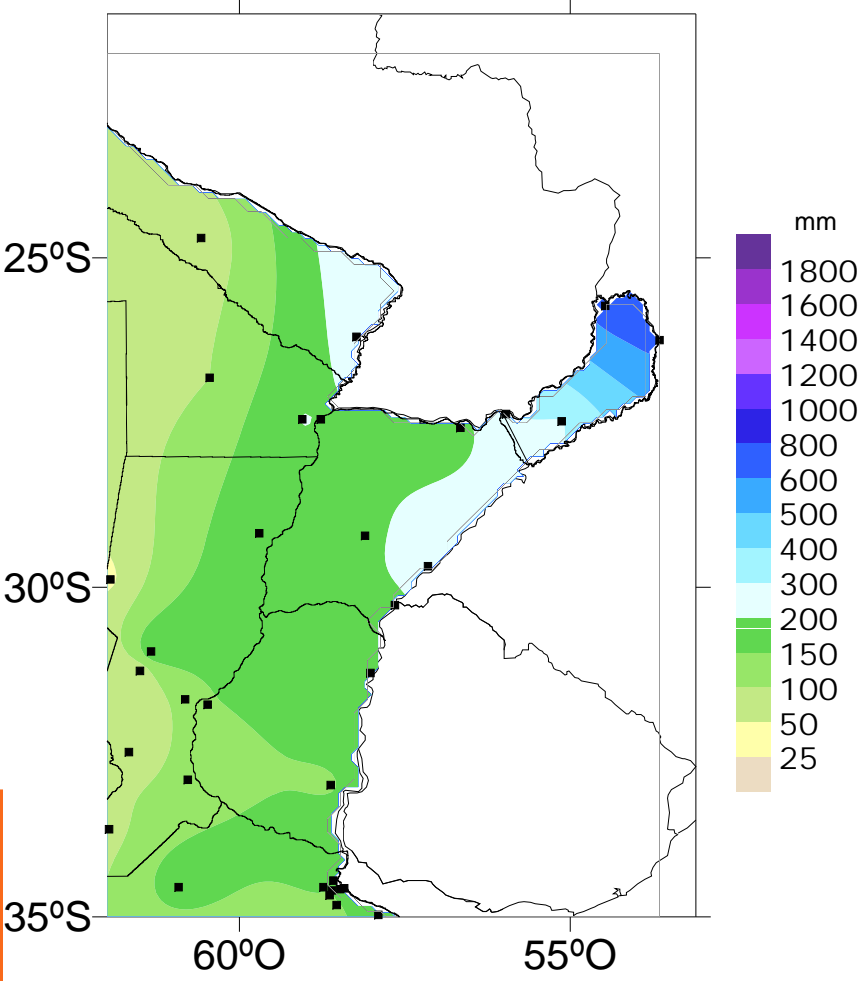
LIC MARÍA DE LOS MILAGROS SKANSI  
DEPARTAMENTO CLIMATOLOGÍA  
SERVICIO METEOROLÓGICO NACIONAL  
[MMS@SMN.GOV.AR](mailto:MMS@SMN.GOV.AR)

XI Jornada de Arroz – 1-2 de agosto de 2013 - Corrientes

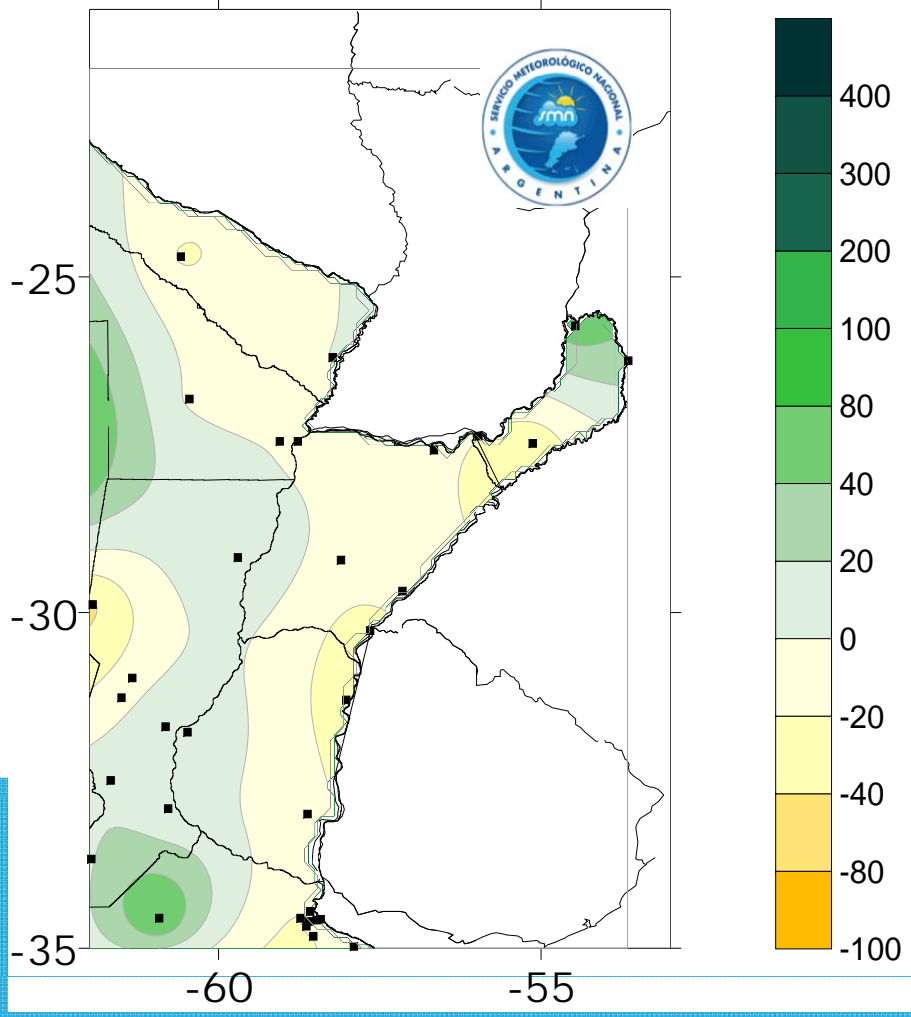
# SITUACIÓN ACTUAL



# Mayo-Junio-Julio: precipitación total y anomalía (%)

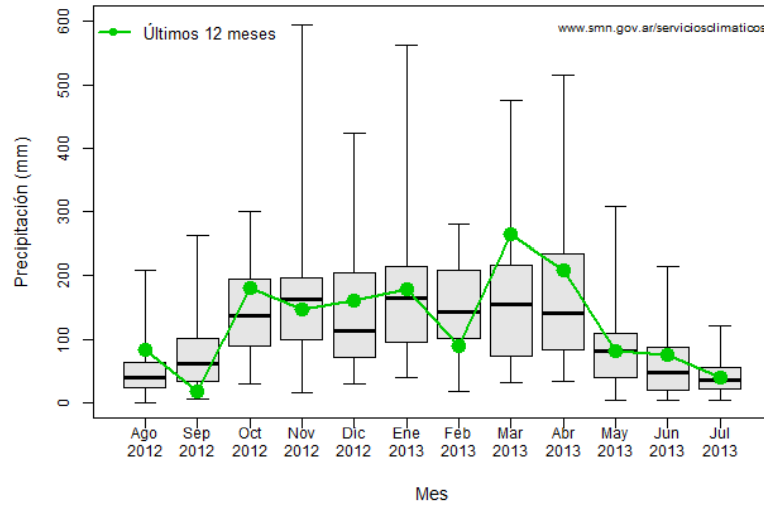


[www.smn.gov.ar/serviciosclimaticos](http://www.smn.gov.ar/serviciosclimaticos)

