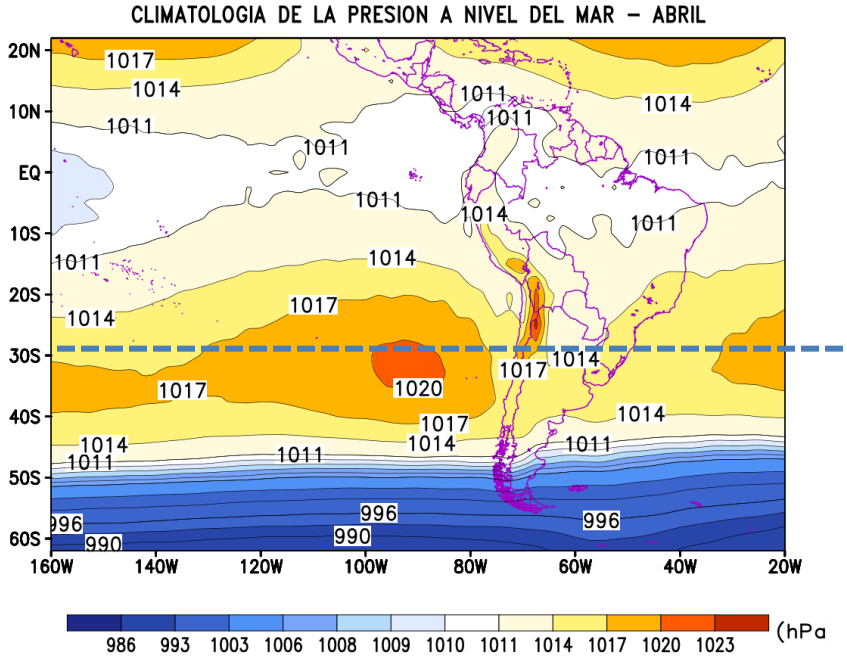
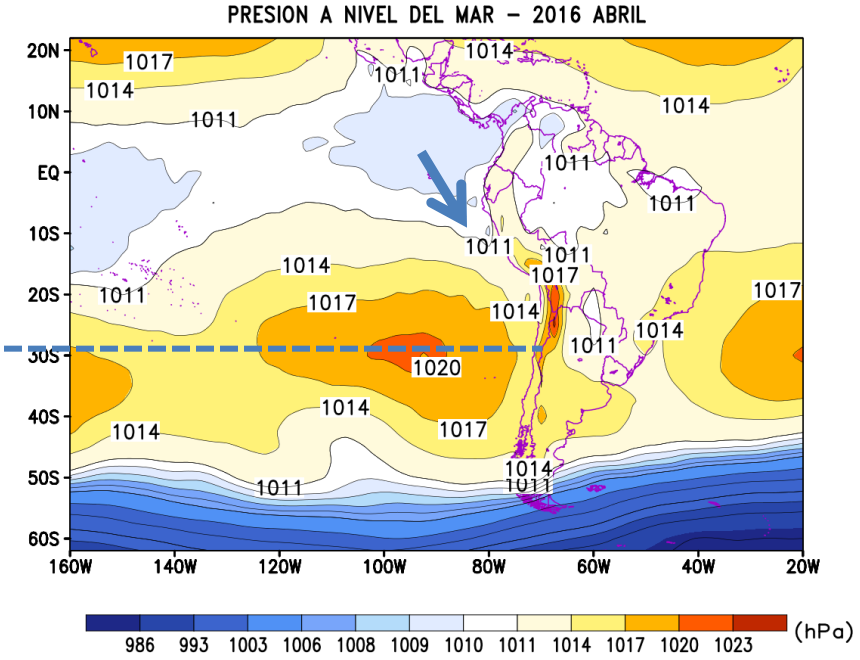
Monitoreo y pronóstico de El Niño
Abril 2016

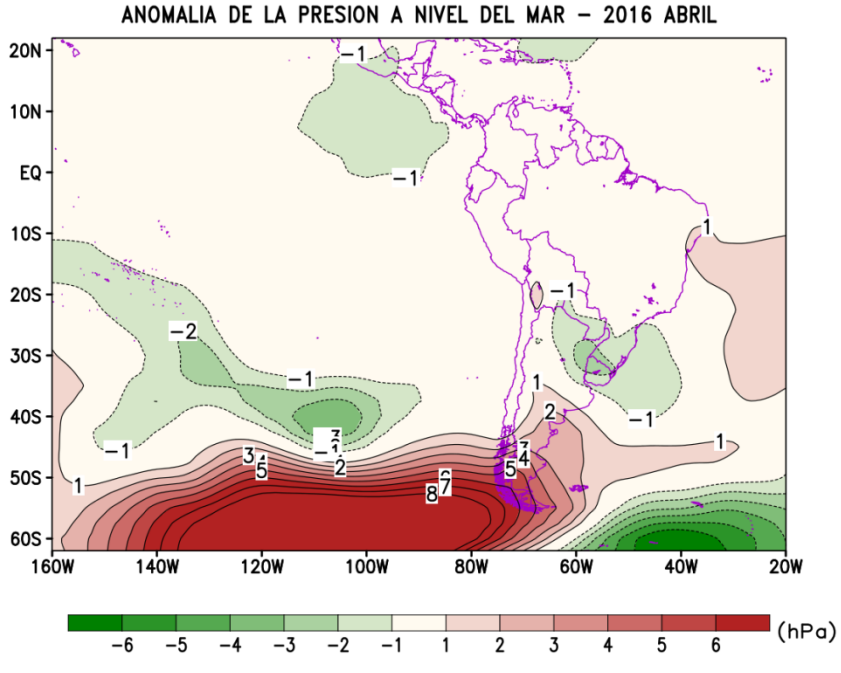
Comité Técnico ENFEN

05 de mayo del 2016

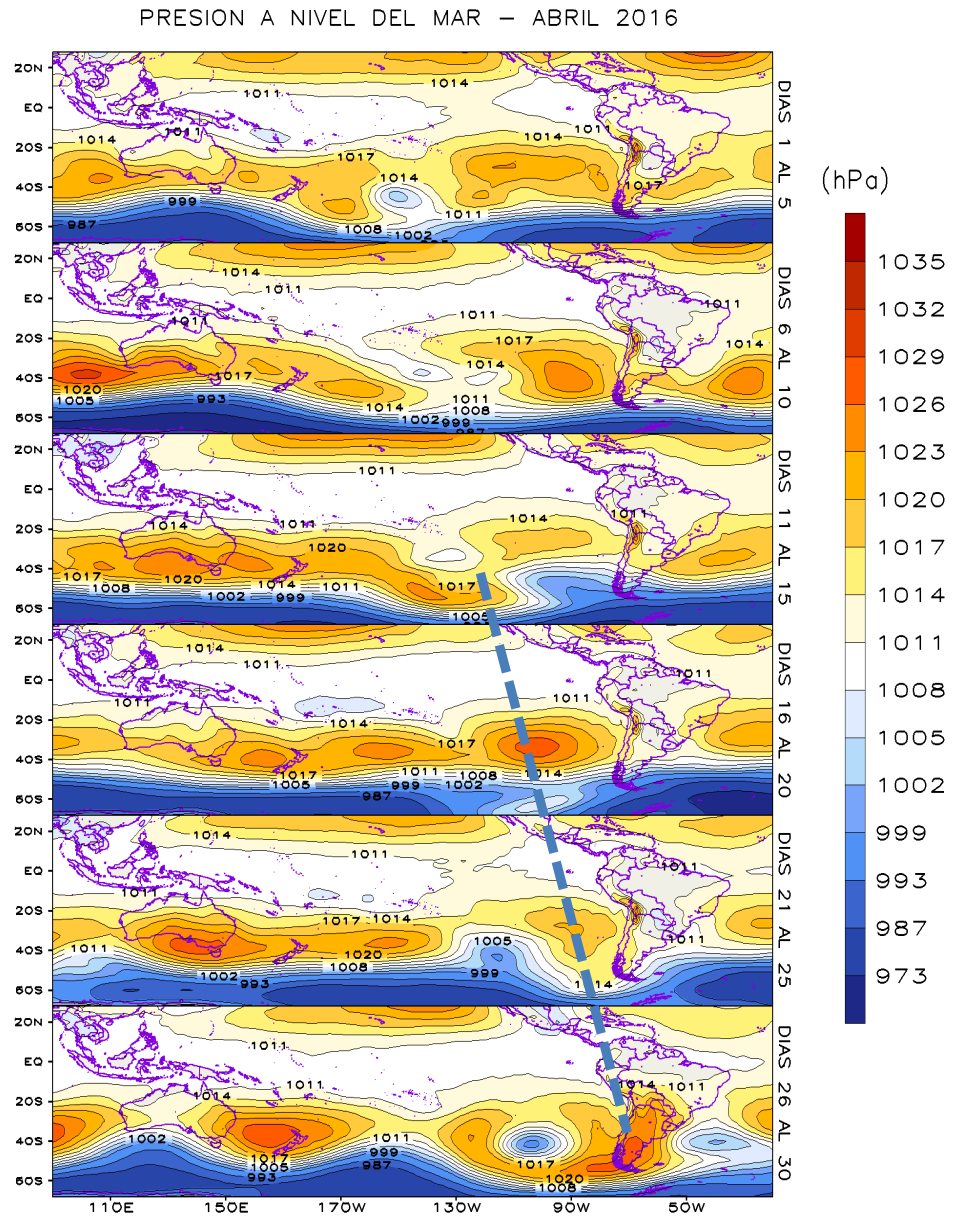
CAMPOS DE PRESIONES

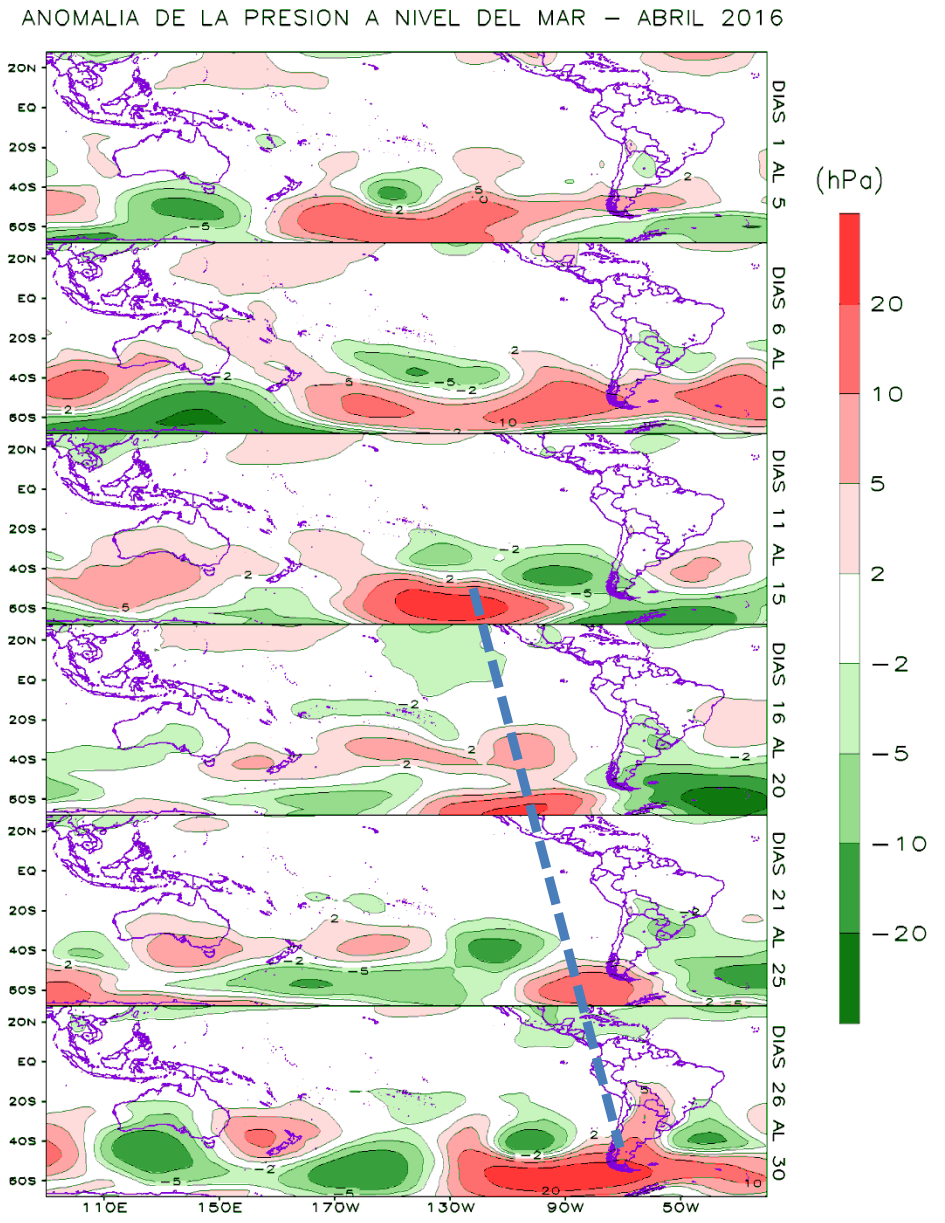




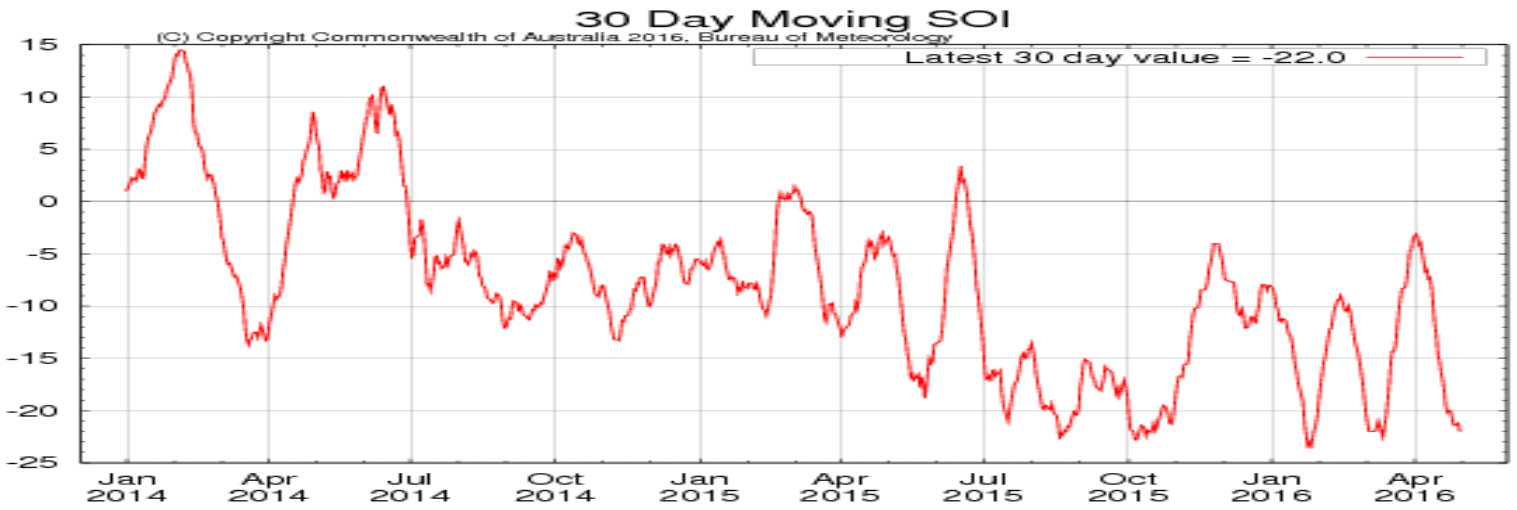


CAMPO DE PRESION Y ANOMALÍAS CADA 5 DIAS





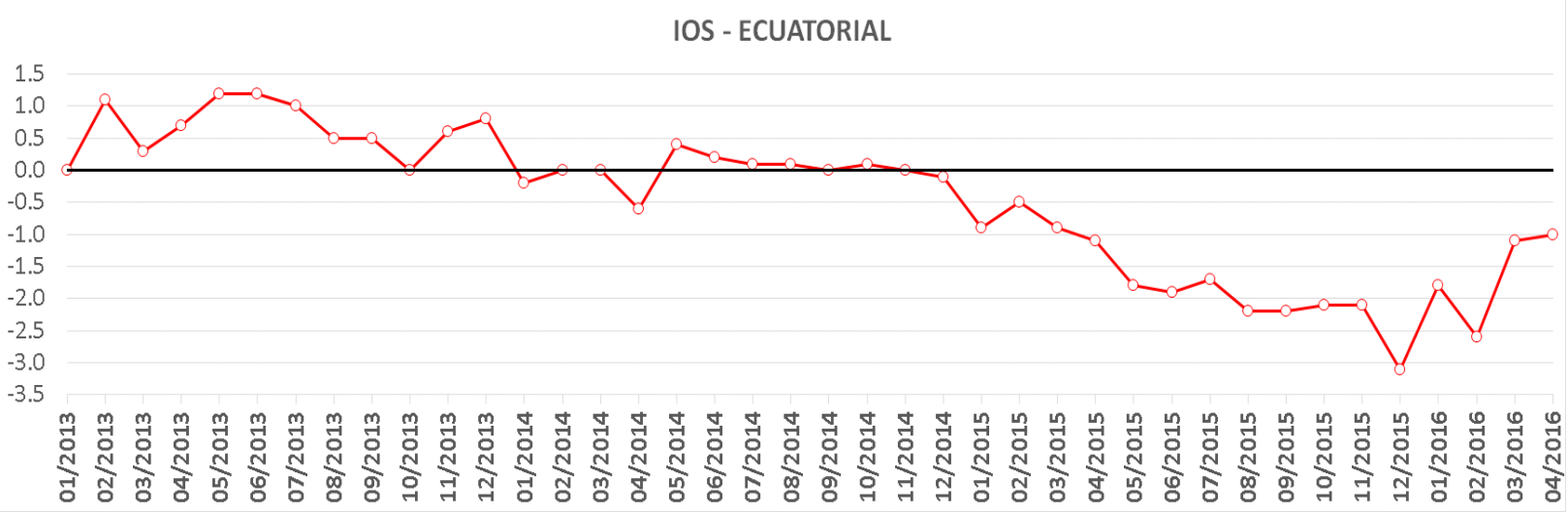
INDICE IOS



FUENTE: BUREAU OF METEOROLOGY

RANGO DE VALORES NORMALES ± 7

Last value 20160401 – 20160430 : -22.0

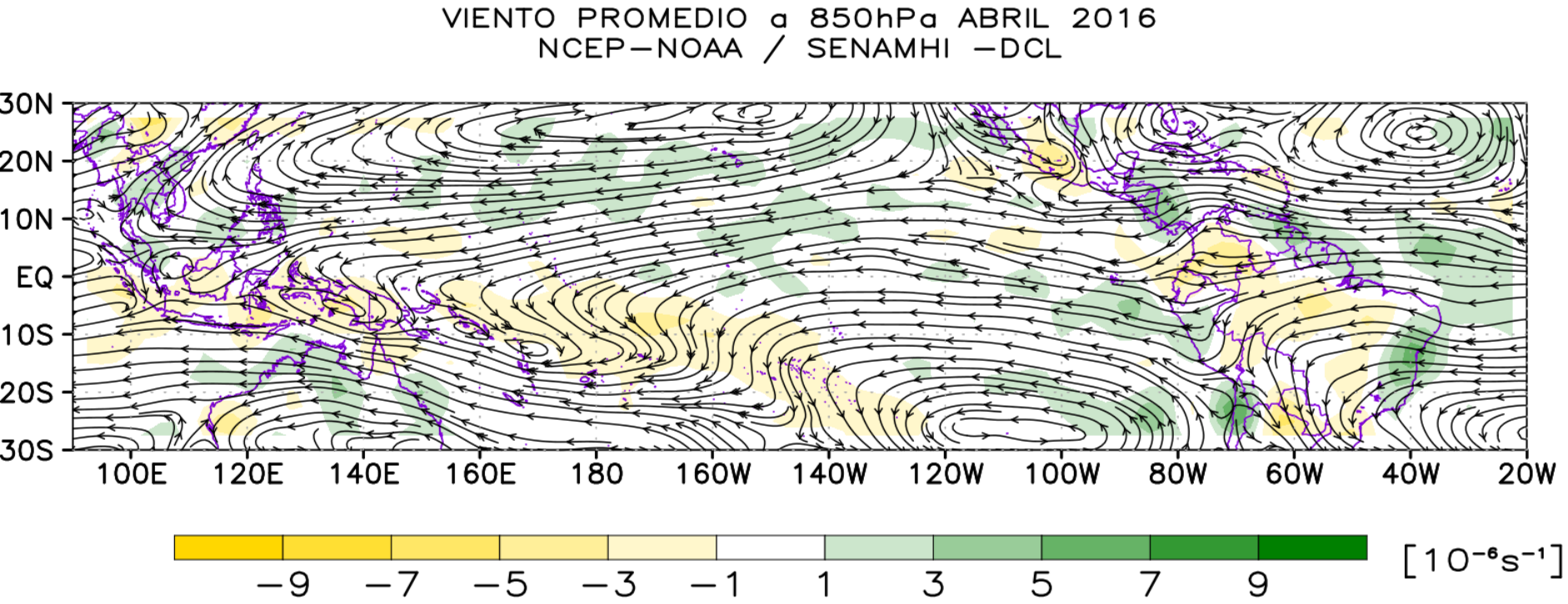


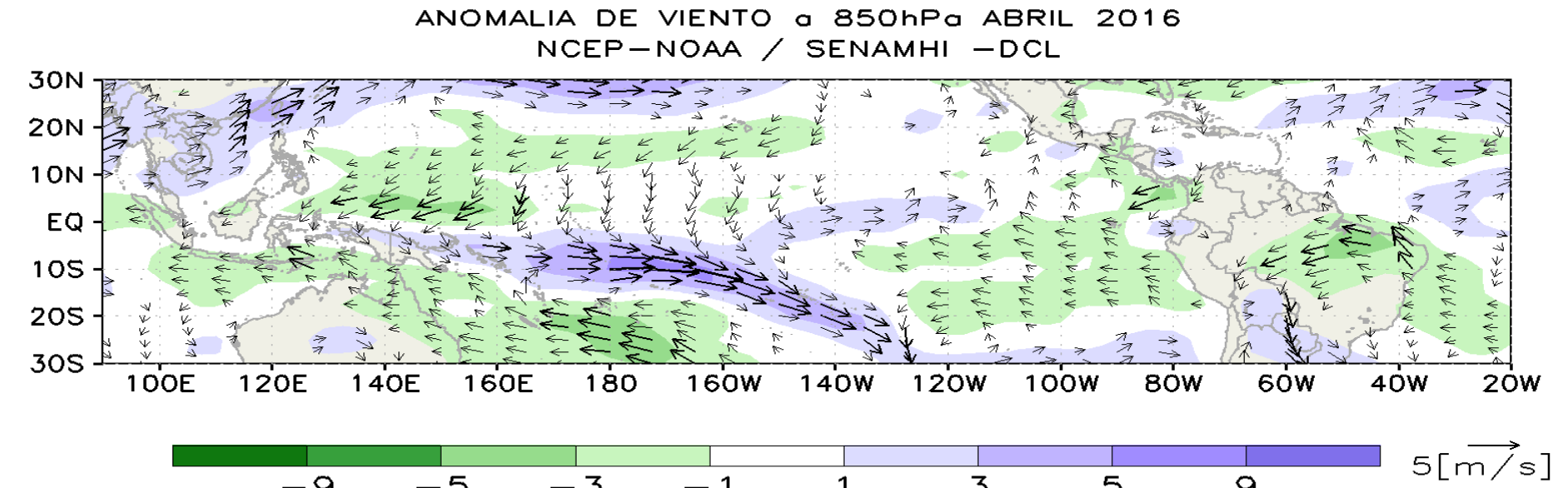
FUENTE: NOAA-SENAMHI

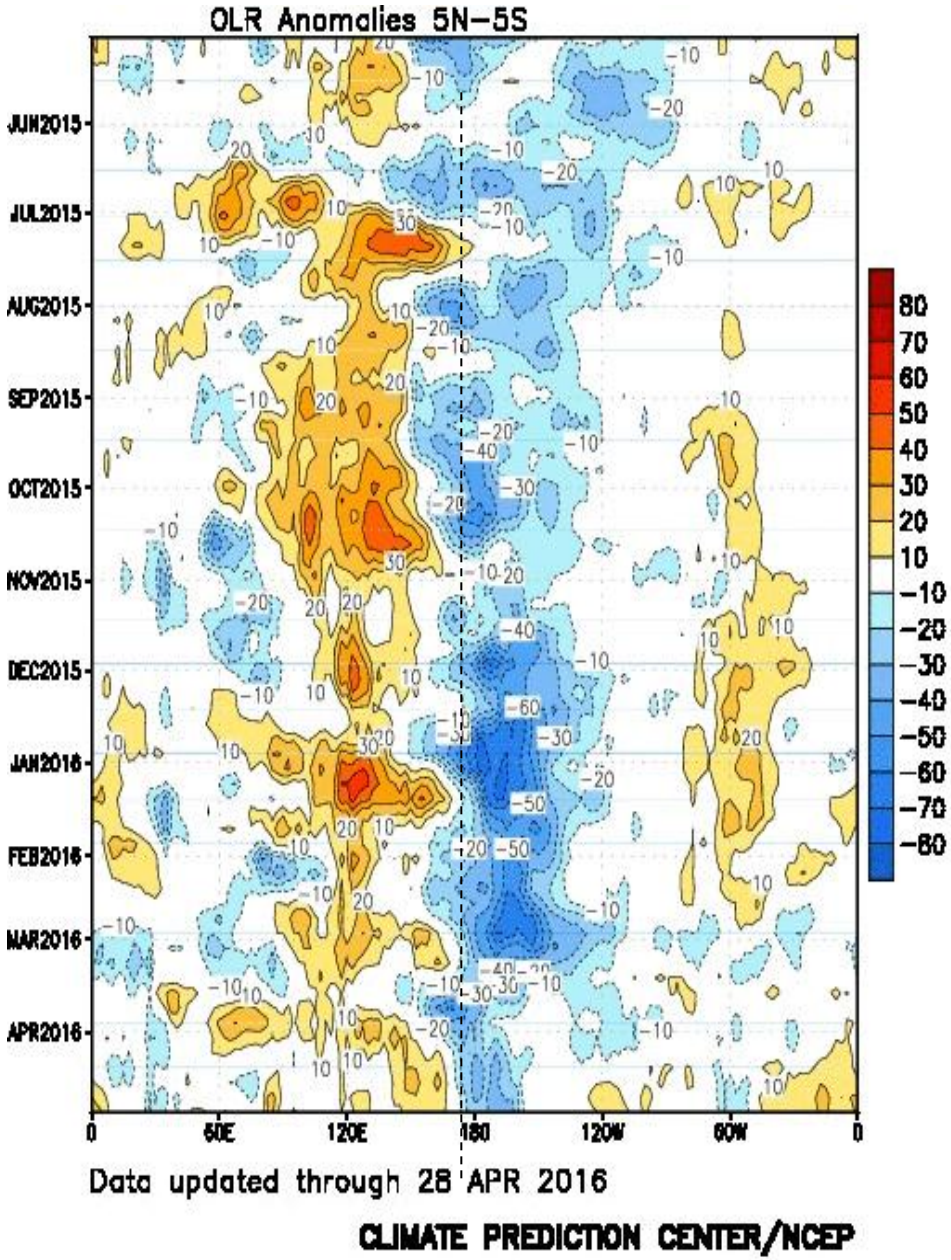
RANGO DE VALORES NORMALES ± 5

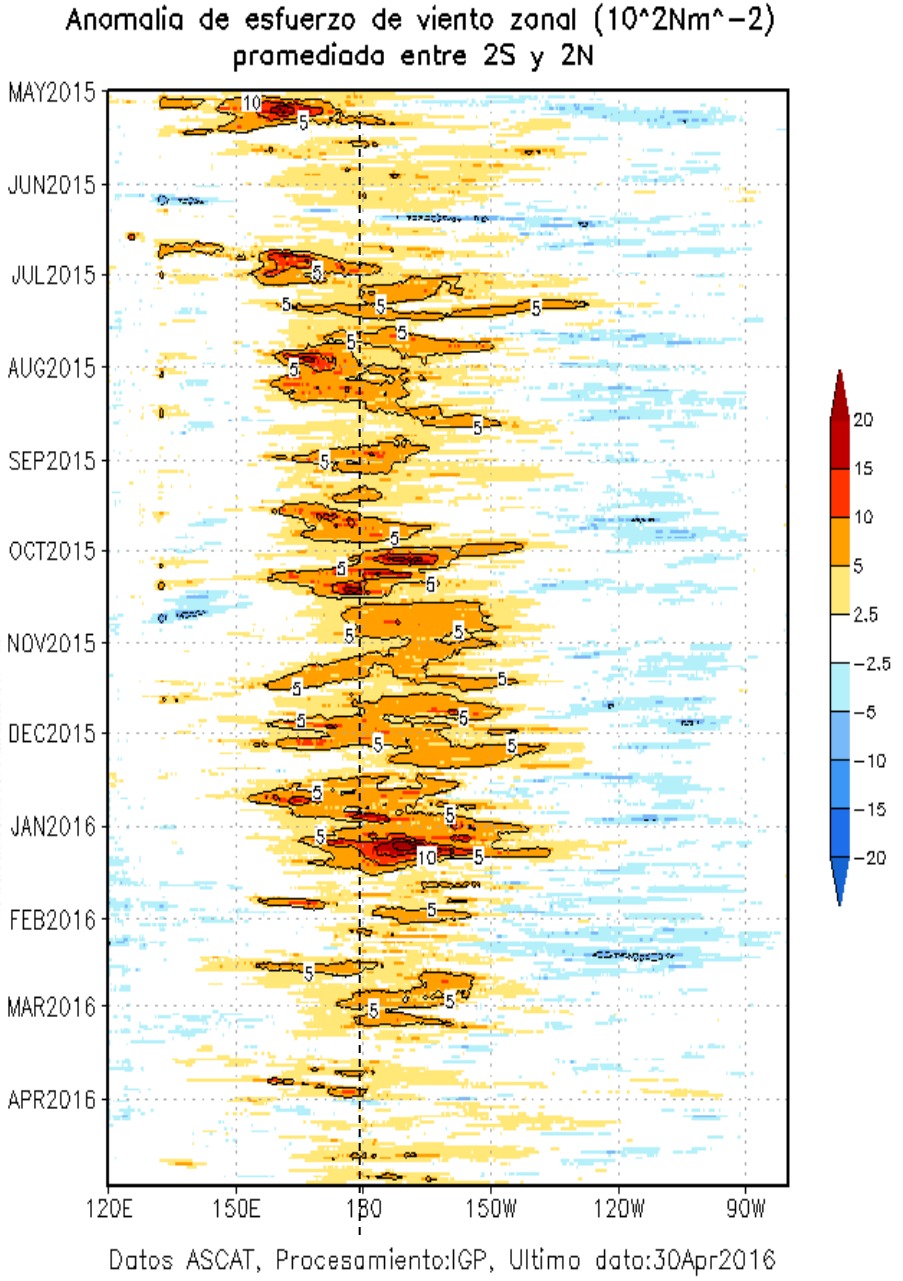
Last value 20160401 – 20160429 : -1.0

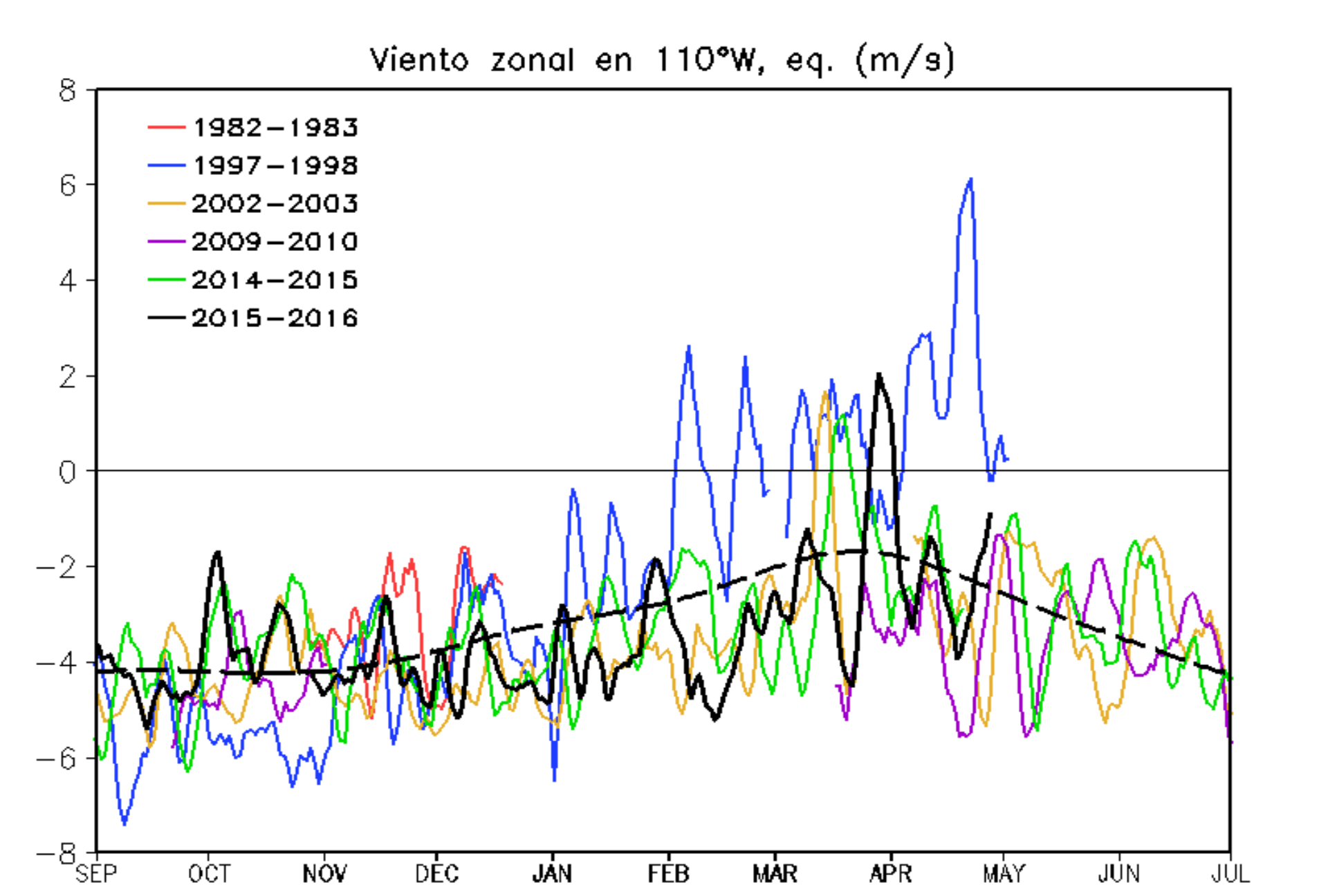
VIENTOS A 850hPa



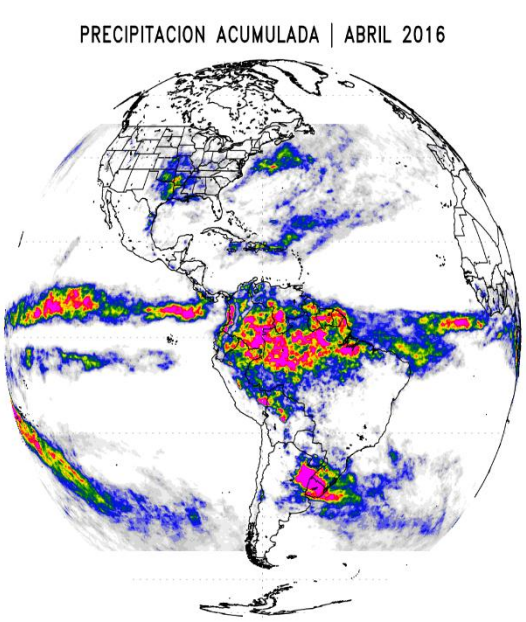


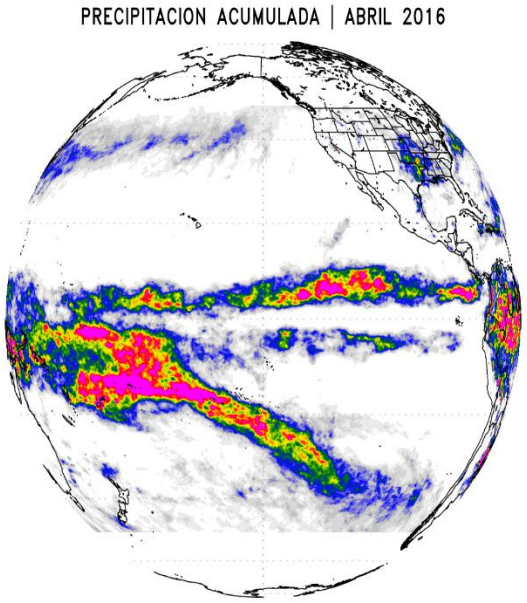

OLR Anomalies 5N-5S
JUN2015
JUL2015
AUG2015
SEP2015
OCT2015
NOV2015
DEC2015
JAN2016
FEB2016
MAR2016
APR2016
0
60E
120E
180
120W
60W
0
80
70
60
50
40
30
20
10
-10
-20
-30
-40
-50
-60
-70
-80
Data updated through 28 APR 2016
CLIMATE PREDICTION CENTER/NCEP

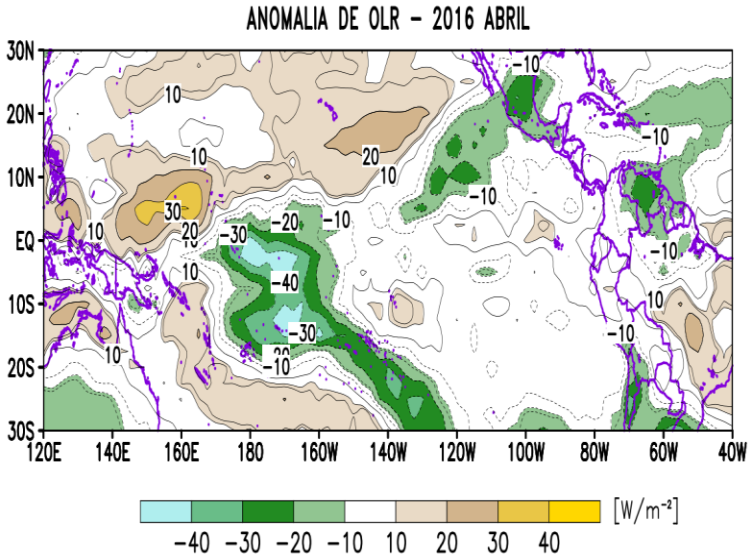

Anomalia de esfuerzo de viento zonal (10^2Nm^-2)
promediada entre 2S y 2N
MAY2015
JUN2015
JUL2015
AUG2015
SEP2015
OCT2015
NOV2015
DEC2015
JAN2016
FEB2016
MAR2016
APR2016
120E
150E
180
150W
120W
90W
20
15
10
5
2.5
-2.5
-5
-10
-15
-20
Datos ASCAT, Procesamiento:IGP, Ultimo data:30Apr2016