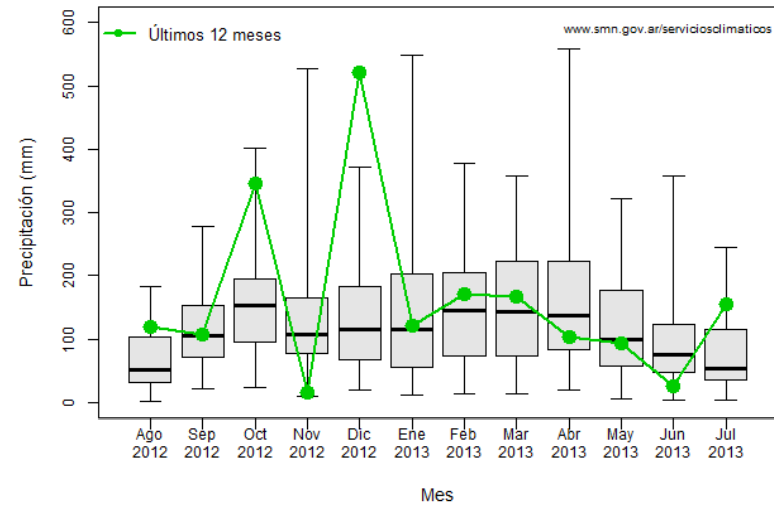


# Último año: precipitación mensual

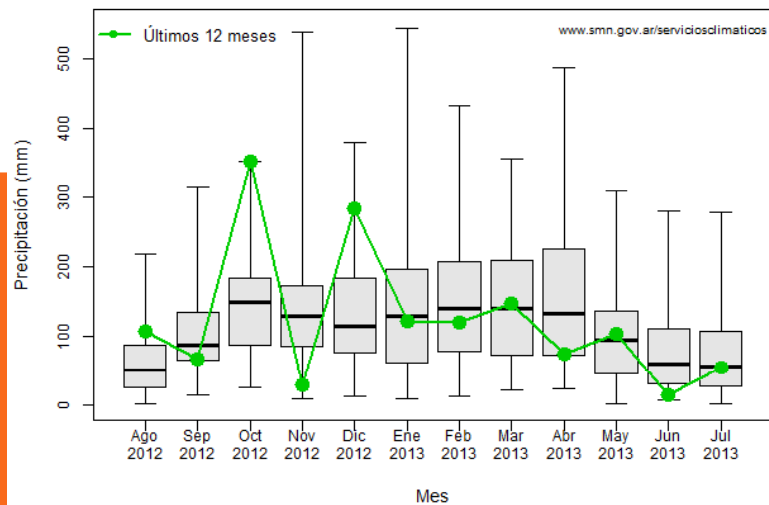
**Precipitación  
Corrientes**



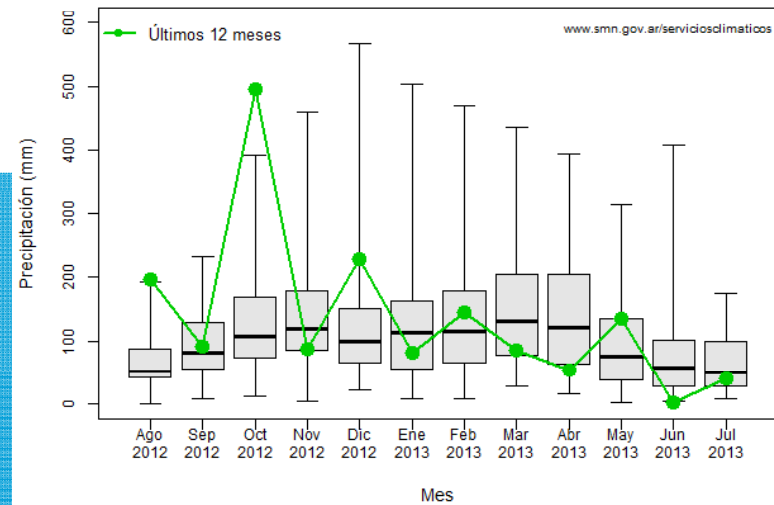
**Precipitación  
Paso de los Libres**



**Precipitación  
Monte Caseros**

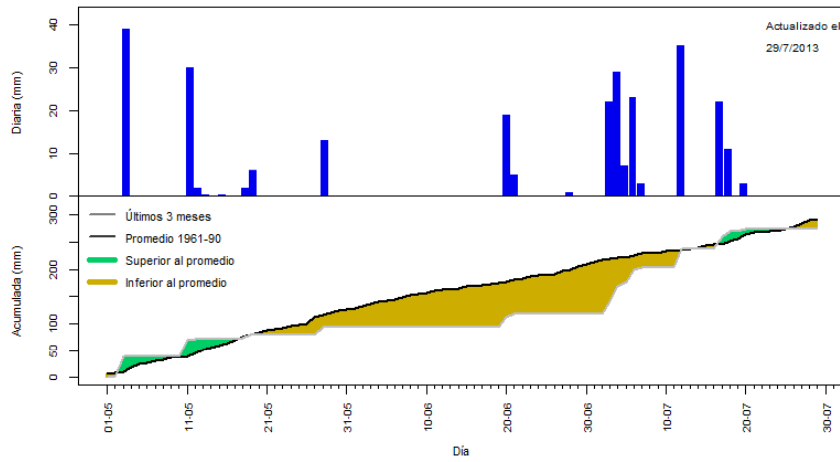


**Precipitación  
Concordia**

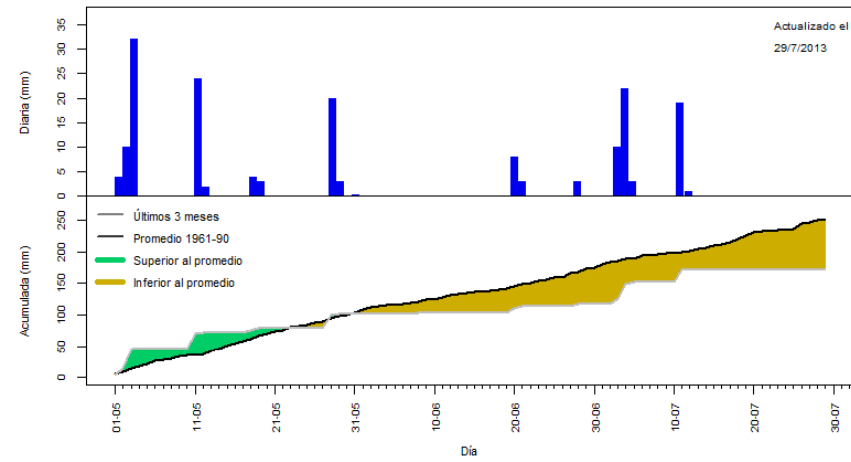


# Precipitación acumulada: 90 días

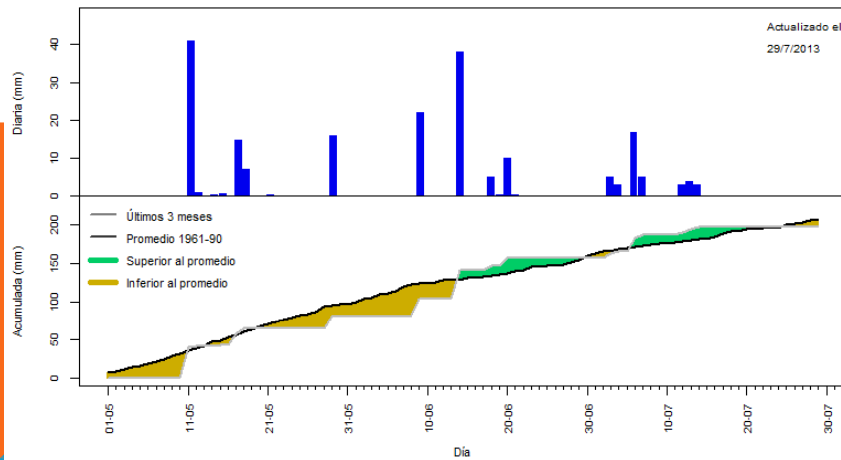
### Precipitaciones Paso de los Libres



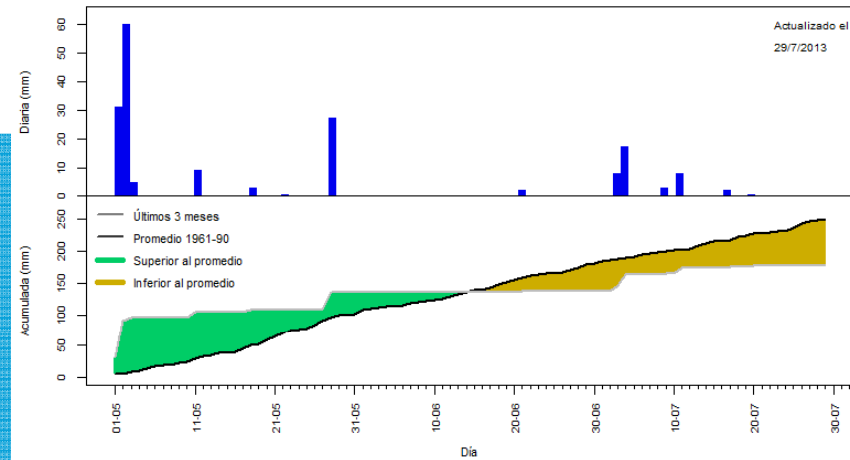
### Precipitaciones Monte Caseros



### Precipitaciones Corrientes

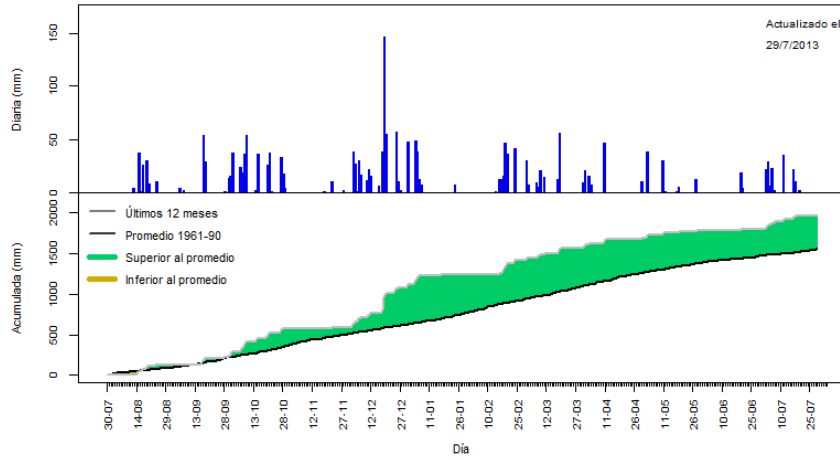


### Precipitaciones Concordia

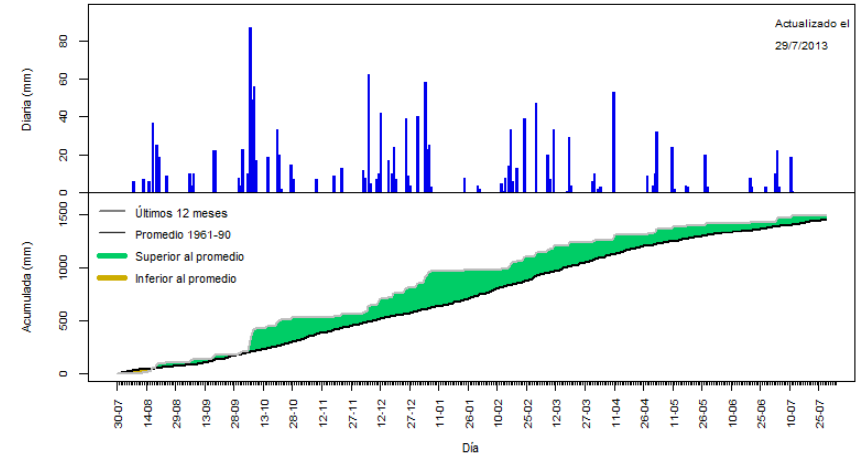


# Precipitación acumulada: 360 días

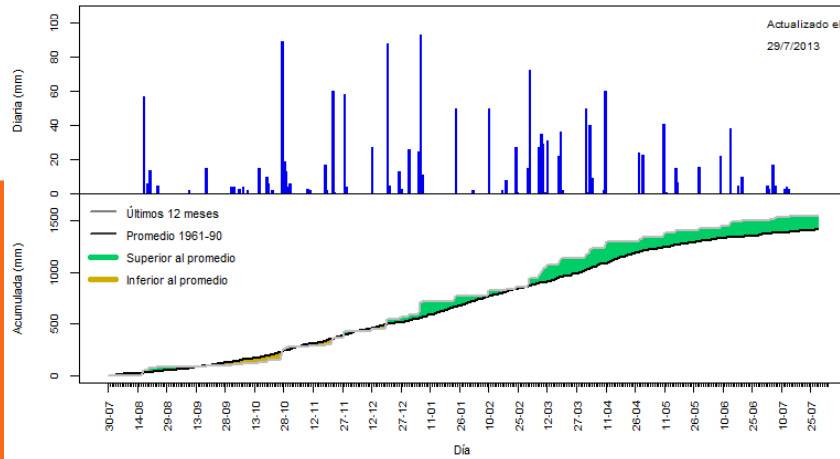
### Precipitaciones Paso de los Libres



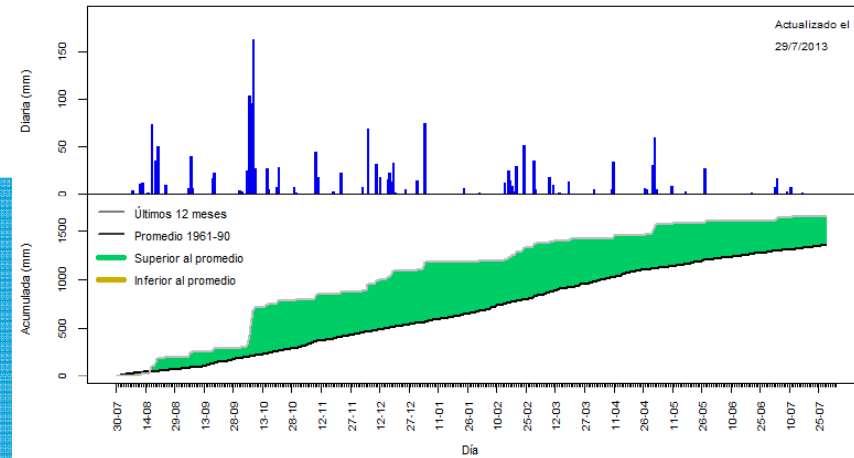
### Precipitaciones Monte Caseros



### Precipitaciones Corrientes

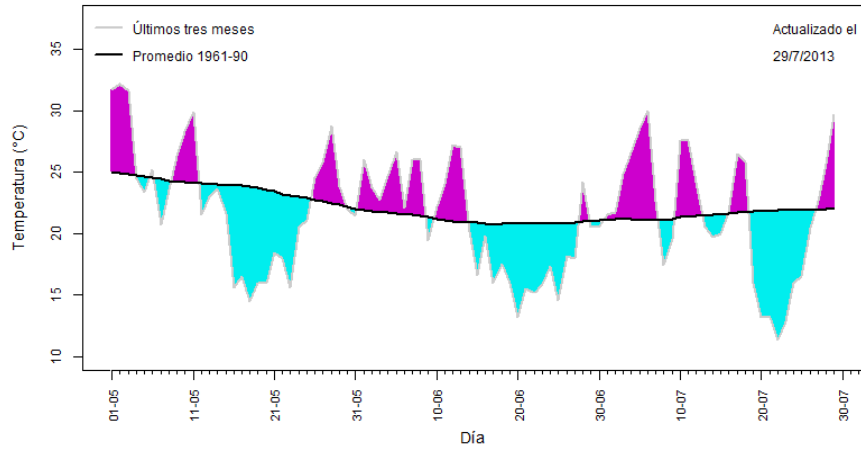


### Precipitaciones Concordia

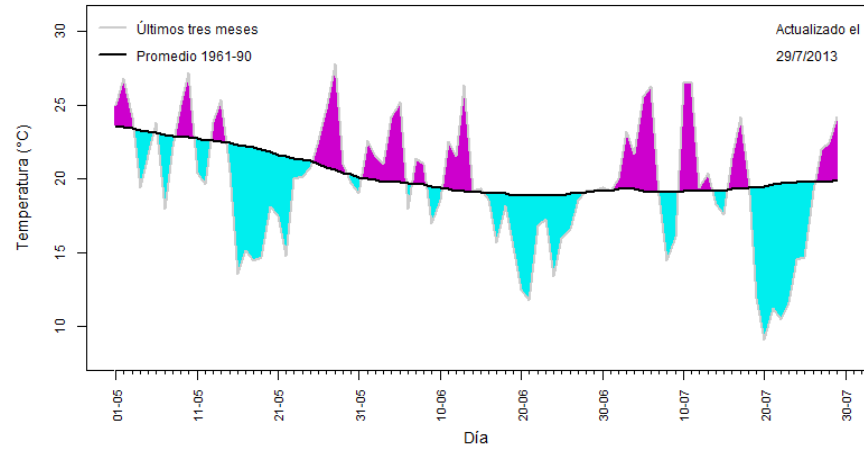


# Temperaturas extremas: últimos 90 días

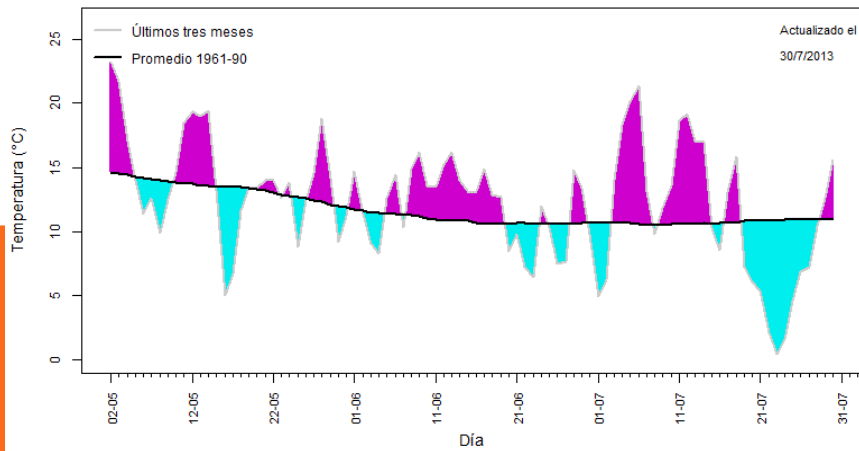
Temperatura máxima  
Corrientes



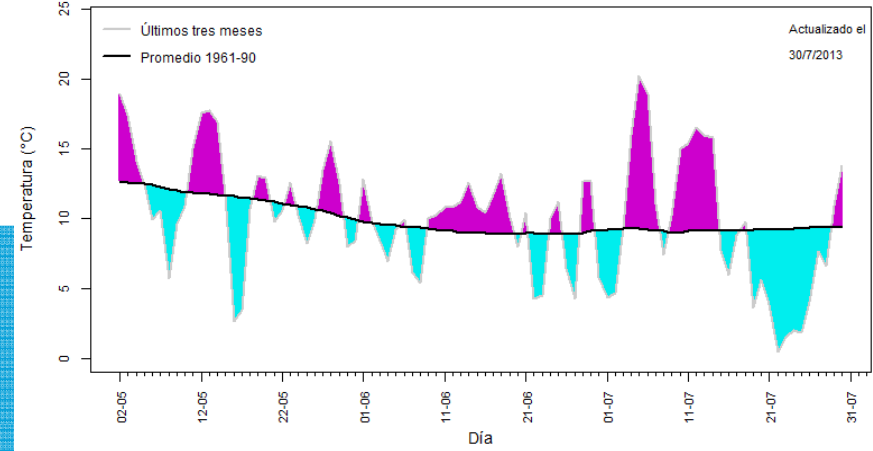
Temperatura máxima  
Paso de los Libres



Temperatura mínima  
Corrientes



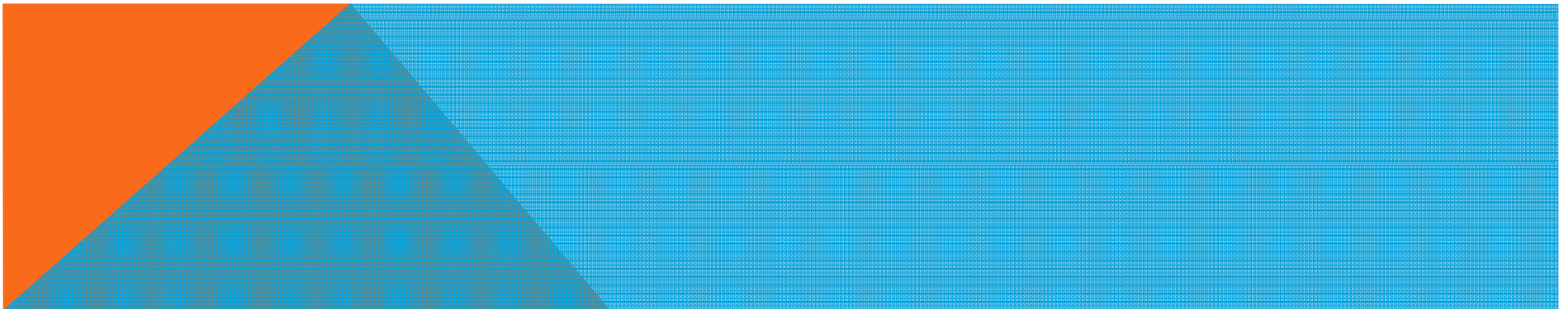
Temperatura mínima  
Paso de los Libres



**Situación actual del Fenómeno**

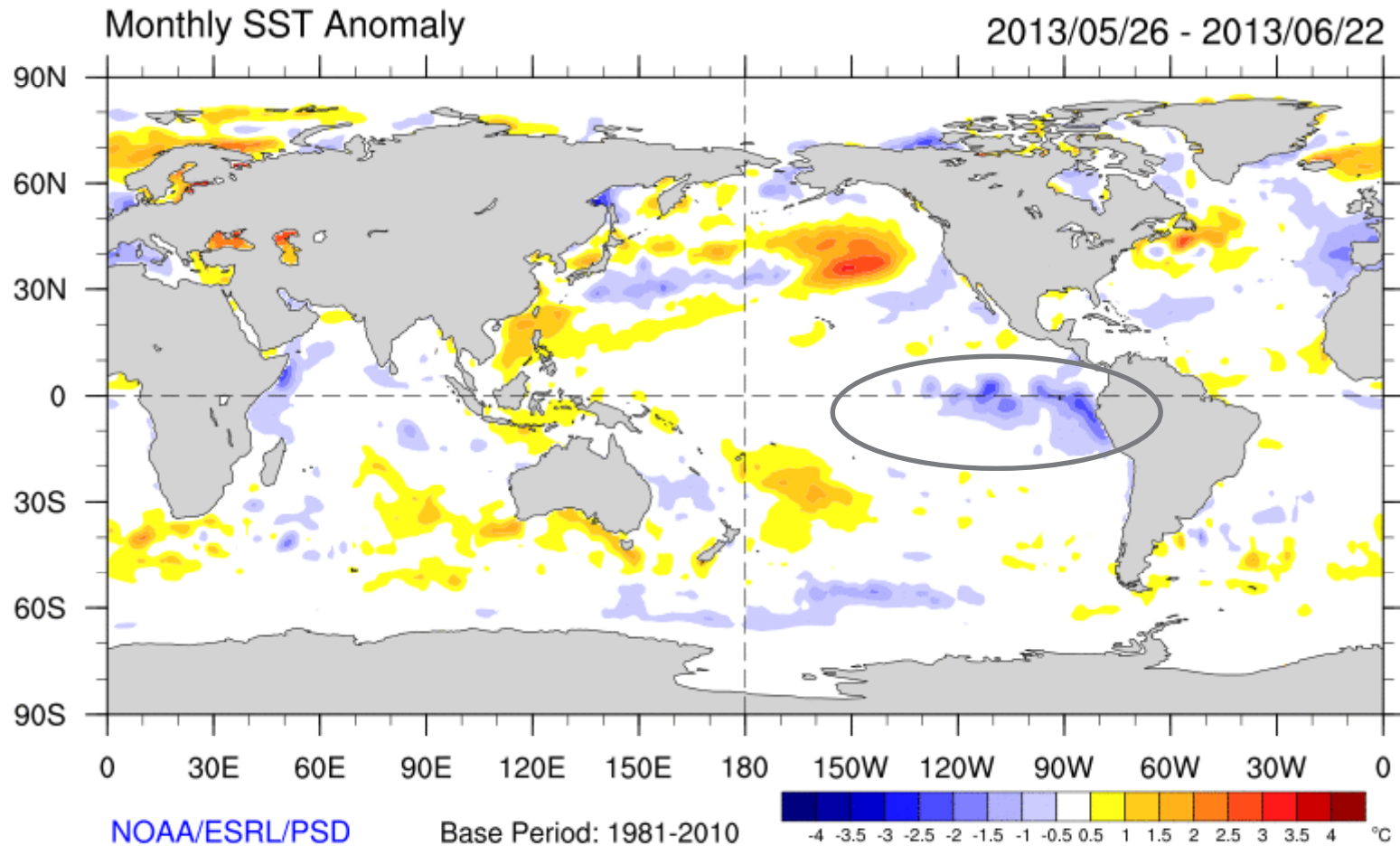
**El Niño – Oscilación del Sur y**

**Pronóstico de su evolución**

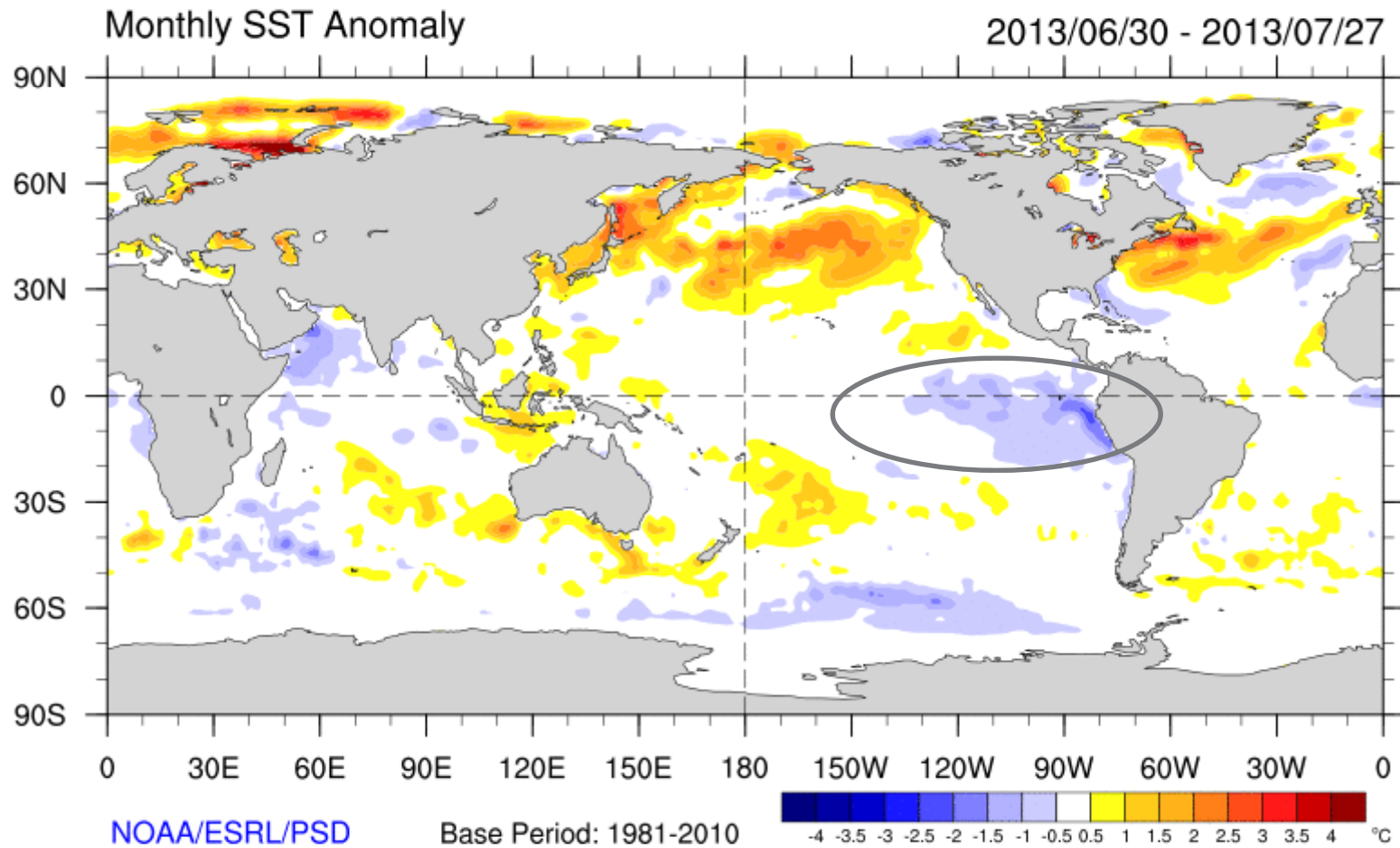




# Anomalía de la temperatura superficial del mar (TSM)

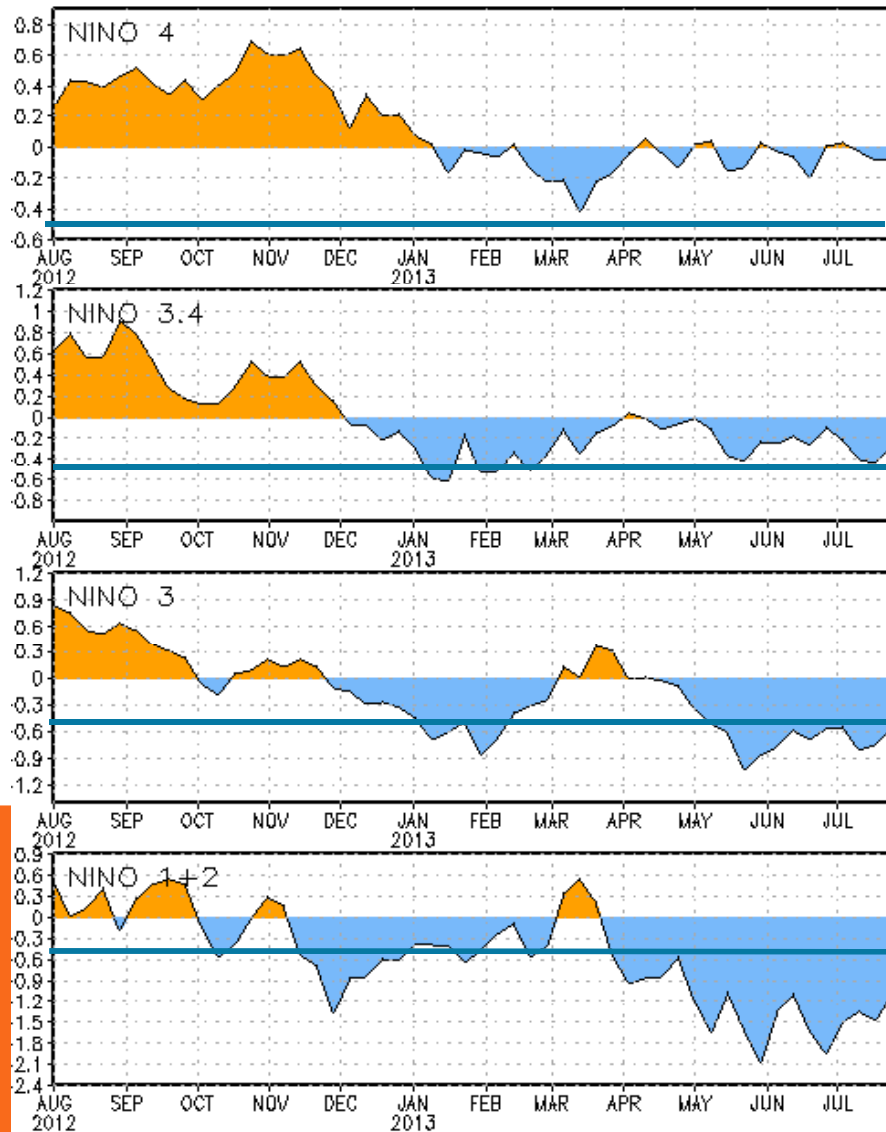


# Anomalía de la temperatura superficial del mar (TSM)



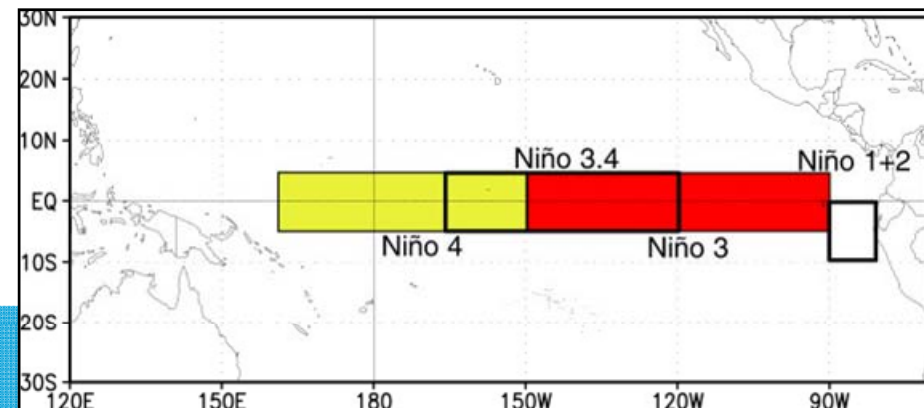
# EVOLUCIÓN TSM POR REGIONES NIÑO

SST Anomalies

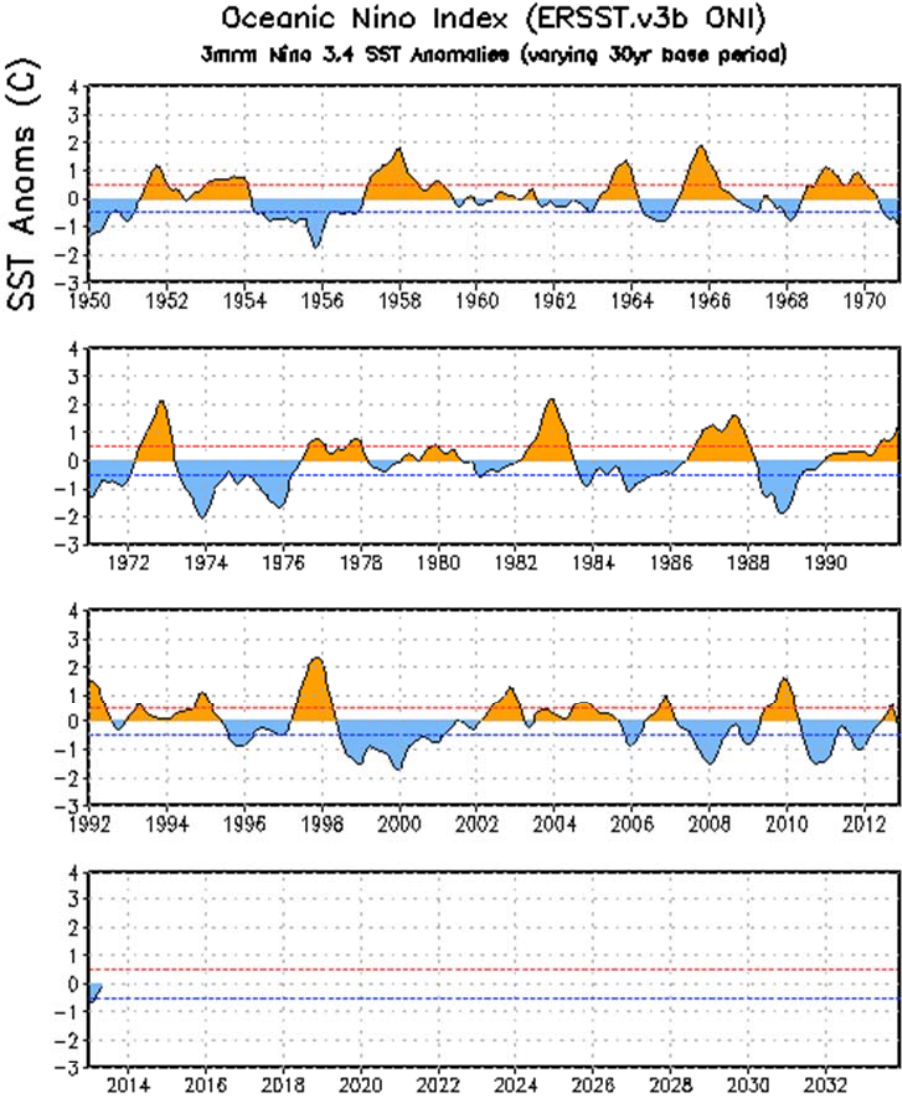


Ultima semana

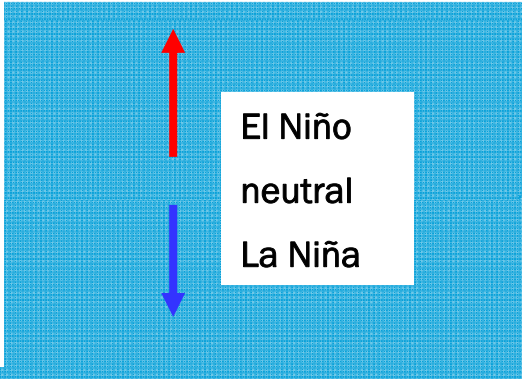
Niño 4	-0.1°C
Niño 3.4	-0.3°C
Niño 3	-0.6°C
Niño 1+2	-1.1°C



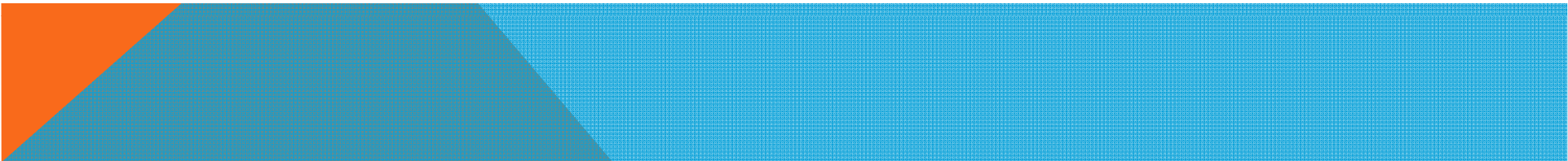
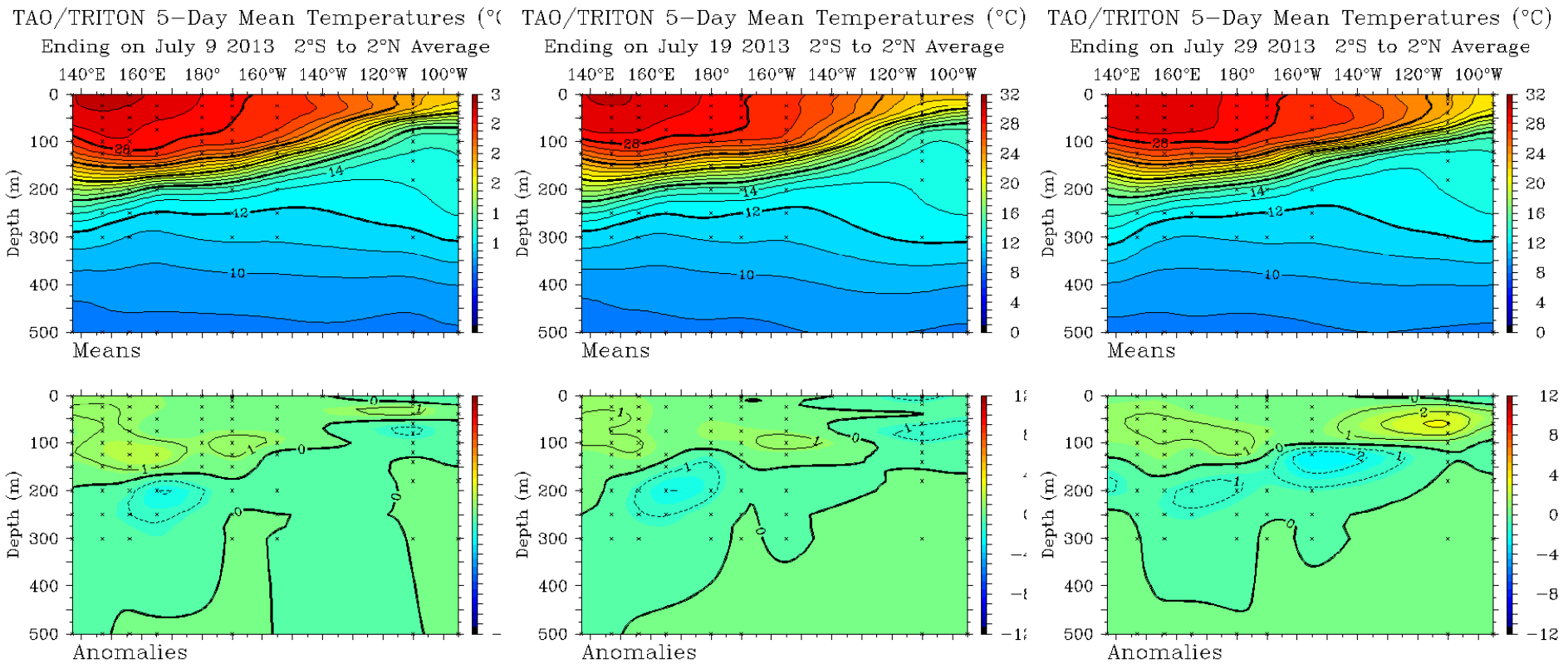
# EVOLUCIÓN ÍNDICE OCEÁNICO