Viento zonal en 110°W, eq. (m/s)
1982−1983
1997−1998
2002−2003
2009−2010
2014−2015
2015−2016
8
6
4
2
0
−2
−4
−6
−8
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
Media movil de 5 dias. Datos: TAO/TRITON (PMEL), Procesamiento: IGP

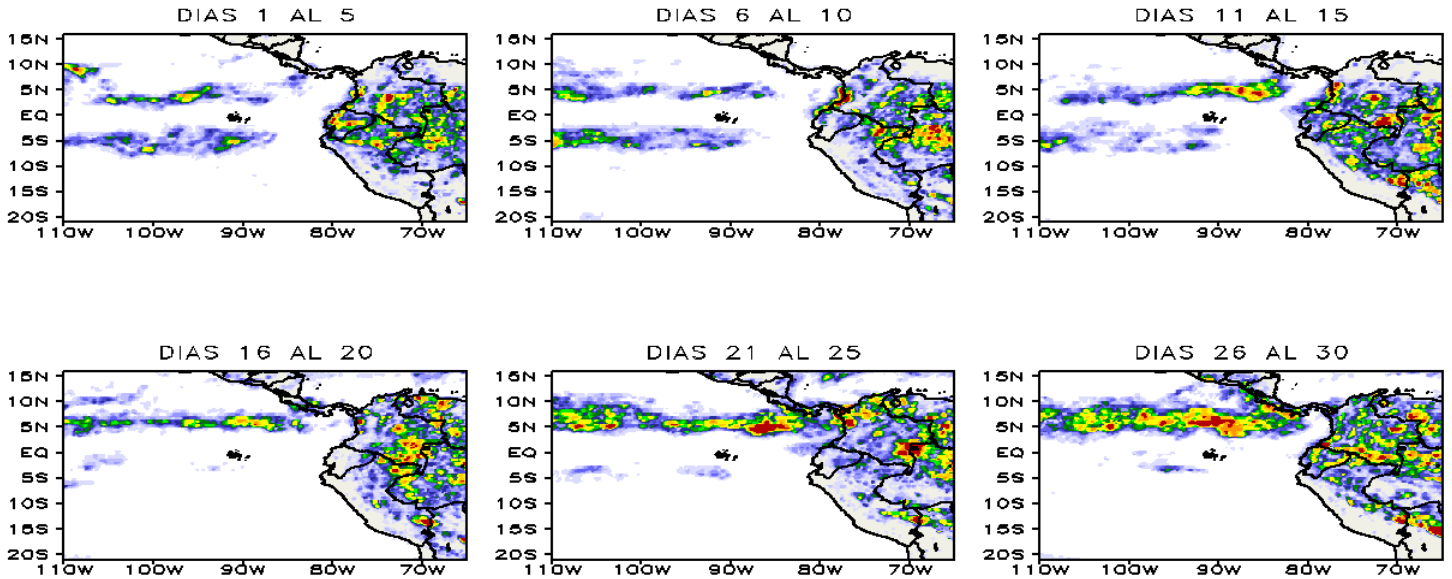
CONVECCIÓN & PRECIPITACIÓN

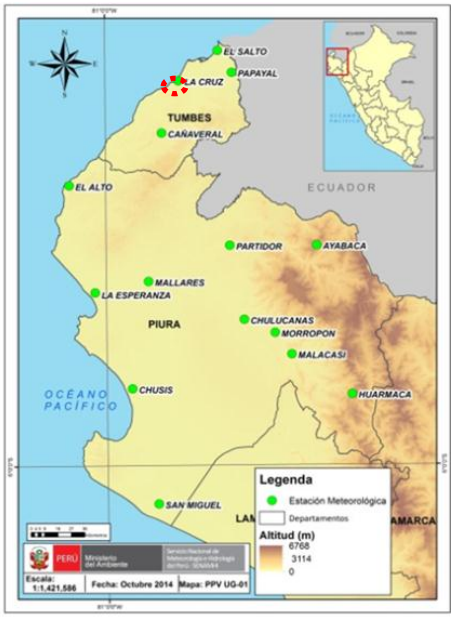


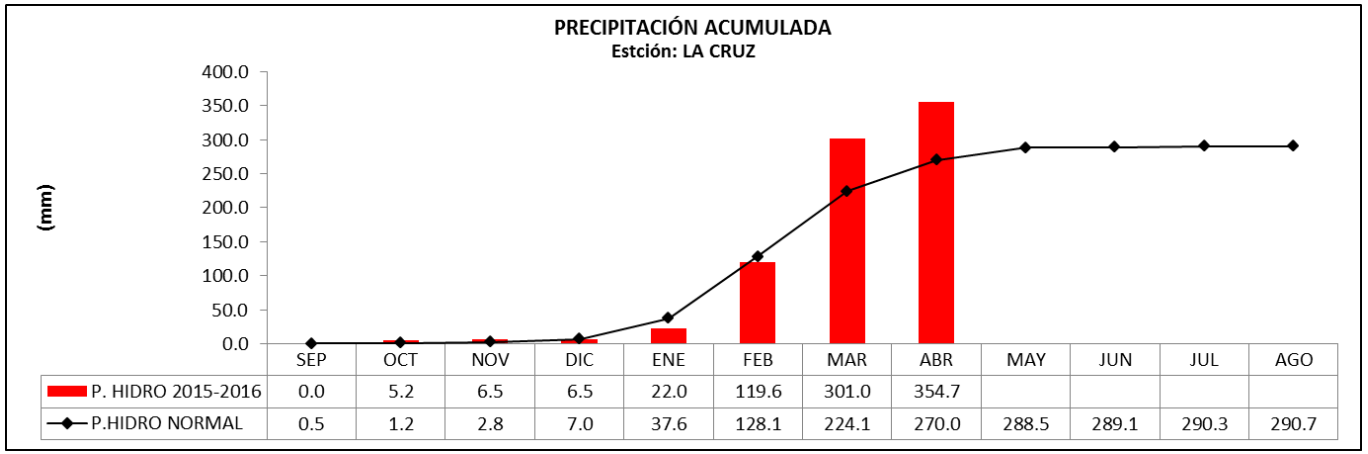




TRMM – PRECIPITACION ACUMULADA CADA 5 DIAS – ABRIL 2016

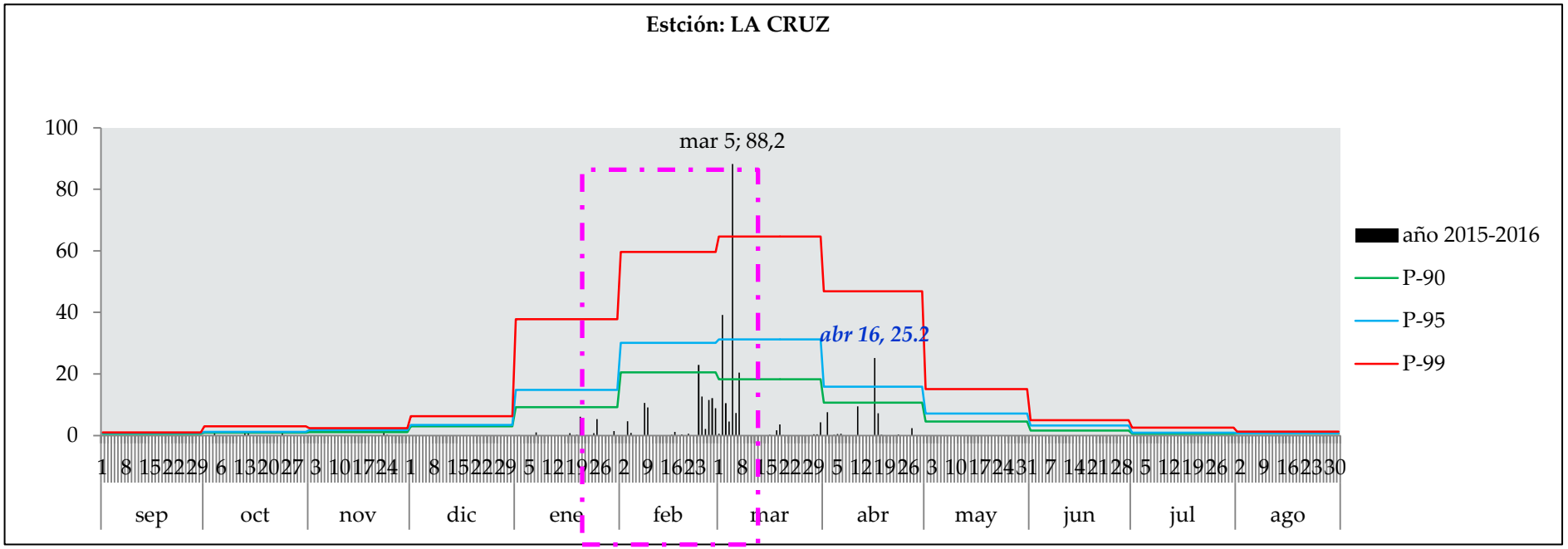


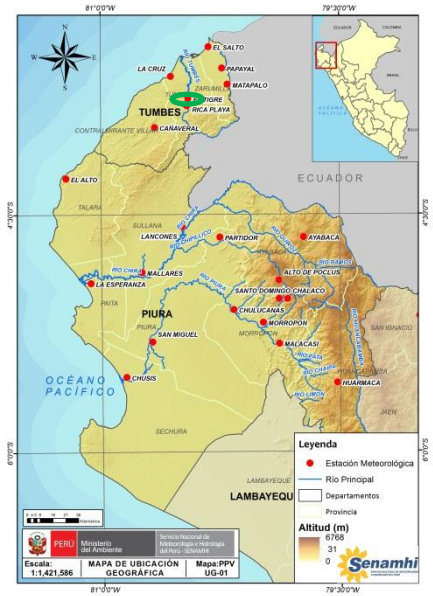


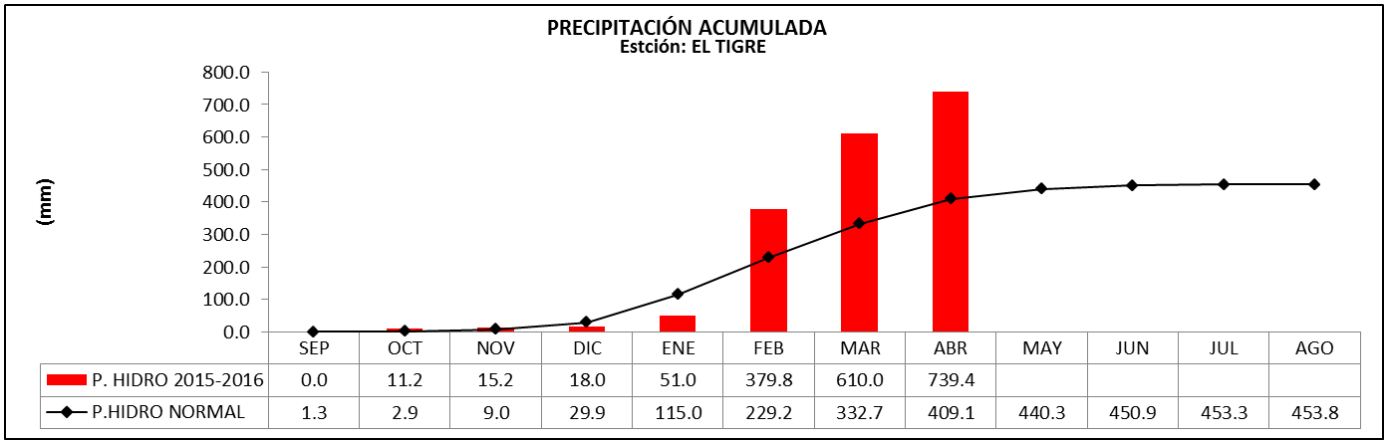


	SEP	OCT	NOV	DIC	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO
P. HIDRO 2015-2016	0.0	5.2	6.5	6.5	22.0	119.6	301.0	354.7				
P.HIDRO NORMAL	0.5	1.2	2.8	7.0	37.6	128.1	224.1	270.0	288.5	289.1	290.3	290.7

ACUMULADO MENSUAL	SEP	OCT	NOV	DIC	ENE	FEB	MAR	ABR
NORMAL MENSUAL	0.5	0.7	1.6	4.2	30.6	90.5	96.1	45.9
A. MENSUAL 2015-2016	0	5.2	1.3	0	15.5	97.61	181.4	53.7

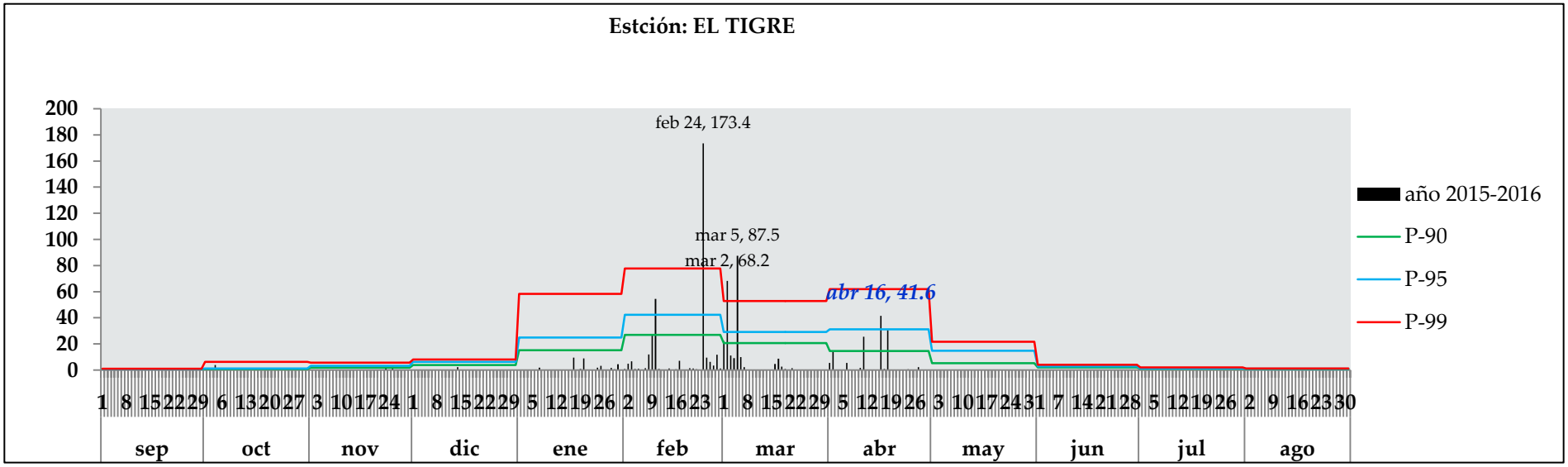


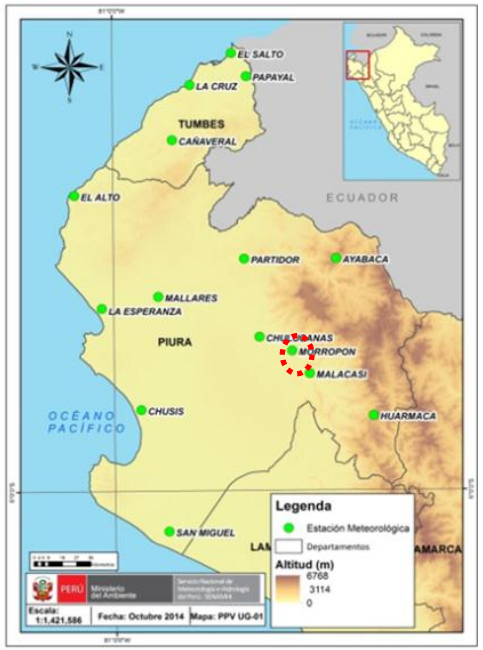


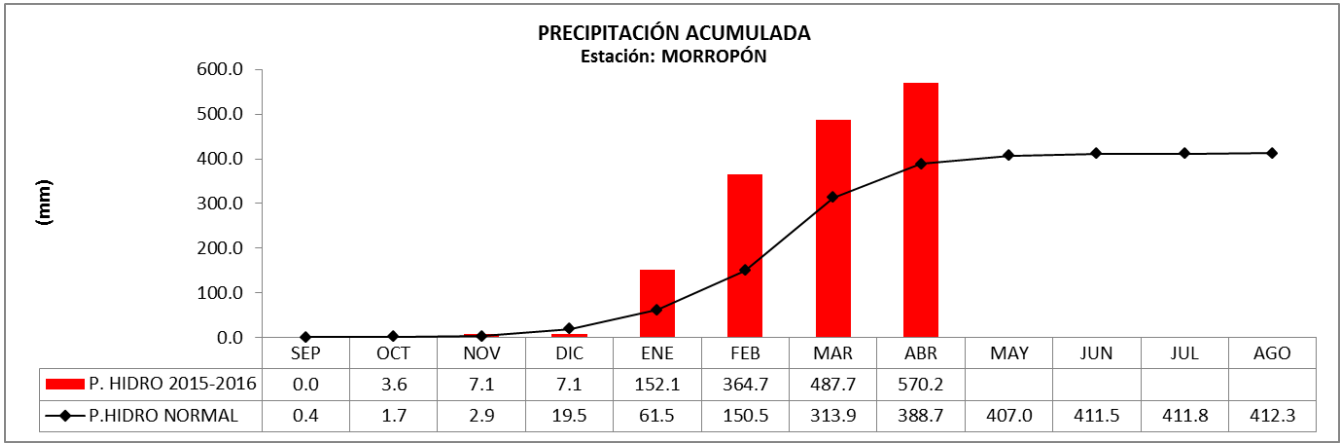


	SEP	OCT	NOV	DIC	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO
P. HIDRO 2015-2016	0.0	11.2	15.2	18.0	51.0	379.8	610.0	739.4				
P.HIDRO NORMAL	1.3	2.9	9.0	29.9	115.0	229.2	332.7	409.1	440.3	450.9	453.3	453.8

ACUMULADO MENSUAL	SEP	OCT	NOV	DIC	ENE	FEB	MAR	ABR
NORMAL MENSUAL	1.3	1.7	6.0	20.9	85.1	114.2	103.5	76.4
A. MENSUAL 2015-2016	0	11.2	4	2.8	33	328.8	230.2	129.4

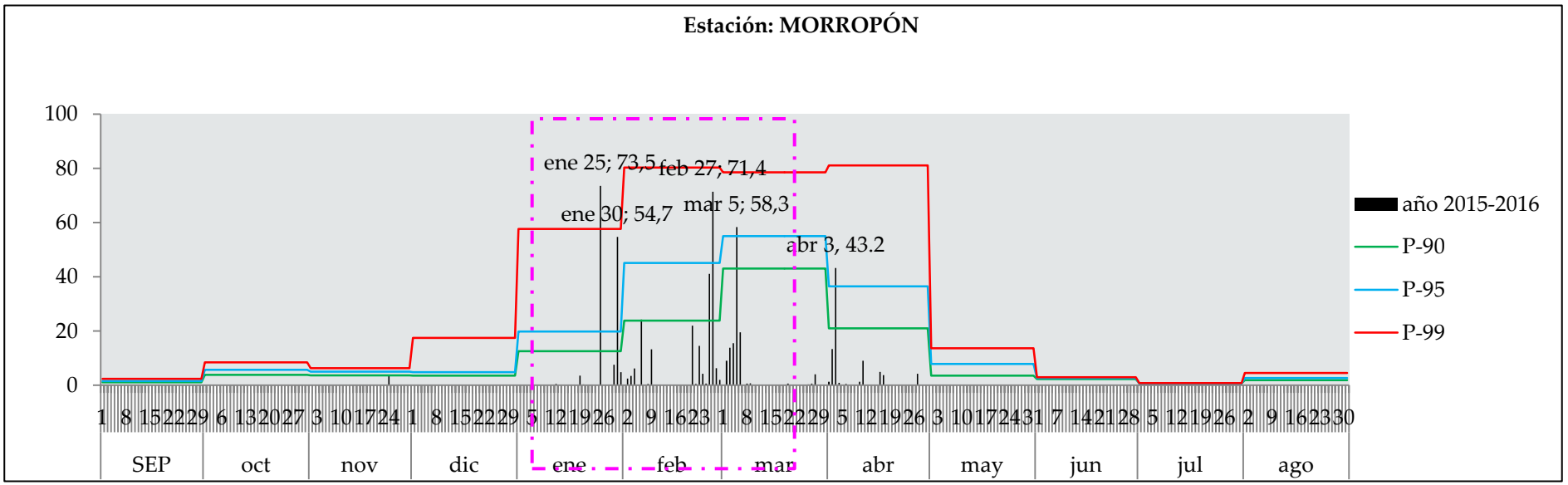


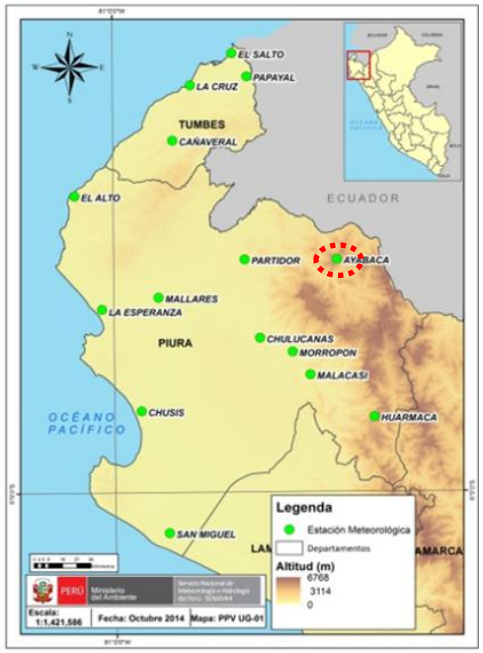


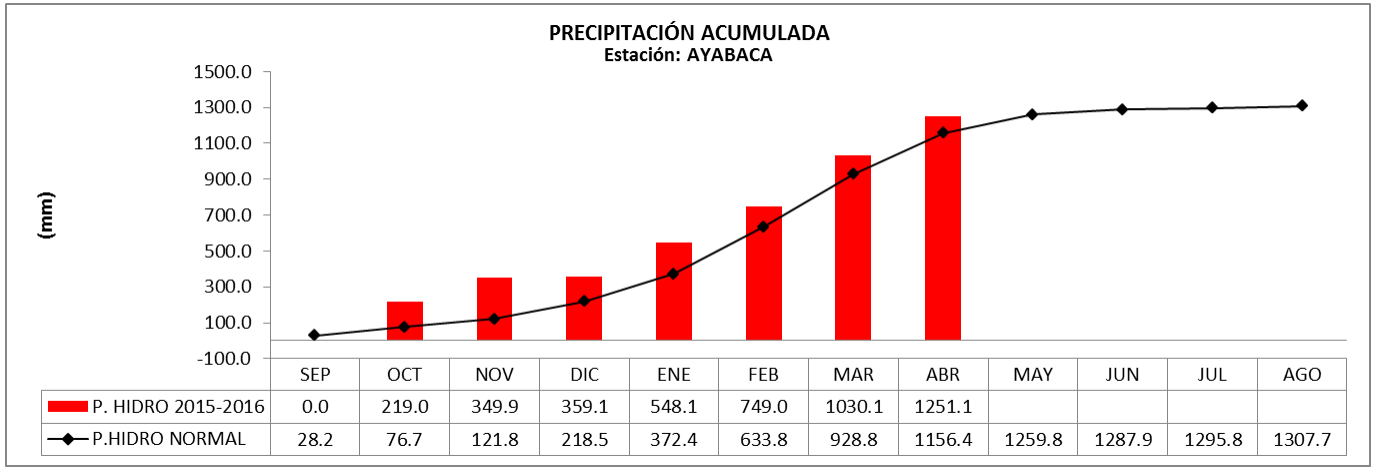


	SEP	OCT	NOV	DIC	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO
P. HIDRO 2015-2016	0.0	3.6	7.1	7.1	152.1	364.7	487.7	570.2				
P.HIDRO NORMAL	0.4	1.7	2.9	19.5	61.5	150.5	313.9	388.7	407.0	411.5	411.8	412.3

ACUMULADO MENSUAL	SEP	OCT	NOV	DIC	ENE	FEB	MAR	ABR
NORMAL MENSUAL	0.4	1.3	1.1	16.7	42.0	89.0	163.4	74.8
A. MENSUAL 2015-2016	0	3.6	3.5	0	145	212.6	123	82.5

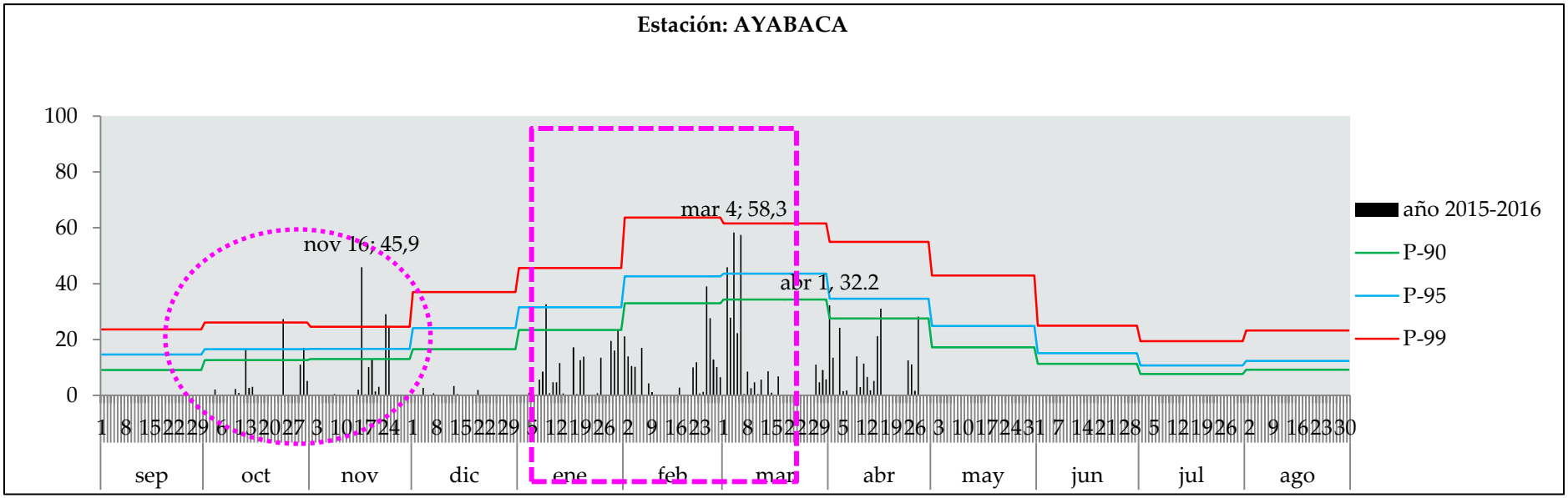






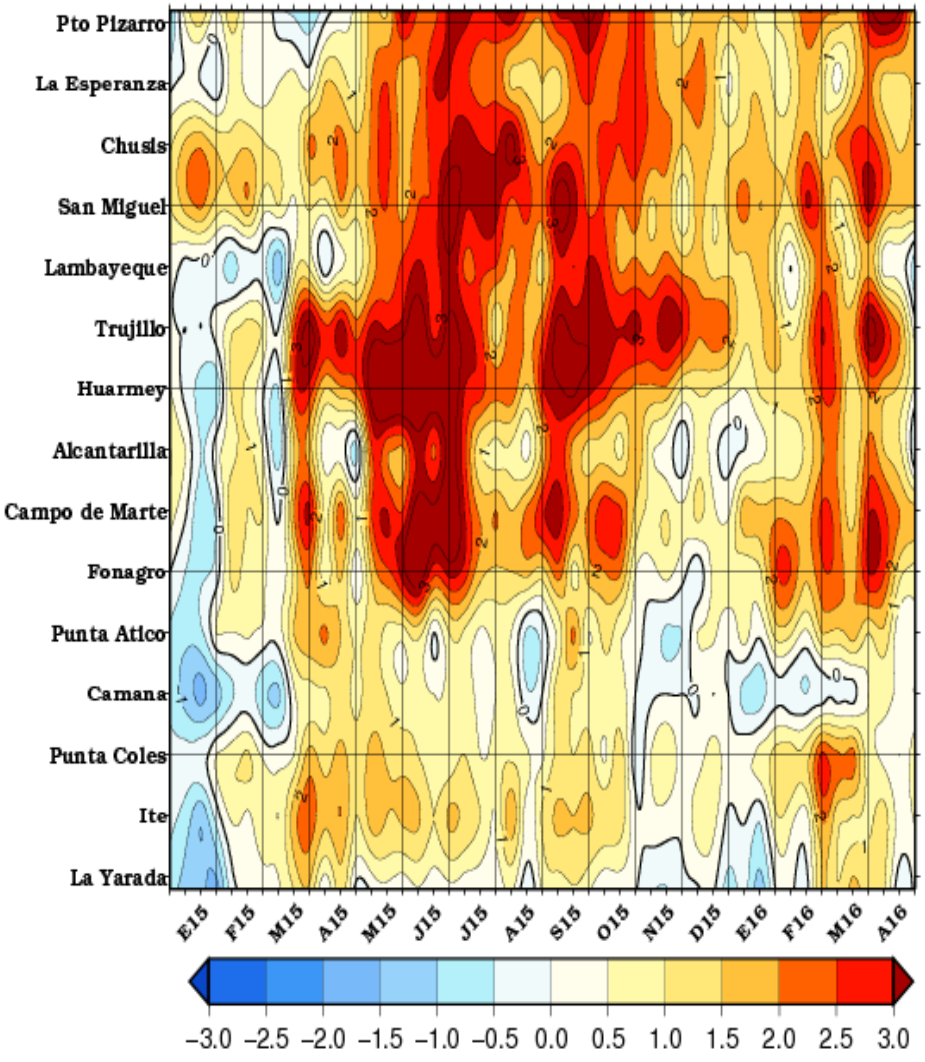
	SEP	OCT	NOV	DIC	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO
P. HIDRO 2015-2016	0.0	219.0	349.9	359.1	548.1	749.0	1030.1	1251.1				
P.HIDRO NORMAL	28.2	76.7	121.8	218.5	372.4	633.8	928.8	1156.4	1259.8	1287.9	1295.8	1307.7

ACUMULADO MENSUAL	SEP	OCT	NOV	DIC	ENE	FEB	MAR	ABR
NORMAL MENSUAL	28.2	48.5	45.1	96.7	153.9	261.5	295.0	227.6
A. MENSUAL 2015-2016	0	219	130.9	9.2	189	200.9	281.1	221

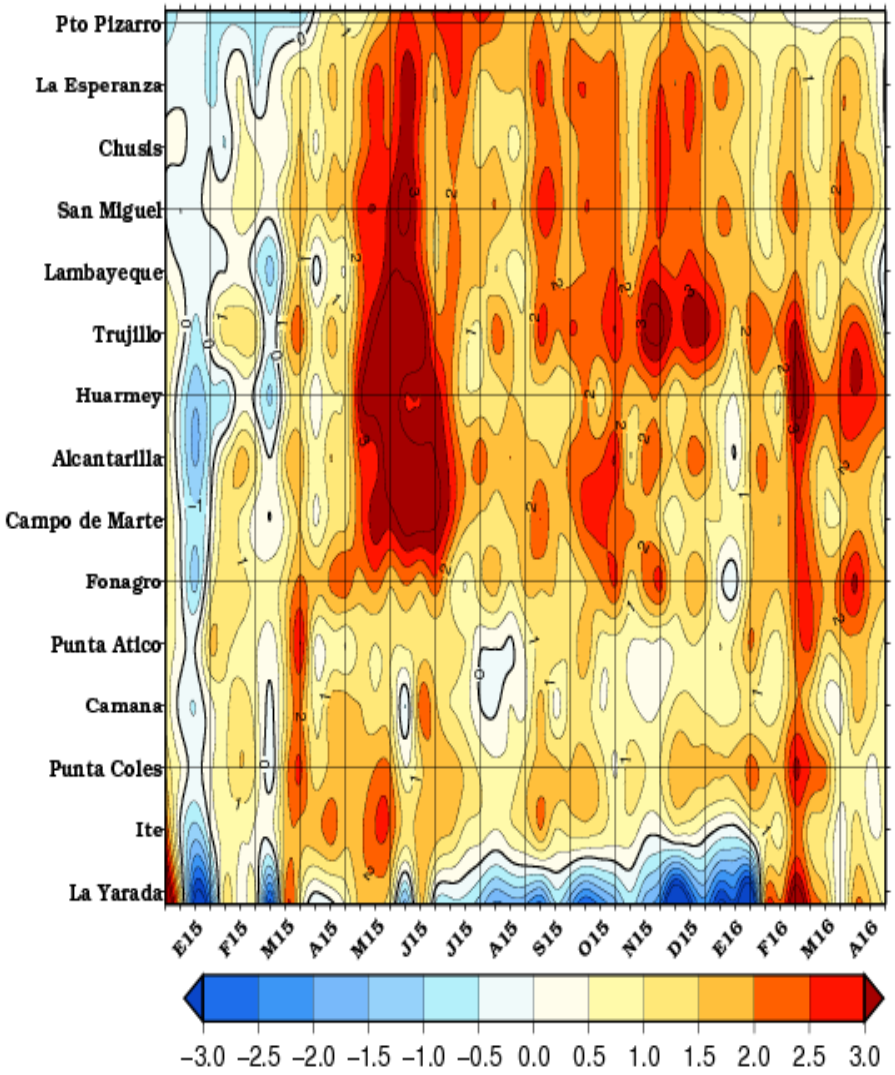


TEMPERATURAS EXTREMAS DEL AIRE

Anomalías de la Temperatura Máxima



Anomalía de la Temperatura Mínima



TEMPERATURAS EXTREMAS DEL AIRE

Tabla1

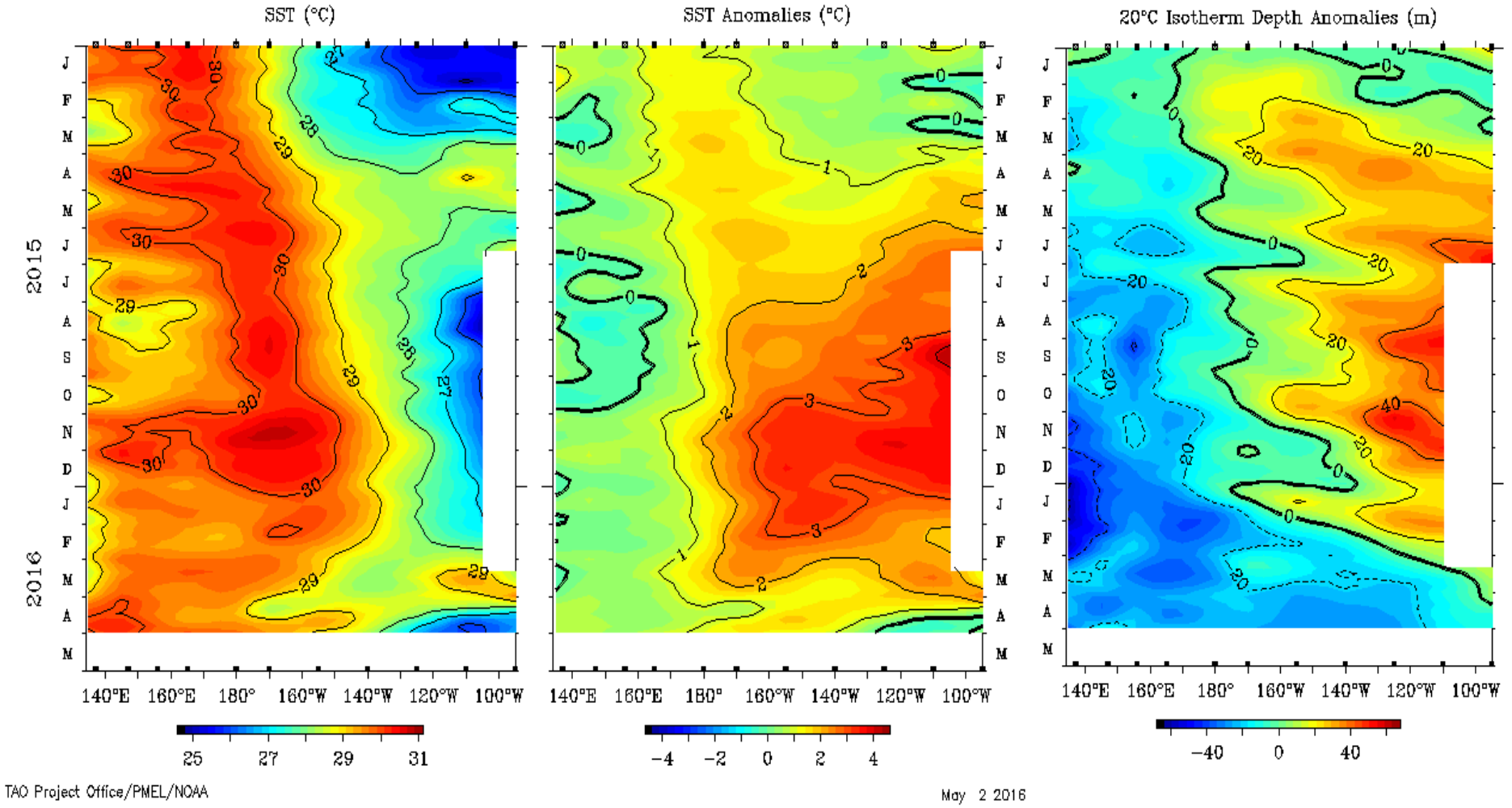
Anomalías de las temperaturas extremas del aire
Abril 2016