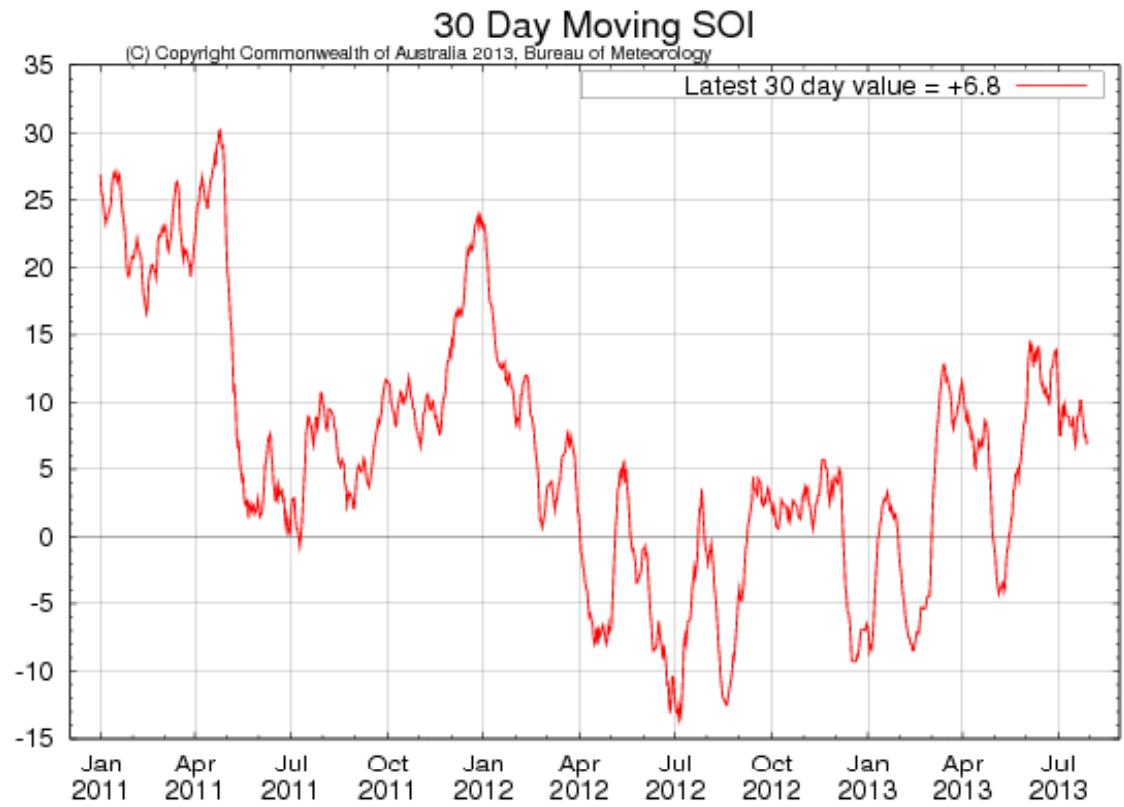
Abr-jun -0.2



# Anomalía de la temperatura subsuperficial del mar (TSM)

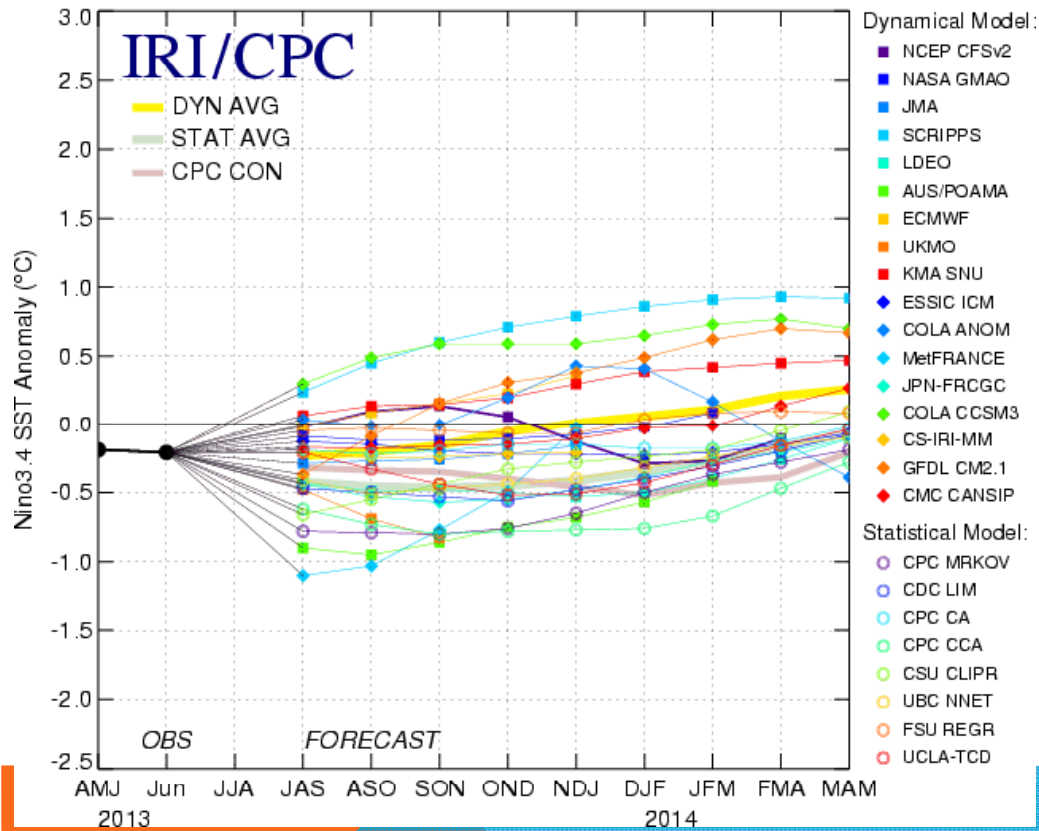


# EVOLUCIÓN INDICE OSCILACIÓN DEL SUR



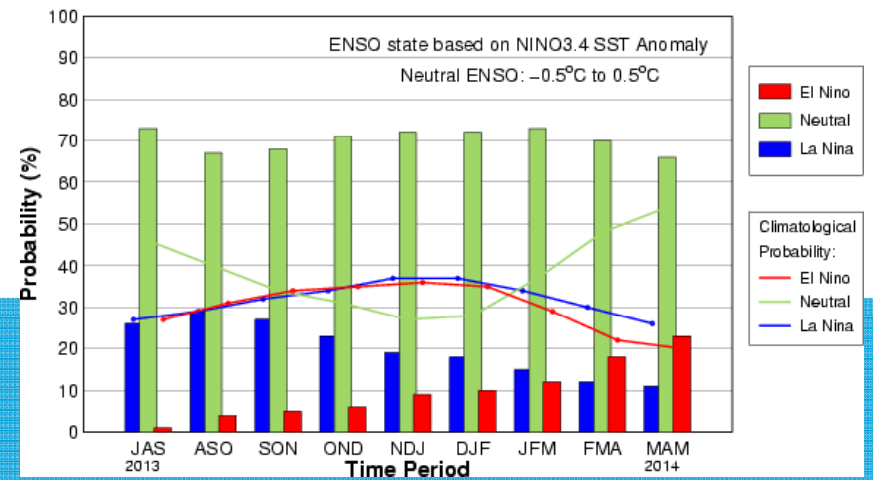
# Pronóstico anomalía TSM

Mid-Jul 2013 Plume of Model ENSO Predictions

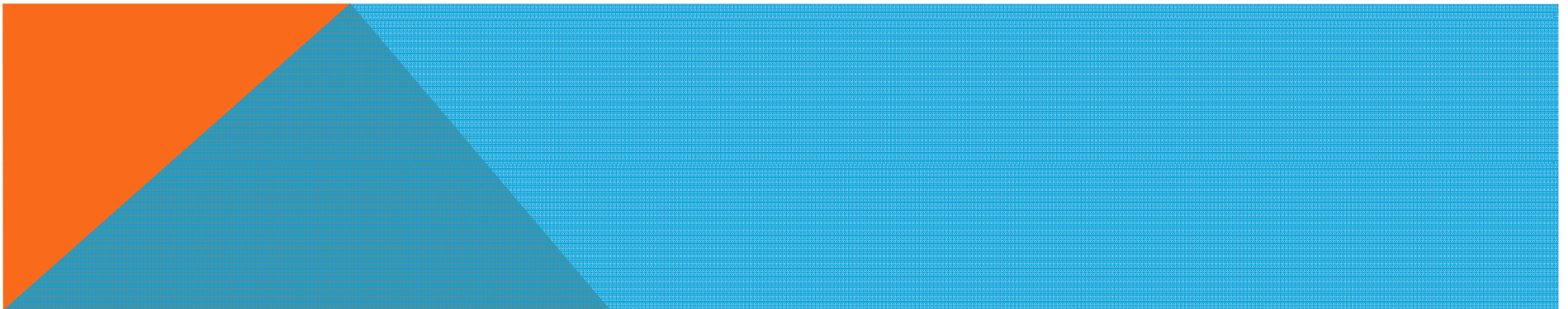


Media de todos los modelos -0.3

Mid-Jul IRI/CPC Plume-Based Probabilistic ENSO Forecast

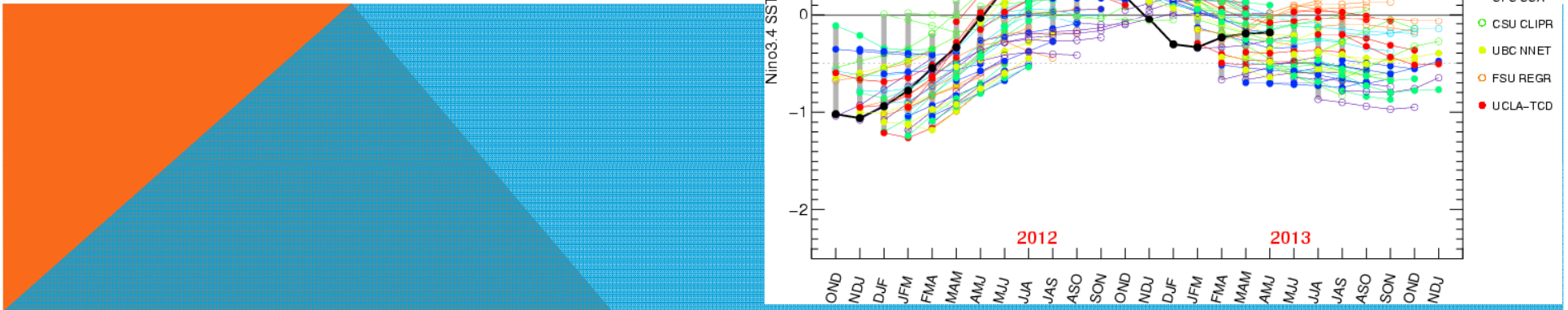
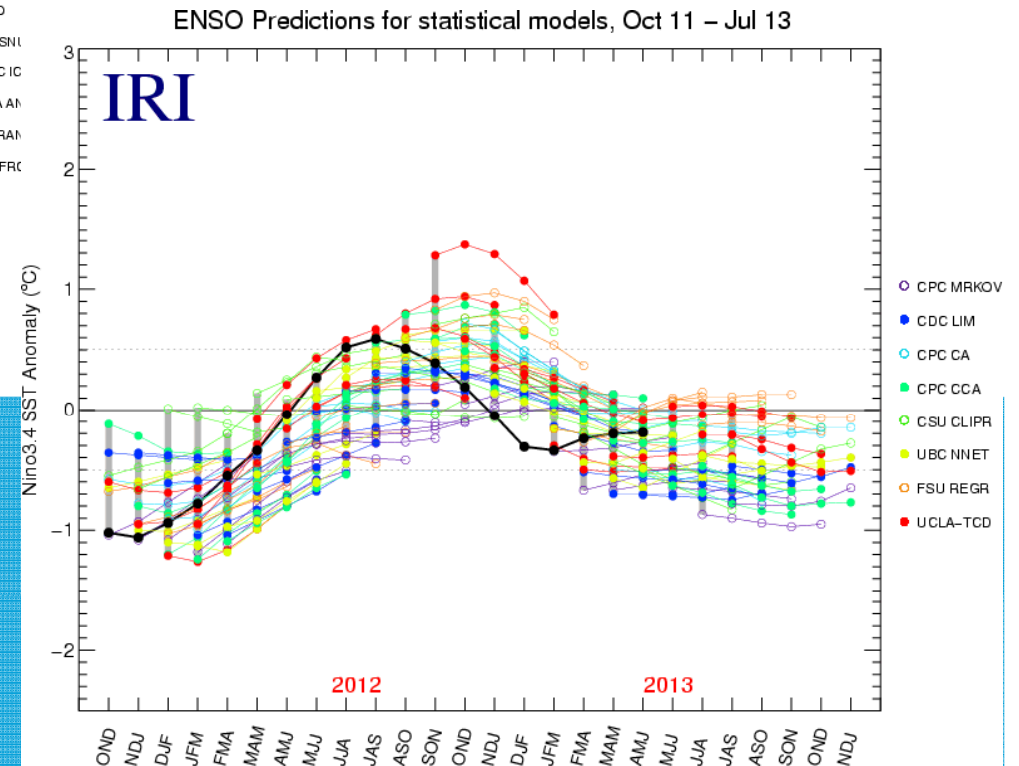
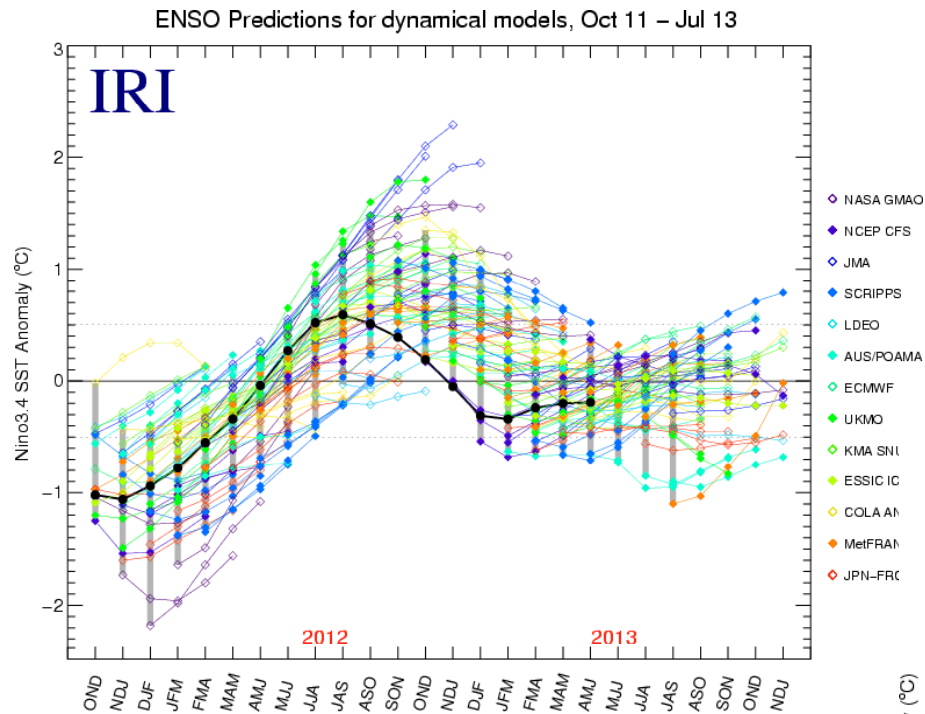


**RESUMEN: EL FENÓMENO ENOS SE  
ENCUENTRA EN FASE NEUTRAL Y SE PREVÉ  
QUE SE MANTENGA EN ESTA FASE DURANTE  
LA PRIMAVERA**