Estación	Longitud (°W)	Latitud (°S)	Altura (m)	Temperatura Máxima (°C)	Ciimatología Tmáxima (°C)	Temperatura Mínima (°C)	Ciimatología Tmínima (°C)	Anomalía TMAX (°C)	Anomalía TMIN (°C)
Puerto Pizarro	80° 27'26	03° 30'30	1	34.1	31.4	24.2	23.8	2.7	0.4
La Esperanza	81° 04'4	04° 55'55	30	32.0	30.6	22.7	21.9	1.4	0.9
Chusis	80° 50'50	05° 31'31	14	33.0	31.3	22.0	21.0	1.7	1.0
San Miguel	80° 40'55	05° 18'14	20	34.0	32.2	22.1	20.7	1.8	1.4
Lambayeque	79° 55'17	06° 42'13	18	27.7	27.8	20.3	19.9	-0.1	0.4
Trujillo	78° 35	08° 03	30	27.1	25.4	19.6	17.9	1.7	1.7
Huarmey	78° 10'1	10° 05'1	20	26.2	25.1	19.9	17.2	1.1	2.7
Alcantarilla	77° 33'1	11° 03'1	120	27.3	26.7	19.3	17.6	0.7	1.7
Campo de Marte	77° 02'35.4	12° 04'13.9	159	26.3	24.2	20.6	18.6	2.1	2.0
Fonagro	76° 08'8	13° 28'28	60	27.7	26.2	19.9	17.6	1.5	2.3
Punta Atico	73° 41'40	16° 13'43	20	24.0	23.3	18.5	17.2	0.7	1.3
Camana	72° 41'49	16° 36'24	15	25.2	24.9	18.9	17.7	0.4	1.2
Punta Coles	71° 22'24.5	17° 41'55.2	70	23.7	23.3	18.3	17.5	0.5	0.7
Ite	70° 57'57	17° 51'50	160	24.1	23.4	18.2	17.4	0.7	0.8
La Yarada	70°31'25	18°12'41	58	25.4	25.0	16.8	15.5	0.4	1.3

Figura 1

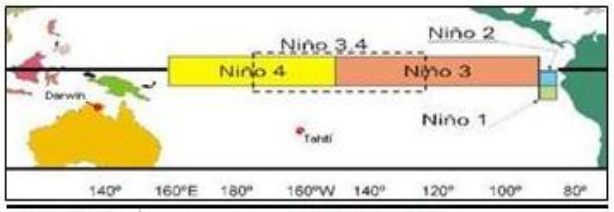
Distribución de la las estaciones meteorológicas en el litoral peruano

ANOMALÍAS DE LA TEMPERATURA SUPERFICIAL DEL MAR Y ISOTERMA DE 20° C EN EL PACÍFICO ECUATORIAL



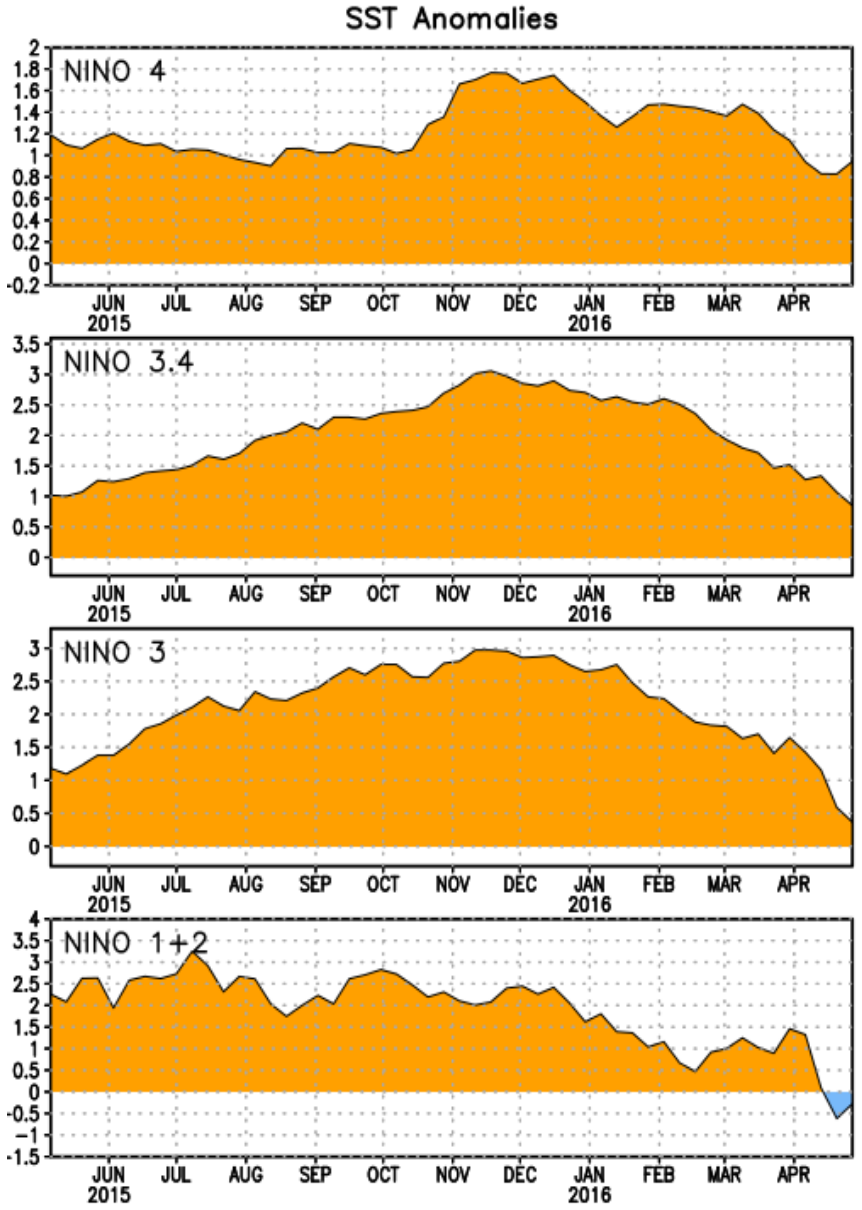
Fuente: TAO

ANOMALÍAS DE LA TEMPERATURA SUPERFICIAL DEL MAR POR REGIONES NIÑO EN EL PACÍFICO ECUATORIAL

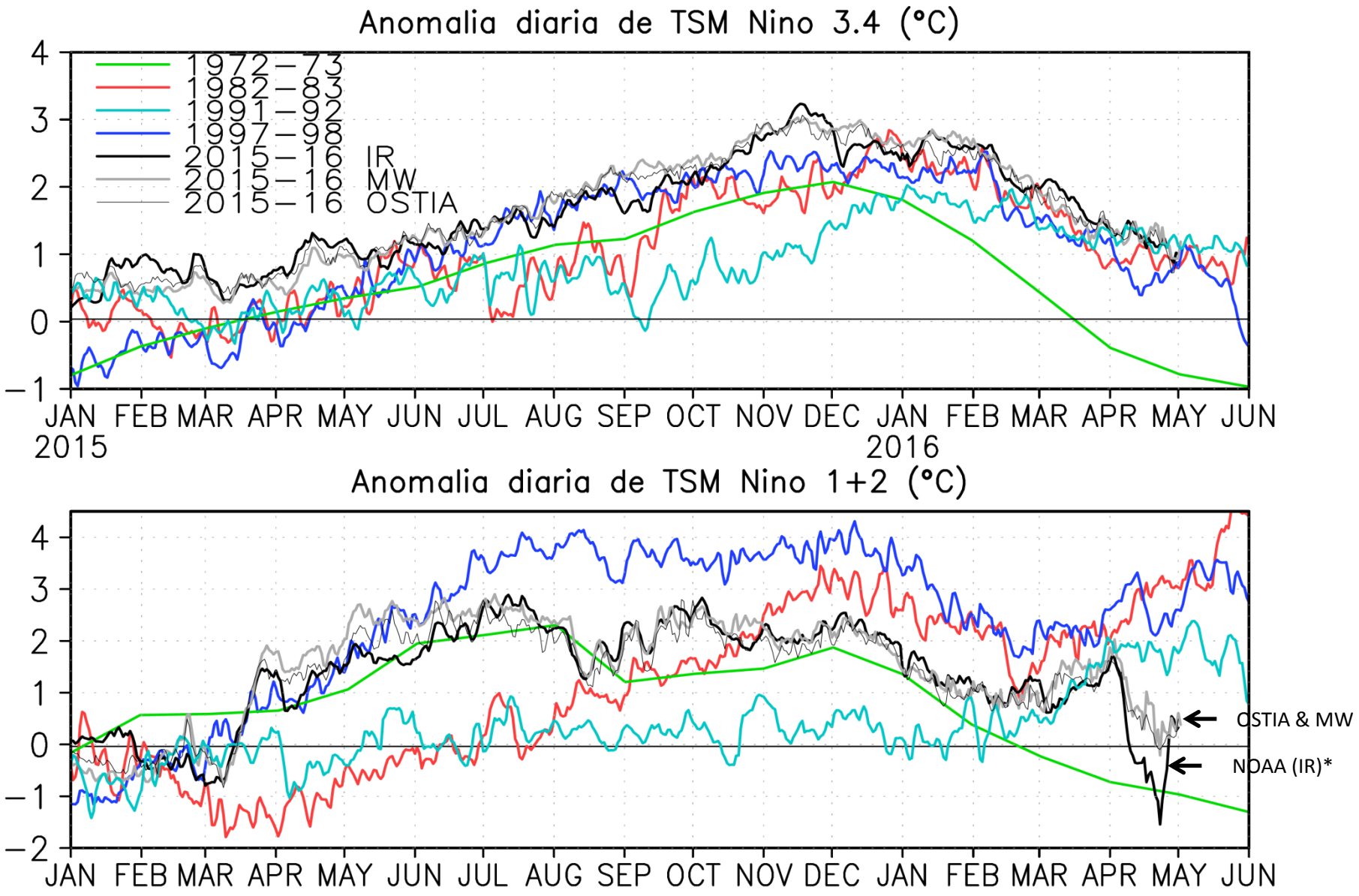


Regiones Niño	ATSM (Semanales)							
	Niño 1+2		Niño 3		Niño 3.4		Niño 4	
06abr2016	1.3	27.1	1.4	28.8	1.3	28.9	0.9	29.3
13abr2016	0.1	25.6	1.2	28.6	1.3	29.1	0.8	29.3
20abr2016	-0.6	24.7	0.6	28.0	1.1	28.6	0.8	29.4
27abr2016	-0.3	24.7	0.4	27.7	0.8	28.7	0.9	29.5
Prom.	**0.1**		**0.9**		**1.1**		**0.9**	

Promedios mensuales 2015								
Regiones Niño	ATSM							
	Niño 1+2		Niño 3		Niño 3.4		Niño 4	
Mar.2016	0.9	27.6	1.6	28.7	1.7	28.9	1.3	29.5
Feb.2016	0.7	26.8	1.9	28.4	2.4	29.1	1.5	29.6
Ene.2016	1.4	25.9	2.6	28.2	2.6	29.2	1.4	29.7
Dic.2015	2.2	25.0	2.9	28.0	2.8	29.4	1.6	30.1
Nov.2015	2.1	23.7	2.9	27.9	3.0	29.6	1.7	30.3
Oct.2015	2.5	23.3	2.7	27.6	2.5	29.2	1.1	29.8
Set.2015	2.6	22.9	2.6	27.5	2.3	29.0	1.0	29.7
Ago. 2015	2.3	22.9	2.3	27.3	2.1	28.9	1.0	29.7
Jul. 2015	2.9	24.5	2.2	27.8	1.6	28.8	1.0	29.8
Jun. 2015	2.5	25.4	1.7	28.1	1.3	29.0	1.1	29.9
May. 2015	2.4	26.7	1.2	28.3	1.0	28.9	1.1	29.9
Abr. 2015	1.4	27.0	0.7	28.2	0.8	28.6	0.8	29.7
Mar. 2015	0.1	26.7	0.2	27.3	0.6	27.8	1.1	29.3



Fuente: NCEP/NOAA



* NOAA OI SST también indica ATSM < 0 en la costa, contrario a datos costeros

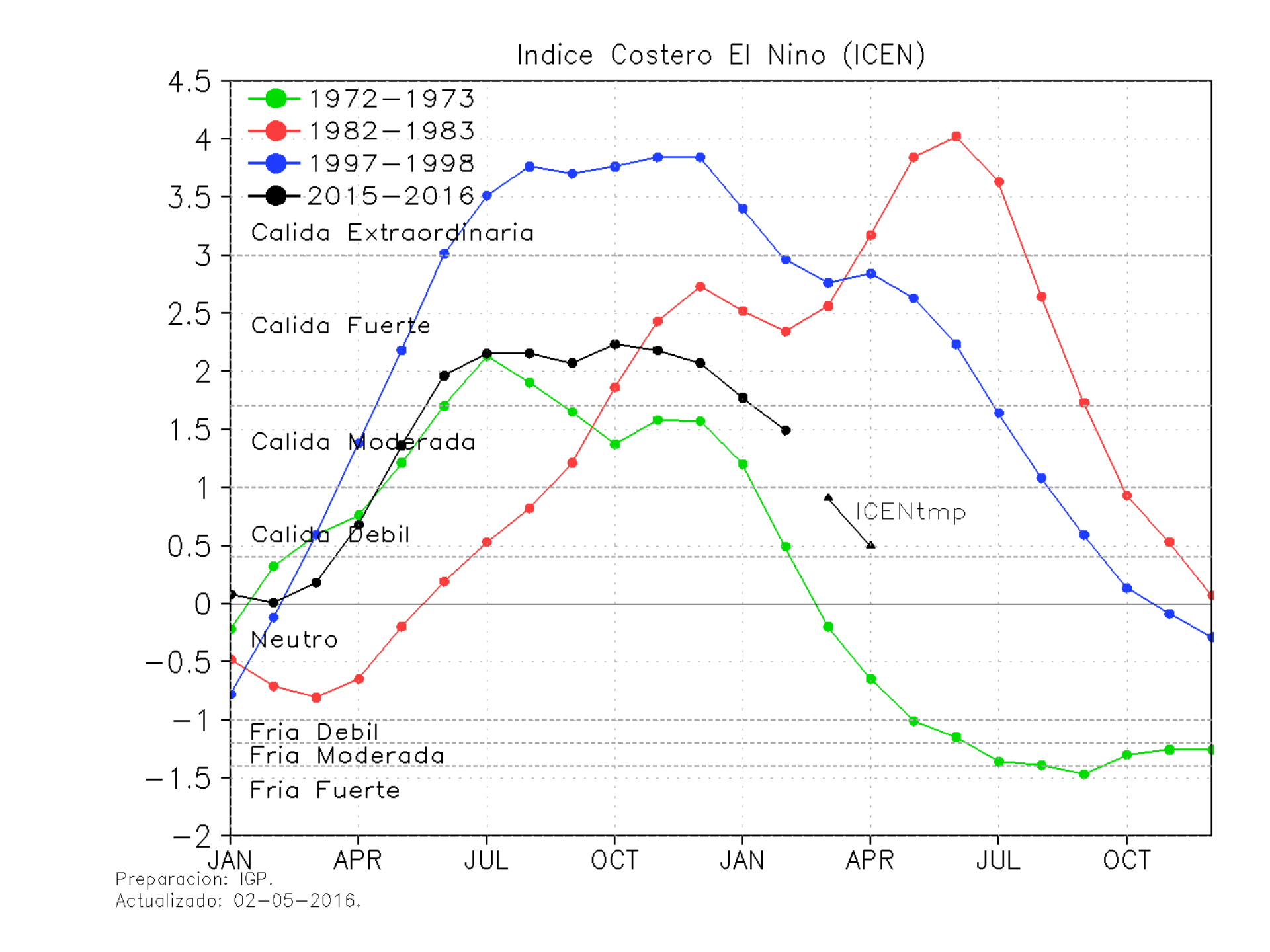
Valores del Índice Costero El Niño

Mes	ICEN	Categoría
06/2015	1.96	Cálida Fuerte
07/2015	2.15	Cálida Fuerte
08/2015	2.15	Cálida Fuerte
09/2015	2.07	Cálida Fuerte
10/2015	2.23	Cálida Fuerte
11/2015	2.18	Cálida Fuerte
12/2015	2.07	Cálida Fuerte
01/2016	1.77	Cálida fuerte
02/2016	1.49	Cálida Moderada

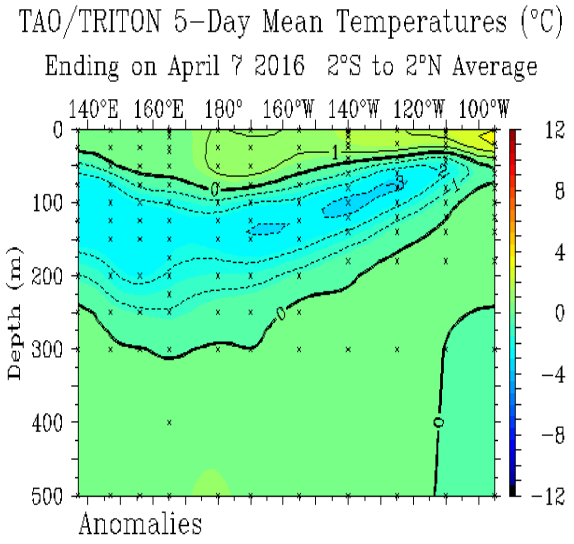
Mes	ICENtmp	Categoría
03/2016	0.91 *	Cálida Débil
04/2016	0.49**	Cálida Débil

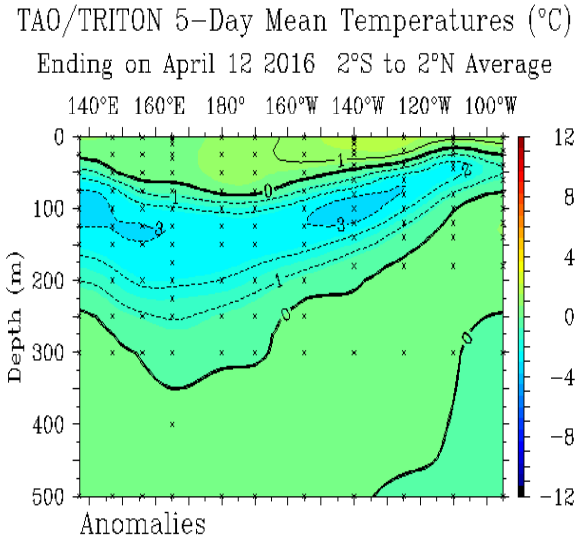
* Se usaron los datos de (Feb. Mar 2016) ERSST3v, (Abr. 2016) OISST_wk.

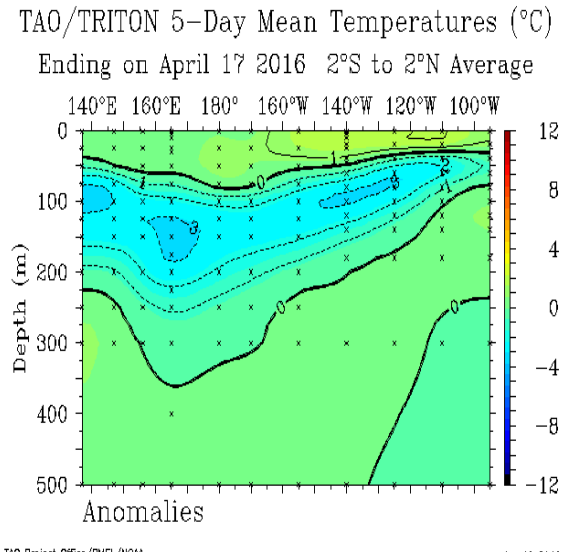
** Se usaron los datos de (Mar. 2016) ERSST3v, (Abr. 2016) OISST_wk , (May. 2016) NMME NMME CI 2016 04

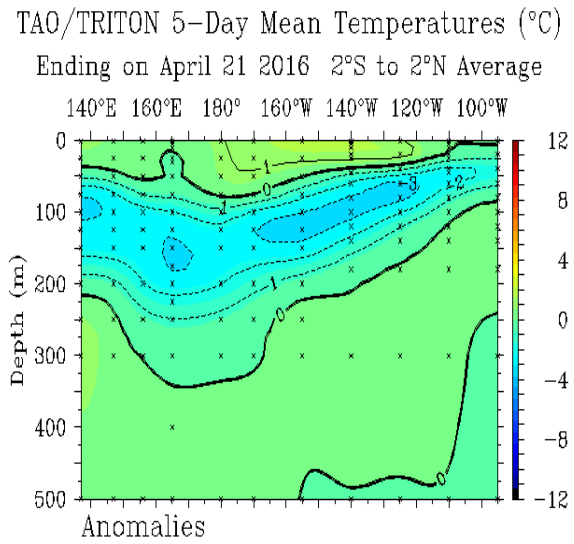

Indice Costero El Nino (ICEN)
1972-1973
1982-1983
1997-1998
2015-2016
Calida Extraordinaria
Calida Fuerte
Calida Moderada
Calida Debil
Neutro
Fria Debil
Fria Moderada
Fria Fuerte
ICENtmp
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
JAN
APR
JUL
OCT
JAN
APR
JUL
OCT
Preparacion: IGP.
Actualizado: 02-05-2016.

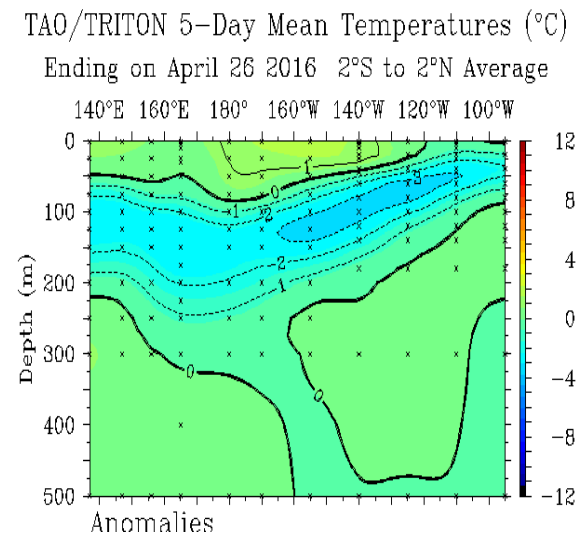
ANOMALÍAS DE LA TEMPERATURA SUBSUPERFICIAL EN EL PACÍFICO ECUATORIAL

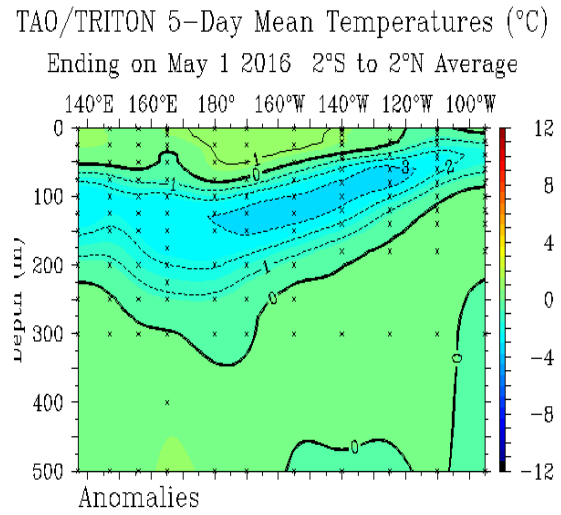












Fuente: PMEL/TAO/TRITON NOAA

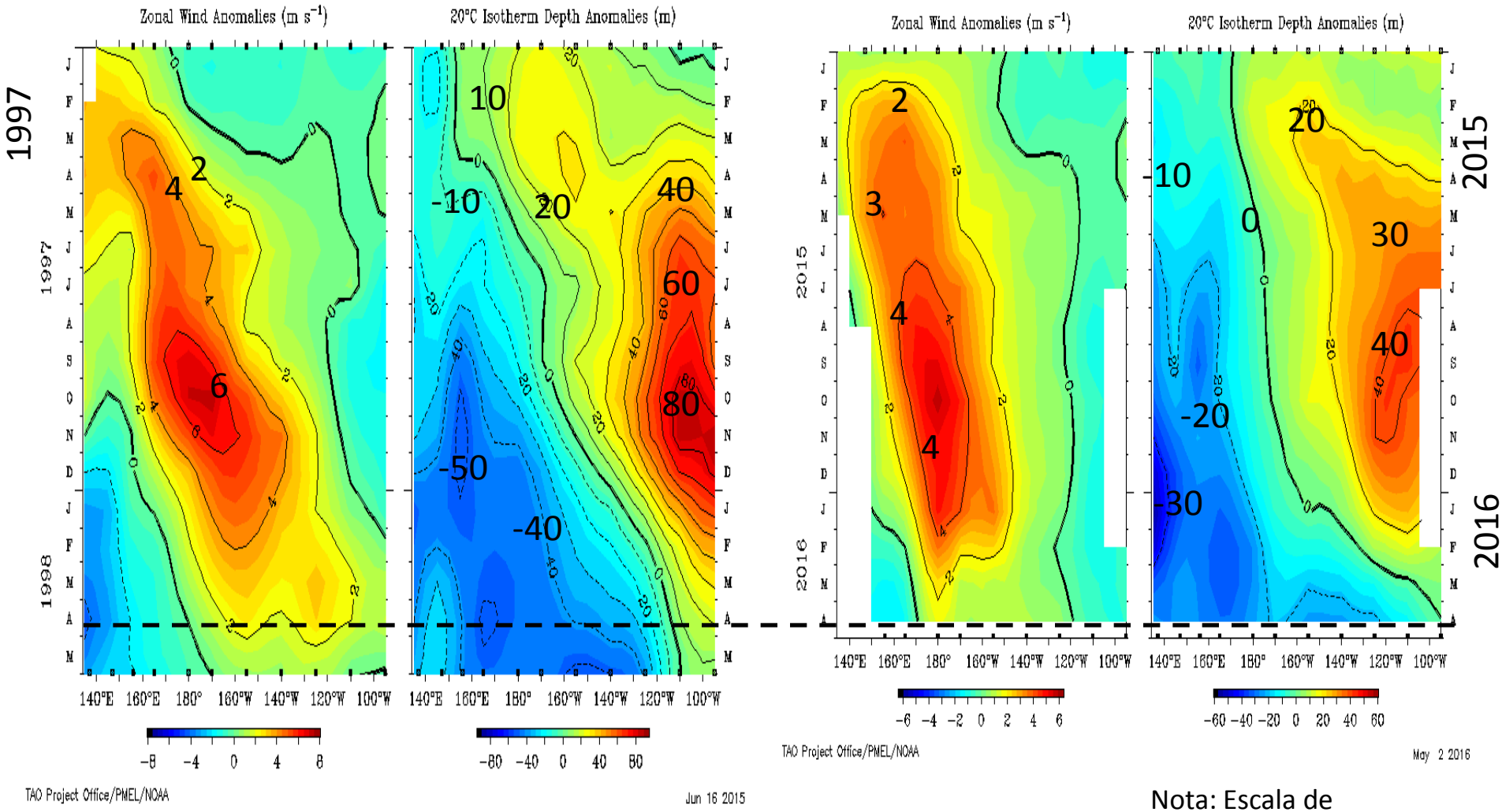
Anomalía mensual de viento zonal y profundidad de 20° C ecuatorial

Viento zonal

Profundidad 20° C

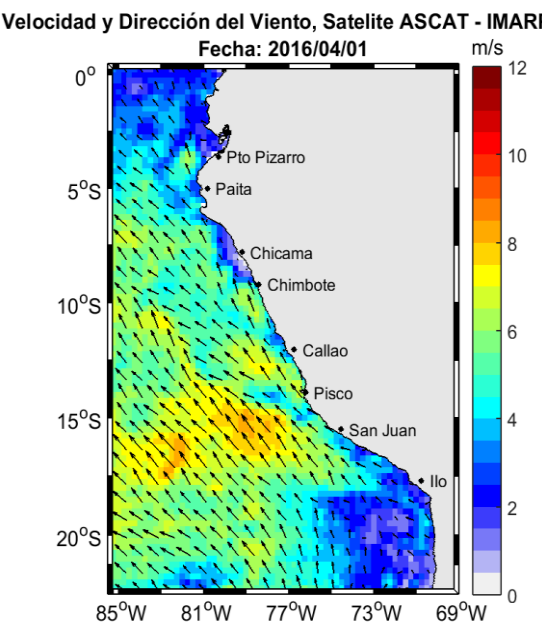
Viento zonal

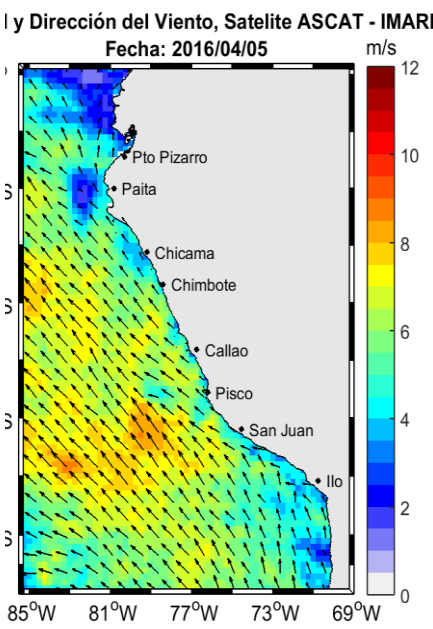
Profundidad 20° C

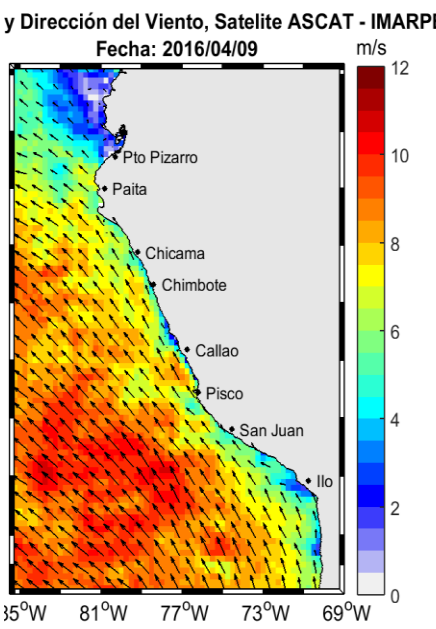


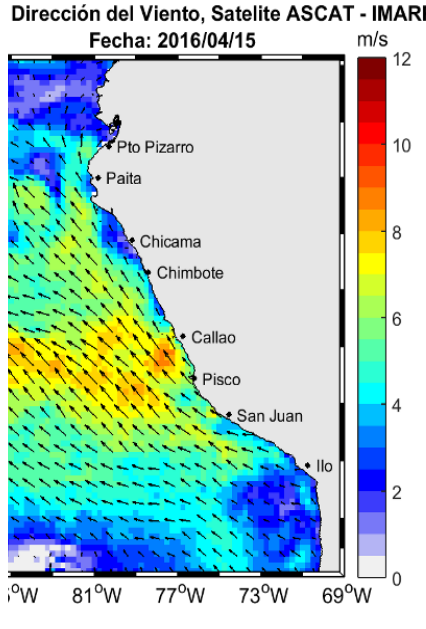
Nota: Escala de colores distinta

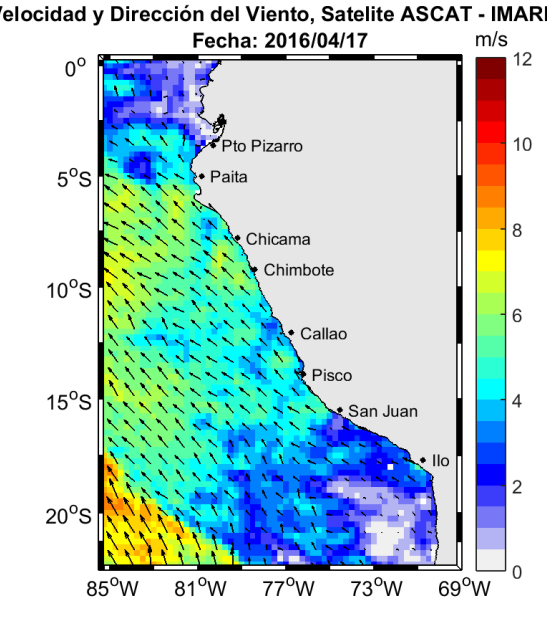
Velocidad y Dirección del Viento (ASCAT)

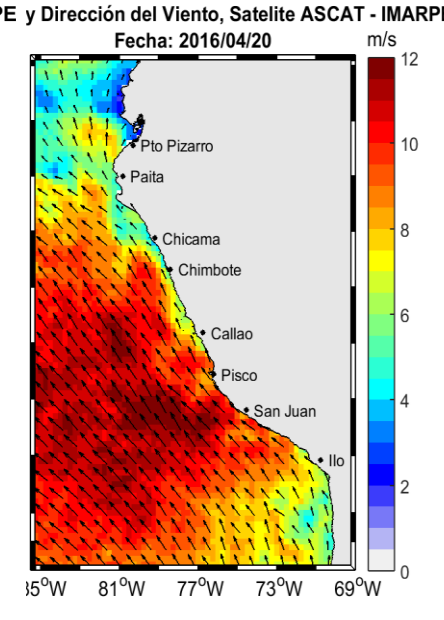


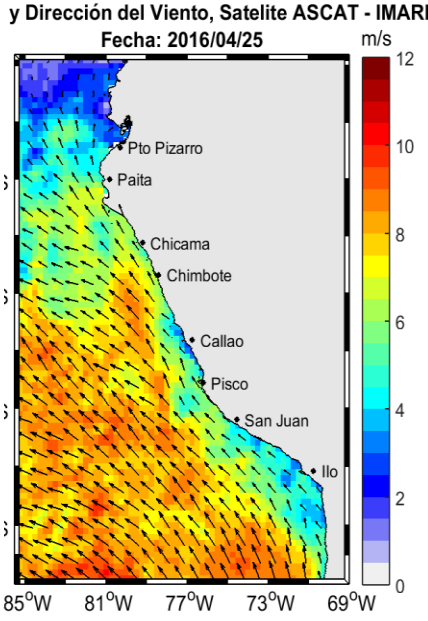


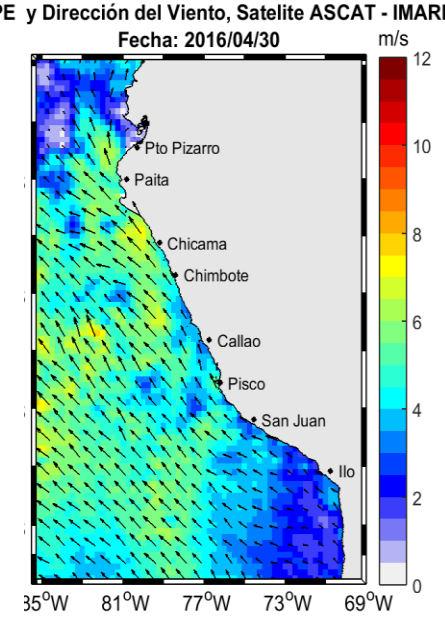




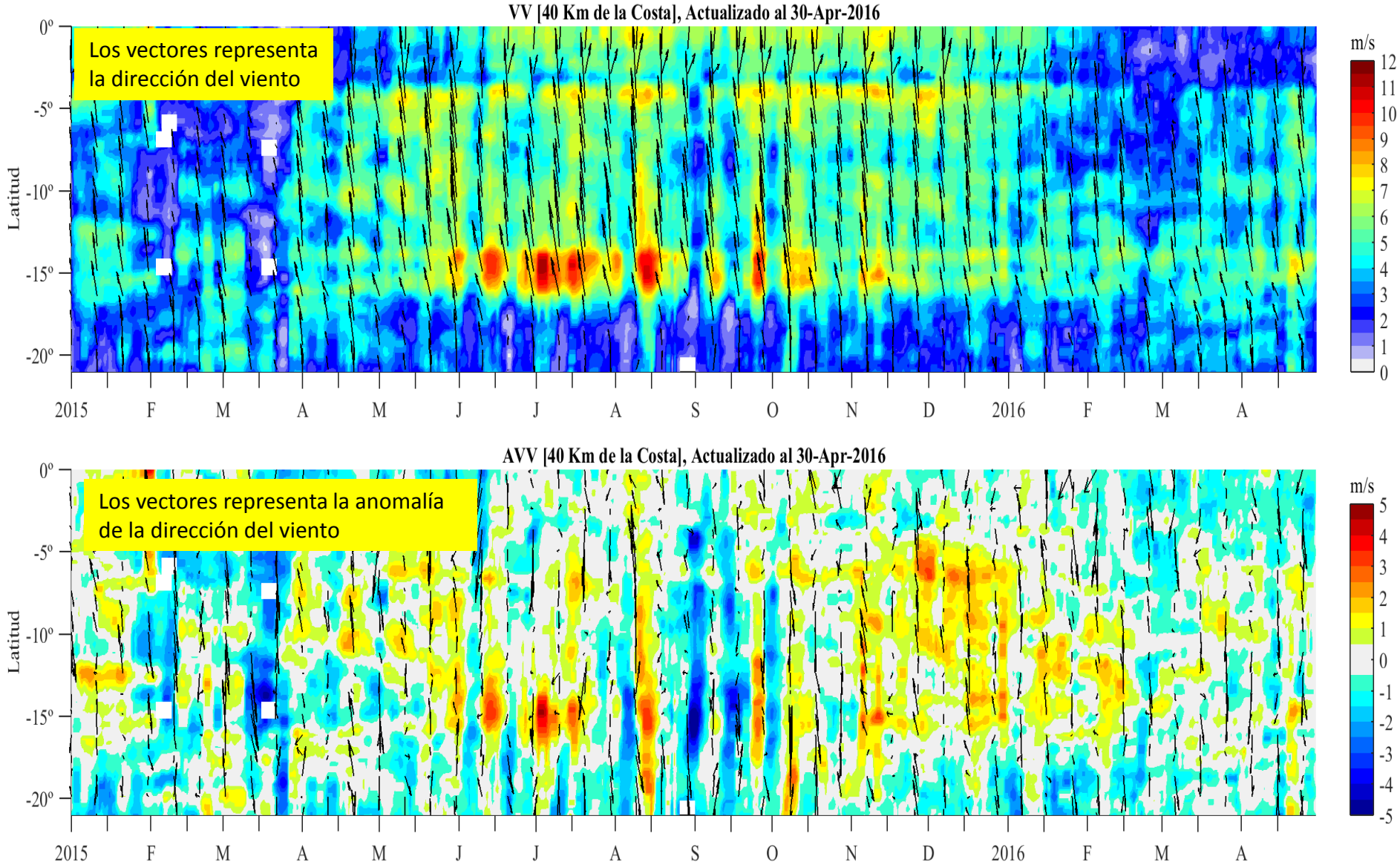






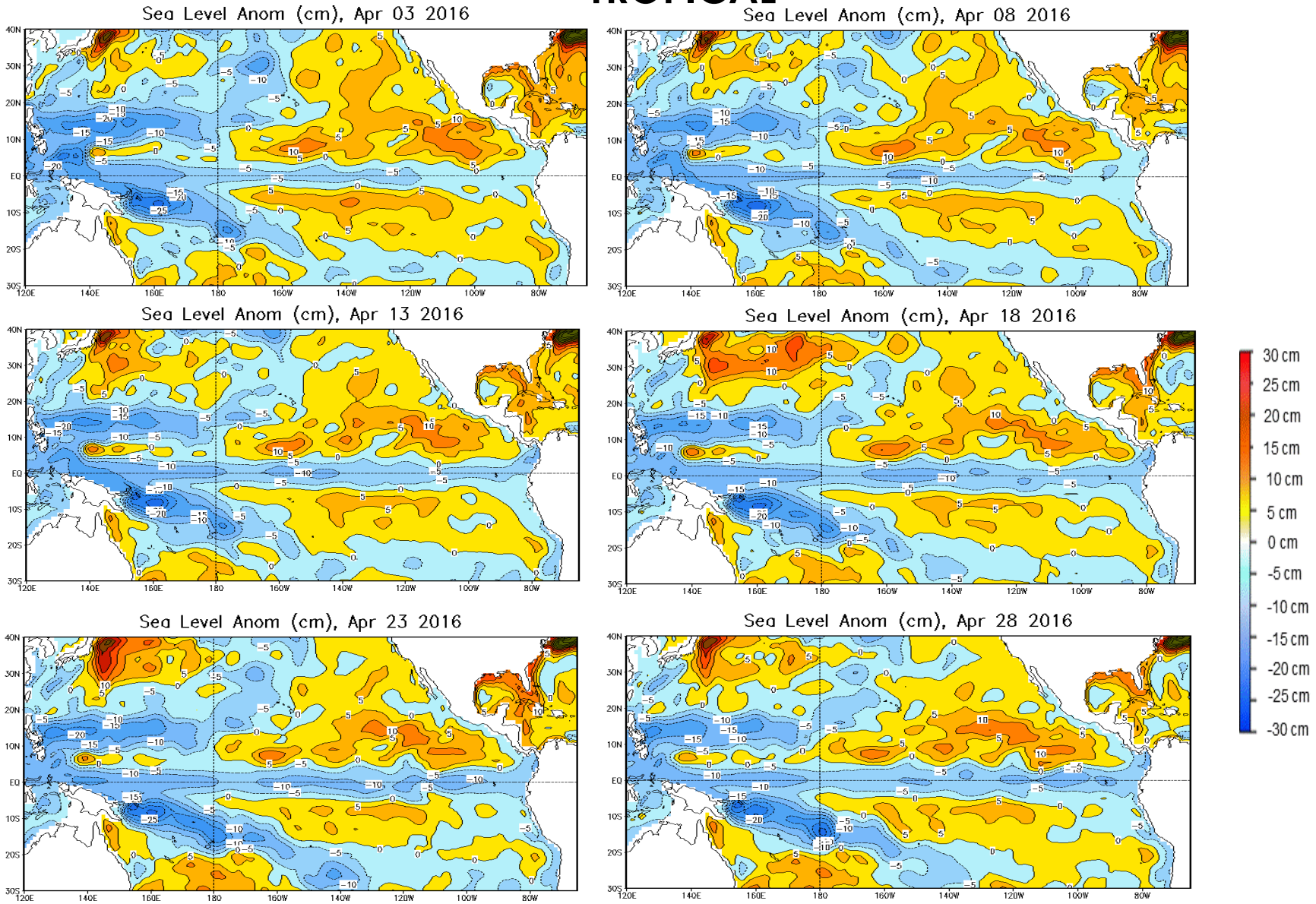


Velocidad y Anomalías del Viento



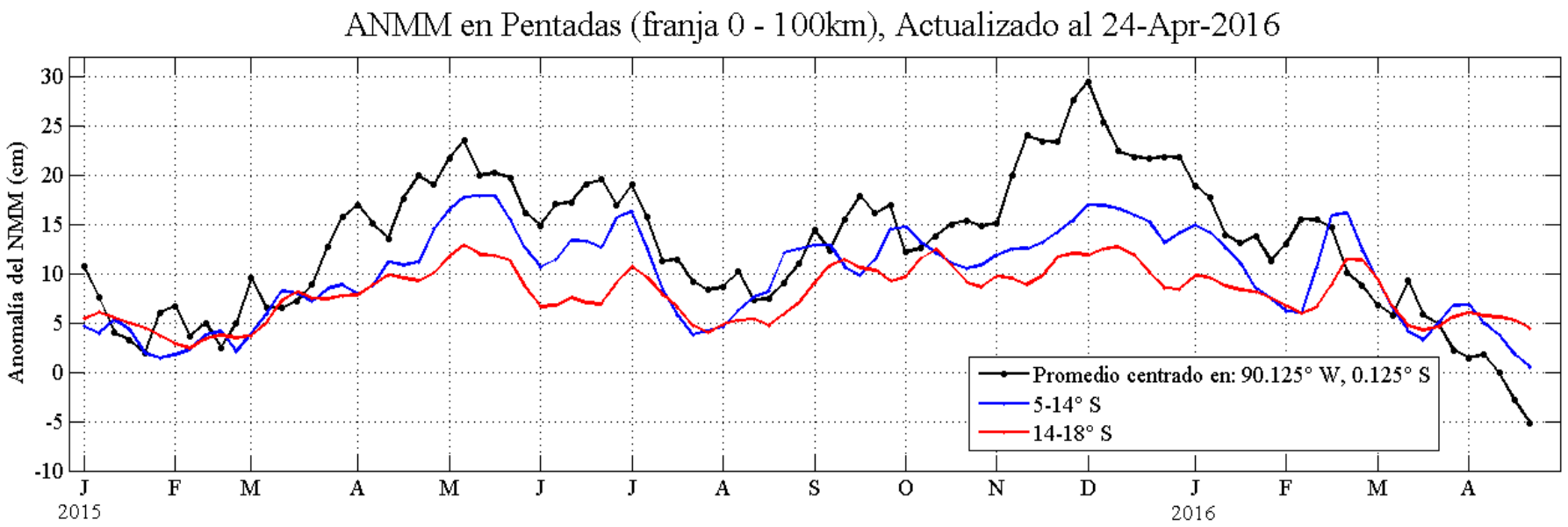
Viento Satelital (40 Km frente a la costa del Perú): a) Velocidad del viento (m/s), b) Anomalía de la velocidad del viento (m/s). Fuente: Satélite ASCAT, Procesamiento: Laboratorio de Hidro-Física Marina, IMARPE

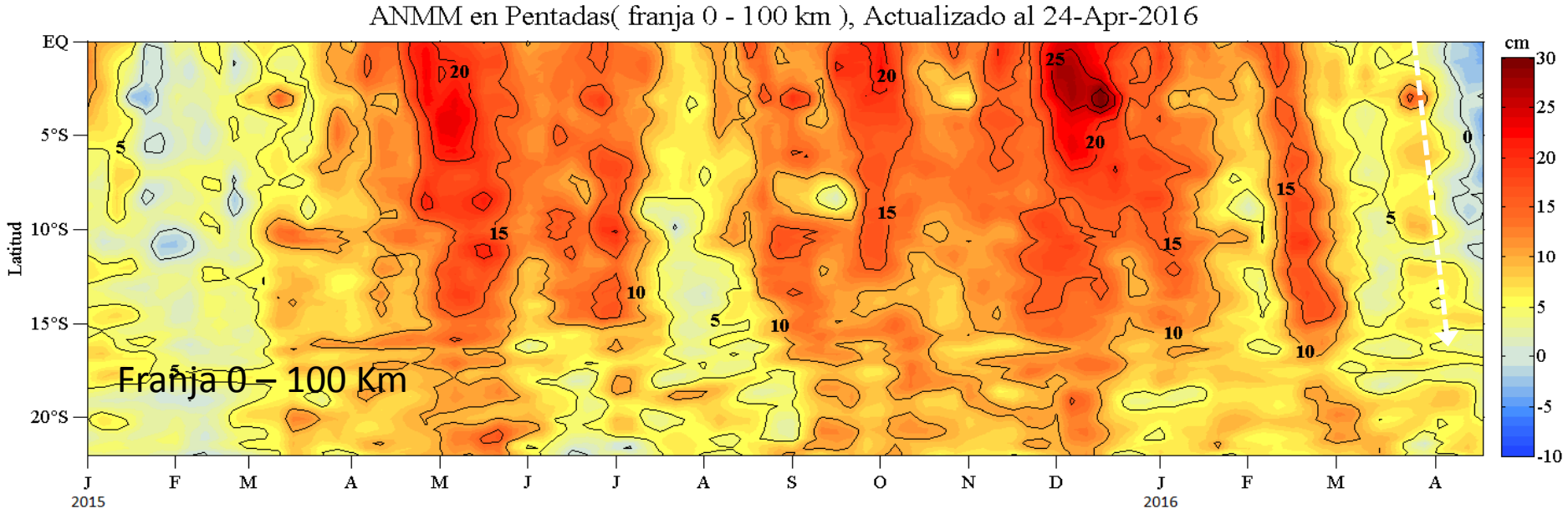
ANOMALÍAS DEL NIVEL DEL MAR EN EL PACÍFICO TROPICAL



Fuente: CPC/NCEP/NOAA

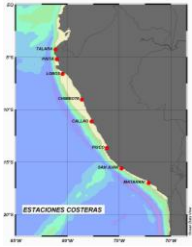
Anomalías del nivel medio del mar al 14.04

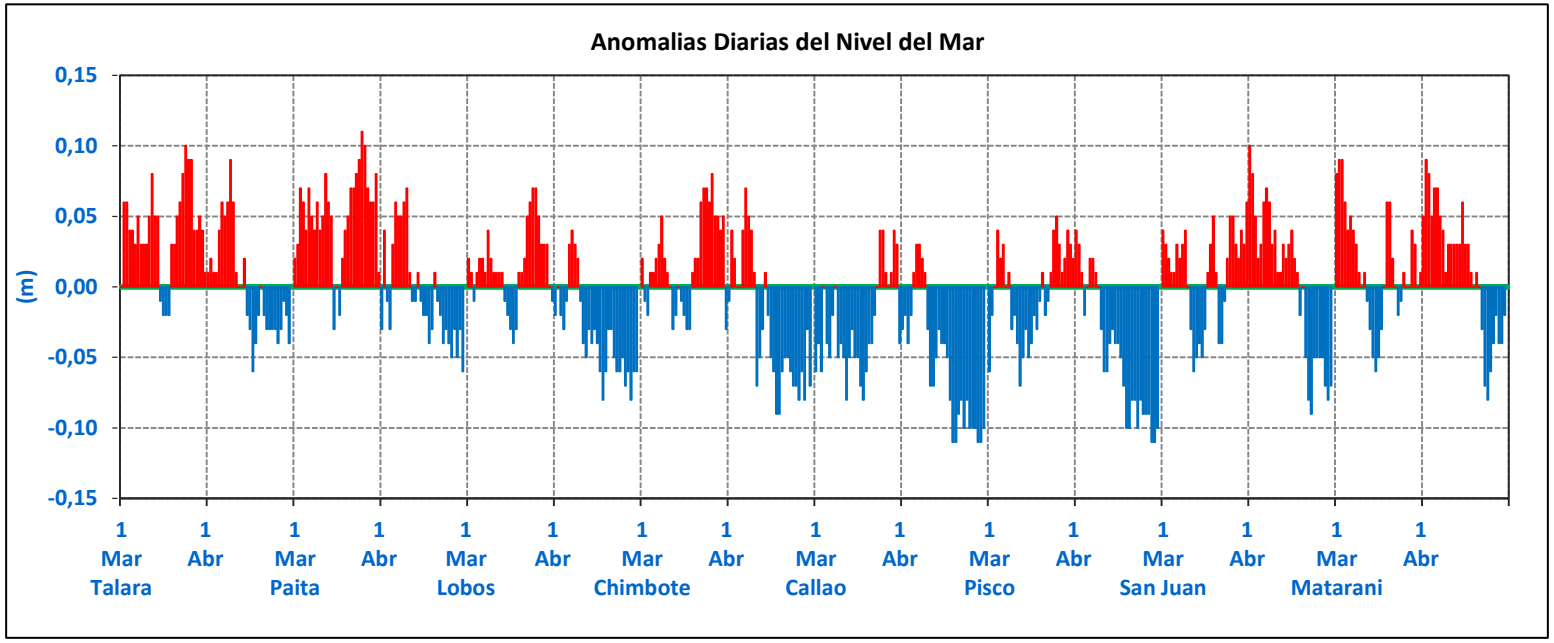




Datos: AVISO/ IMARPE

ANOMALÍAS DEL NIVEL MEDIO DEL MAR EN EL LITORAL PERUANO

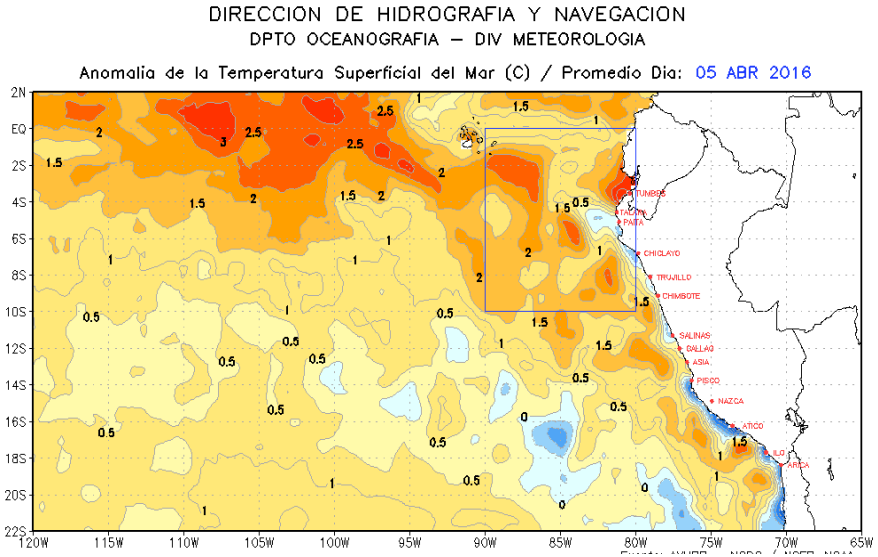


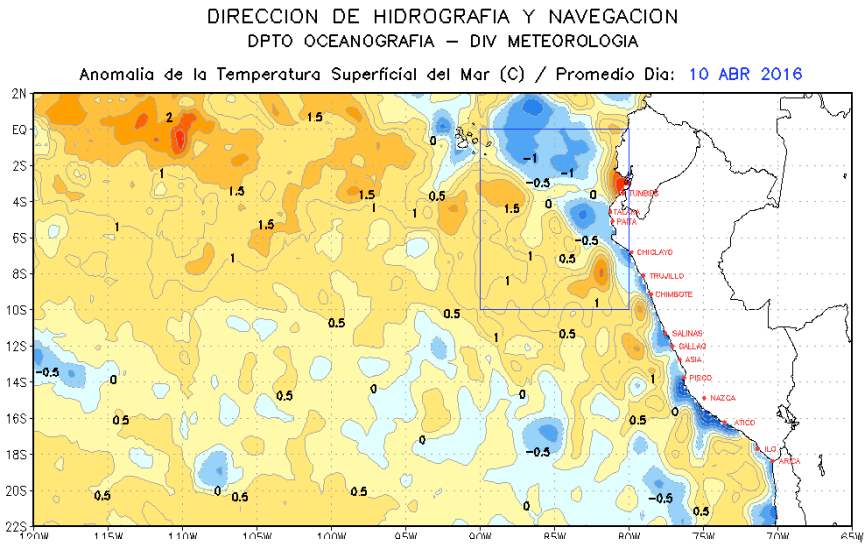


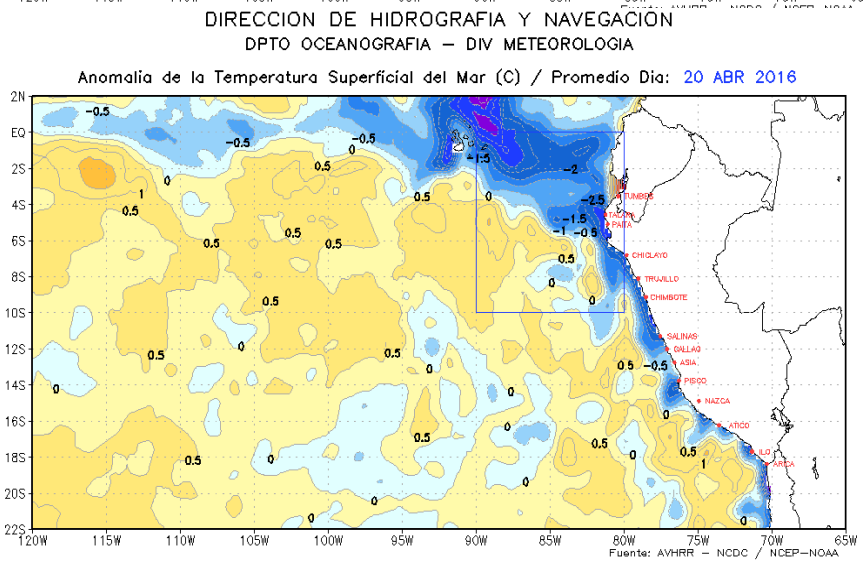
Estación	ANNM (cm) 2015										2016			
	Mar.	Abr.	May.	Jun.	Jul.	Ago.	Set.	Oct.	Nov.	Dic.	Ene.	Feb.	Mar.	Abr
Talara	5	16	19	15	10	12	16	13	18	19	5	8	4	0
Paita	4	14	20	16	12	13	17	15	19	21	8	10	5	-1
Isla Lobos de Afuera	-	11	15	14	7	9	11	9	13	15	7	7	2	-3
Chimbote	4	10	15	15	7	10	12	9	13	15	5	11	2	-6
Callao	0	7	10	12	3	8	9	6	9	9	2	7	-3	-5
San Juan	4	8	10	13	3	8	13	11	11	12	6	9	1	0
Matarani	3	4	6	9	4	8	12	9	12	12	7	10	2	1

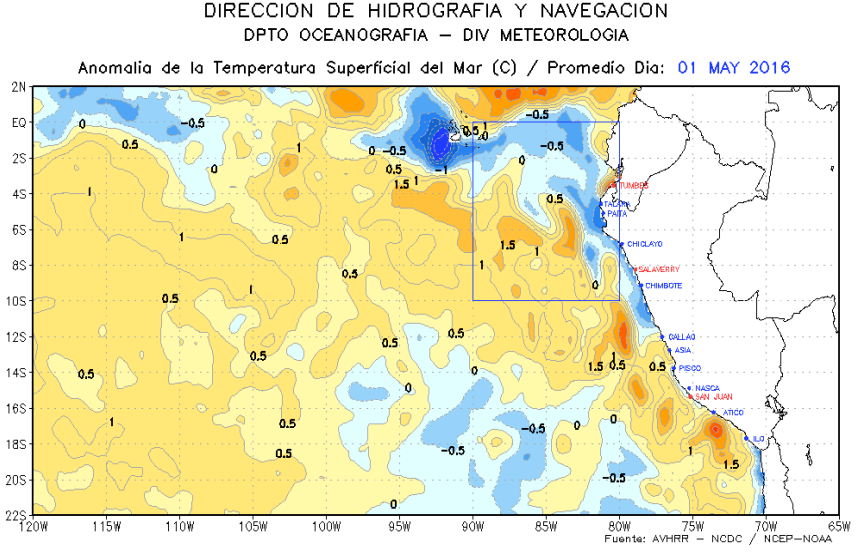
Promedios Diarios NMM		
Estación	Sábado 30 Abril 2016	
	NMM (m)	ANMM(m)
Talara	0.86	-0.04
Paita	0.77	-0.06
I. Lobos de Afuera	0.69	-0.06
Chimbote	0.56	-0.07
Callao	0.48	-0.10
Pisco	0.39	-0.10
San Juan	0.37	-0.07
Matarani	0.53	-0.02

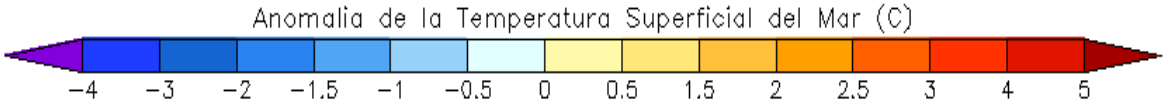
ANOMALÍAS DE LA TEMPERATURA SUPERFICIAL DEL MAR EN EL PACÍFICO SUDORIENTAL





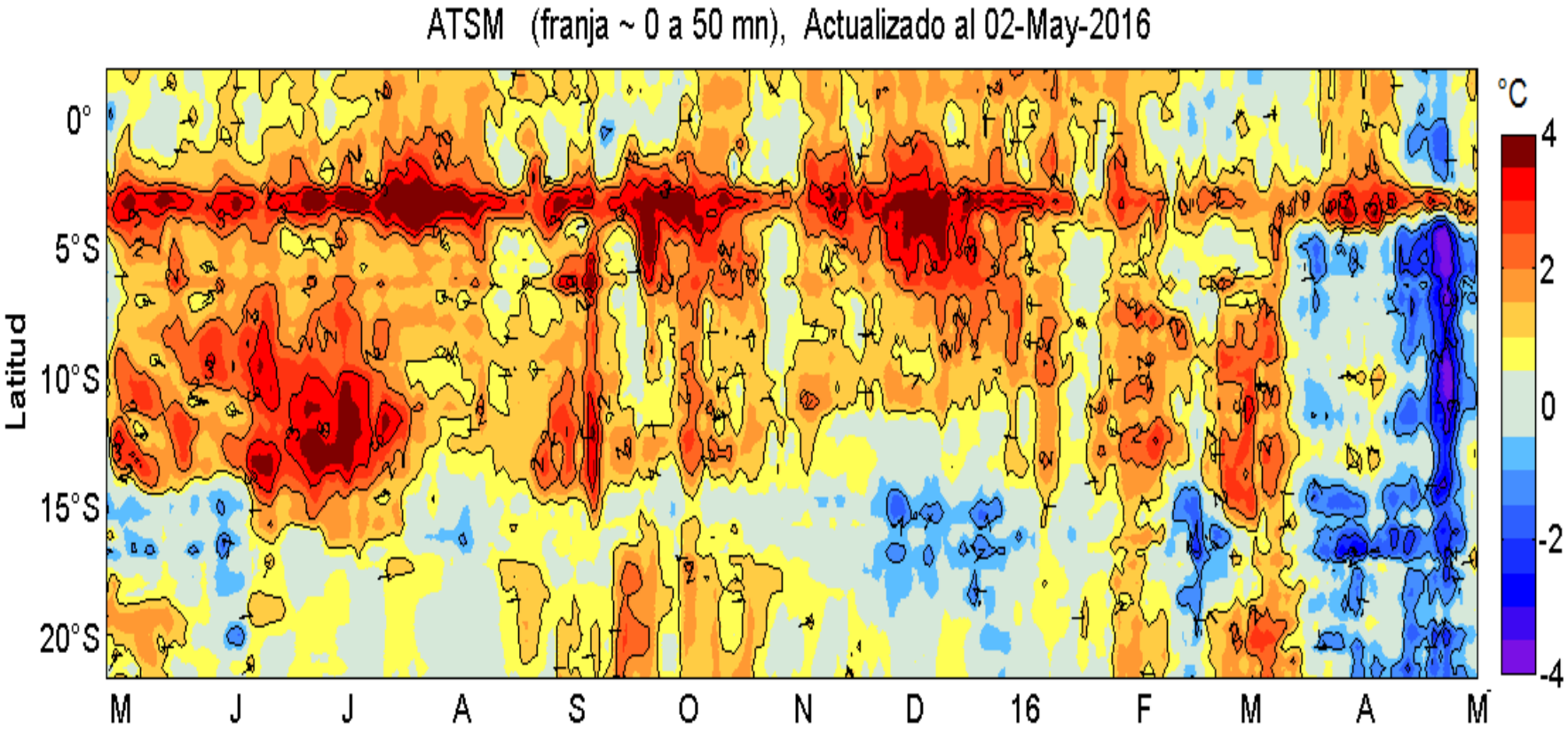




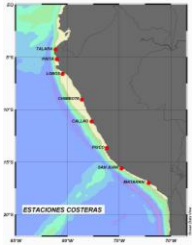


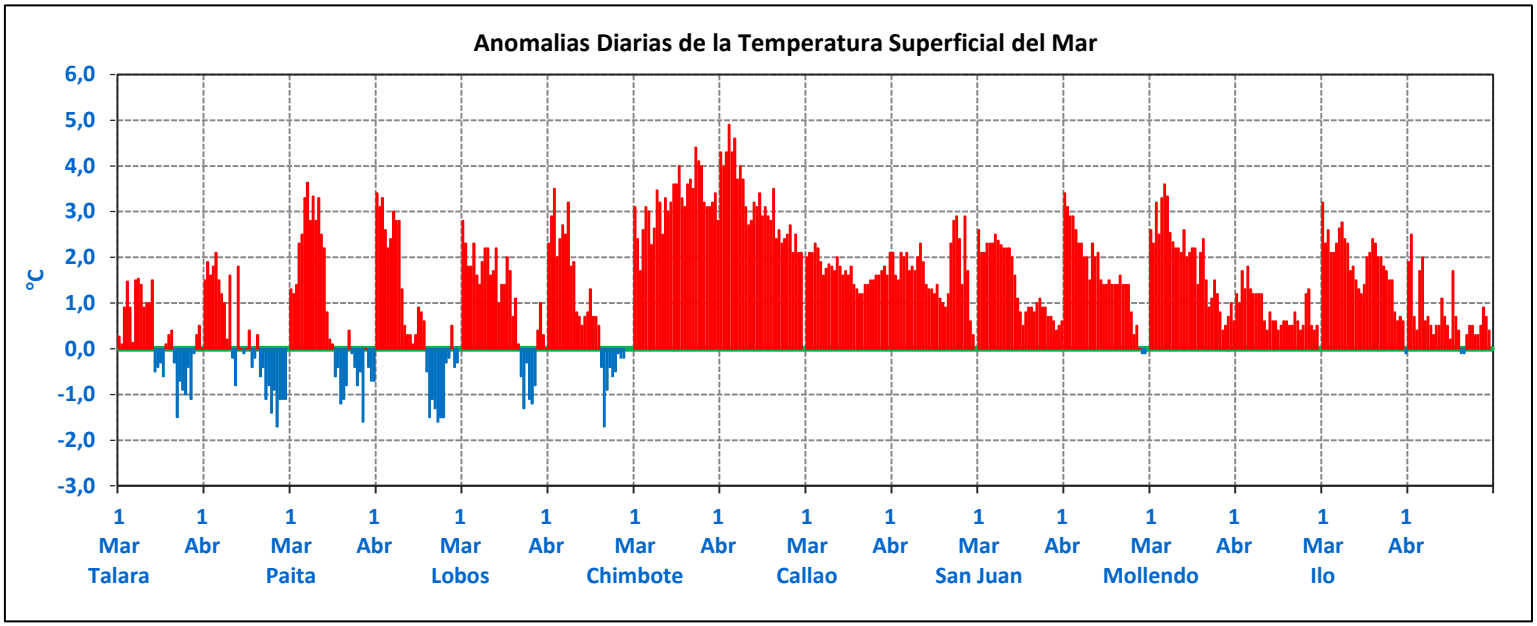
Fuente: Gráficos DHN, Datos NCEP/NOAA

Anomalías de TSM satelital



ANOMALÍAS DE LA TEMPERATURA SUPERFICIAL DEL MAR EN EL LITORAL PERUANO

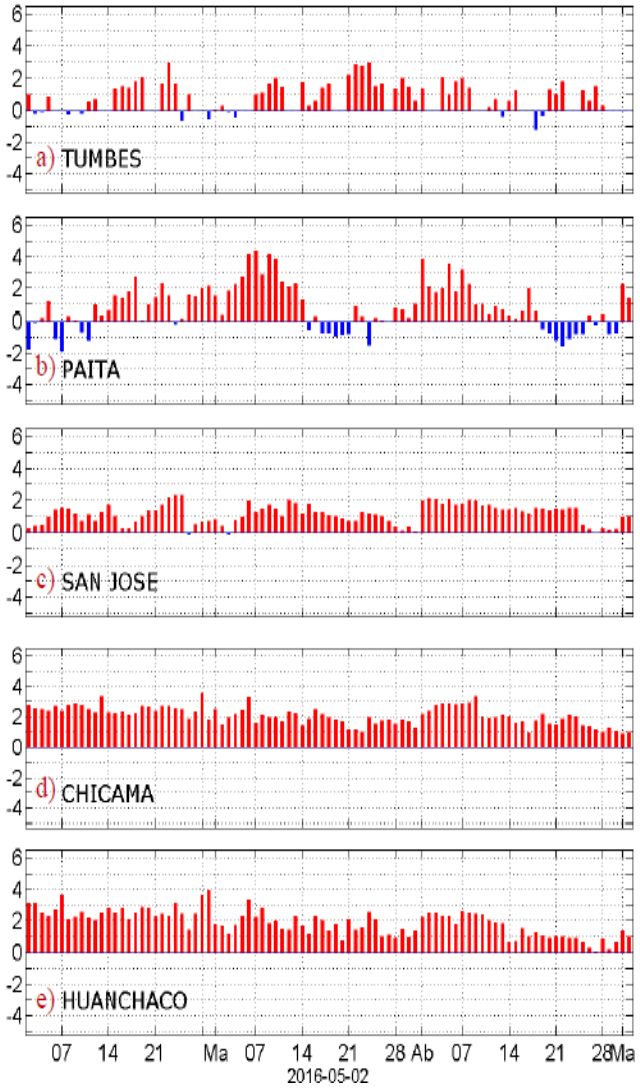


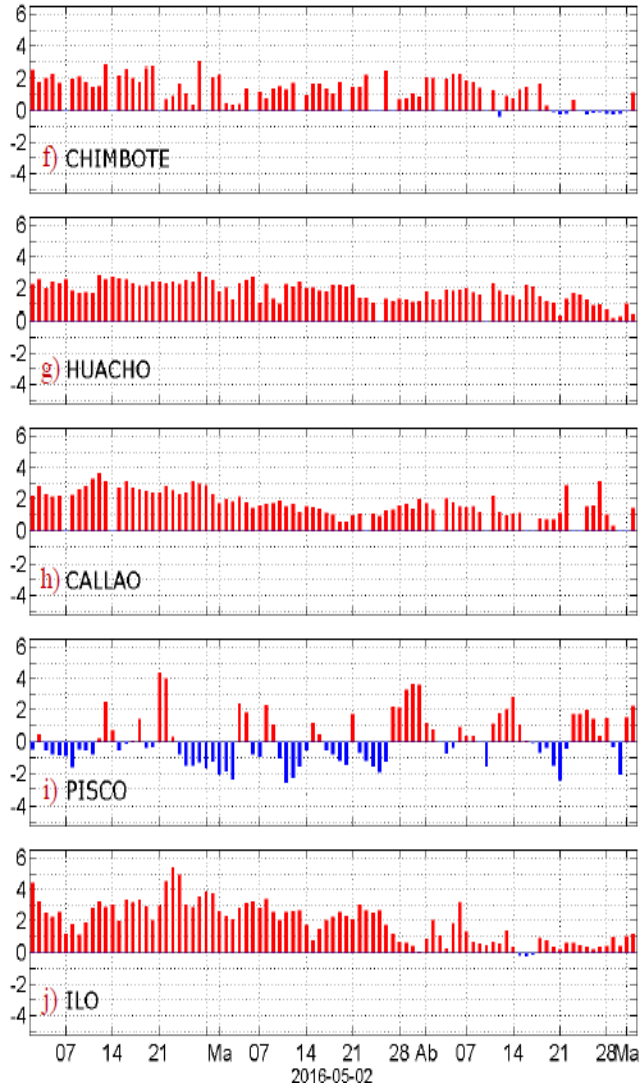


Estación	ATSM (°C) 2015										2016			
	Mar.	Abr.	May.	Jun.	Jul.	Ago.	Set.	Oct.	Nov.	Dic	Ene	Feb	Mar.	Abr.
Talara	-0.1	1.1	3	2.6	2.5	1.2	2.5	3.2	3.0	3.1	1.3	-0.8	0.2	0.2
Paita	0.3	0.6	3.7	3.2	2.8	2.1	3.2	3.2	2.8	4.6	1.6	-0.1	0.8	0.7
Isla Lobos de Afuera	-0.4	0.6	2.2	3.4	2.4	1.4	2.1	2.4	1.7	2.7	2.4	0.5	1.0	0.9
Chimbote	-0.6	-0.6	2.5	4.6	2.5	2.2	2.4	2	1.3	1.5	2.7	2.4	3.2	-
Callao	-0.4	0.1	2.5	3.2	2.1	1.7	1.8	2.1	2.2	3.1	3.5	2.9	1.7	1.7
San Juan	0.1	0.3	0.8	1.6	0.8	1	1.1	1	1.7	1.7	2.0	1.8	1.4	1.6
Mollendo	0.5	0.7	1.2	1.7	1.5	0.8	2.3	1.5	1.0	1.2	2.3	2.4	1.9	0.8
Ilo	0.8	0.5	1.1	1.6	1.9	0.7	1.8	1.5	1.1	1.7	2.0	2.5	1.8	0.7

Promedios Diarios TSM		
Estación	Sábado 30 Abril 2016	
	TSM (°C)	ATSM(°C)
Talara	19.5	-1.1
Paita	19.9	-0.3
I. Lobos de Afuera	19.5	-0.6
Chimbote	-	-
Callao	17.6	+0.3
San Juan	15.1	-0.1
Mollendo	16.8	+0.5
Ilo	17.0	+0.4

Anomalías de Temperatura Superficial del Mar en el litoral





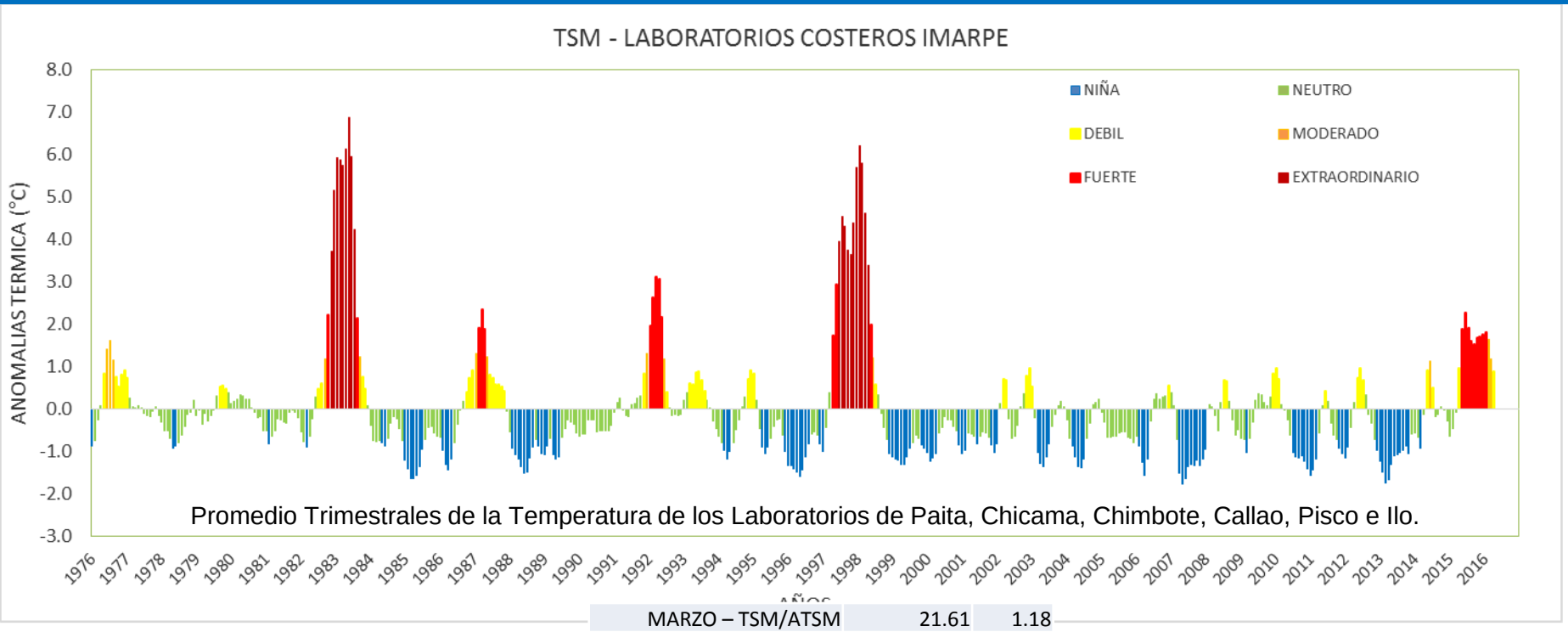
02/05/2016

Estación	T, °C	ΔT, °C
Tumbes	sd	sd
Paita	20,47	1,37
San José	20,73	0,93
Chicama	18,50	1,00
Huanchaco	18,53	1,03
Chimbote	21,00	1,10
Huacho	17,17	0,47
Callao	18,00	1,40
Pisco	23,33	2,23
Atico	17,30	-
Matarani	16,70	-
Ilo	17,50	1,20