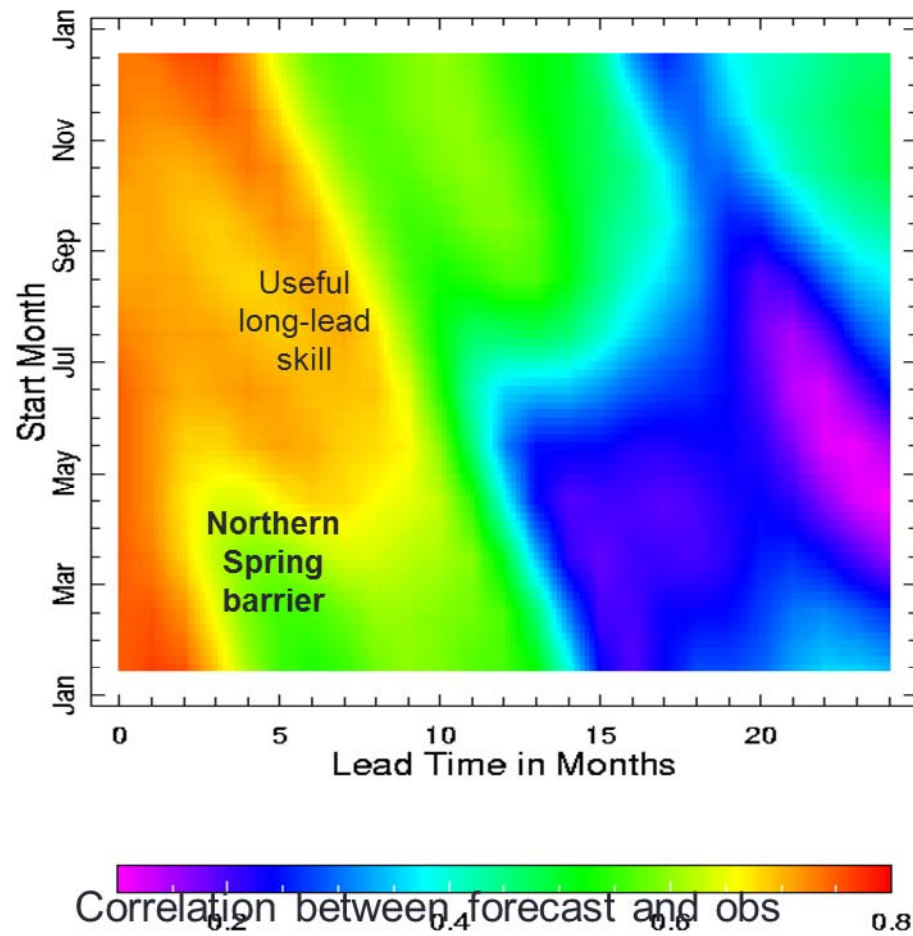


# Verificación últimos 2 años

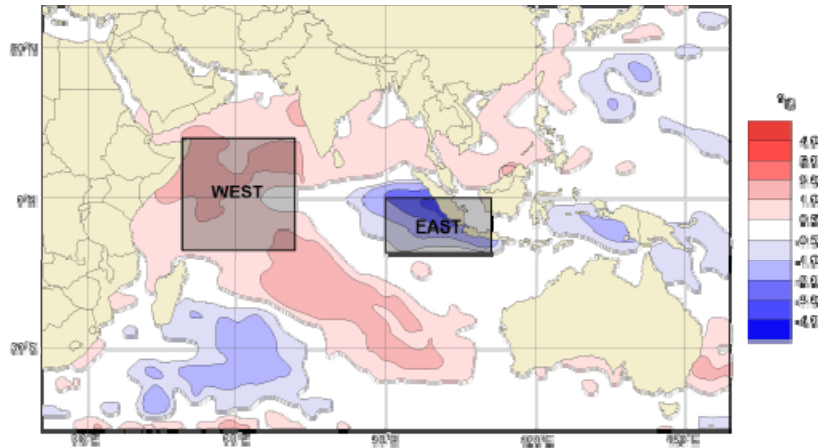


# LIMITACIONES PRONÓSTICOS

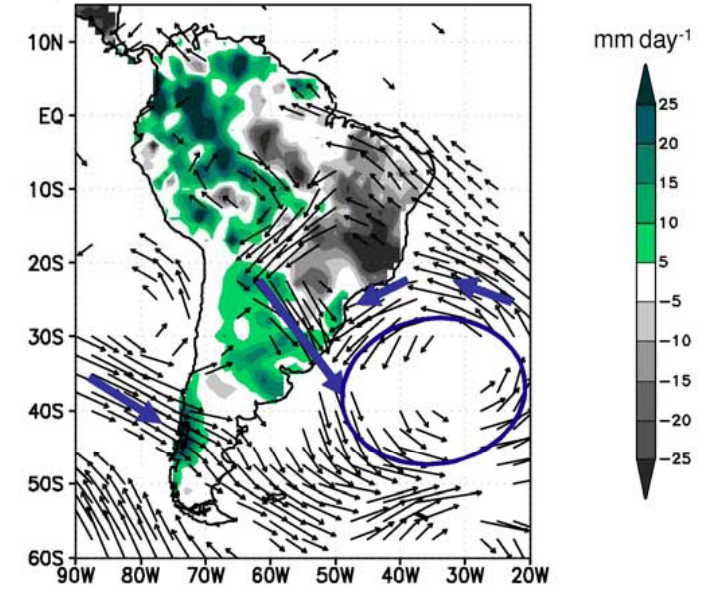
Skill of LDEO3 (Zebiak-Cane) simple dynamical model, 1970-2000  
for NINO3 Region



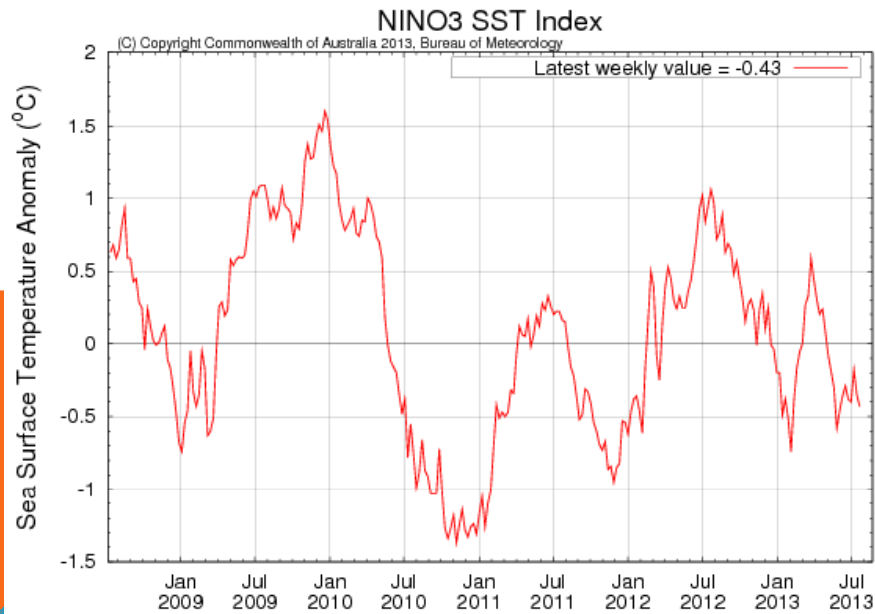
# DIPOLO DEL OCÉANO INDICO



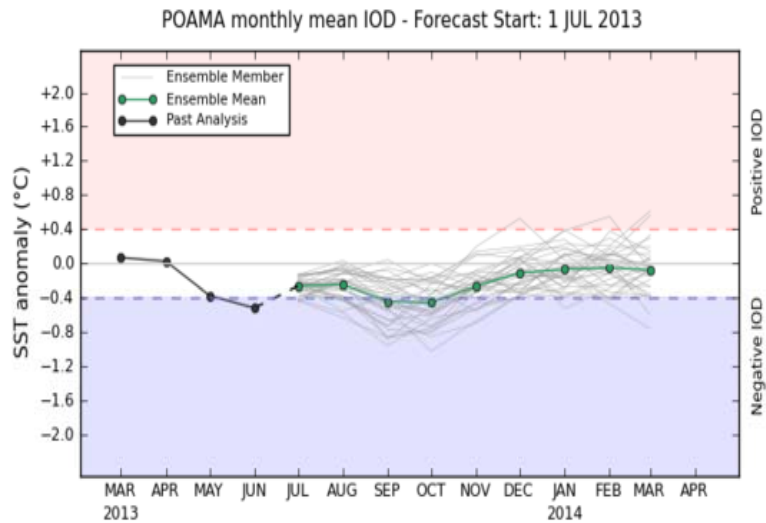
Sep–Nov NCEP/NCAR Rain & Wind Anom.



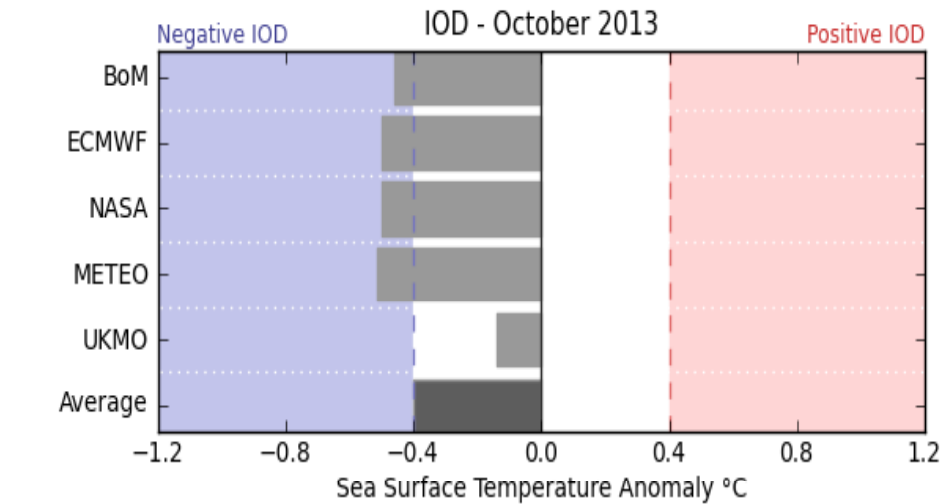
Influencia media del IOD en la precipitación de Sudamérica (SON)- (Chan et al. 2008)  
Fase positiva del IOD