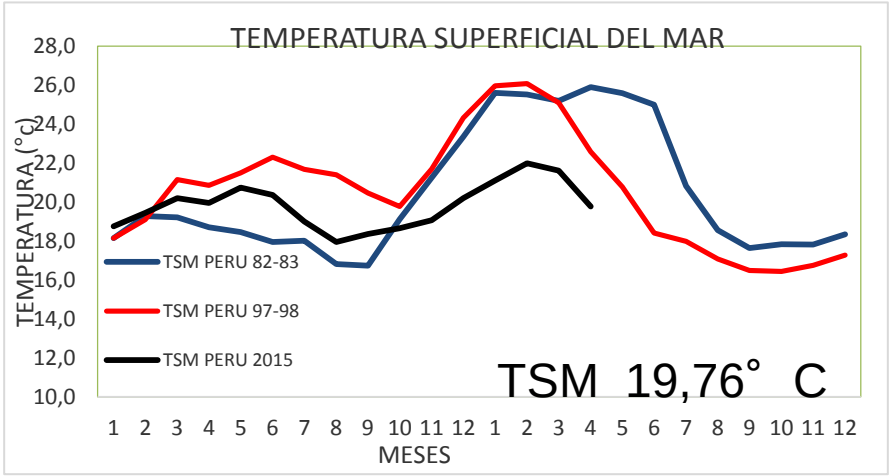
sd: Sin dato

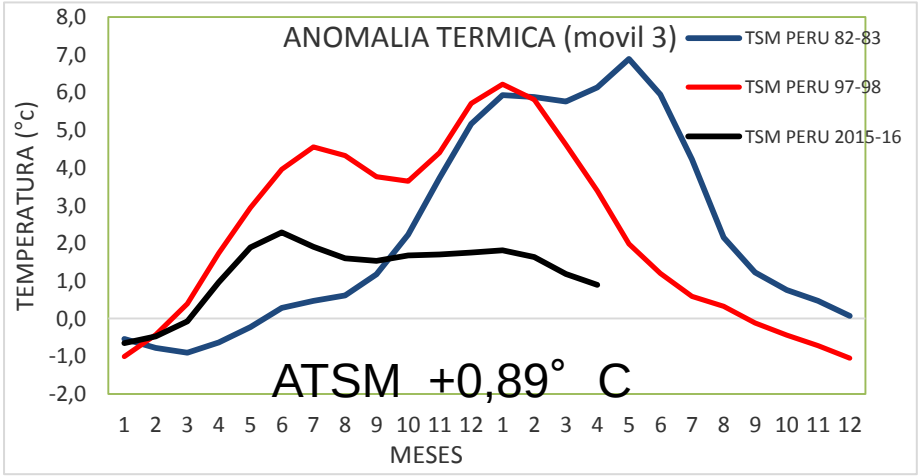
Fuente: IMARPE

Anomalías de Temperatura Superficial del Mar en el litoral

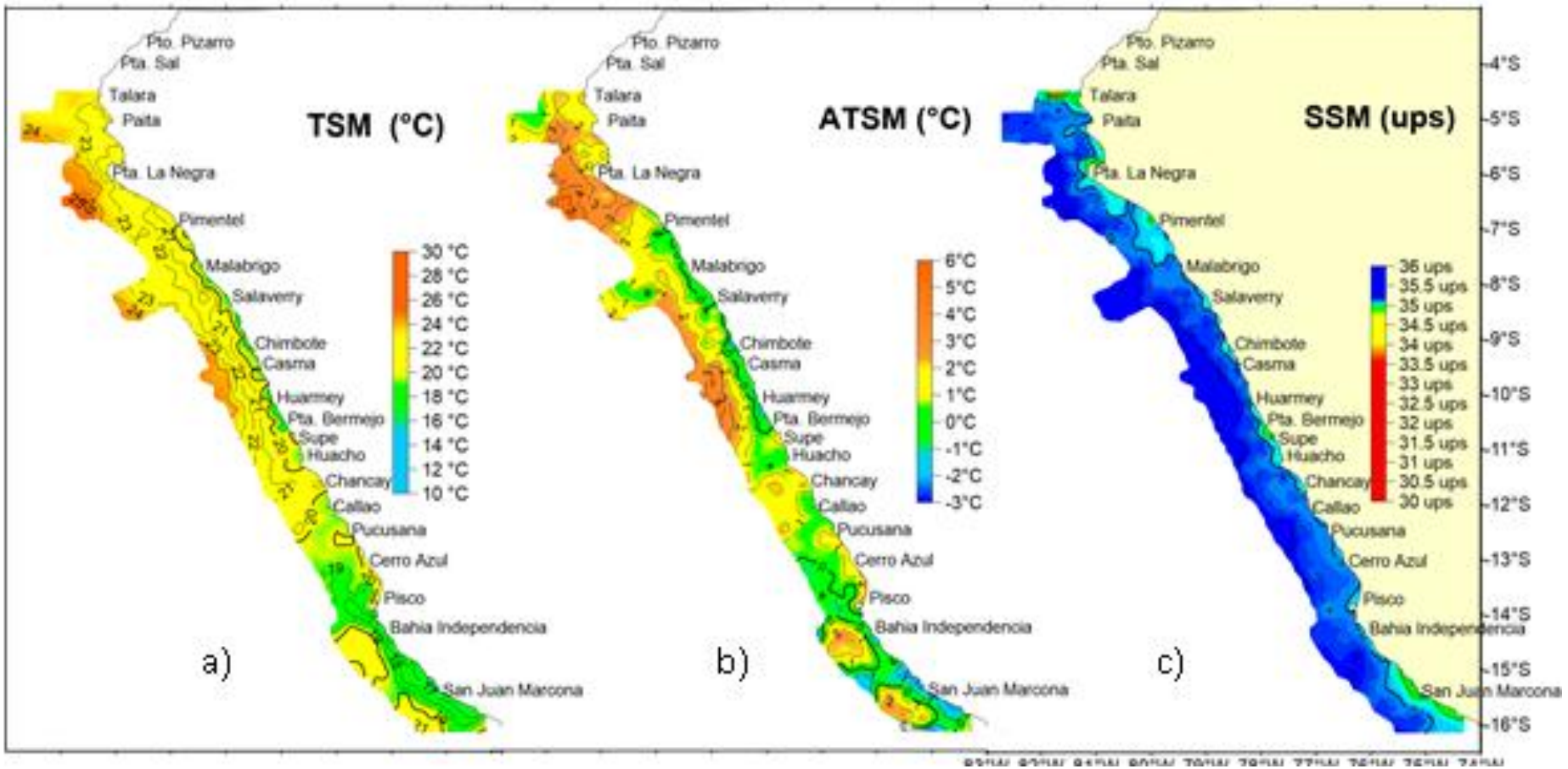


MARZO – TSM/ATSM	21.61	1.18
ABRIL – TSM/ATSM	19,76	0,89



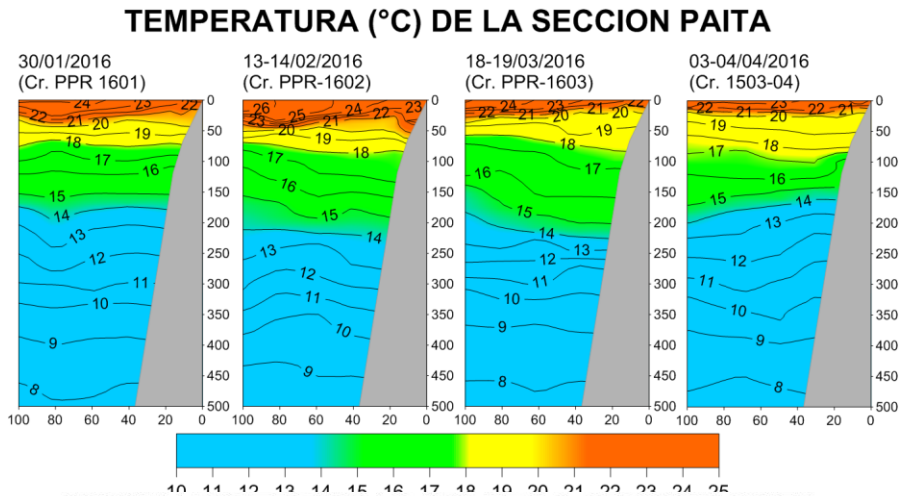


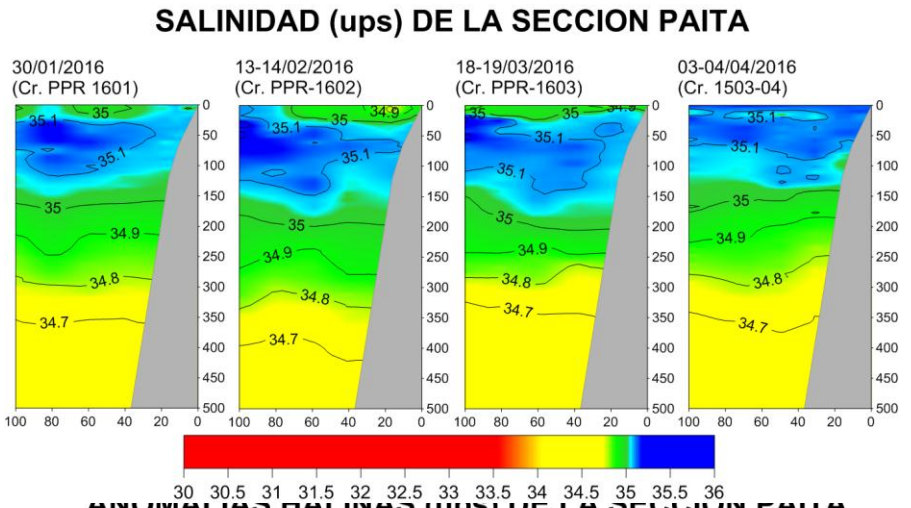
Cr. De Evaluación de Recursos Pelágicos 1603-04

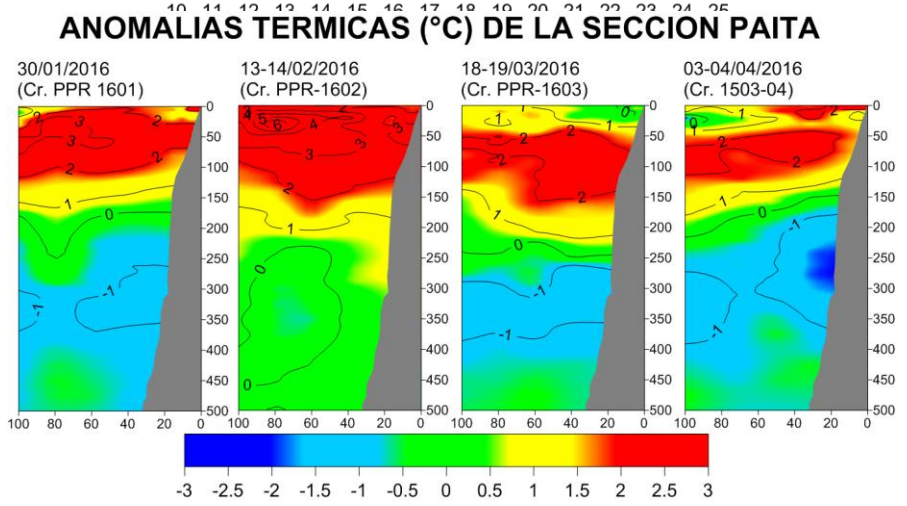


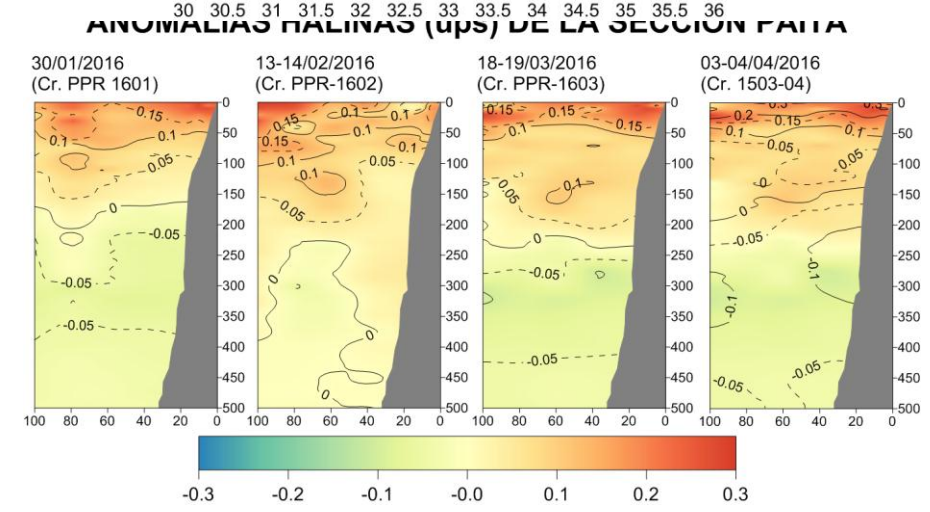
Secciones Paita (T, S, O)

SECCION PAITA ENERO – ABRIL 2016



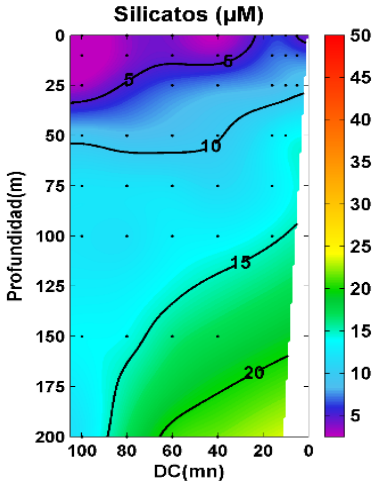


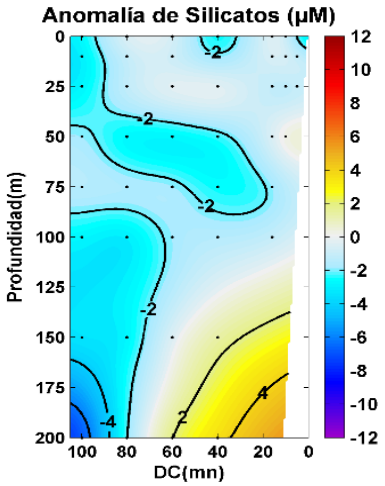




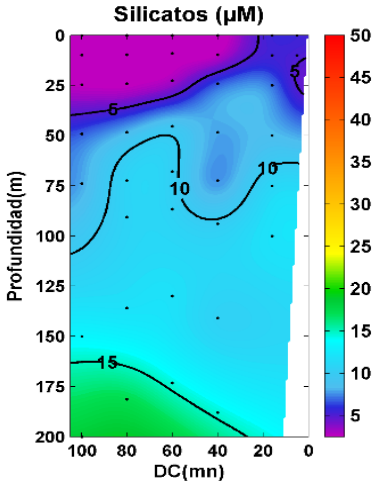
SECCIÓN PAIATA 2016

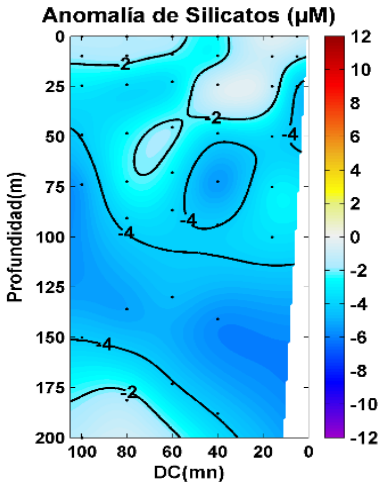
29-30 ENERO





13-14 FEBRERO





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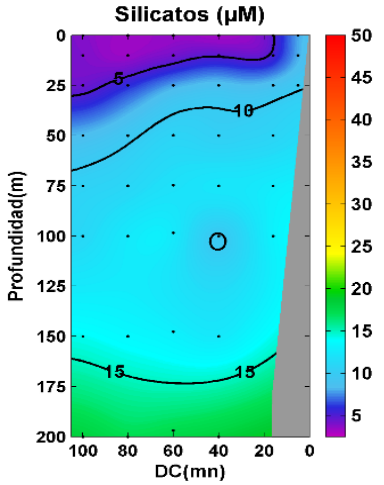
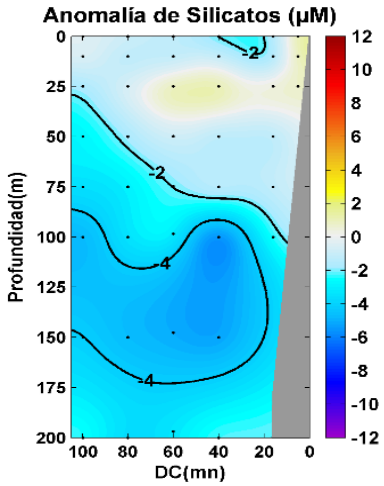
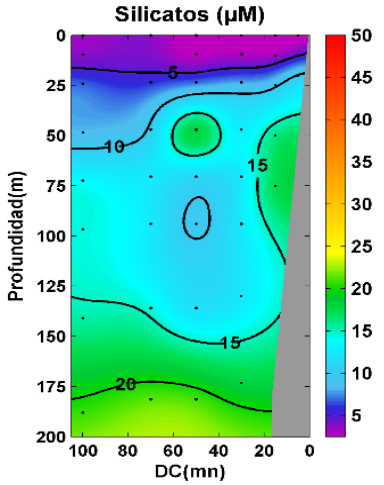
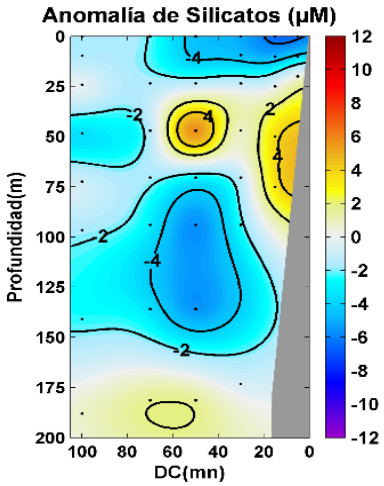




3-4 ABRIL

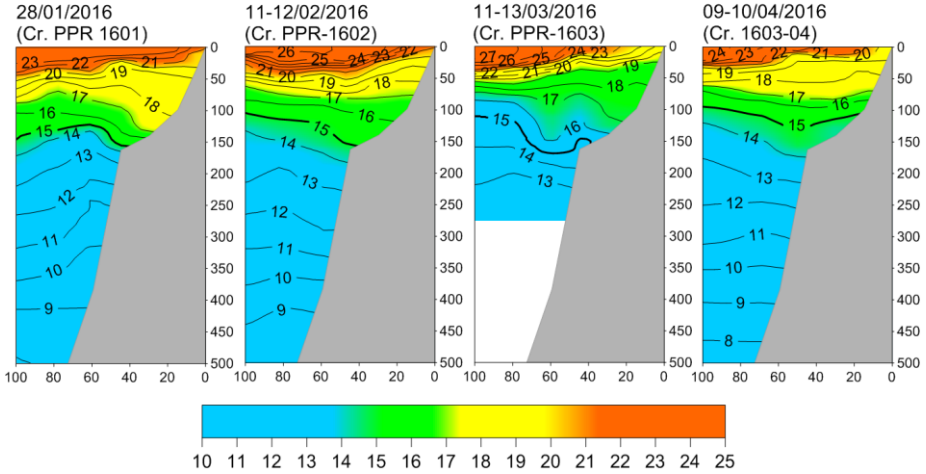




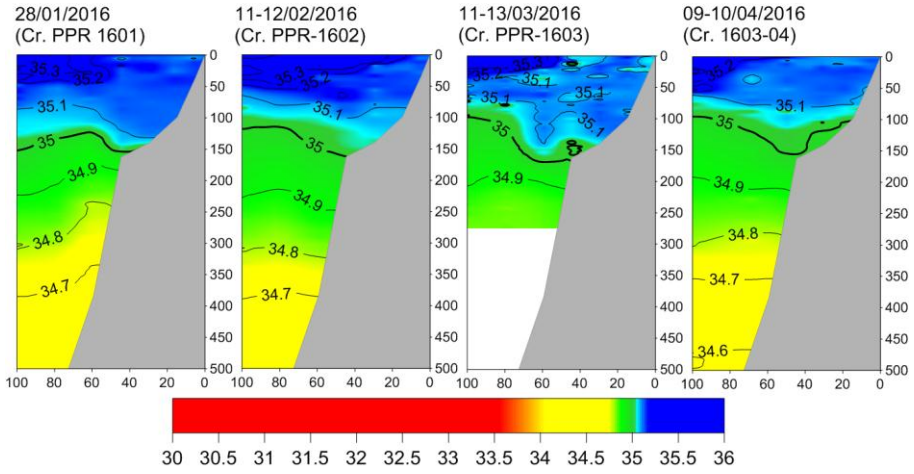
Secciones Paita (T, S, O)

SECCION CHICAMA ENERO - ABRIL - 2016

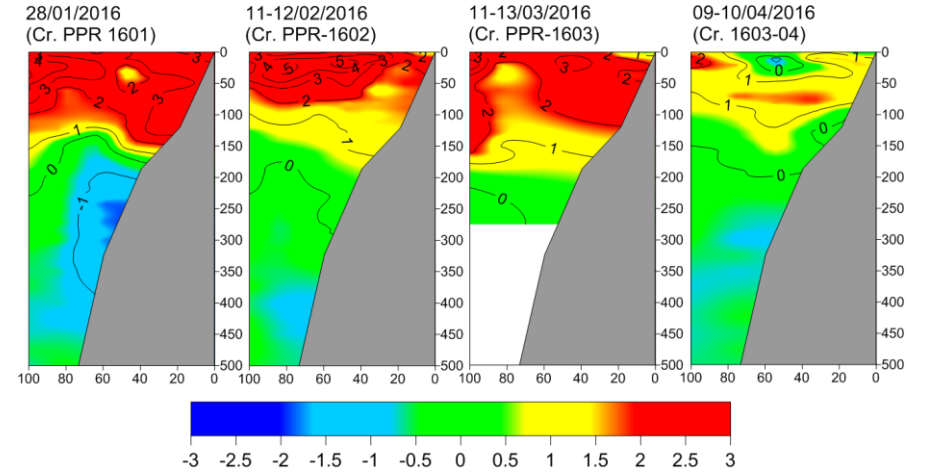
TEMPERATURA (°C) DE LA SECCION CHICAMA



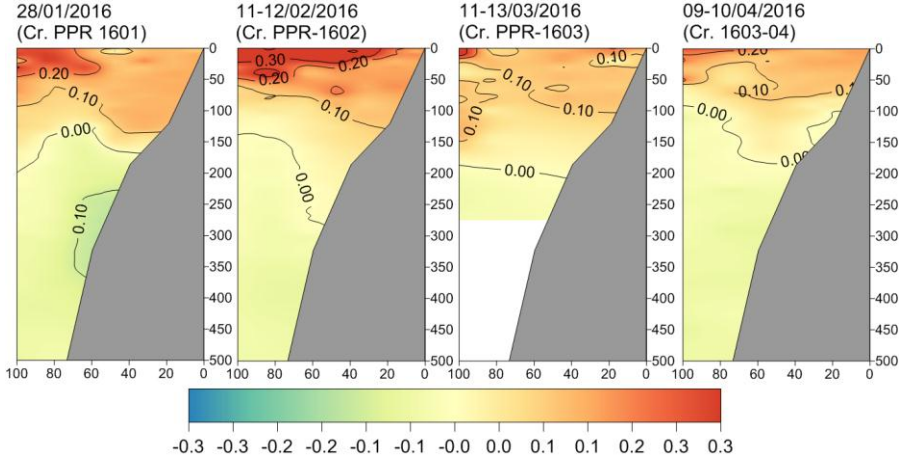
SALINIDAD (ups) DE LA SECCION CHICAMA



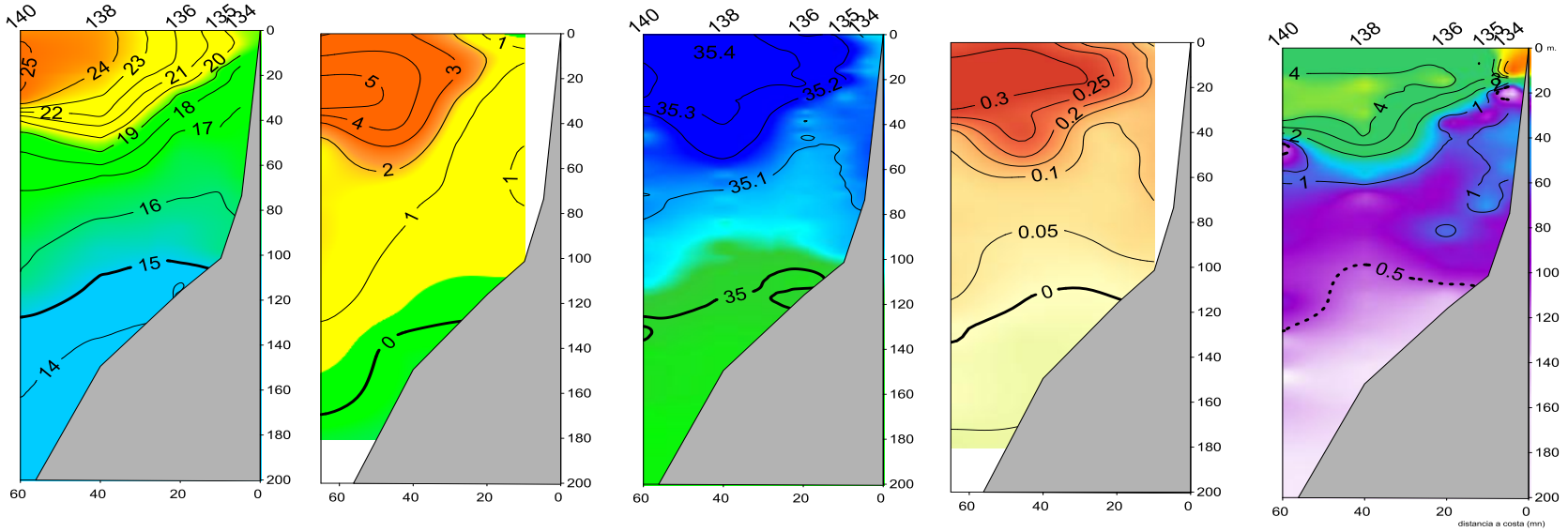
ANOMALIAS TERMICAS (°C) DE LA SECCION CHICAMA



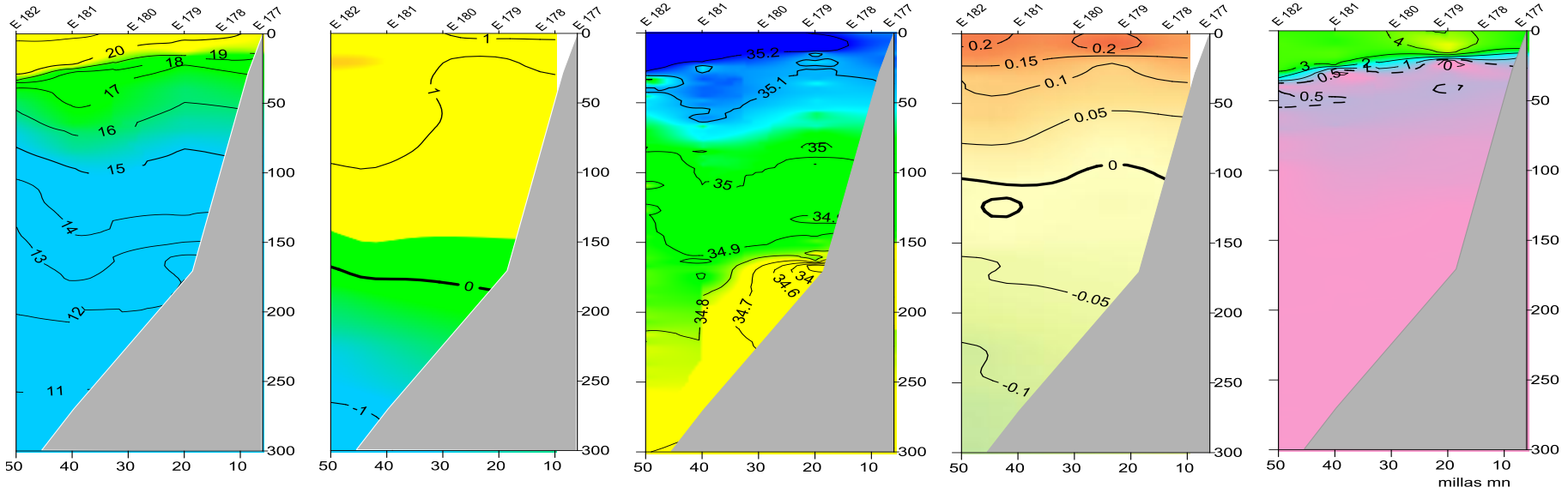
ANOMALIAS HALINAS (ups) DE LA SECCION CHICAMA



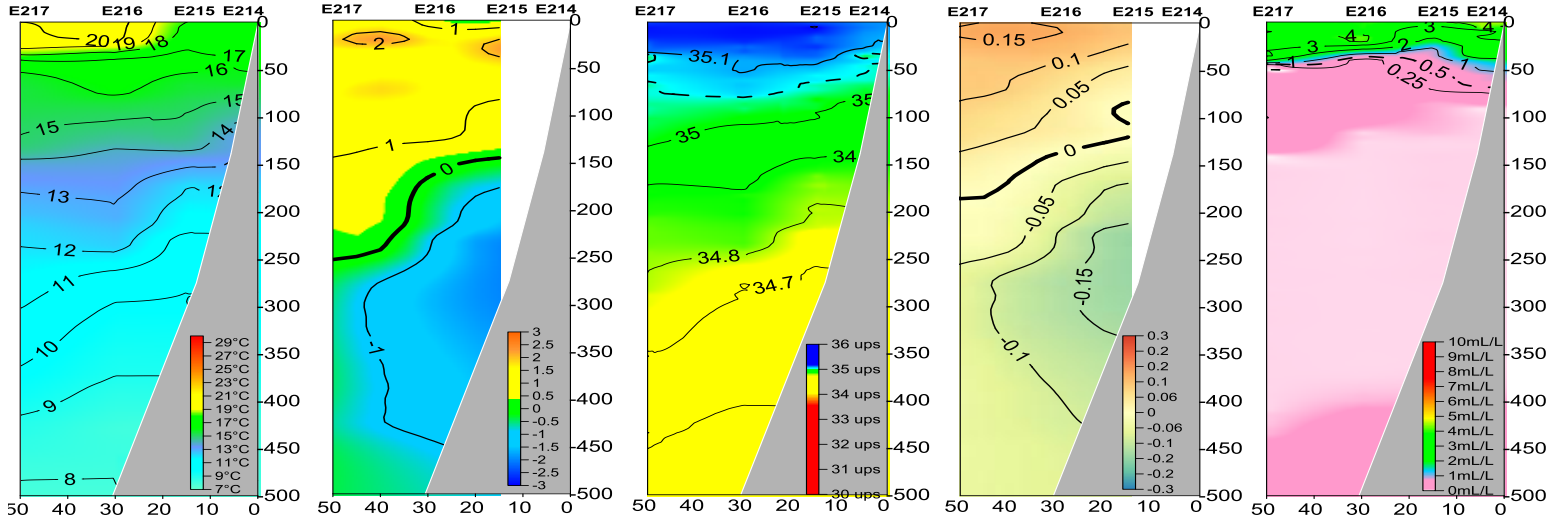
Secciones Chimbote (T, S, O)



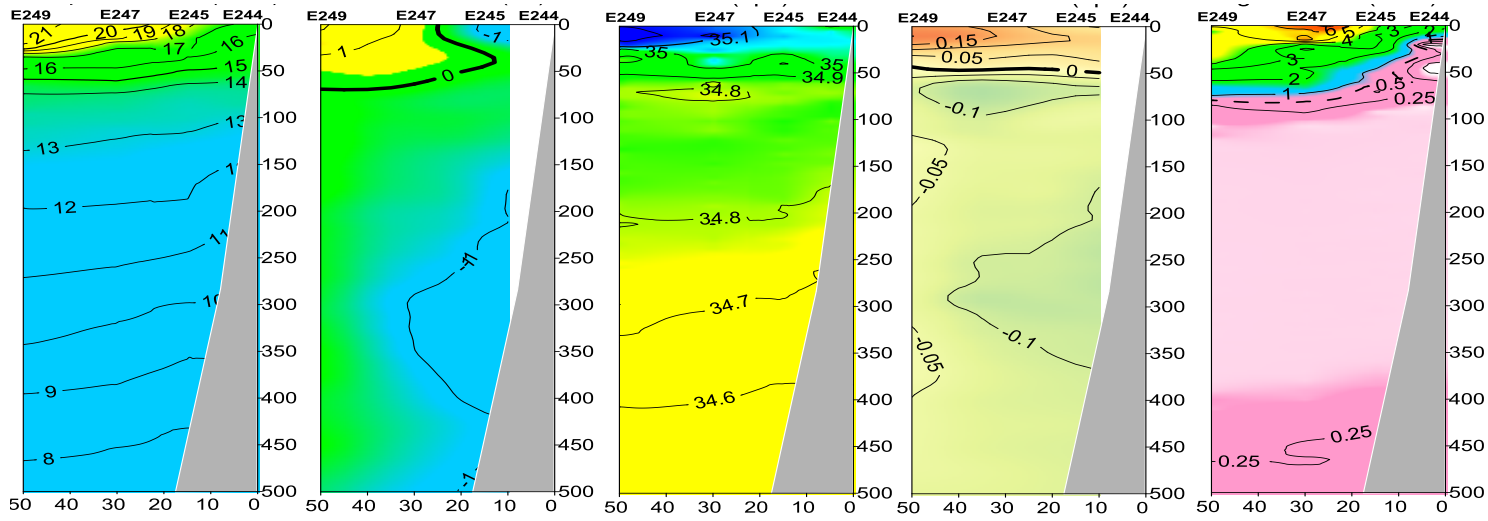
Secciones Callao (T, S, O)



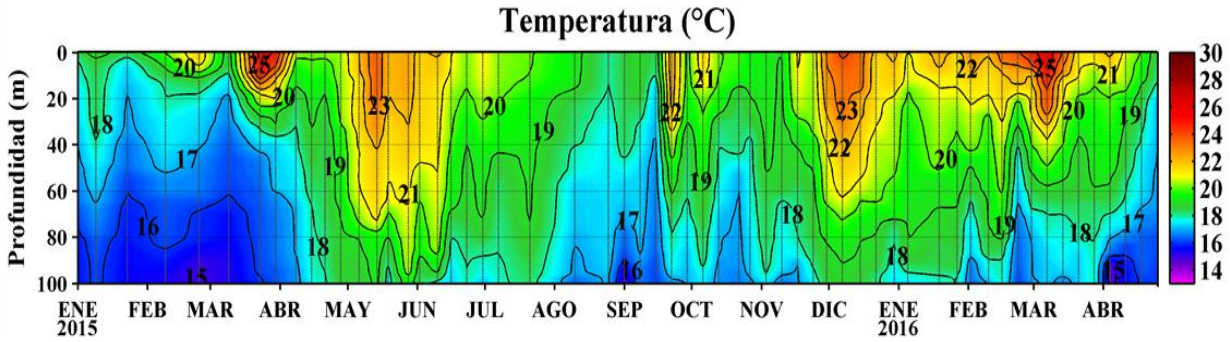
Secciones Pisco (T, S, O)

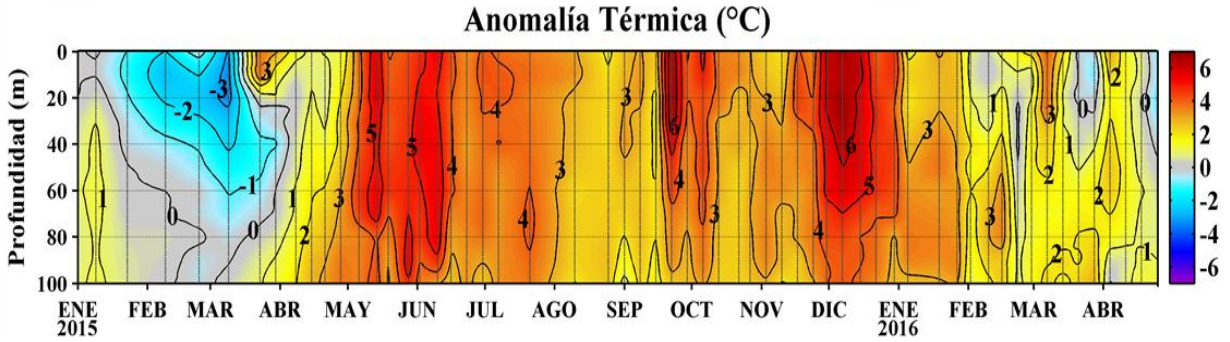


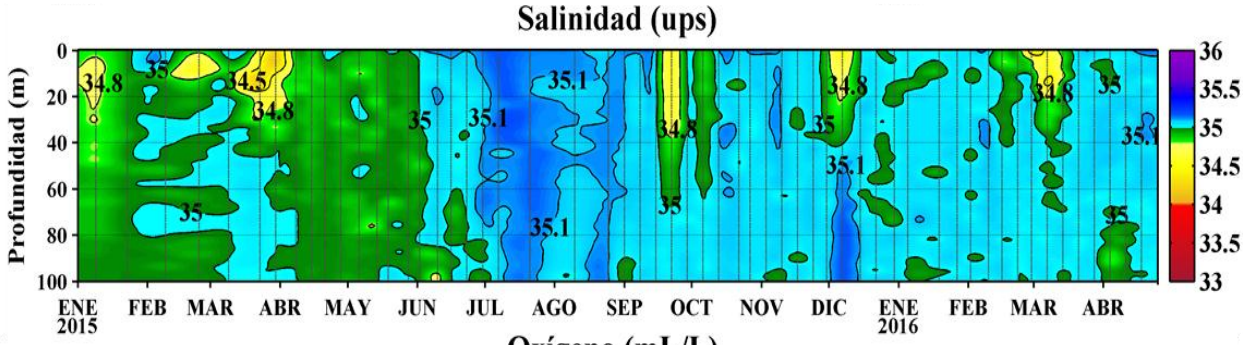
Secciones San Juan (T, S, O)

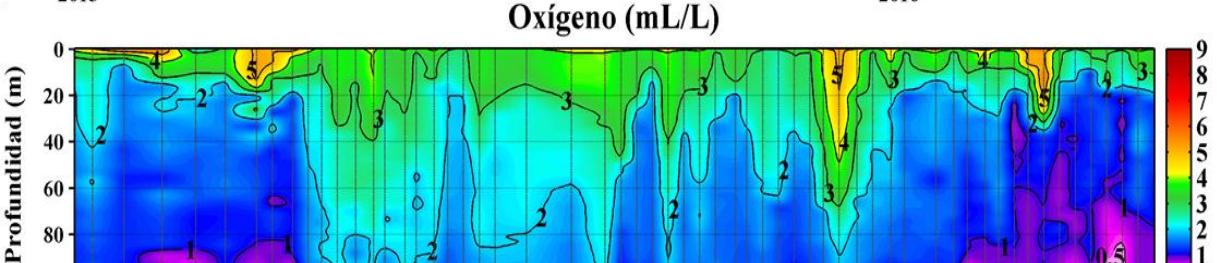


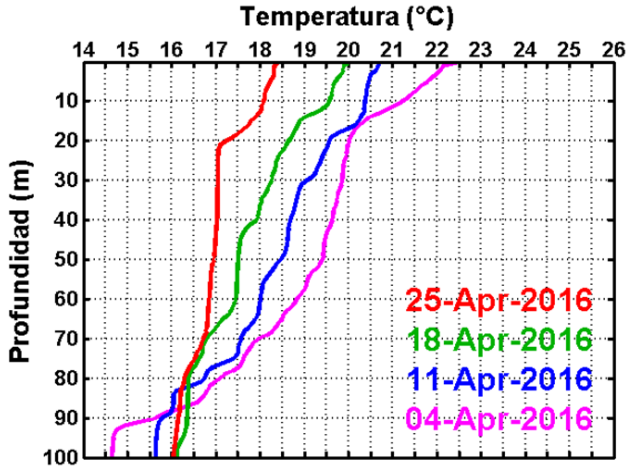
Punto Fijo Paita: T, S, O (25.04.2016)

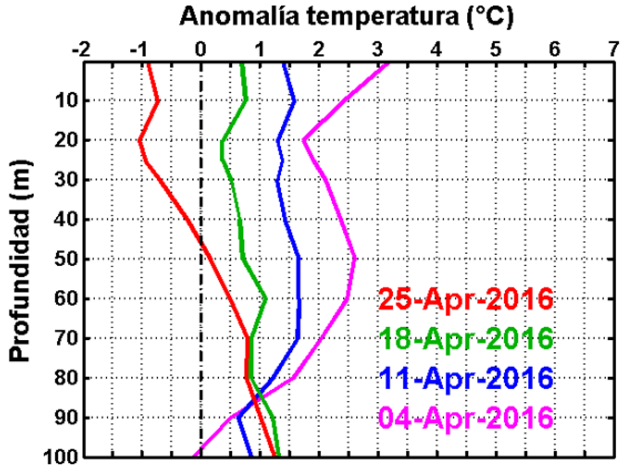




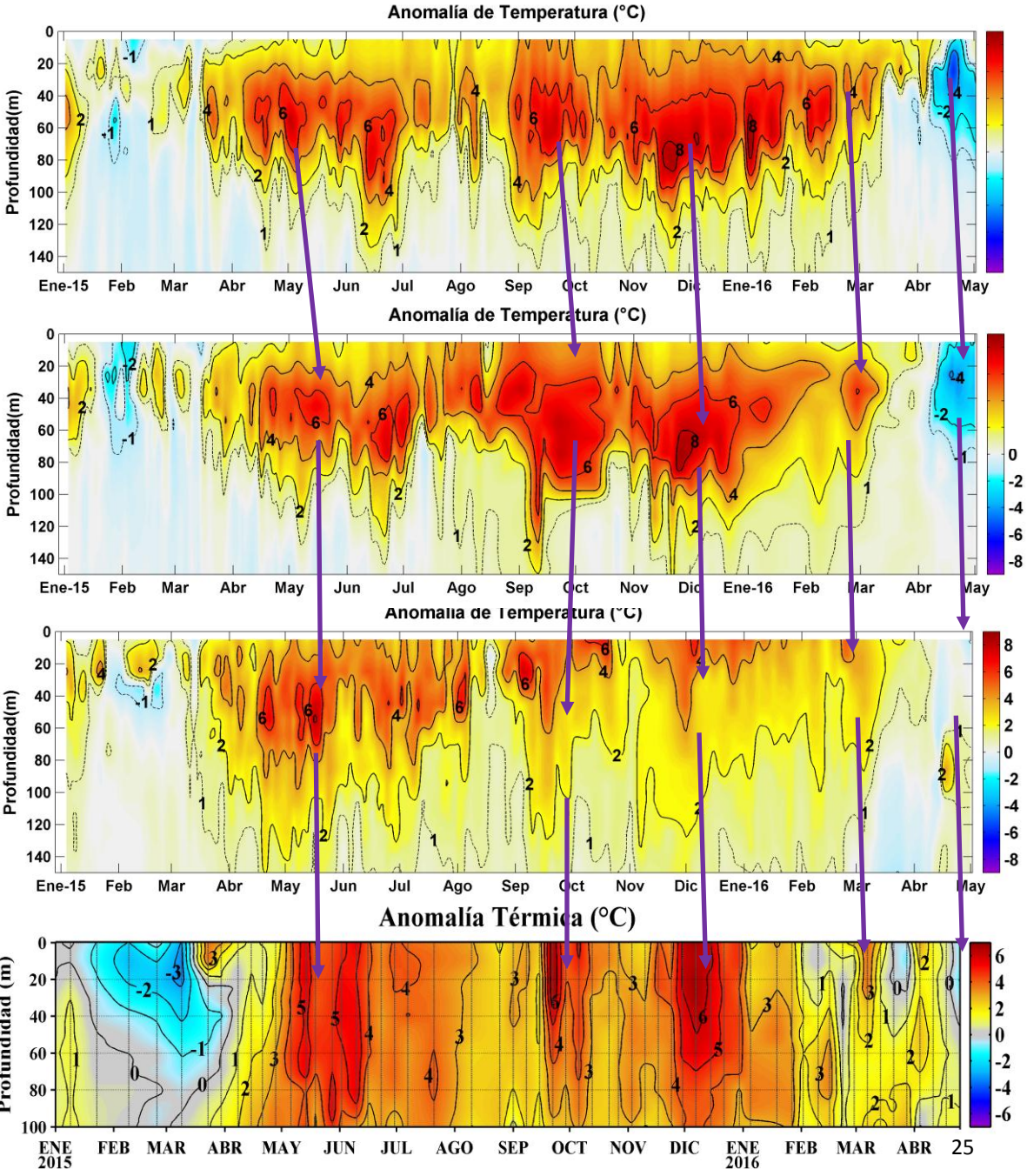


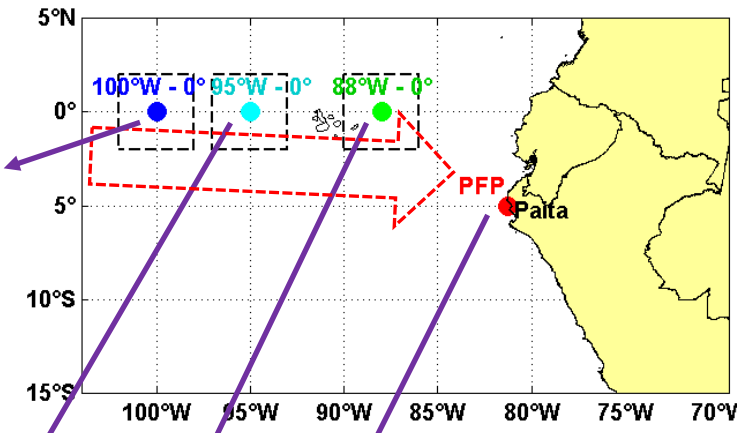




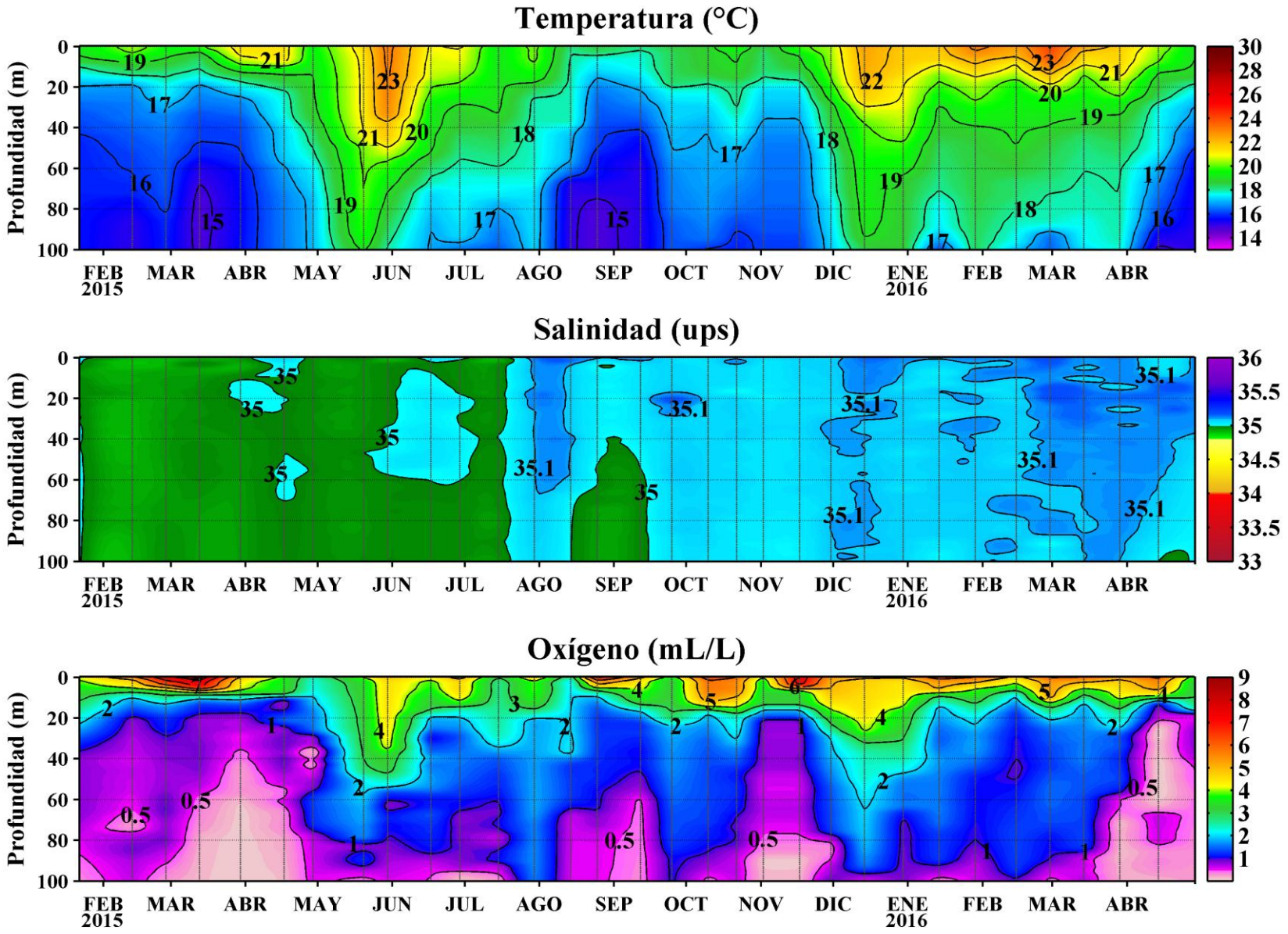


SERIE DE TIEMPO DE ANOMALÍA TÉRMICA (ENERO 2015 - 02 DE MAYO 2016)
DATOS ARGOS, CLIMATOLOGÍA GODAS (1993-2015) –PFP (25 ABRIL DE 2016)

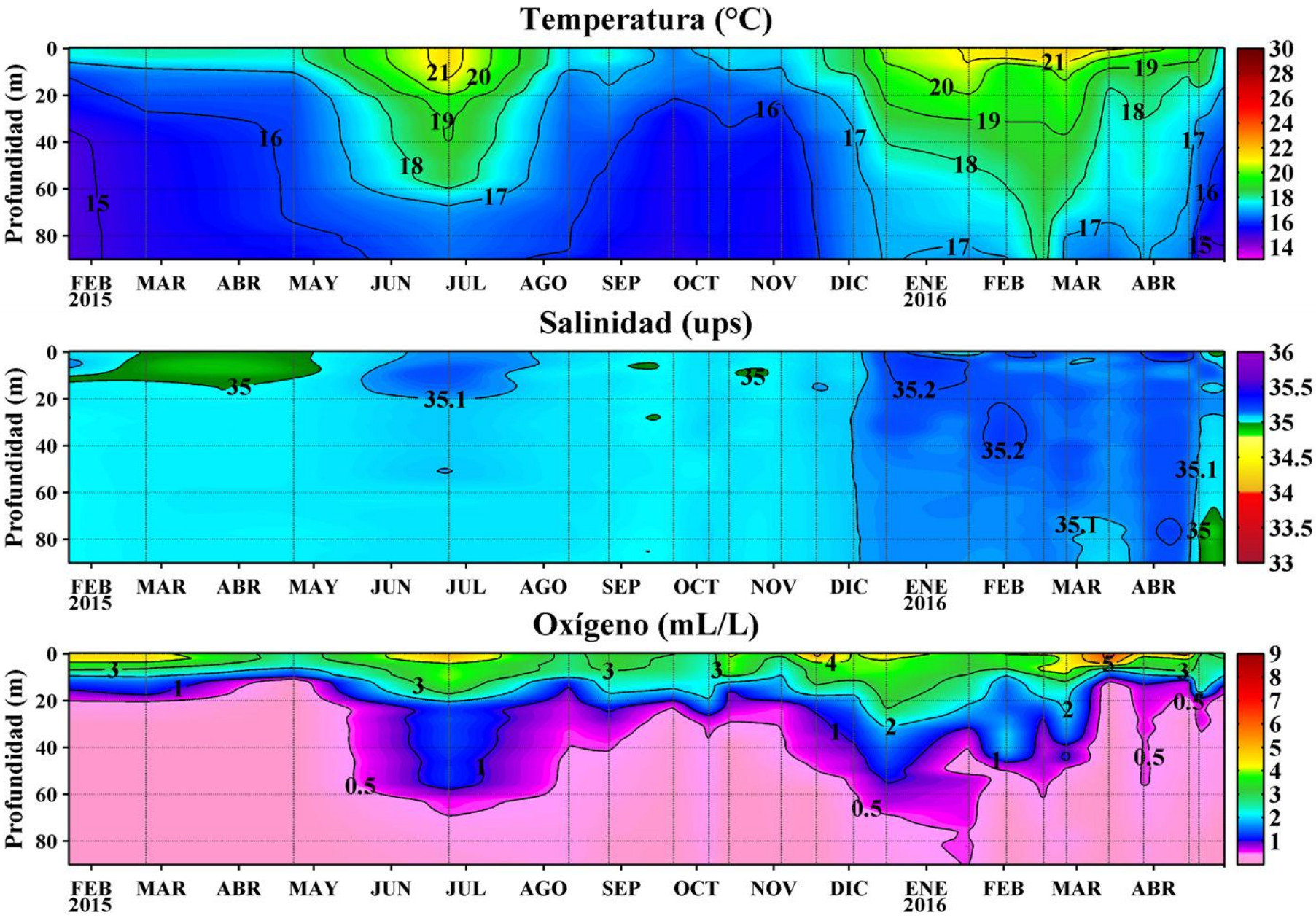




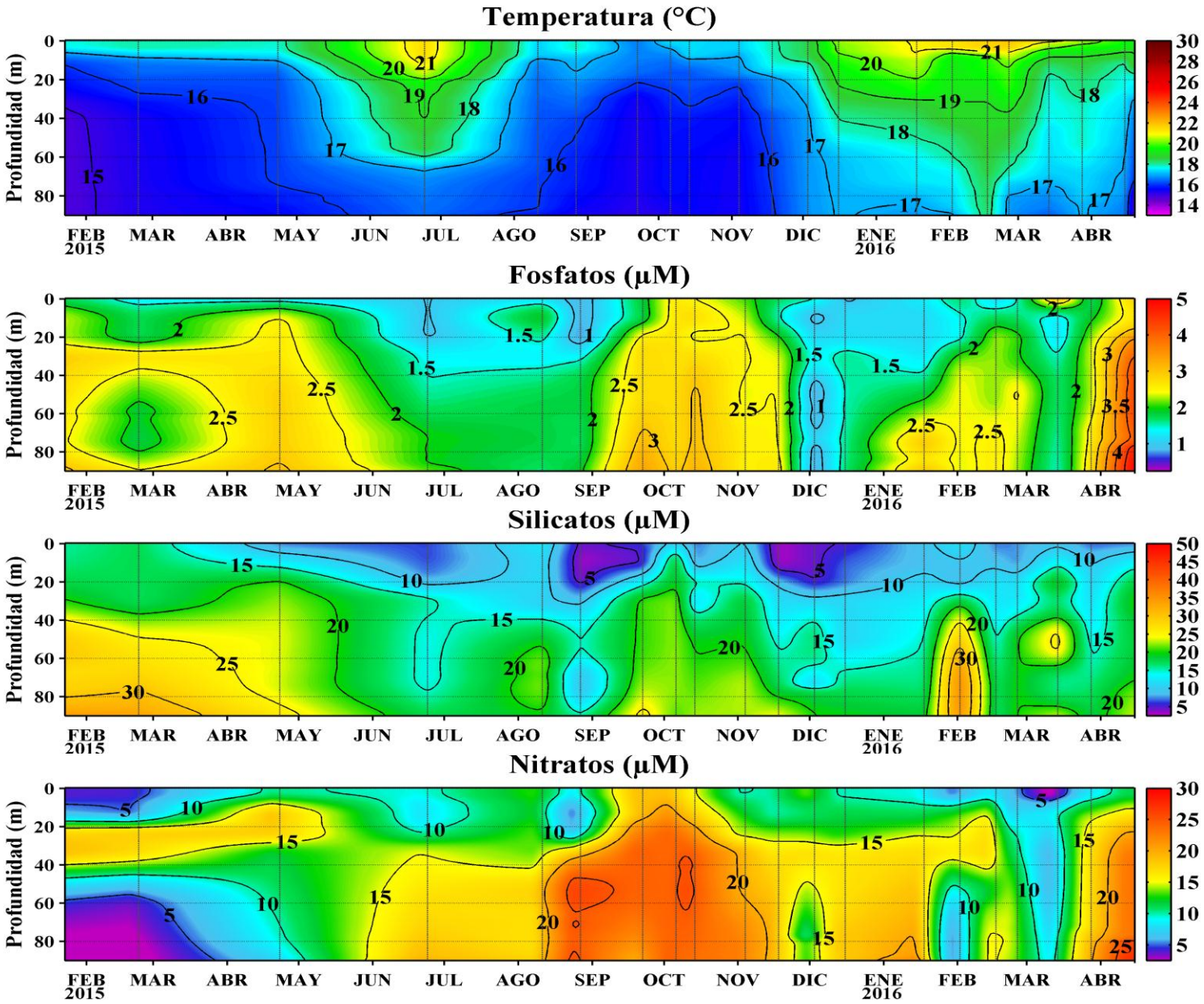
Punto Fijo Chicama: T, S, O (29 abril 2016)



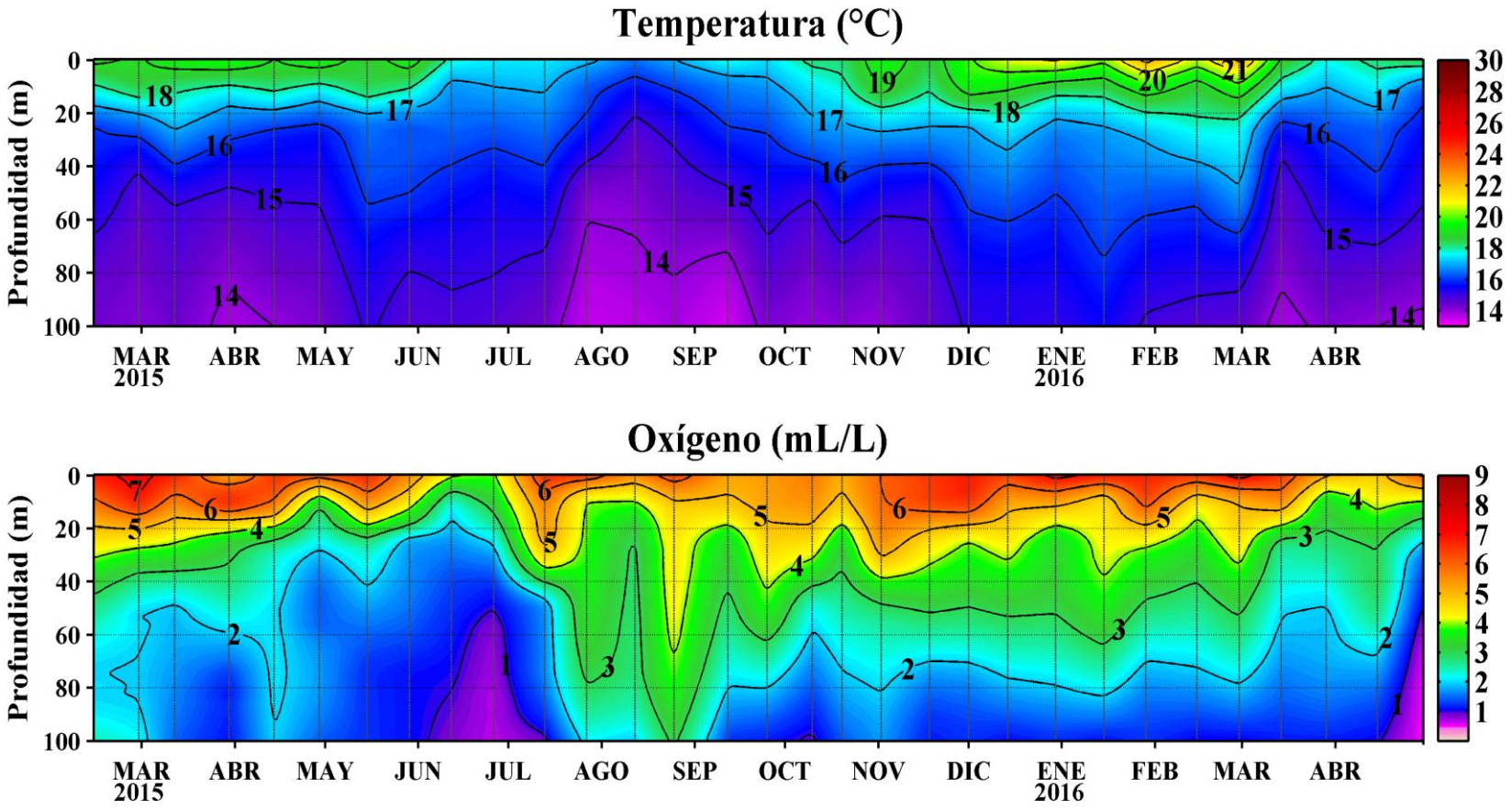
Punto Fijo Callao: T, S, O (29.04.2016)



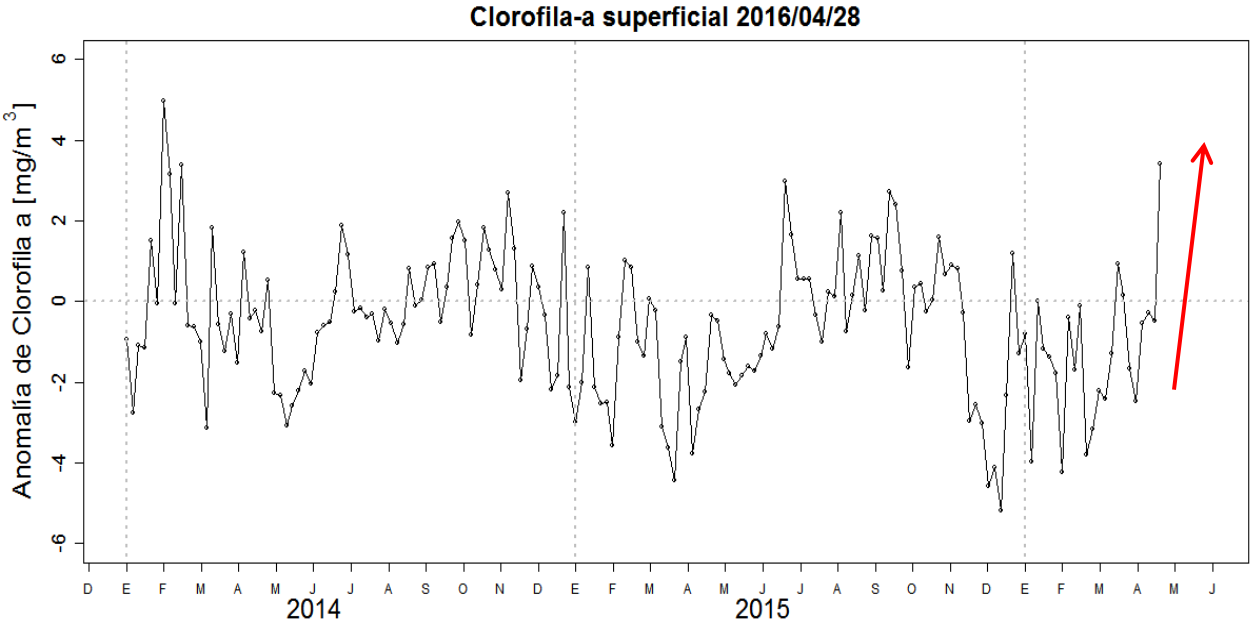
PUNTO FIJO DE CALLAO (19 DE ABRIL 2016)



Punto Fijo Ilo: T, O (30.04.2016)



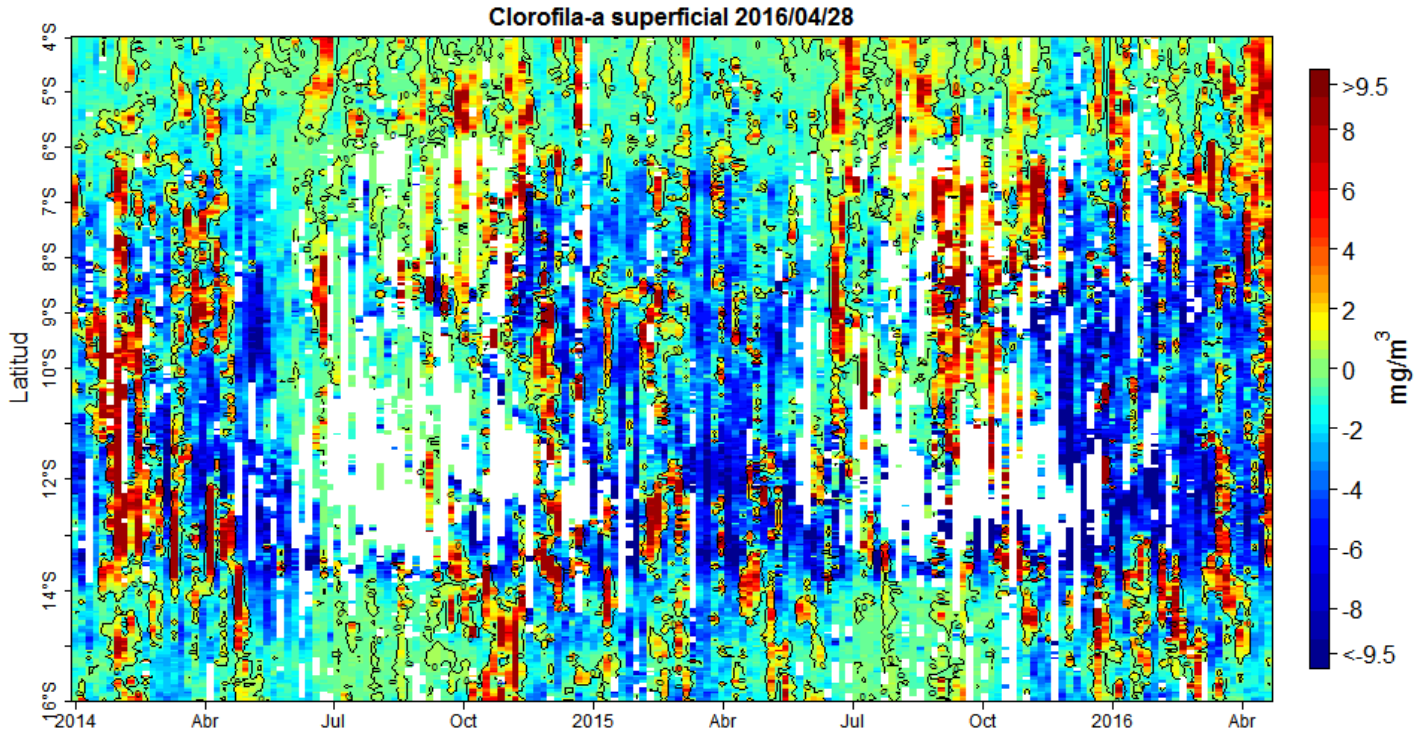
Clorofila-a Superficial



Fuente: Satélite MODIS – 4km

A) Promedio pentadal de anomalía de cl-*a* (0-100km, 4° S-16° S).

B) Hovmöller de cl-*a* mensual a lo largo de la costa (0-100km).



Desembarque industrial de los principales recursos pelágicos - Abril 2016

Especie \ Flota \ Región		Año Calendario (01 Ene. al 30 Abr. 2016)					
		Norte	Centro	N+C	Sur	Total	%
Anchoveta	FI Acero	113 700	86 044	199 745	19 111	218 856	75.57
	FI Madera	57 062	9 500	66 562	116	66 678	23.02
Sub-total		170 763	95 544	266 307	19 227	285 534	98.60
%		59.80	33.46	93.27	6.73	100.00	
Sardina		0	0	0	0	0	0.00
Jurel		0	0	0	0	0	0.00
Caballa		20	94	114	2	116	0.04
Samasa		1 852	0	1 852	0	1 852	0.64
*Otros		117	1 922	2 039	57	2 096	0.72
Total		172 751	97 560	270 311	19 286	289 597	100.00
%		59.65	33.69	93.34	6.66	100.00	

* Otros incluye principalmente: Bonito, jurel fino, bagre, melva.

Cifras preliminares de uso científico

Fuente: AFIRNP

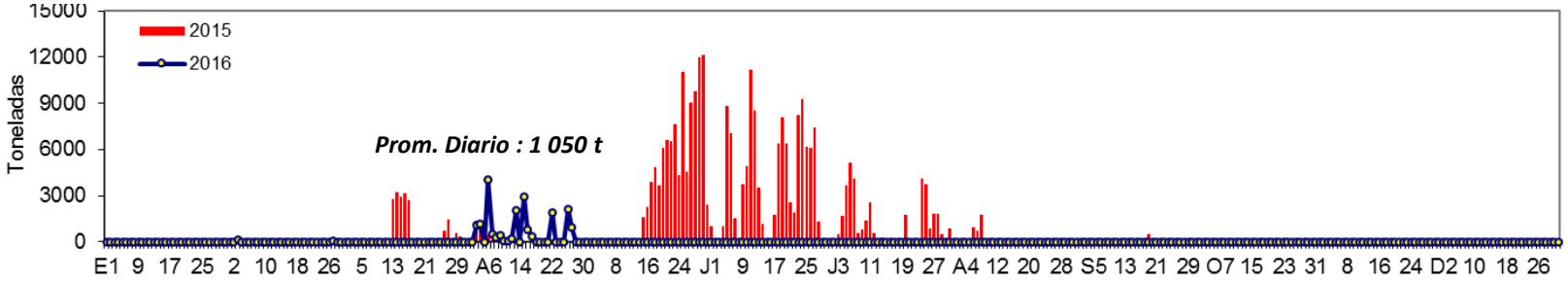
Primera temporada de pesca Sur de anchoveta (03 febrero al 30 junio 2016)

R.M Nº 017-2016-PRODUCE
380 mil t

Al 30 de abril

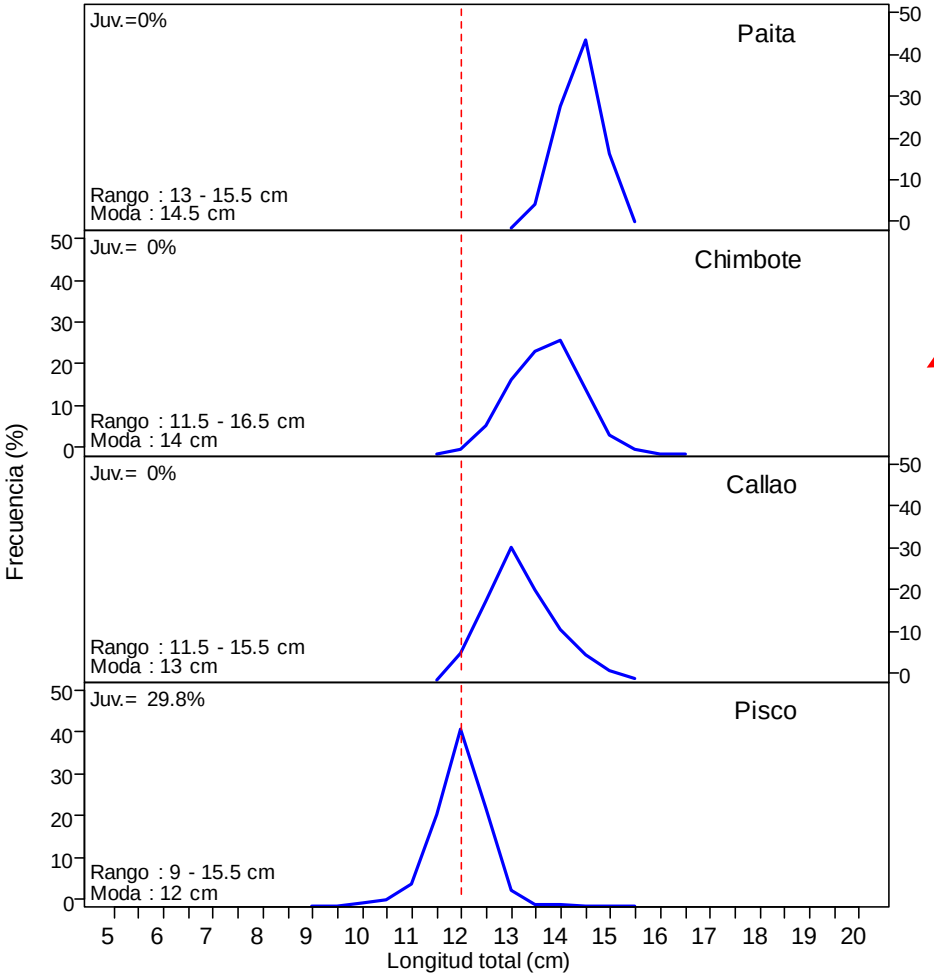
Especie \ Flota \ Puerto		Atico	Planchada	Quilca	Mollendo	Ilo	Total	%
Anchoveta	**FI Acero**	2 234	4 083	0	6 671	6124	19 111	99.40
	FI Madera	116	0	0	0	0	116	0.60
Total		2 350	4 083	0	6 671	6 124	19 227	100.00
%		12.22	21.23	0.00	34.69	31.85	100.00	
CUOTA (382 000 t) en la región SUR				***5.03 % de la cuota total***				

Cifras preliminares

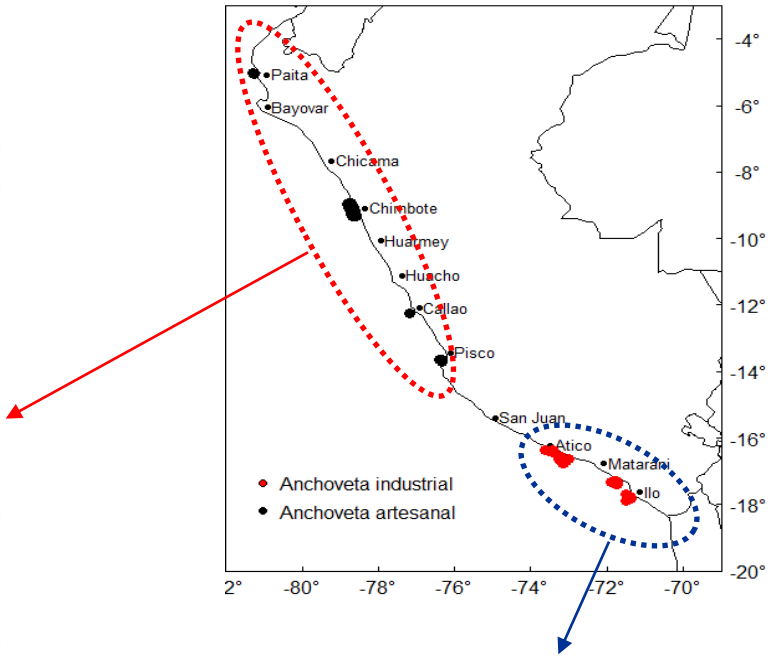


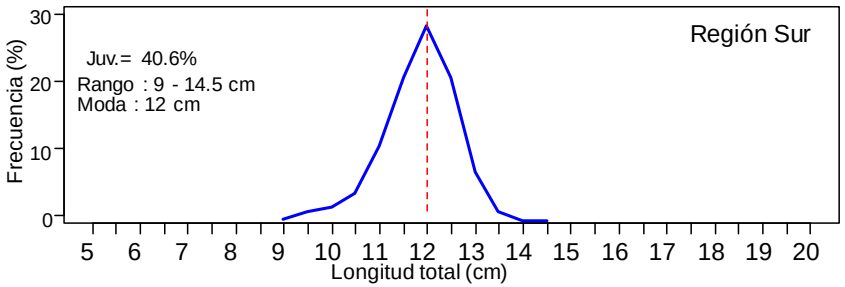
Desembarques de anchoveta en la región Sur. Comparativo 2015/2016

Estructura de tallas de anchoveta (Abril 2016)



Flota artesanal y/o menor escala

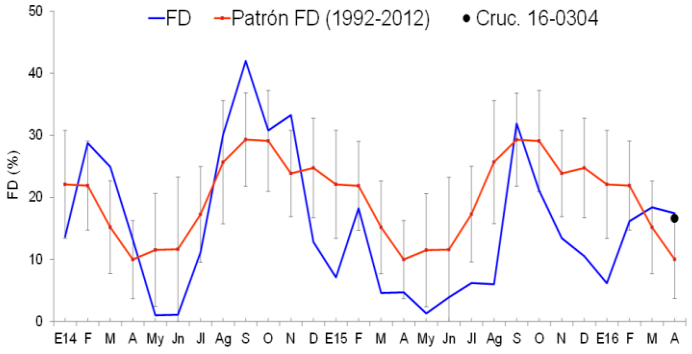




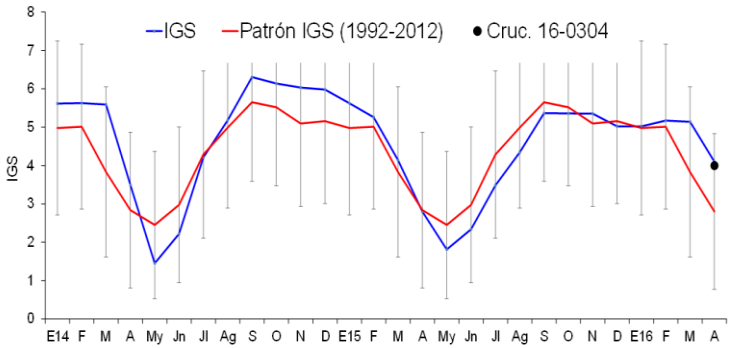
Flota industrial

Condición reproductiva de anchoveta (Abril 2016)