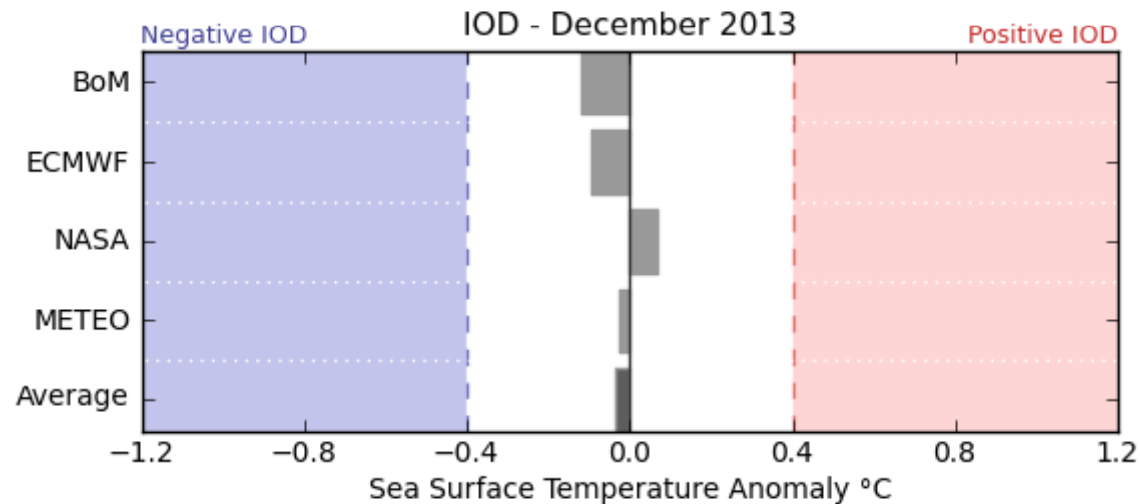
# DOI - PRONÓSTICO



Copyright 2013 Australian Bureau of Meteorology

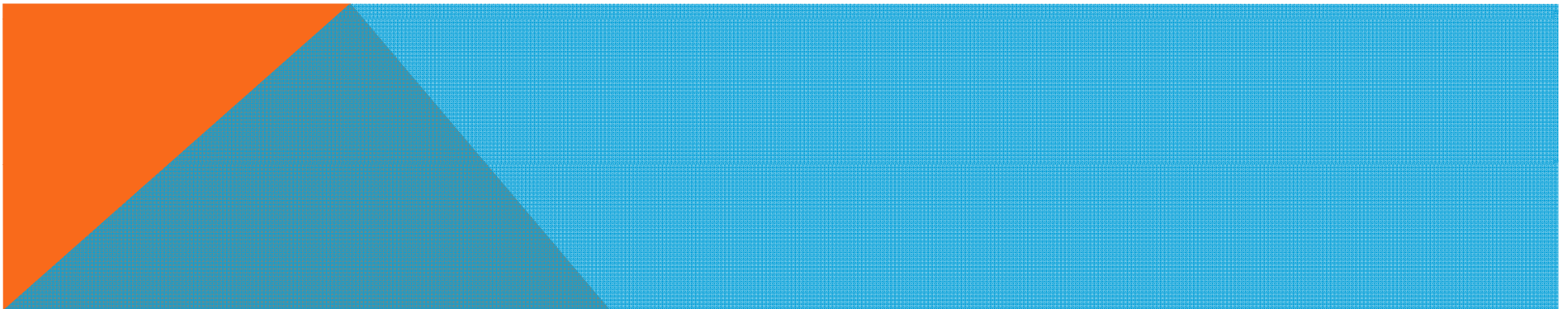


© Copyright Australian Bureau of Meteorology

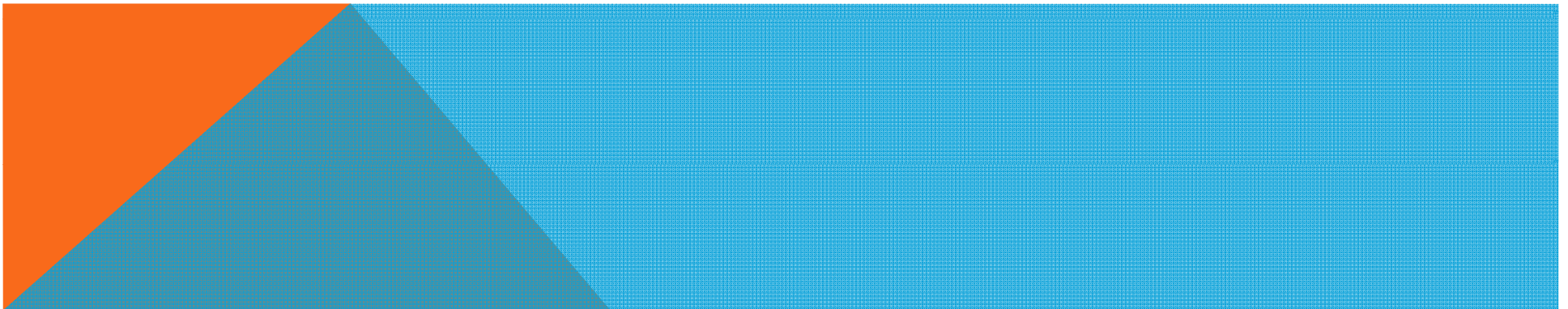


© Copyright Australian Bureau of Meteorology

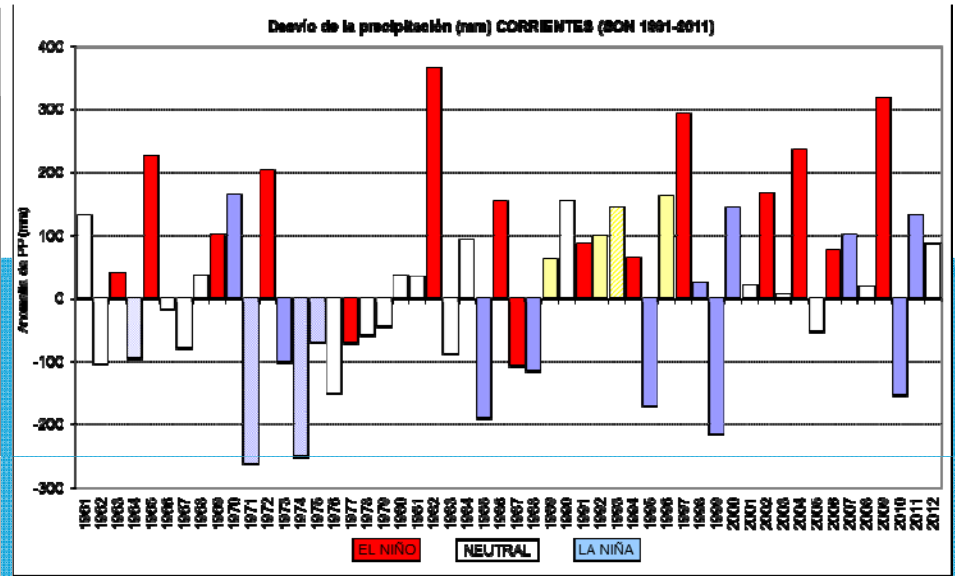
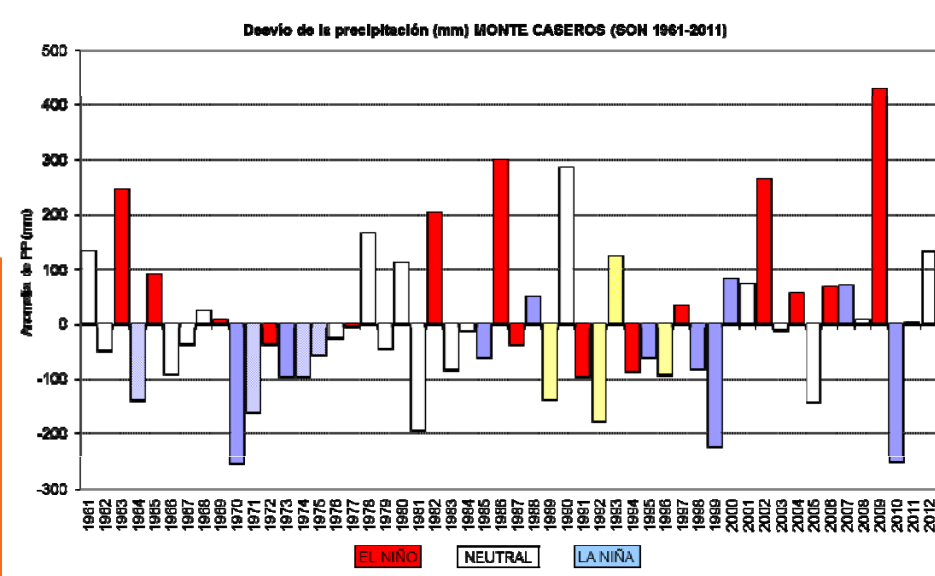
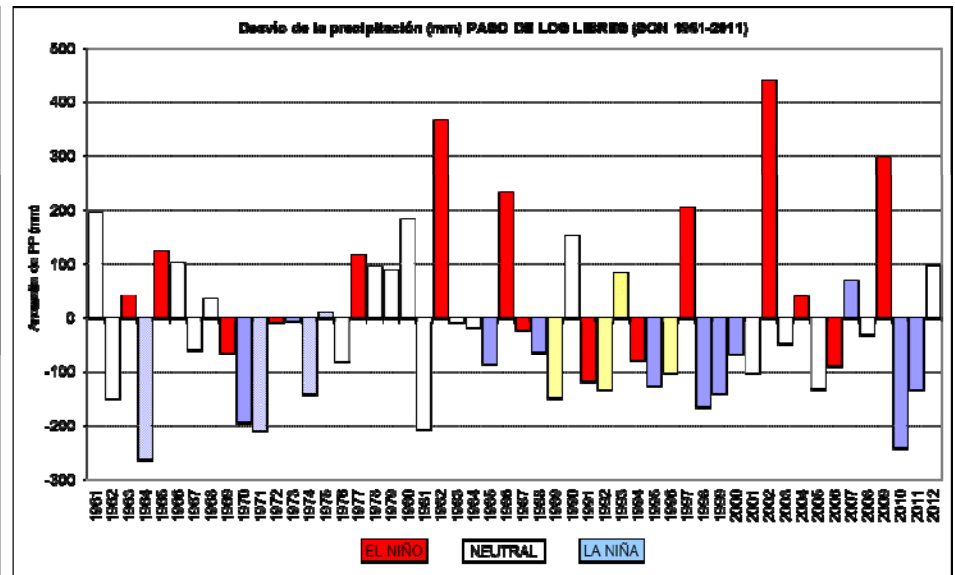
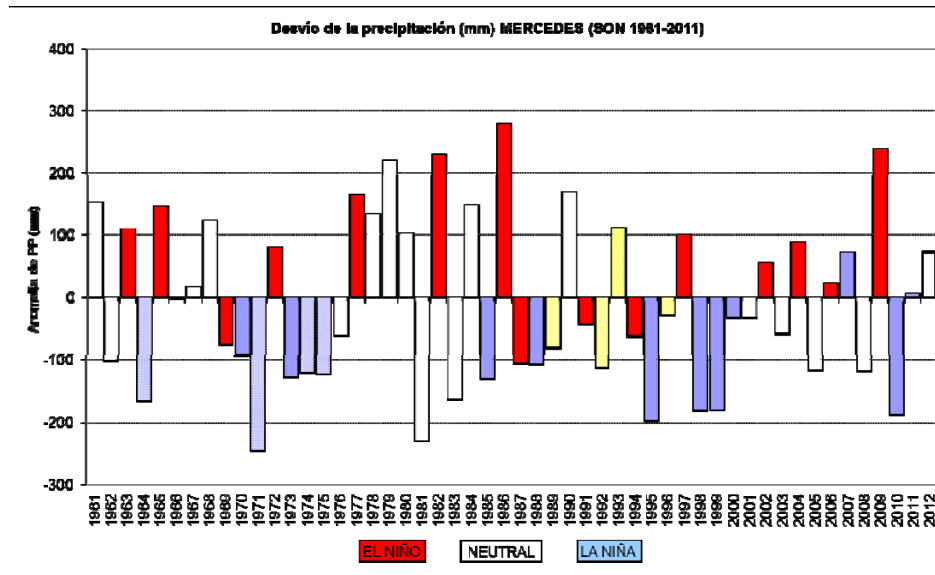
**EL ÍNDICE DEL DIPOLO DEL OCÉANO INDICO SE  
ENCUENTRA NEGATIVO. DE ACUERDO A LOS  
PRONÓSTICOS SE MANTENDRÍA EN UNA FASE  
LEVEMENTE NEGATIVA HASTA ENTRADA LA  
PRIMAVERA, LUEGO SERÍA NEUTRAL**



**Relación entre El Niño-Oscilación  
del Sur / Dipolo del Océano  
Indico y las precipitaciones**

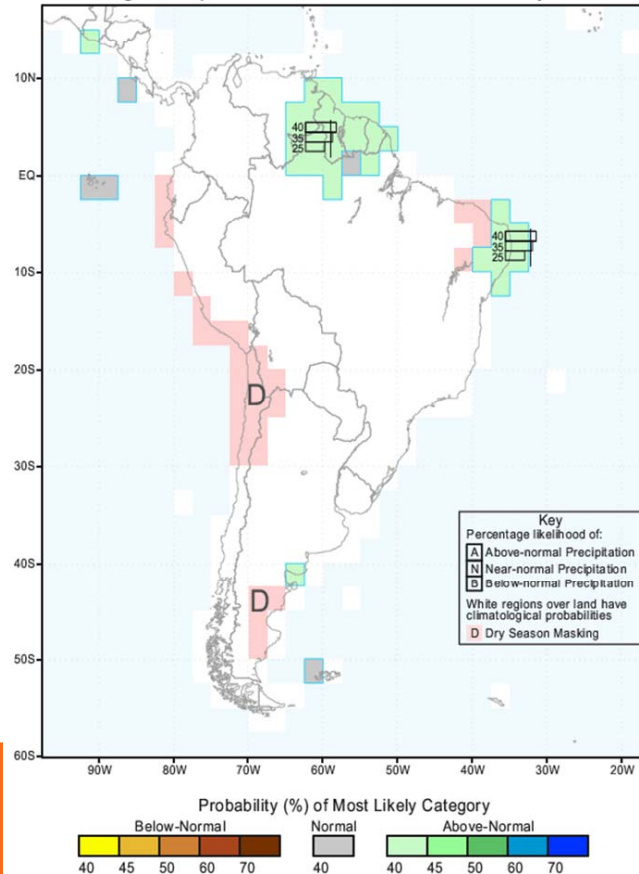


# PRECIPITACIÓN SON

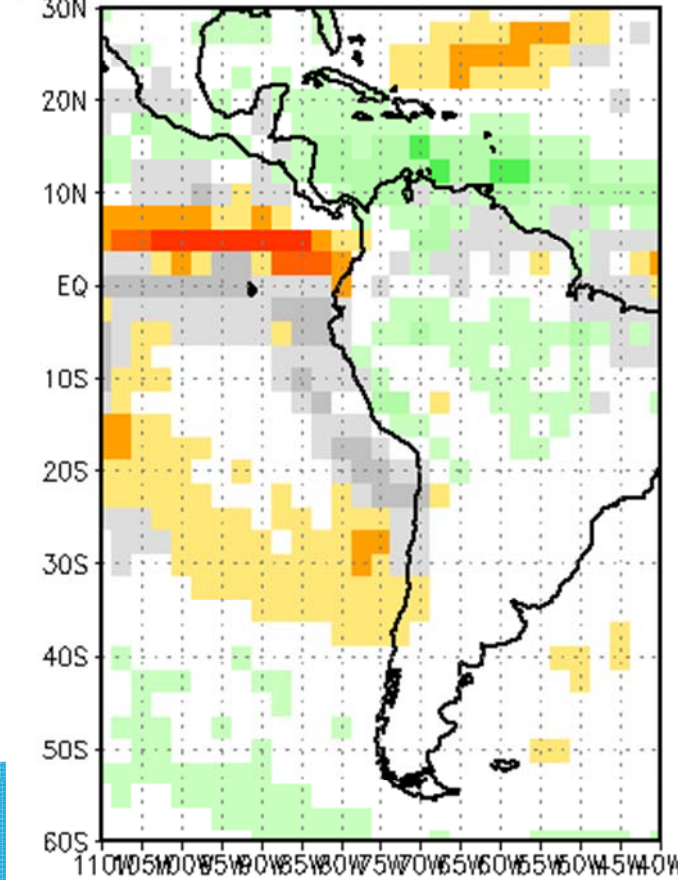


# Pronósticos para ASO

IRI Multi-Model Probability Forecast for Precipitation for August-September-October 2013, Issued July 2013



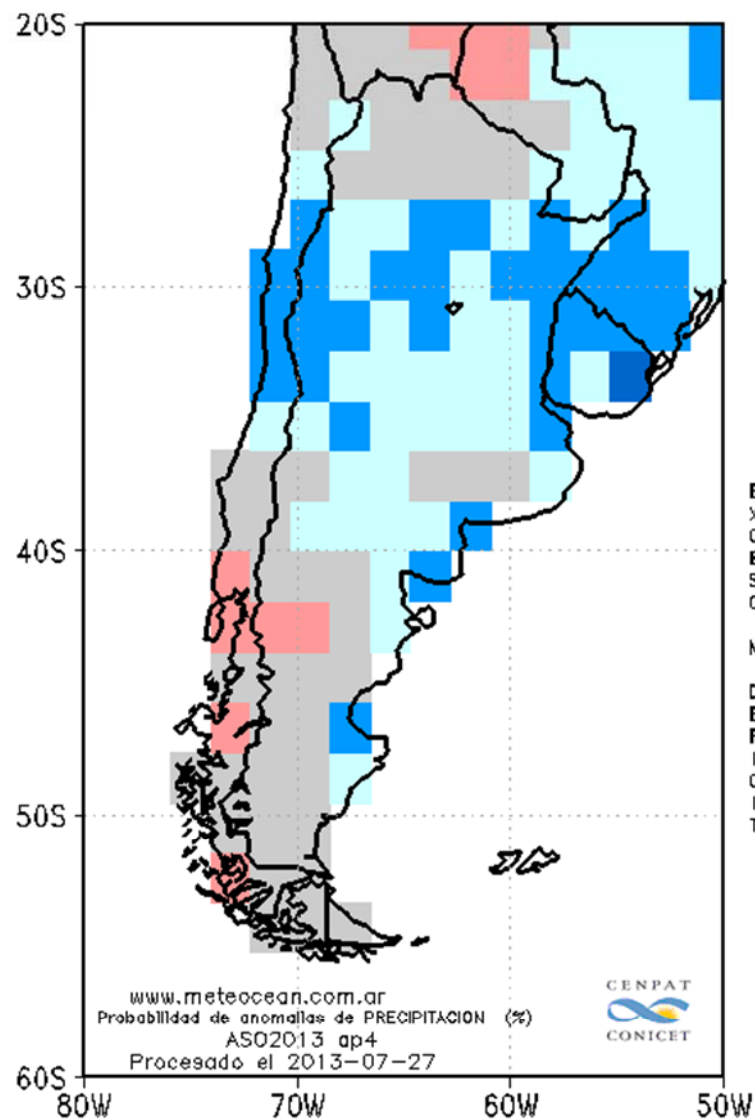
ASO2013



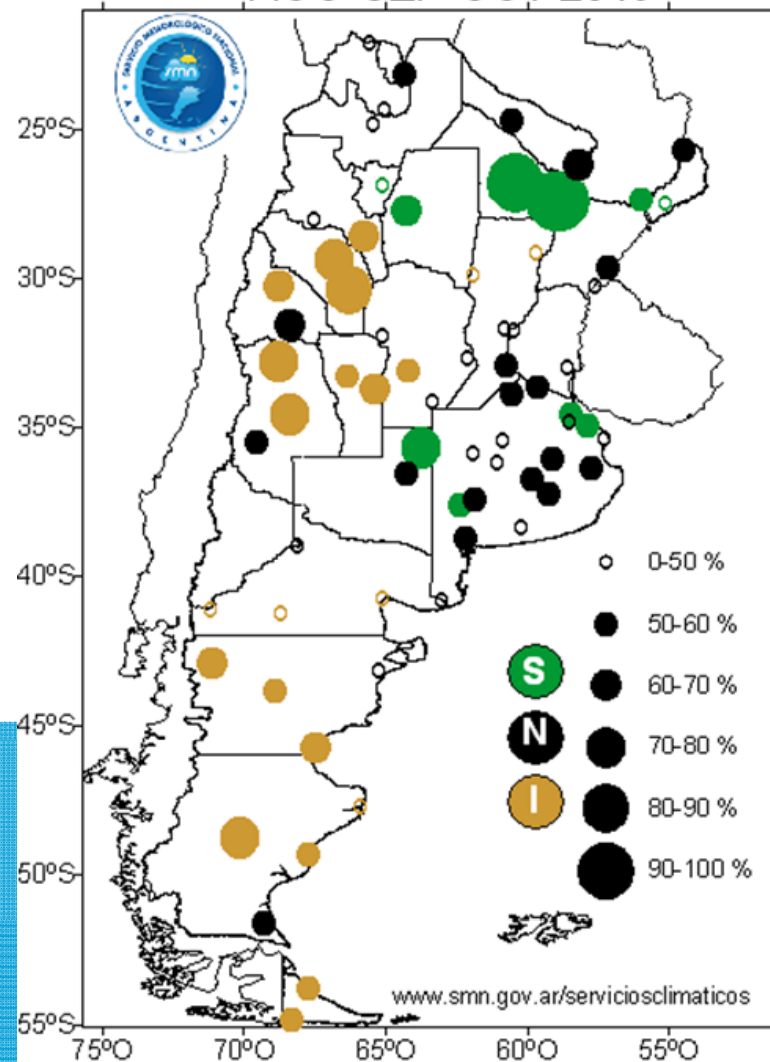
Global Producing Centres (GPCs - OMM)



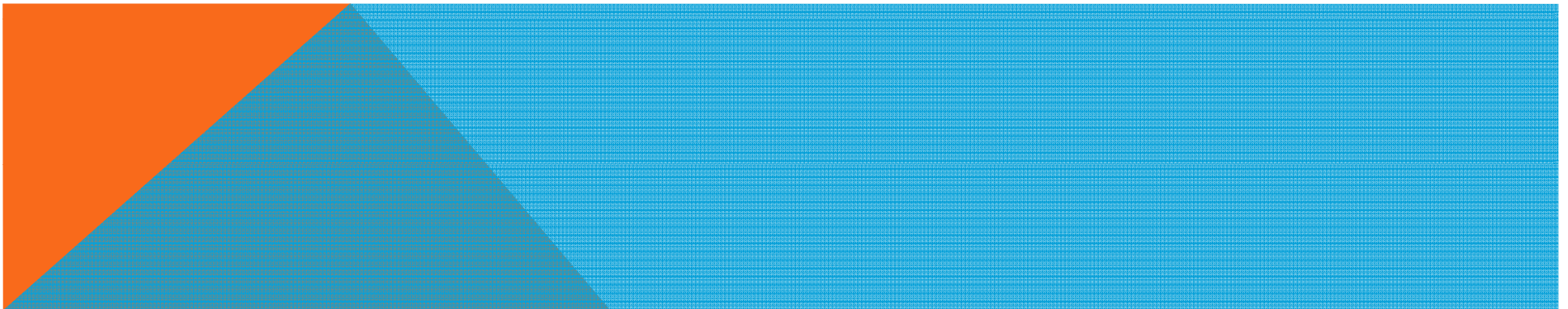
# Pronósticos para ASO



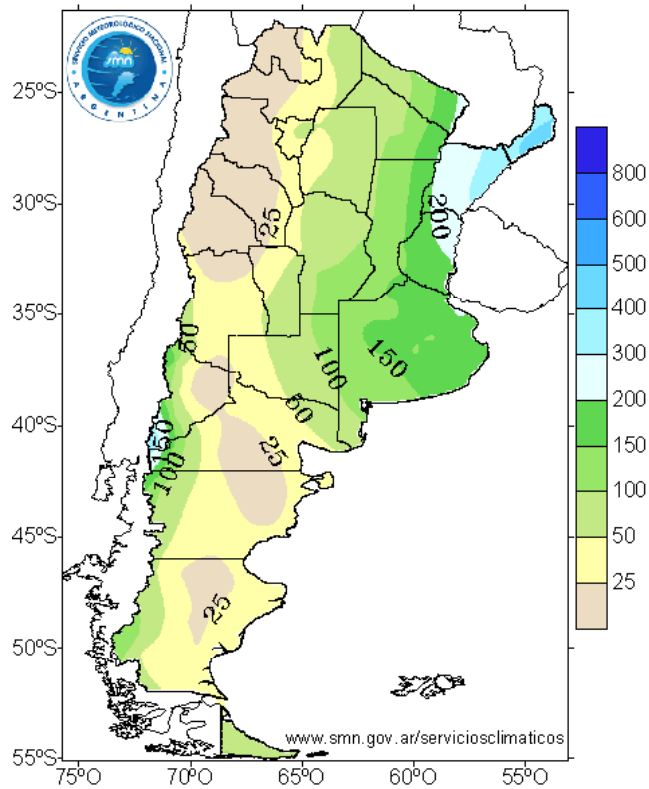
## Pronóstico de Precipitación AGO-SEP-OCT 2013