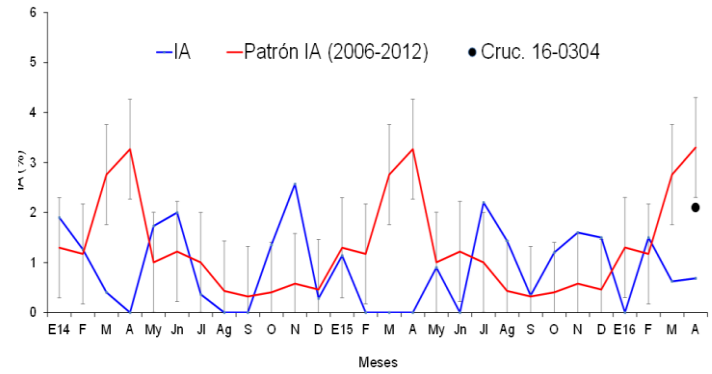
Fracción desovante



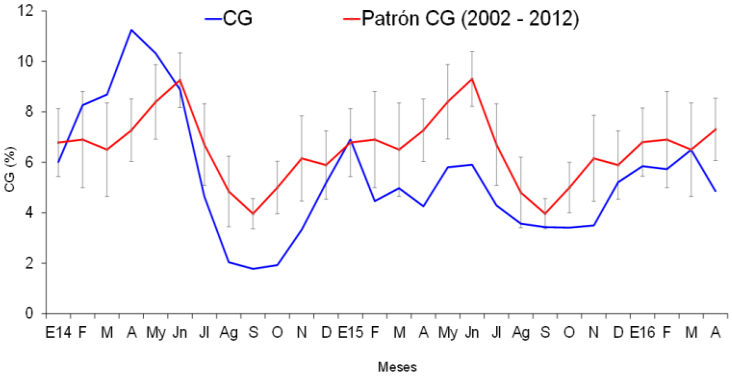
Índice Gonadosomatico



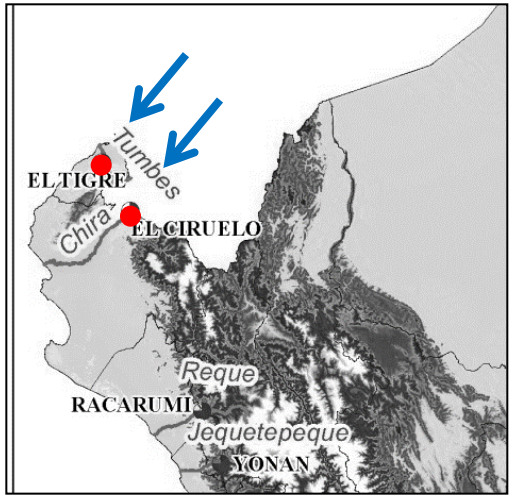
Índice de atresia

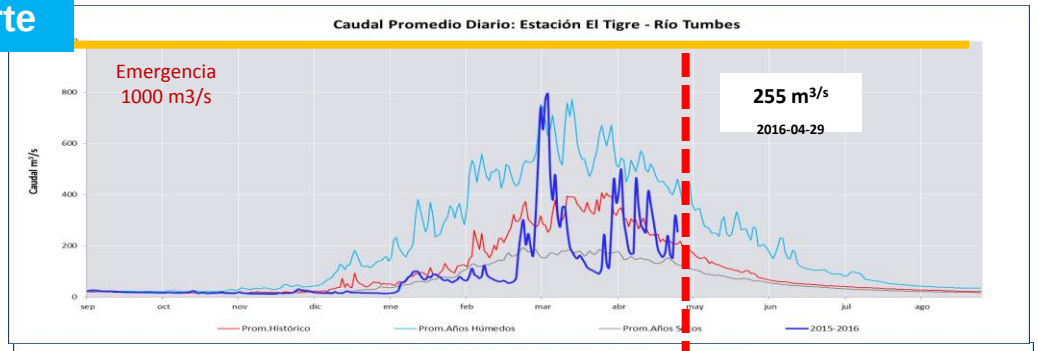


Contenido graso

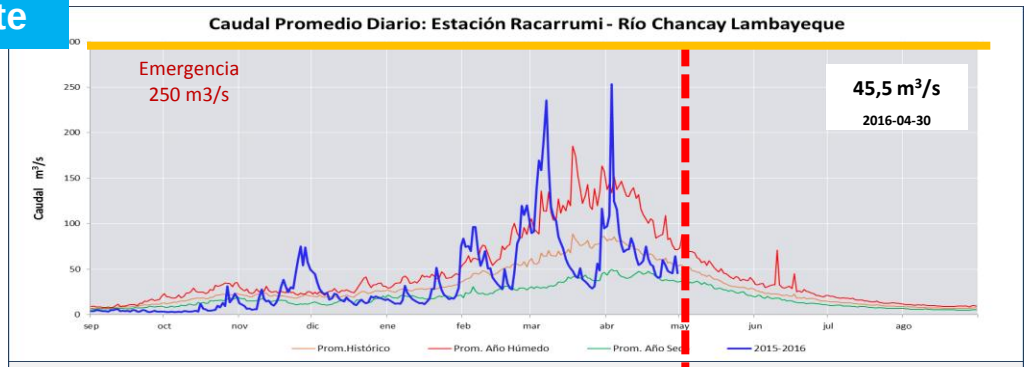


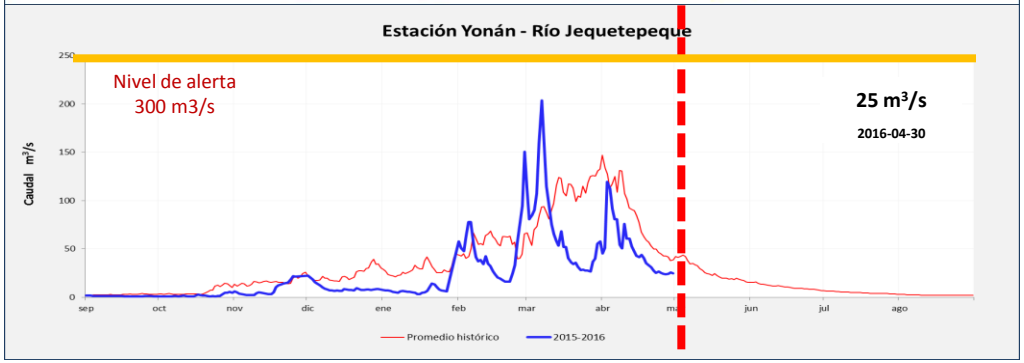
Región hidrográfica Pacífico – Ríos Costa Norte



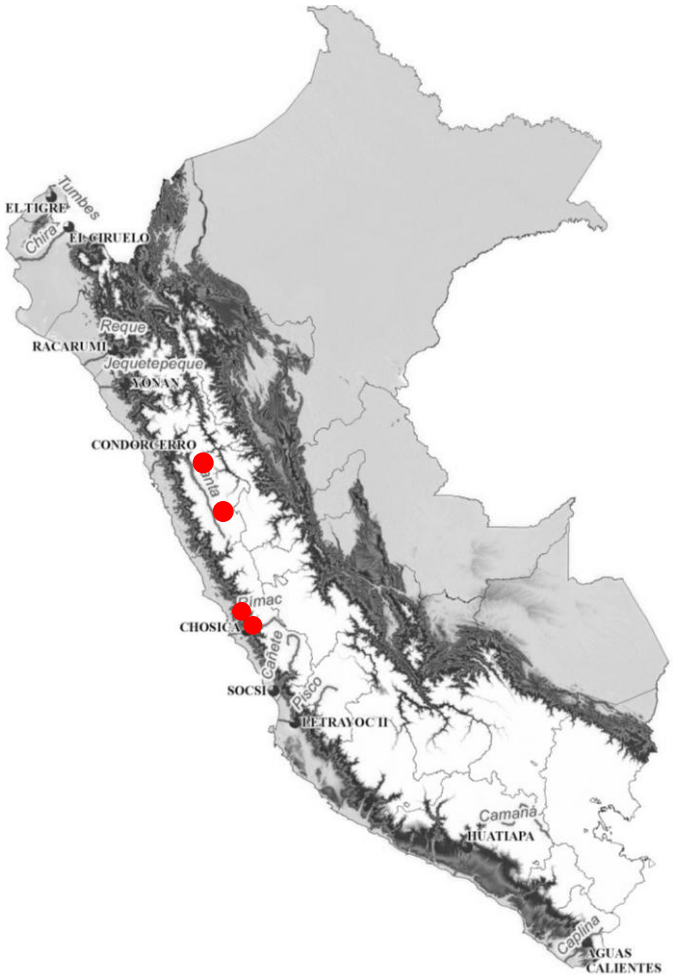


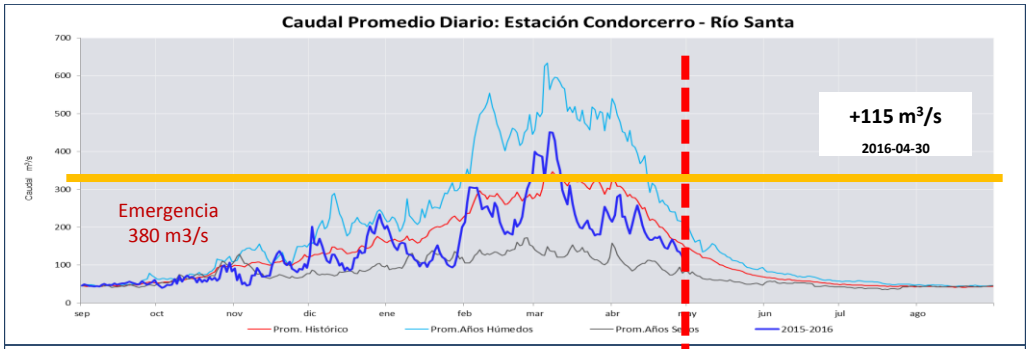
Región hidrográfica Pacífico – Ríos Costa Norte

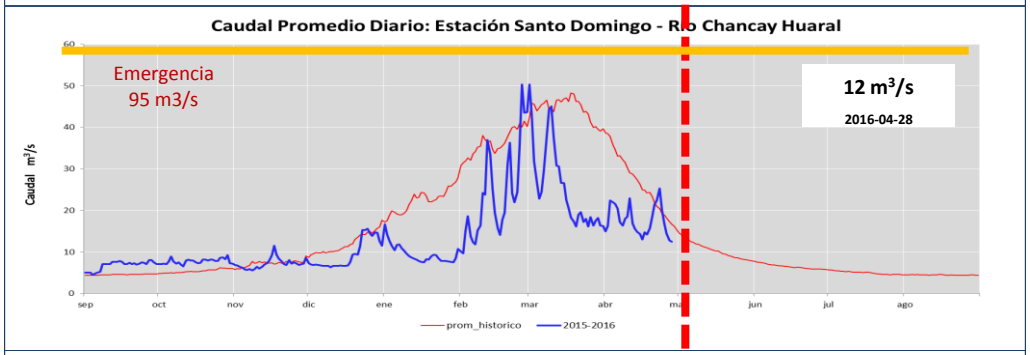


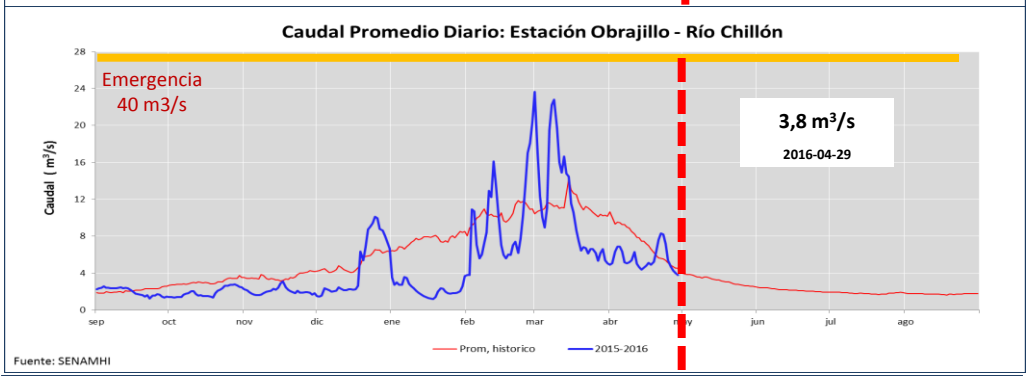


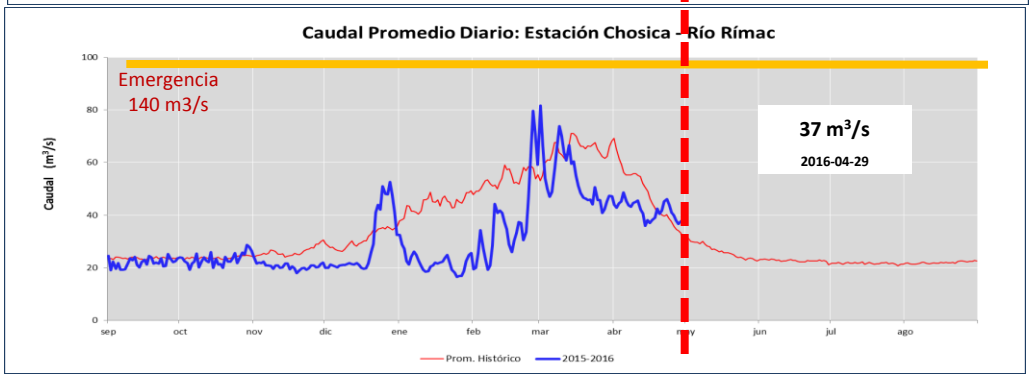
Región hidrográfica Pacífico – Ríos Costa Centro



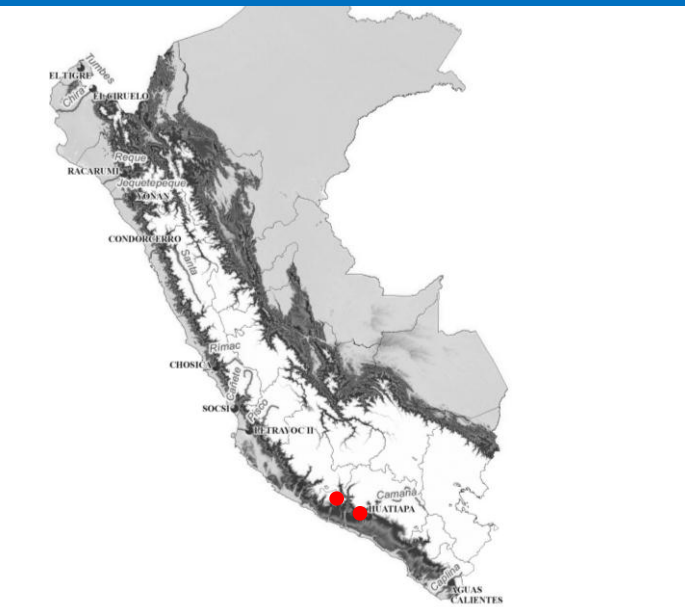


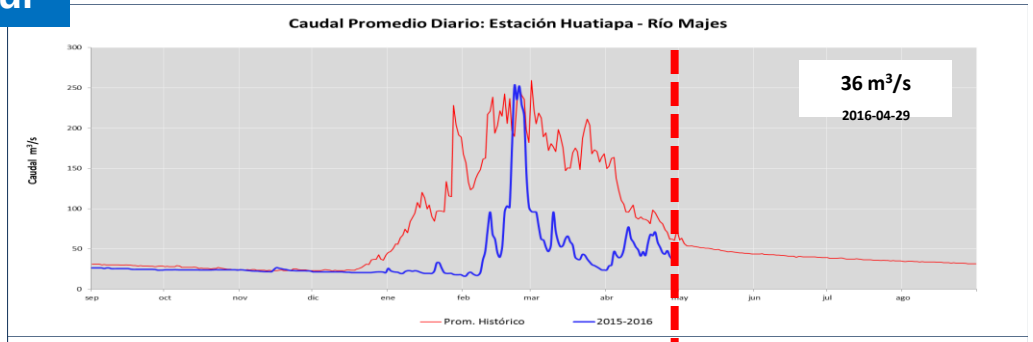


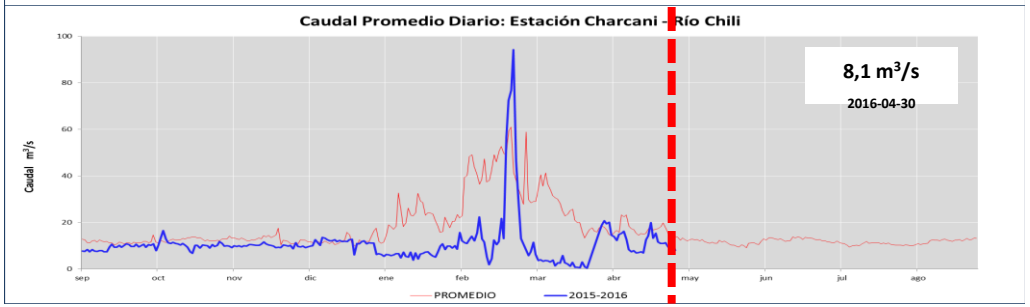




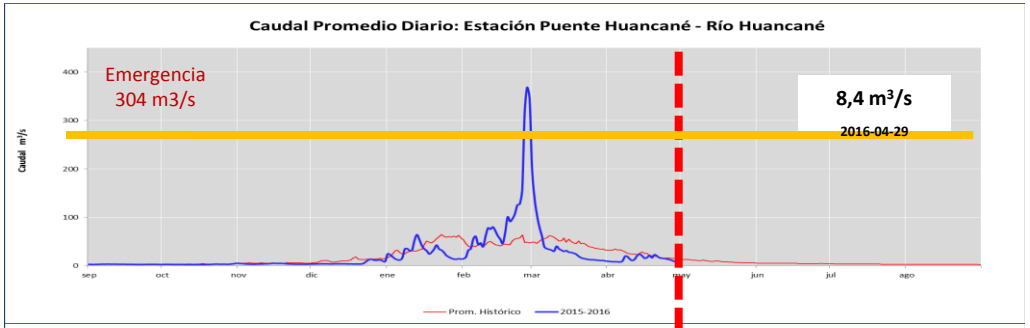
Región hidrográfica Pacífico – Ríos Costa Sur

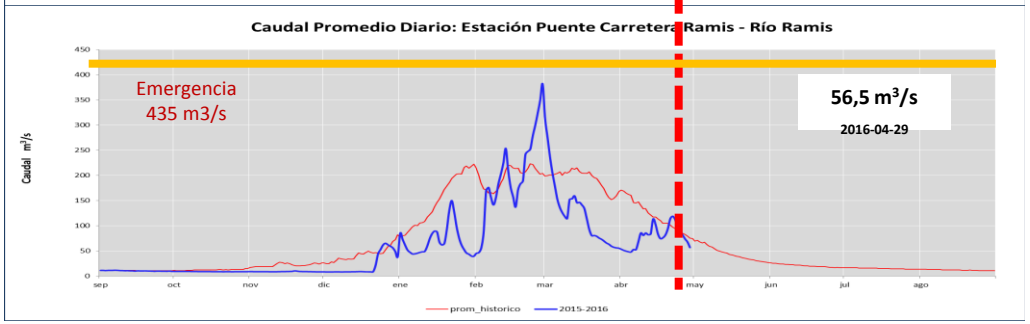




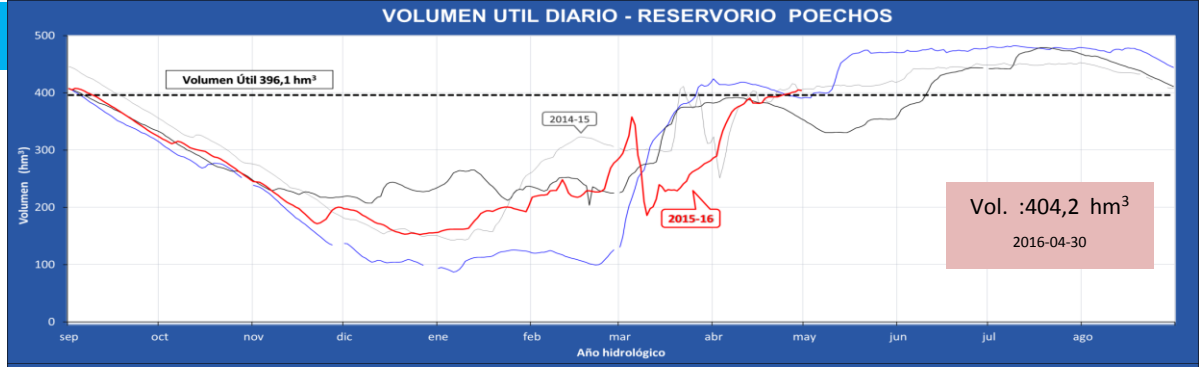


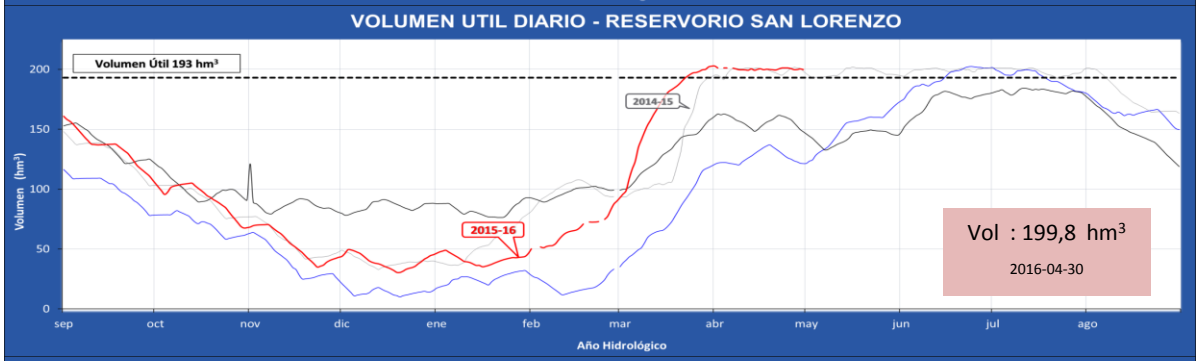
Región hidrográfica Titicaca

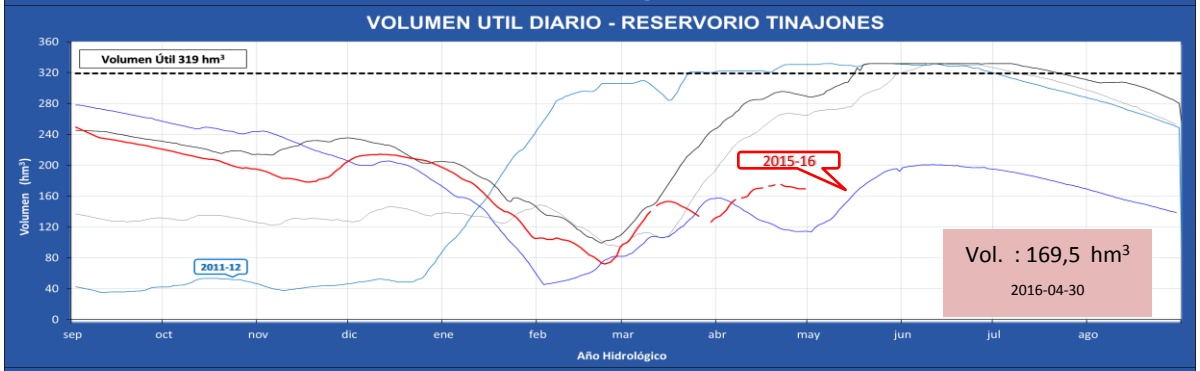


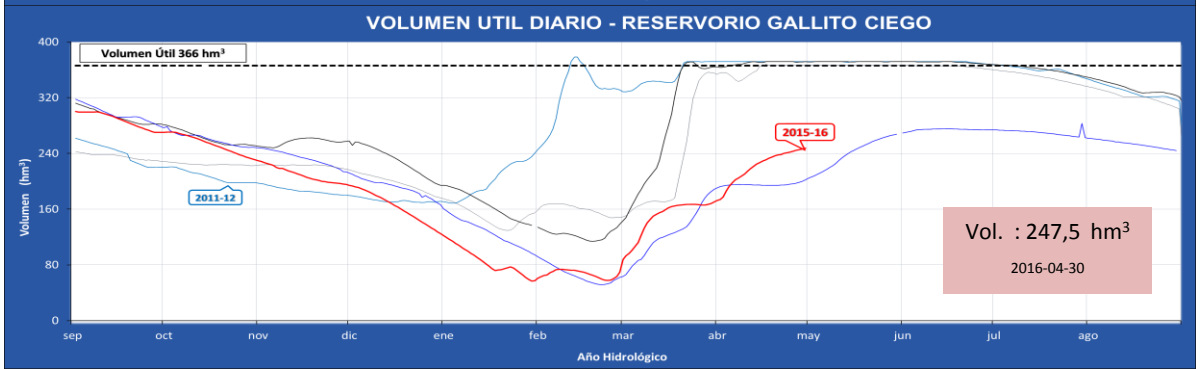


Embalses. Costa Norte.

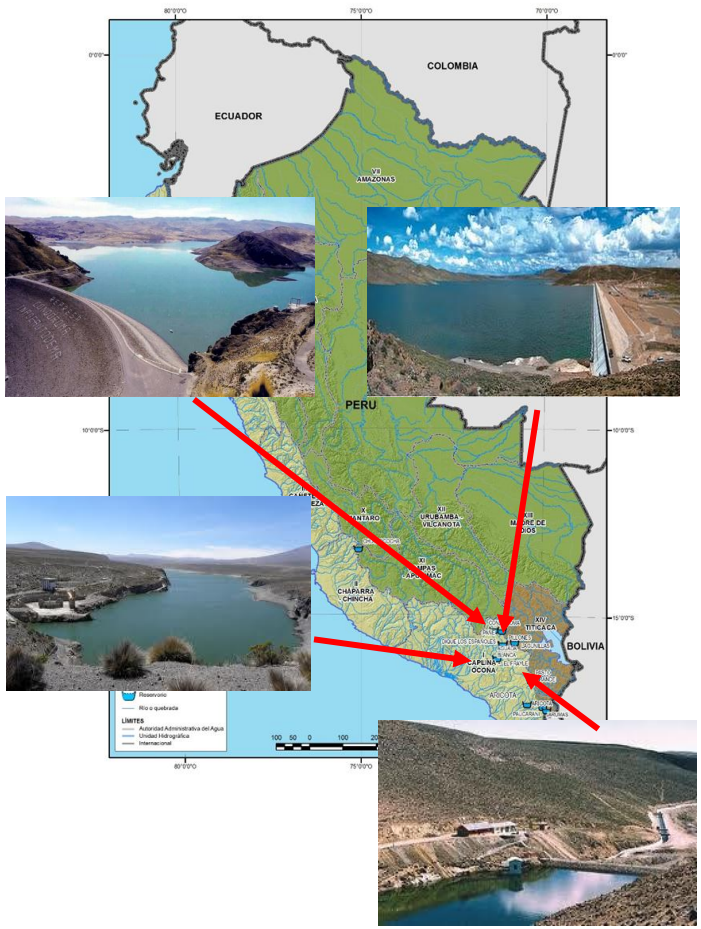


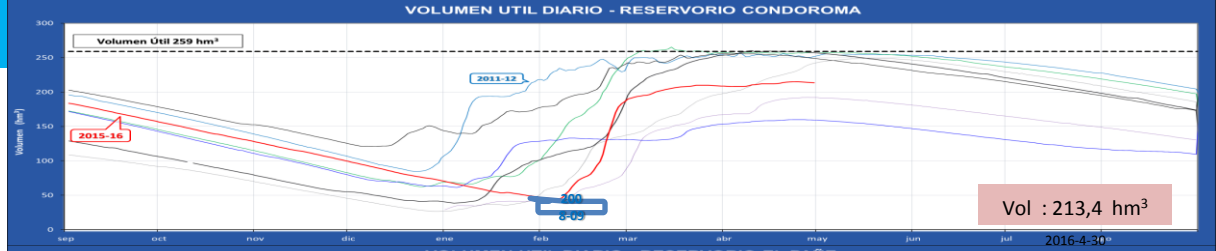


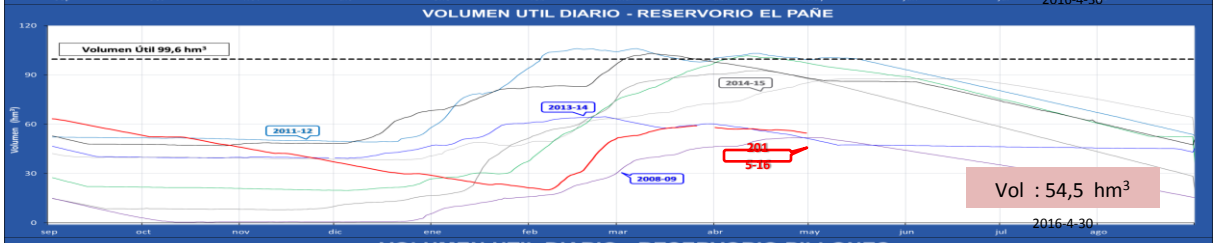


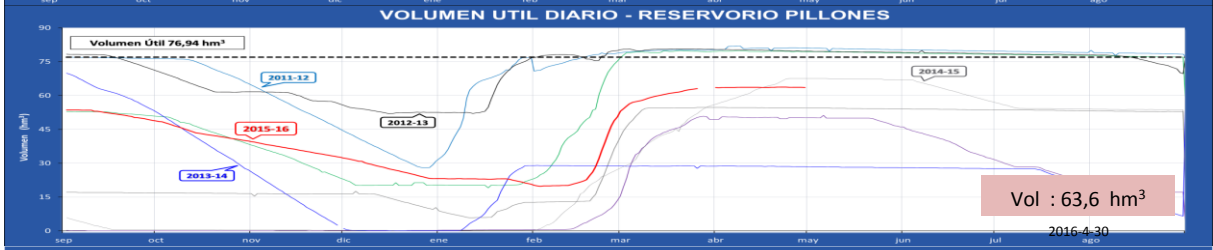


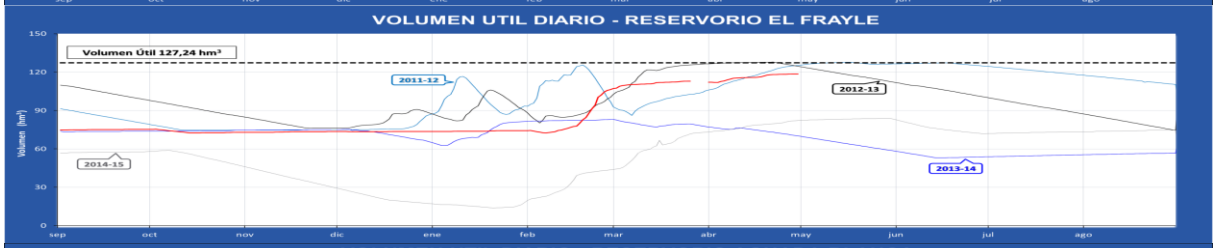
Embalses. Costa Sur.

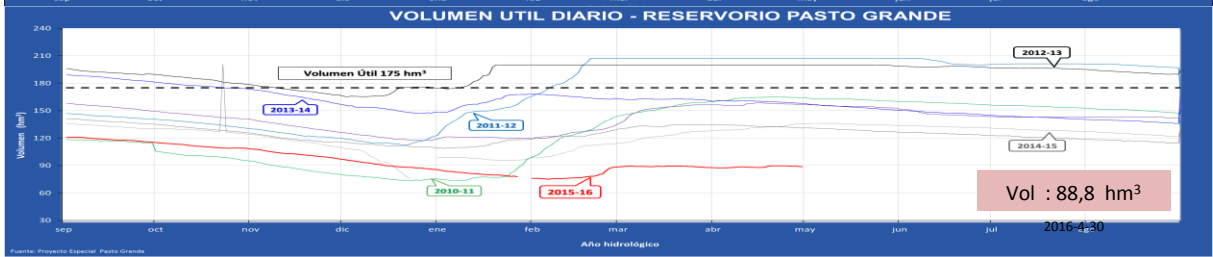












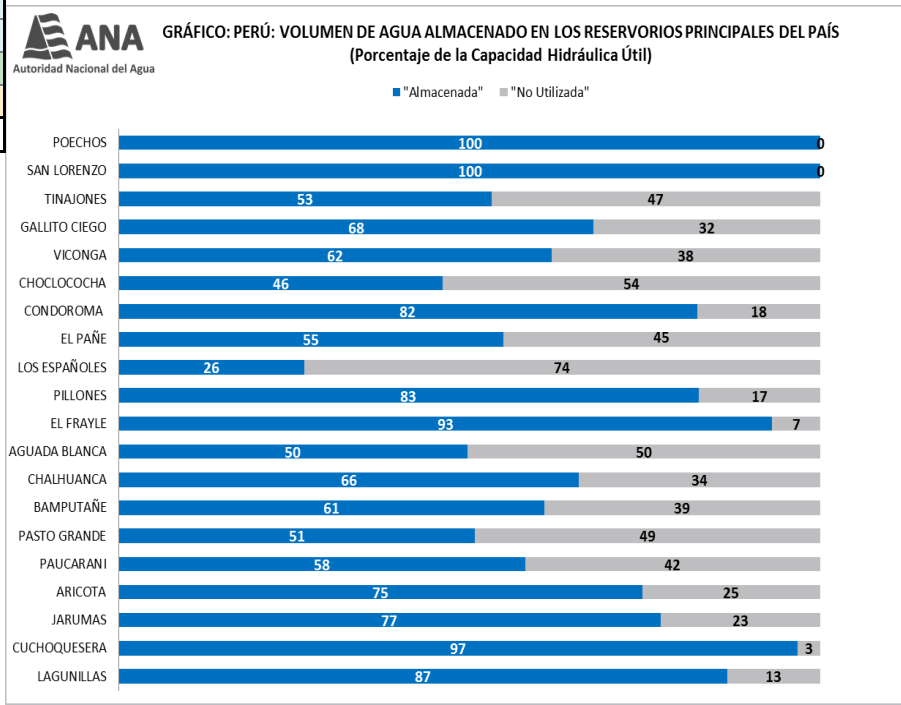
Resumen del estado de los principales embalses.

Zona	Nombre del Reservorio	Fecha Reporte	Departamento de Influencia	Área Bajo Riego (ha)	Capacidad Hidráulica (hm^3)		Capacidad Hidráulica Almacenada (%)
					Útil	Almacenada	
Costa - Norte	POECHOS	30-abr	Piura	93 240	396,1	404,2	100,0
	SAN LORENZO	30-abr	Piura	42 530	193,0	199,8	100,0
	TINAJONES	30-abr	Lambayeque	87 600	319,0	169,5	53,1
	GALLITO CIEGO	30-abr	La Libertad	55 700	366,0	247,5	67,6
Costa - Centro	VICONGA	29-abr	Lima	24 970	30,0	18,5	61,7
Costa - Sur	CHOCLOCOCHA	30-abr	Ica	23 000	131,1	60,5	46,1
	CONDOROMA	30-abr	Arequipa	20 810	259,0	213,4	82,4
	EL PAÑE	30-abr	Arequipa	27 060	99,6	54,6	54,8
	LOS ESPAÑOLES	30-abr	Arequipa		9,1	2,4	26,4
	PILLONES	30-abr	Arequipa		76,9	63,6	82,6
	EL FRAYLE	30-abr	Arequipa		127,2	118,4	93,1
	AGUADA BLANCA	30-abr	Arequipa		30,4	15,1	49,6
	CHALHUANCA	30-abr	Arequipa		25,2	16,5	65,6
	BAMPUTAÑE	30-abr	Arequipa		40,0	24,2	60,6
	PASTO GRANDE	30-abr	Moquegua	3 500	175,0	88,8	50,7
	PAUCARANI	30-abr	Tacna	1 700	8,5	4,9	58,0
	ARICOTA	29-abr	Tacna	3 200	260,0	193,9	74,6
	JARUMAS	14-abr	Tacna	4 000	12,5	9,7	77,2
Sierra - Centro	CUCHOQUESERA	29-abr	Ayacucho	19 200	60,0	58,0	96,7
Sierra - Sur	LAGUNILLAS	30-abr	Puno	5 000	500,0	433,5	86,7
Situación Nacional		-	-	411 510	3 118,7	2 397,1	**76,9**

Fuente: http://snirh.ana.gob.pe/fen/EFEN_EstadoEmbalses.aspx

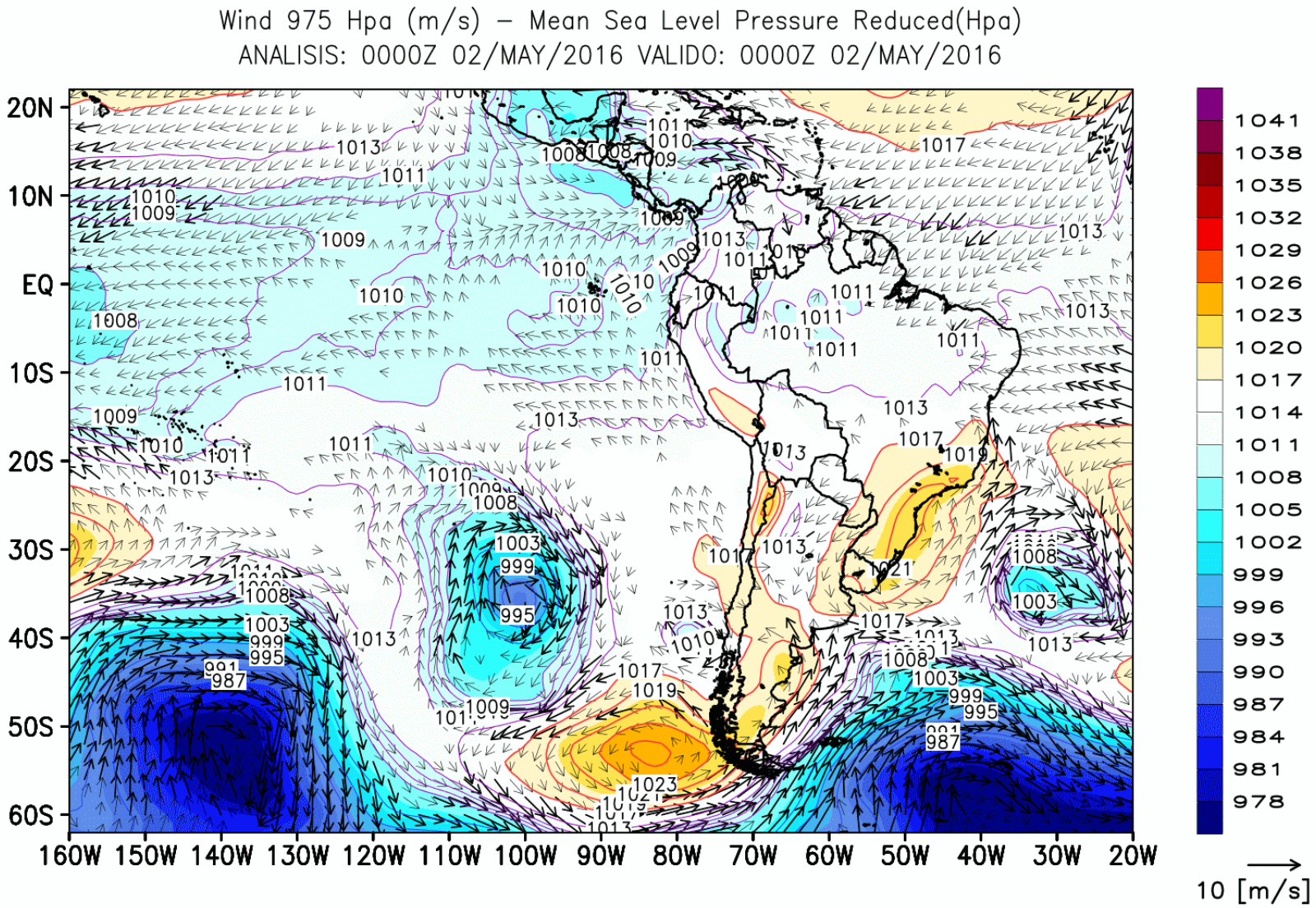
Los reservorios en la costa norte y sur alcanzaron en promedio 80% y 64% de su capacidad hidráulica.