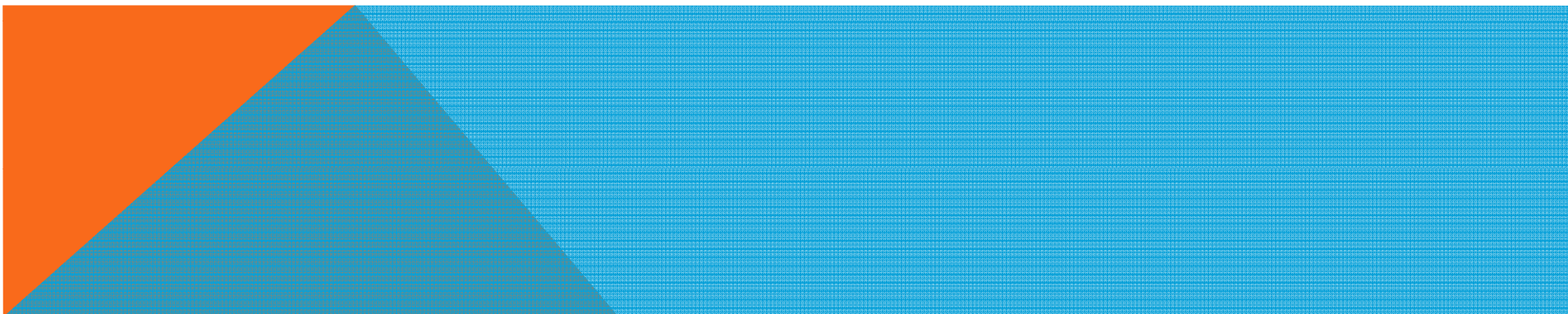
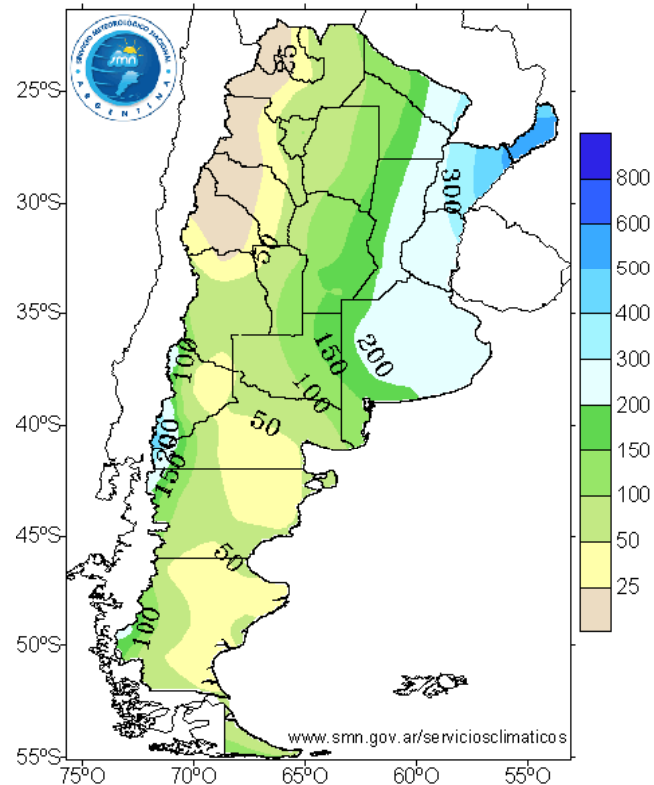
**Pronóstico ASO: mayor probabilidad  
de ocurrencia de precipitaciones  
dentro del rango normal.**



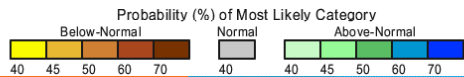
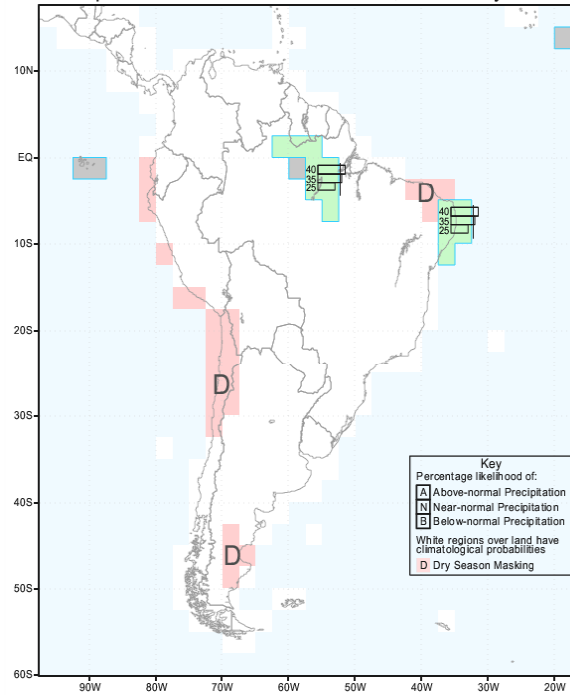
TERCIL INFERIOR DE PRECIPITACIÓN (mm)  
AGOSTO-SEPTIEMBRE-OCTUBRE



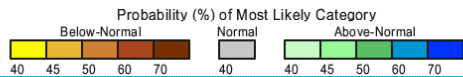
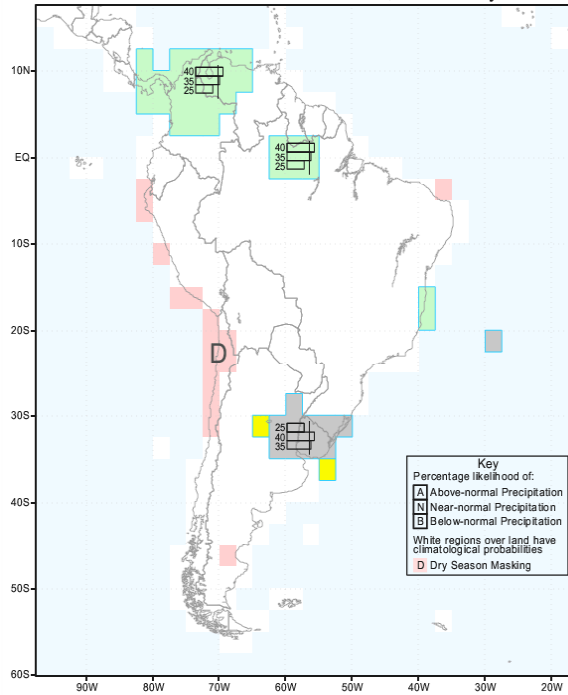
TERCIL SUPERIOR DE PRECIPITACIÓN (mm)  
AGOSTO-SEPTIEMBRE-OCTUBRE



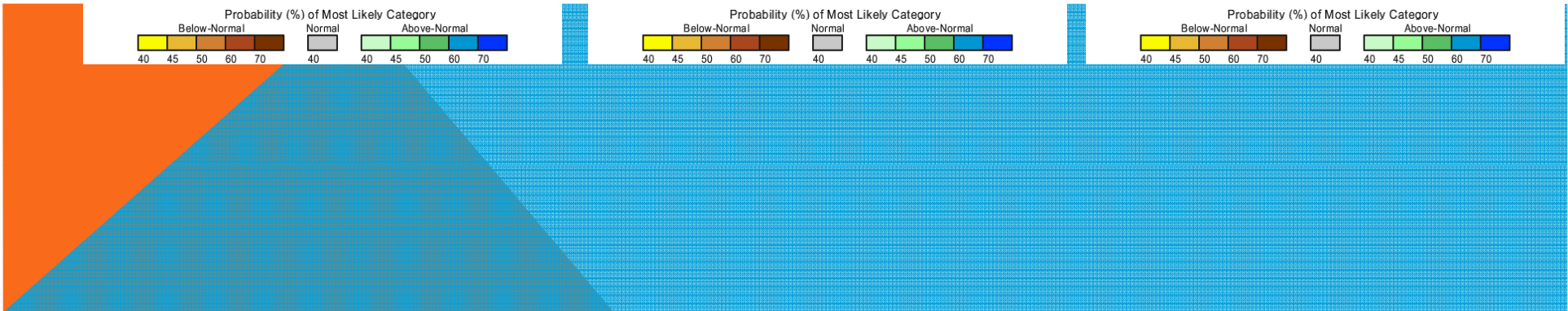
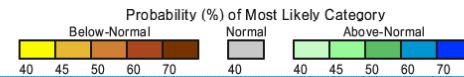
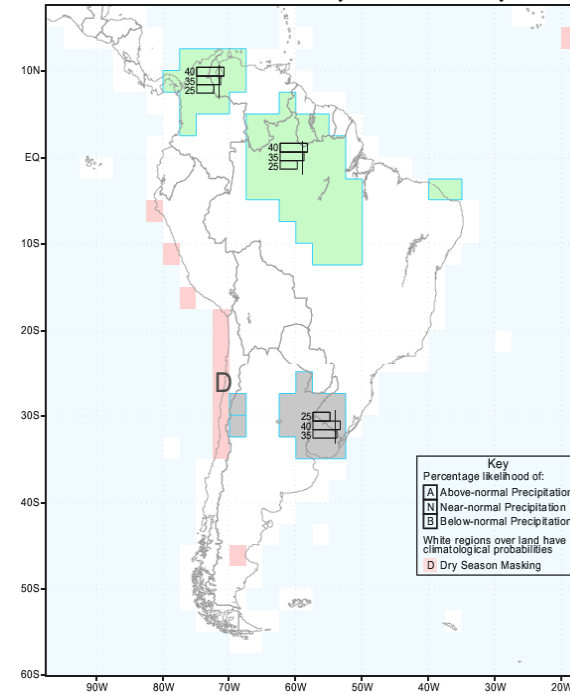
IRI Multi-Model Probability Forecast for Precipitation for September-October-November 2013, Issued July 2013



IRI Multi-Model Probability Forecast for Precipitation for October-November-December 2013, Issued July 2013

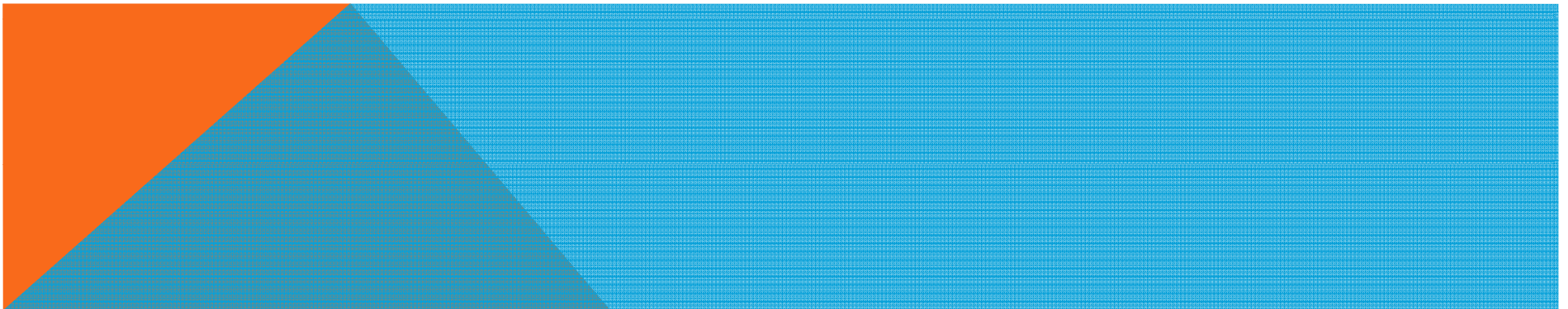


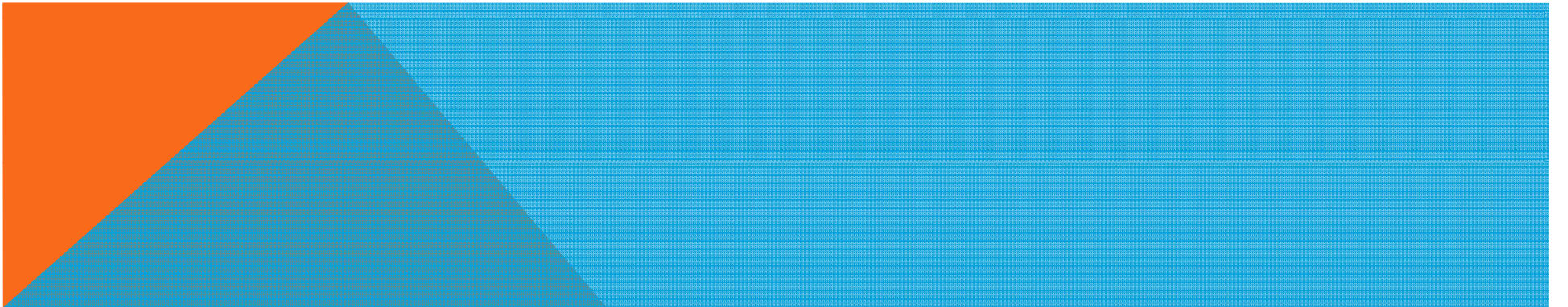
IRI Multi-Model Probability Forecast for Precipitation for November-December-January 2014, Issued July 2013



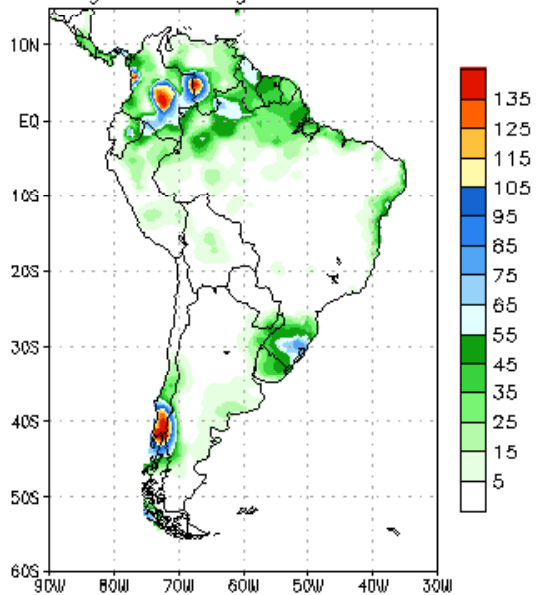
**Pronóstico SON/OND: mayor  
probabilidad de ocurrencia de  
precipitaciones normales.**

**Se mantendría el mismo patrón, si  
bien la confiabilidad es menor.**



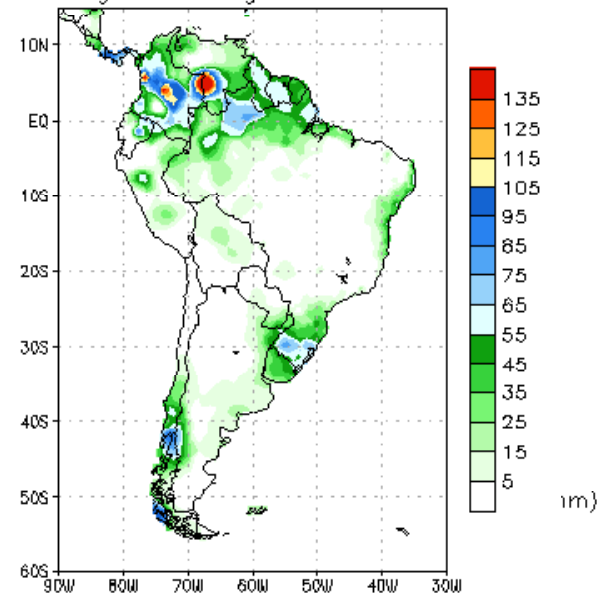


NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)  
 from: 01Aug2013  
 01Aug2013–07Aug2013 Accumulation

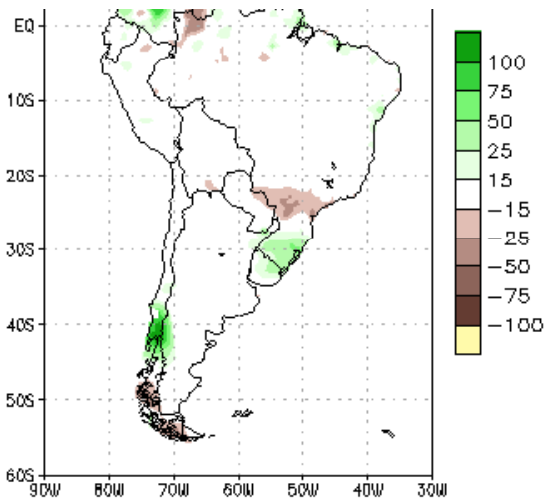


Bias correction based on last 30-day forecast error

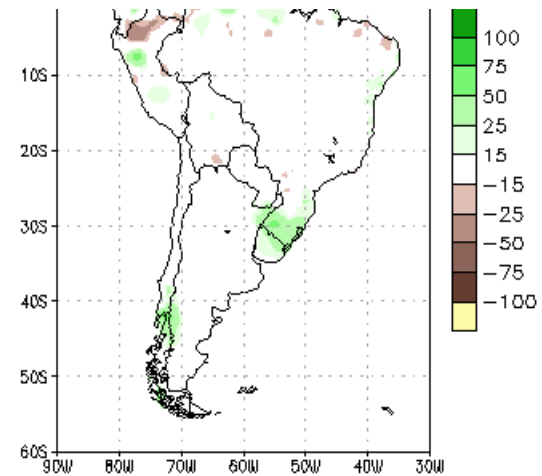
NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)  
 from: 01Aug2013  
 08Aug2013–14Aug2013 Accumulation



Bias correction based on last 30-day forecast error



Bias correction based on last 30-day forecast error  
 CPC Unified Precip Climatology (1981–2010)



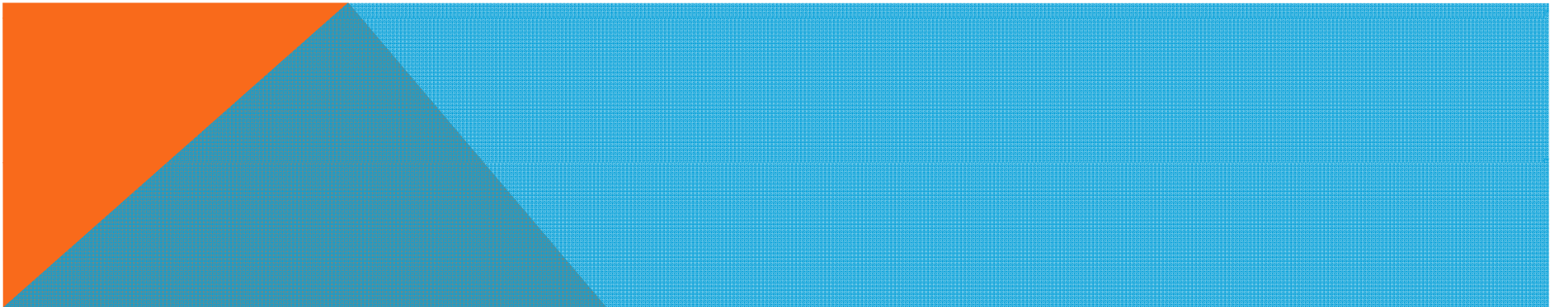
Bias correction based on past 30-day forecast error  
 CPC Unified Precip Climatology (1981–2010)

**GRACIAS POR SU ATENCIÓN**

**PREGUNTAS?**





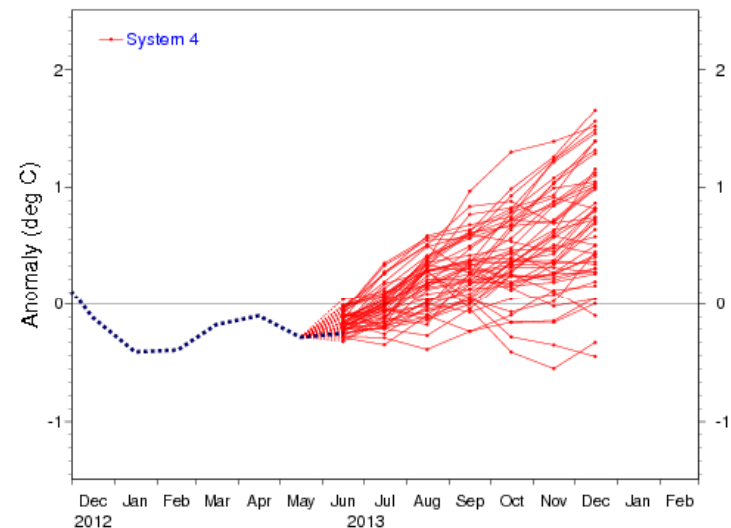
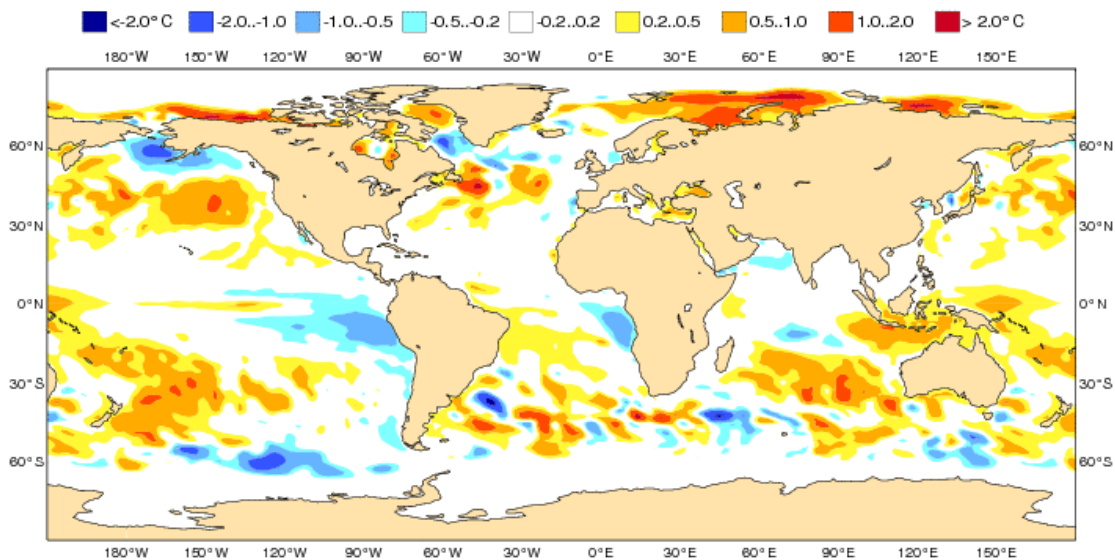


# PREVISIÓN ANOMALÍAS TSM

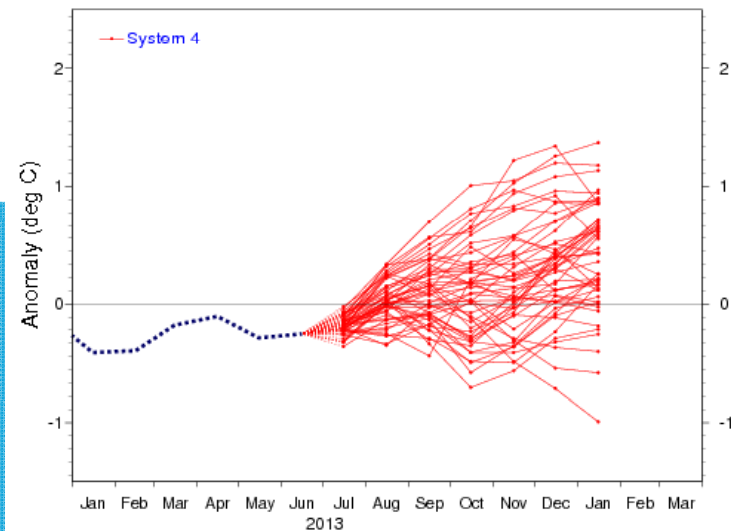
ECMWF Seasonal Forecast  
 Mean forecast SST anomaly  
 Forecast start reference is 01/07/13  
 Ensemble size = 51, climate size = 450

System 4  
 ASO 2013

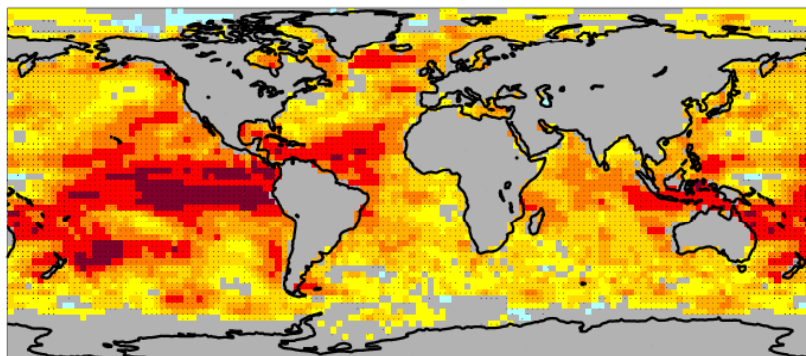
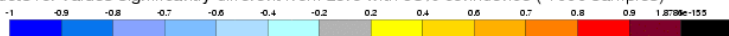
NINO3.4 SST anomaly plume  
 ECMWF forecast from 1 Jun 2013  
 Monthly mean anomalies relative to NCEP OIv2 1981-2010 climatology



NINO3.4 SST anomaly plume  
 ECMWF forecast from 1 Jul 2013  
 Monthly mean anomalies relative to NCEP OIv2 1981-2010 climatology

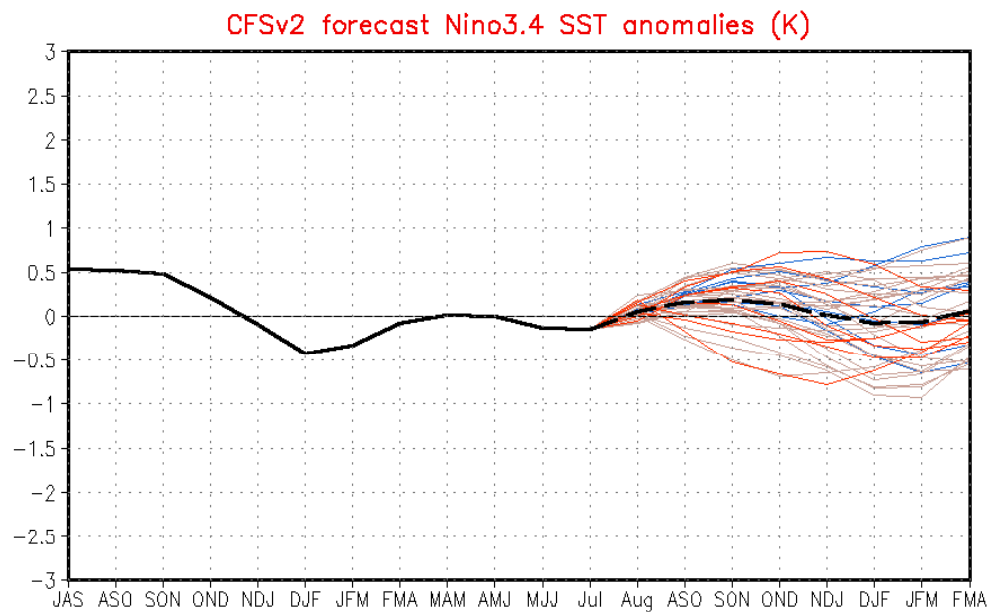
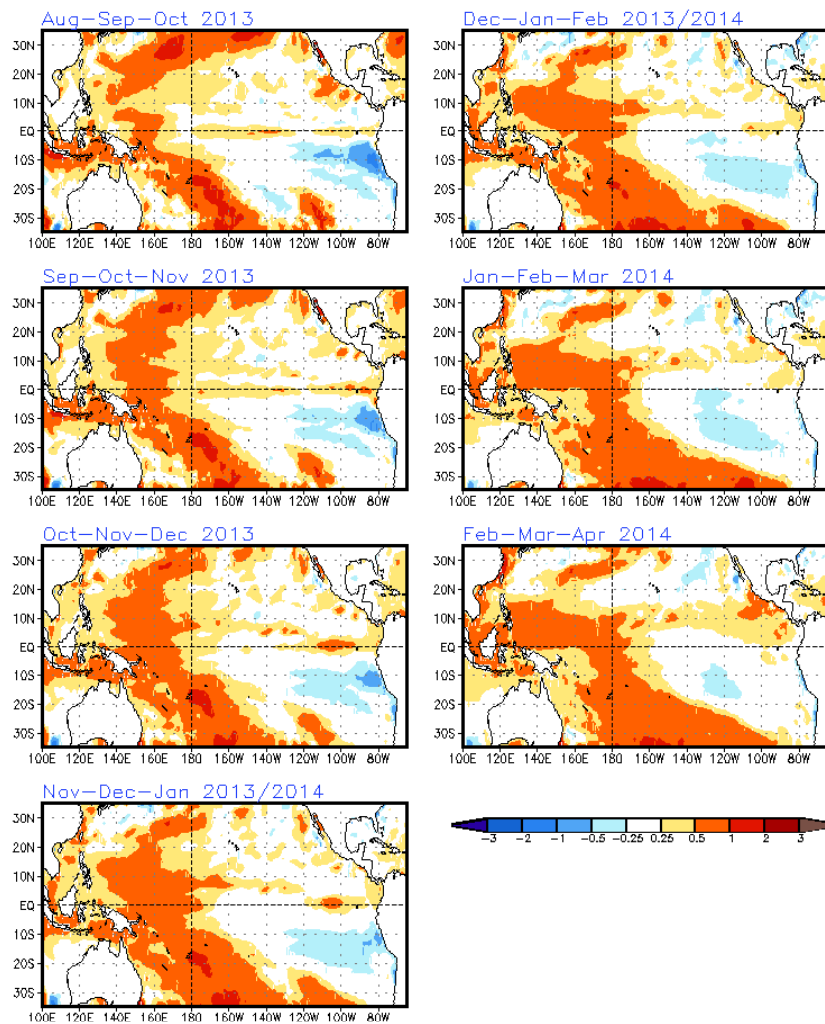


Anomaly Correlation Coefficient for ECMWF with 15 ensemble members  
 Sea Surface temperature  
 Hindcast period 1981-2010 with start in July average over months 2 to 4  
 Black dots for values significantly different from zero with 95% confidence ( 1000 samples)

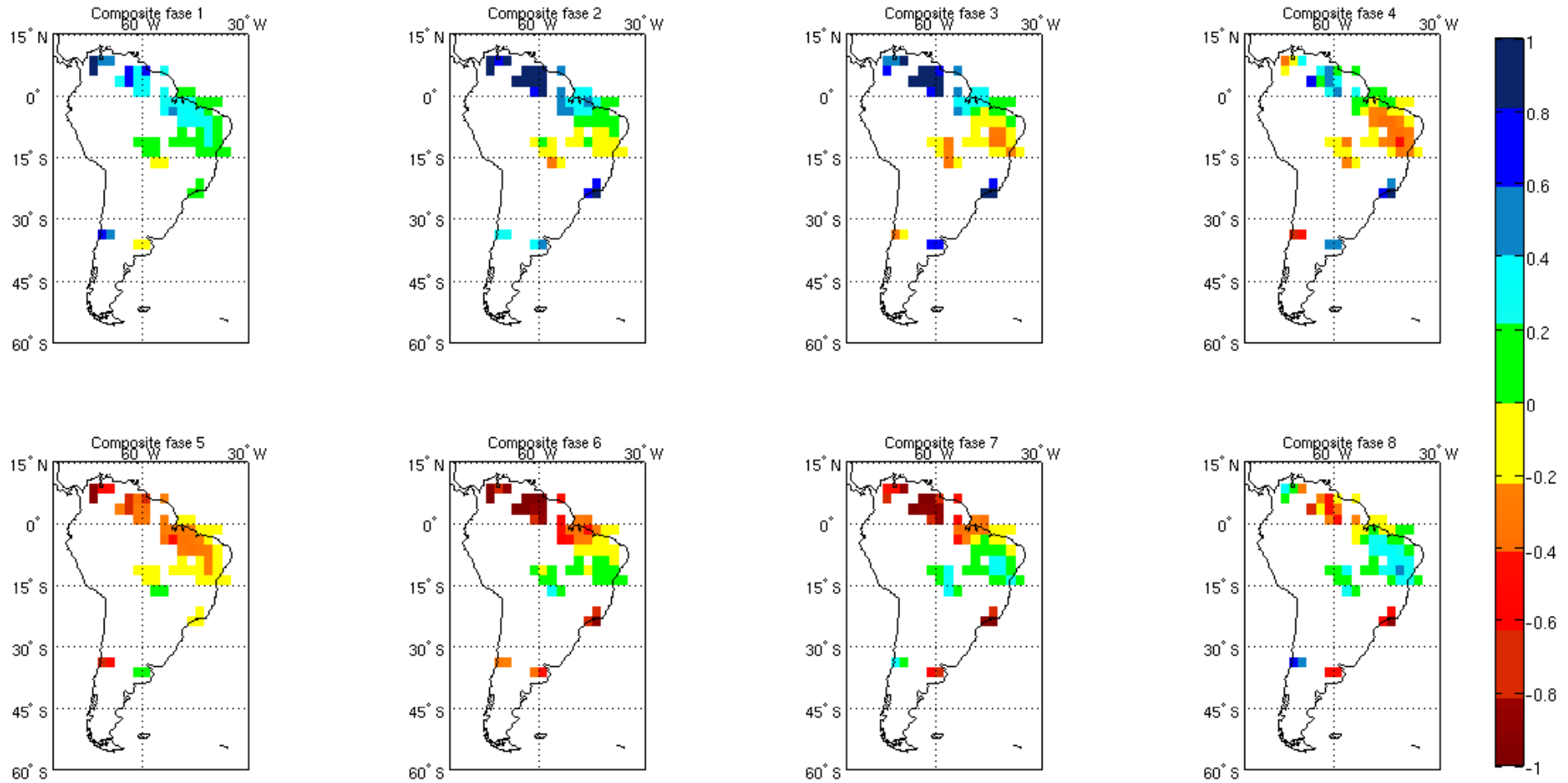


# PREVISIÓN ANOMALÍAS TSM

## CFS VERSIÓN 2



# SON- Composite PP (Liebmann)



# PRECIPITACIÓN DEF