El sistema Rímac viene recuperándose a partir de la quincena de febrero, con un estado hasta el 16 de abril de 86%.



PERSPECTIVAS

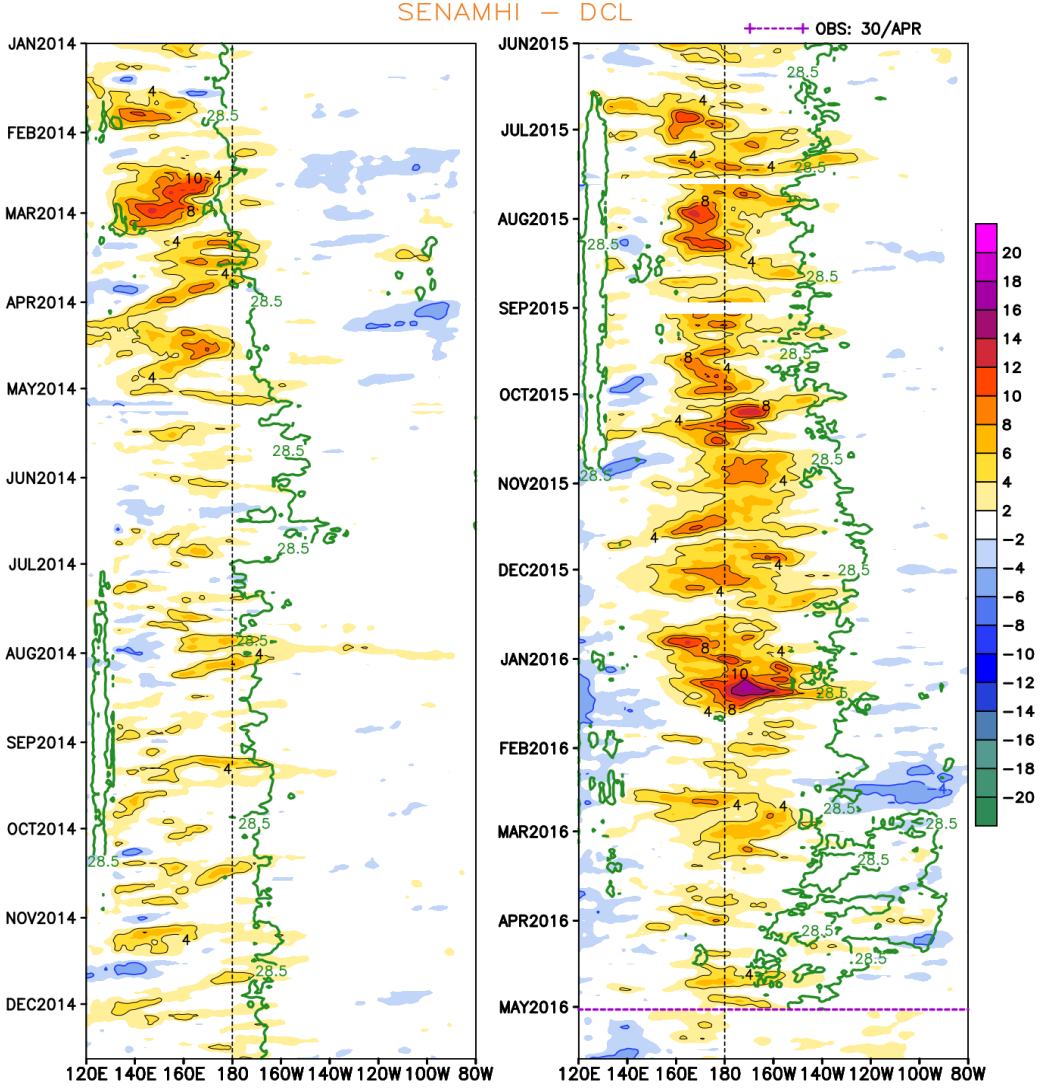
www.gif-animator.com - UNREGISTERED



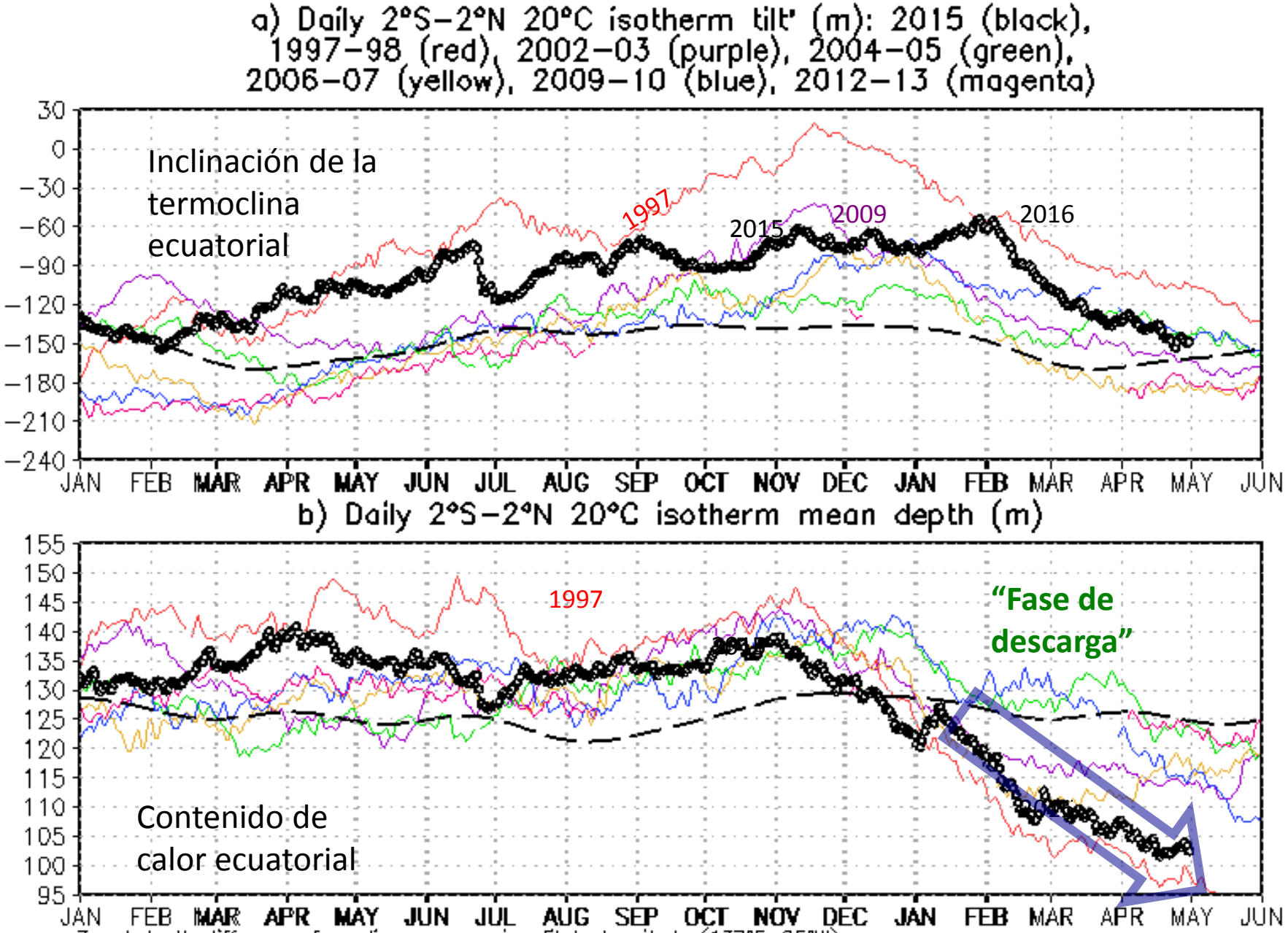
Viento Oceanico Superficial (m/s) – 10mts – *"Media Diaria Satelital"*

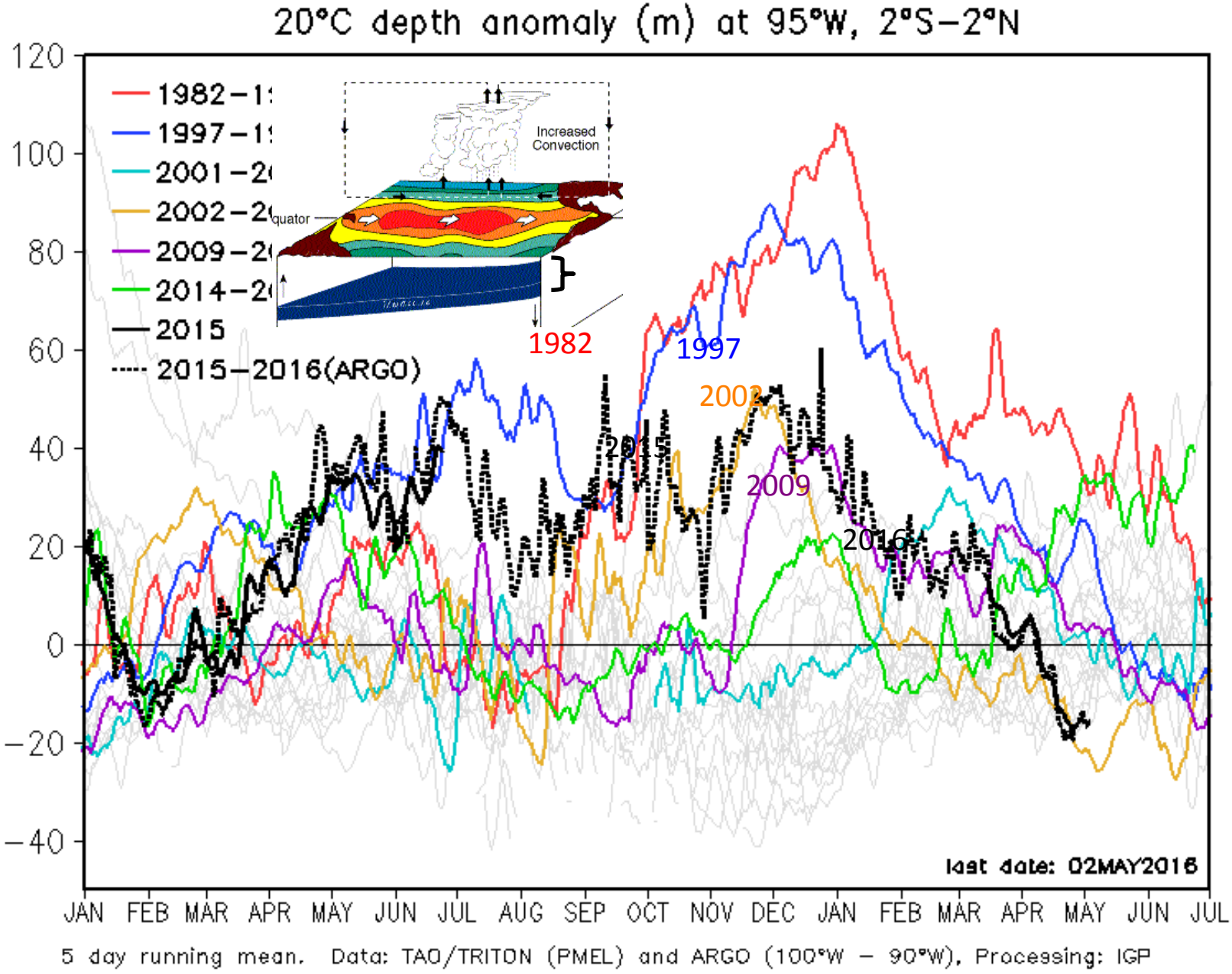
Anom.Viento Zonal <2°S–2°N>

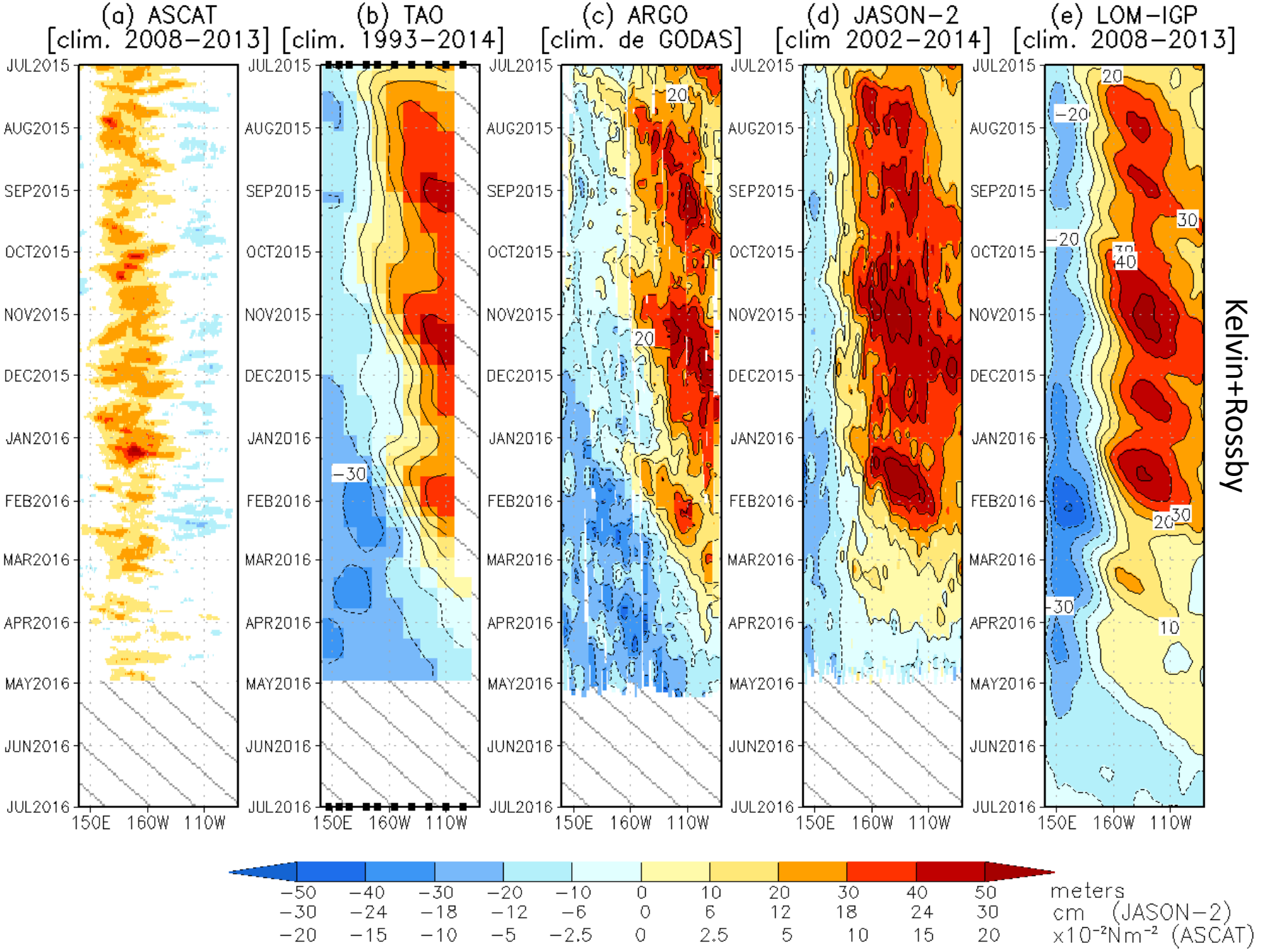
SENAMHI – DCL

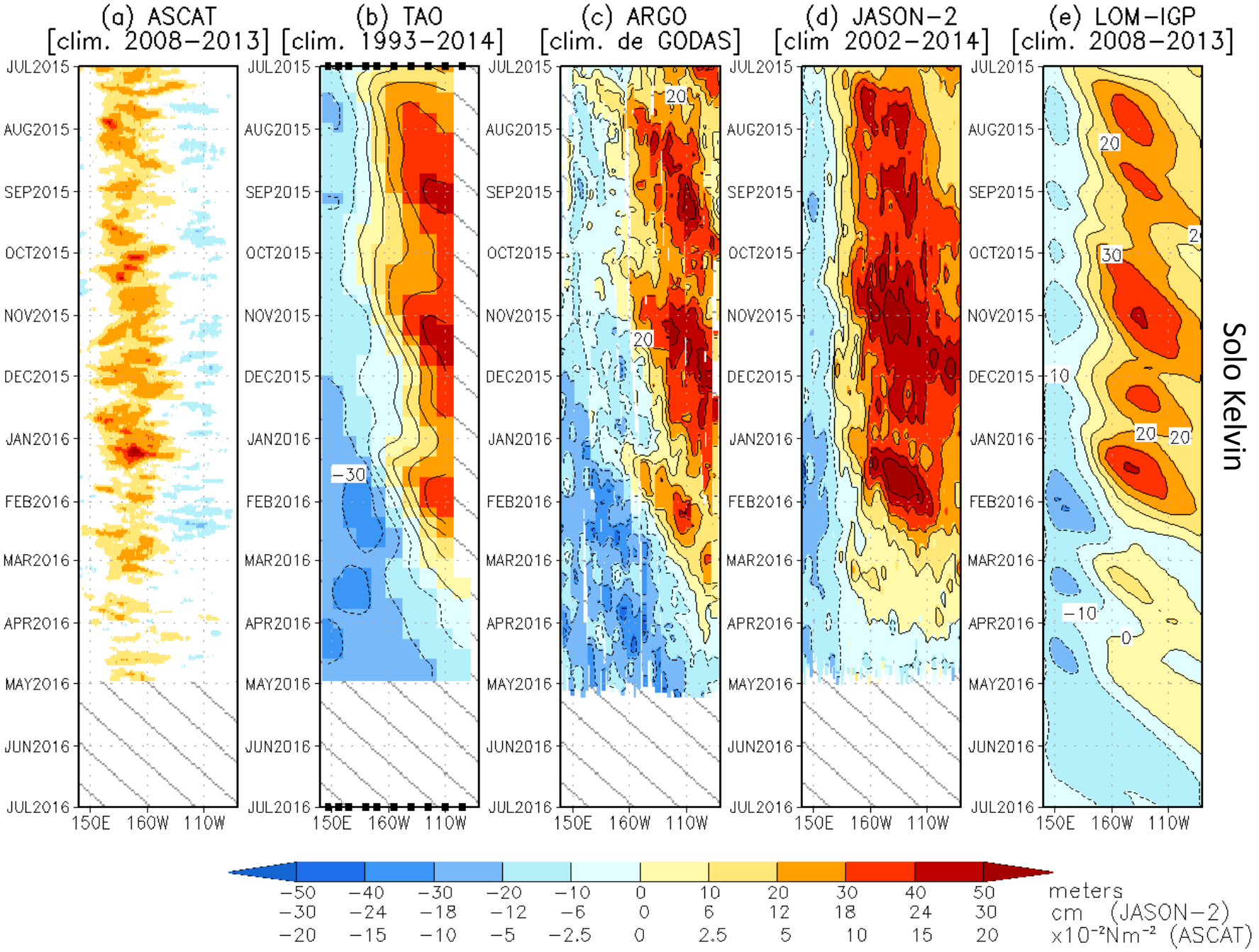


Datos Pronosticados hasta 19 MAY 2016.


a) Daily 2°S–2°N 20°C isotherm tilt* (m): 2015 (black), 1997–98 (red), 2002–03 (purple), 2004–05 (green), 2006–07 (yellow), 2009–10 (blue), 2012–13 (magenta)
Inclinación de la termoclina ecuatorial
1997
2015
2009
2016
30
0
−30
−60
−90
−120
−150
−180
−210
−240
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN
b) Daily 2°S–2°N 20°C isotherm mean depth (m)
1997
"Fase de descarga"
Contenido de calor ecuatorial
155
150
145
140
135
130
125
120
115
110
105
100
95
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN
* Zonal depth difference from linear regression fit to longitude (137°E–95°W)
Only for days with at least 10 out of 11 lons. 1–2–1 smoothing. Clim dashed (1993–2012)
Data: TAO/TRITON (last: 30APR2016). Processing: @KTakahashiG (IGP)


20°C depth anomaly (m) at 95°W, 2°S–2°N
1982–1
1997–1
2001–2
2002–2
2009–2
2014–2
2015
2015–2016(ARGO)
Increased Convection
quator
1982
1997
2002
2015
2009
2016
last date: 02MAY2016
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL
5 day running mean. Data: TAO/TRITON (PMEL) and ARGO (100°W – 90°W). Processing: IGP


(a) ASCAT
[clim. 2008–2013]
(b) TAO
[clim. 1993–2014]
(c) ARGO
[clim. de GODAS]
(d) JASON–2
[clim 2002–2014]
(e) LOM–IGP
[clim. 2008–2013]
JUL2015
AUG2015
SEP2015
OCT2015
NOV2015
DEC2015
JAN2016
FEB2016
MAR2016
APR2016
MAY2016
JUN2016
JUL2016
150E 160W 110W
Kelvin+Rossby
−50 −40 −30 −20 −10 0 10 20 30 40 50
meters
−30 −24 −18 −12 −6 0 6 12 18 24 30
cm (JASON–2)
−20 −15 −10 −5 −2.5 0 2.5 5 10 15 20
x10⁻²Nm⁻² (ASCAT)


(a) ASCAT
[clim. 2008–2013]
(b) TAO
[clim. 1993–2014]
(c) ARGO
[clim. de GODAS]
(d) JASON–2
[clim 2002–2014]
(e) LOM–IGP
[clim. 2008–2013]
JUL2015
AUG2015
SEP2015
OCT2015
NOV2015
DEC2015
JAN2016
FEB2016
MAR2016
APR2016
MAY2016
JUN2016
JUL2016
150E
160W
110W
−30
20
30
10
0
−10
Solo Kelvin
−50 −40 −30 −20 −10 0 10 20 30 40 50
meters
−30 −24 −18 −12 −6 0 6 12 18 24 30
cm (JASON–2)
−20 −15 −10 −5 −2.5 0 2.5 5 10 15 20
x10⁻²Nm⁻² (ASCAT)

Simulación de la propagación de las ondas Kelvin Ecuatoriales

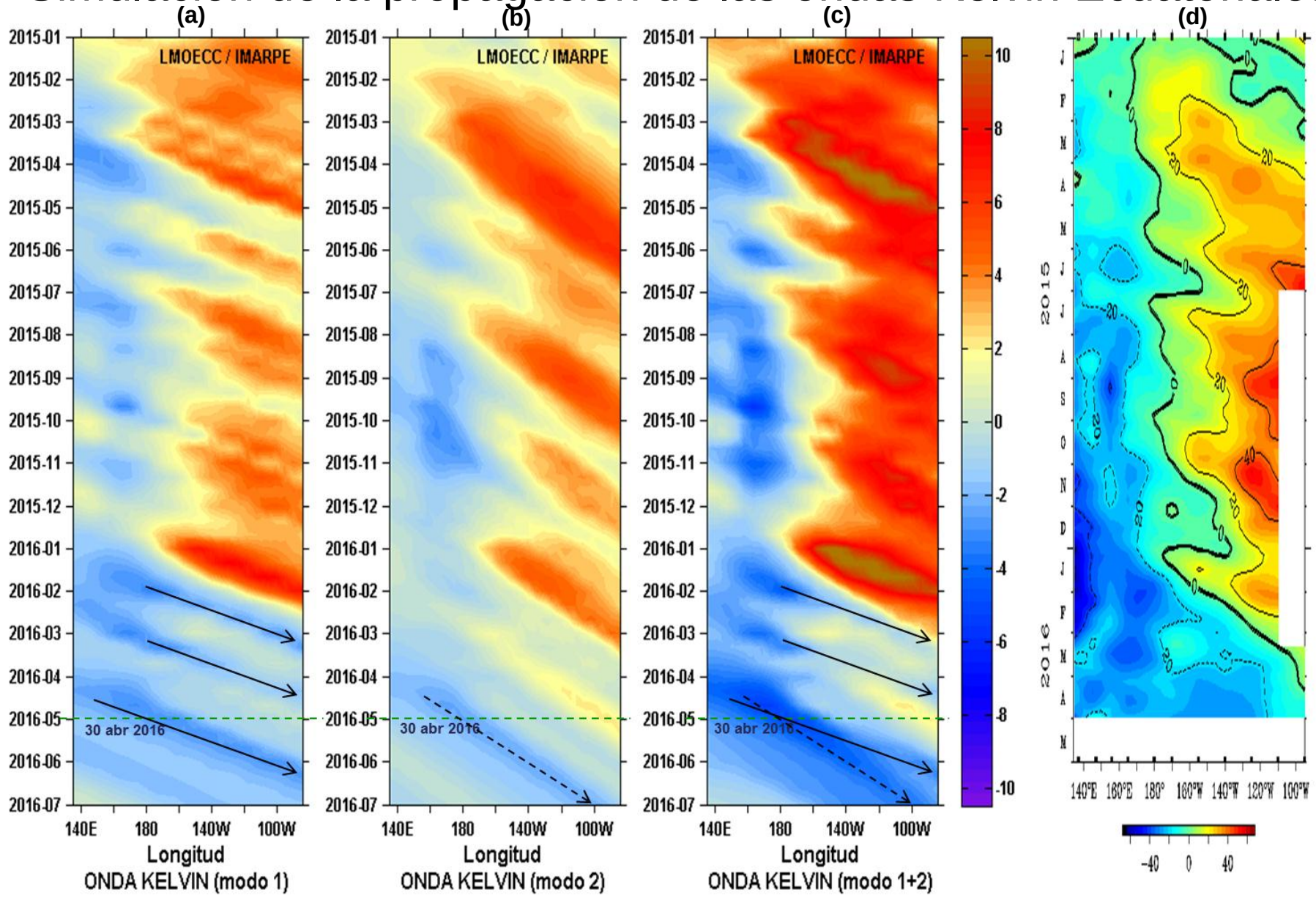
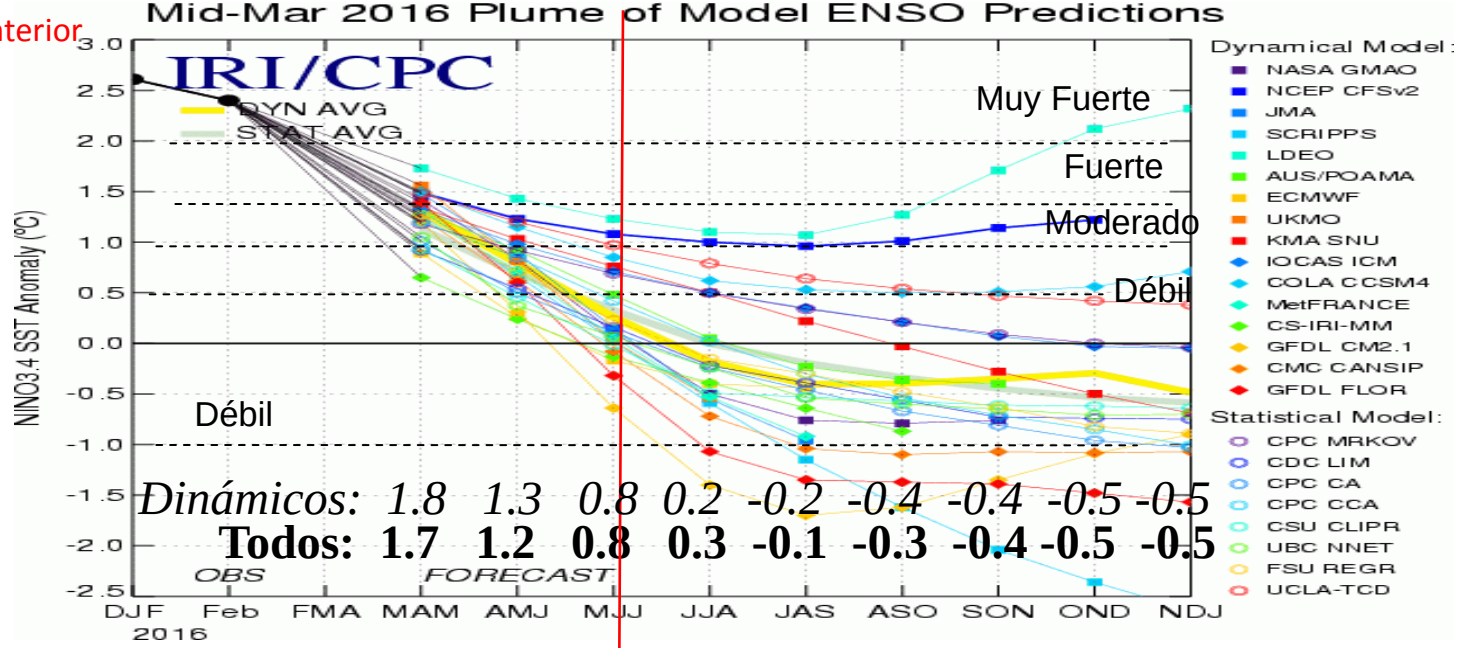
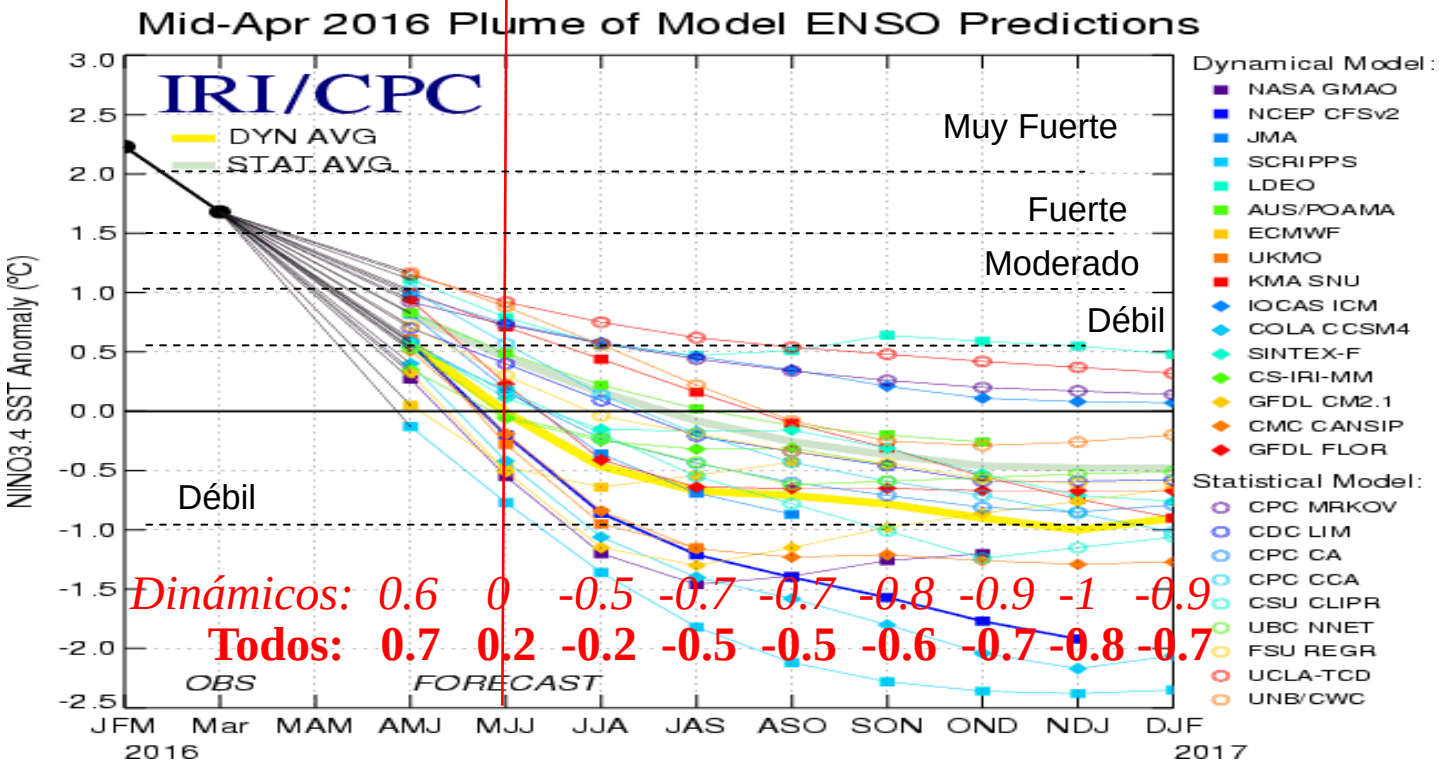


Diagrama Hovmöller longitud-tiempo de las ondas Kelvin en el océano Pacifico ecuatorial (0° N): (a) Modo 1, (b) Modo 2, (c) Modos 1+2 y (d) Anomalías de la profundización de la isoterma de 20° C (m) en la Pacifico Ecuatorial (2° S y 2° N). La línea discontinua horizontal, en verde, indica el inicio del pronóstico sin el forzante de vientos. Fuente: IMARPE, forzado con vientos de NCEP (Figuras a-c) y adaptación de TAO/PMEL/NOAA (Figuras d).

Corrida del mes anterior



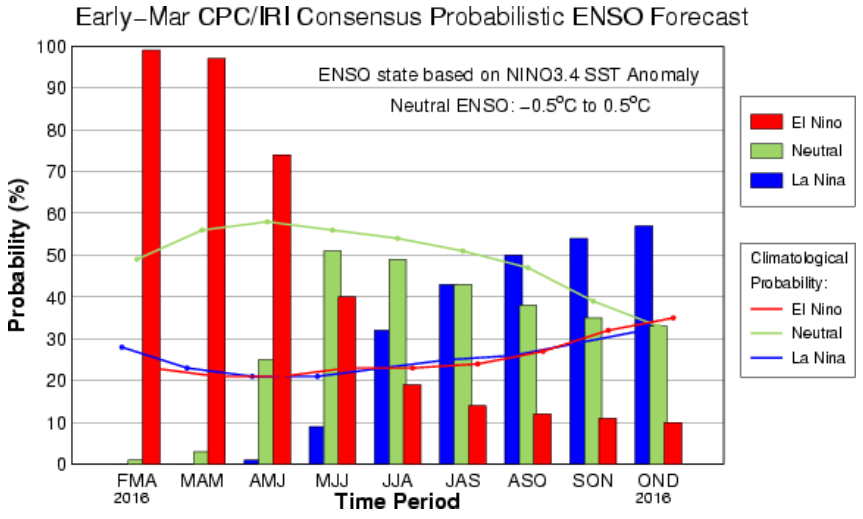
Corrida del mes reciente



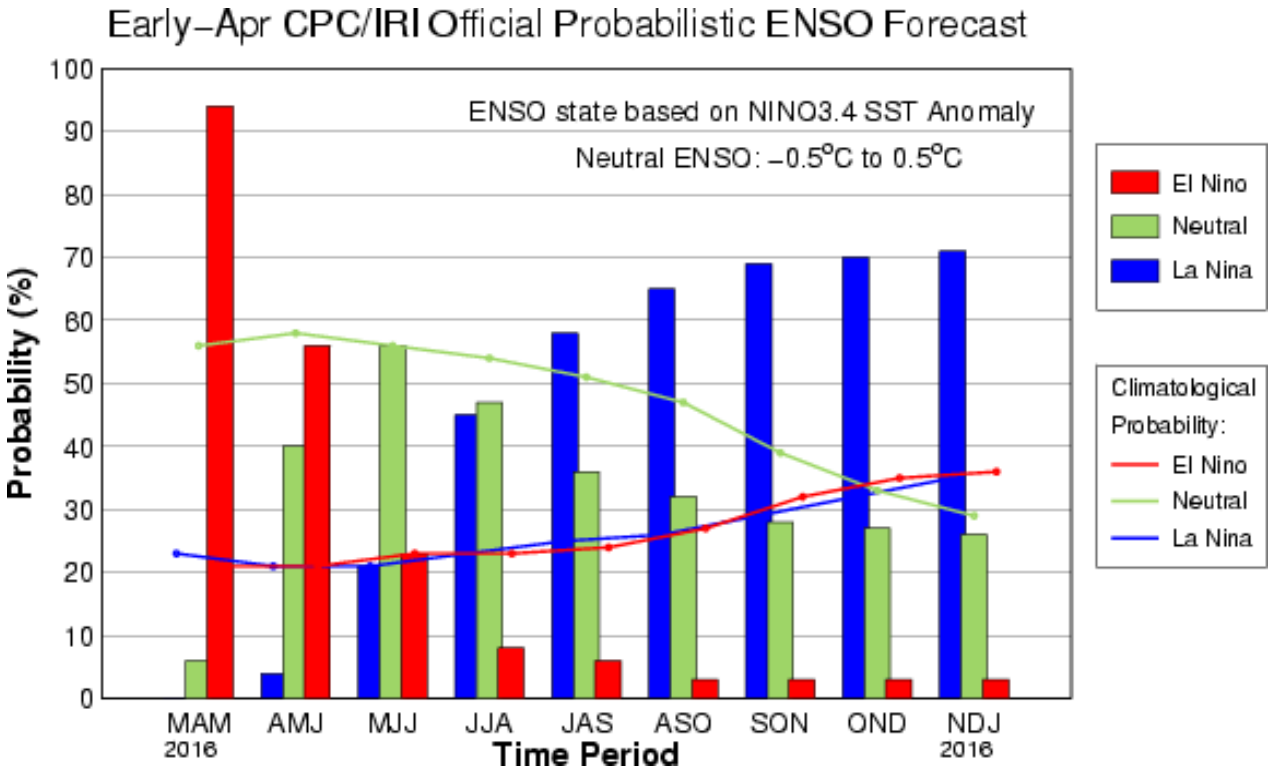
Ensamblado multimodelos (IRI) para Niño 3.4

Probabilidades de El Niño según porcentaje de modelos (IRI) y **evaluación experta**

Corrida del mes anterior

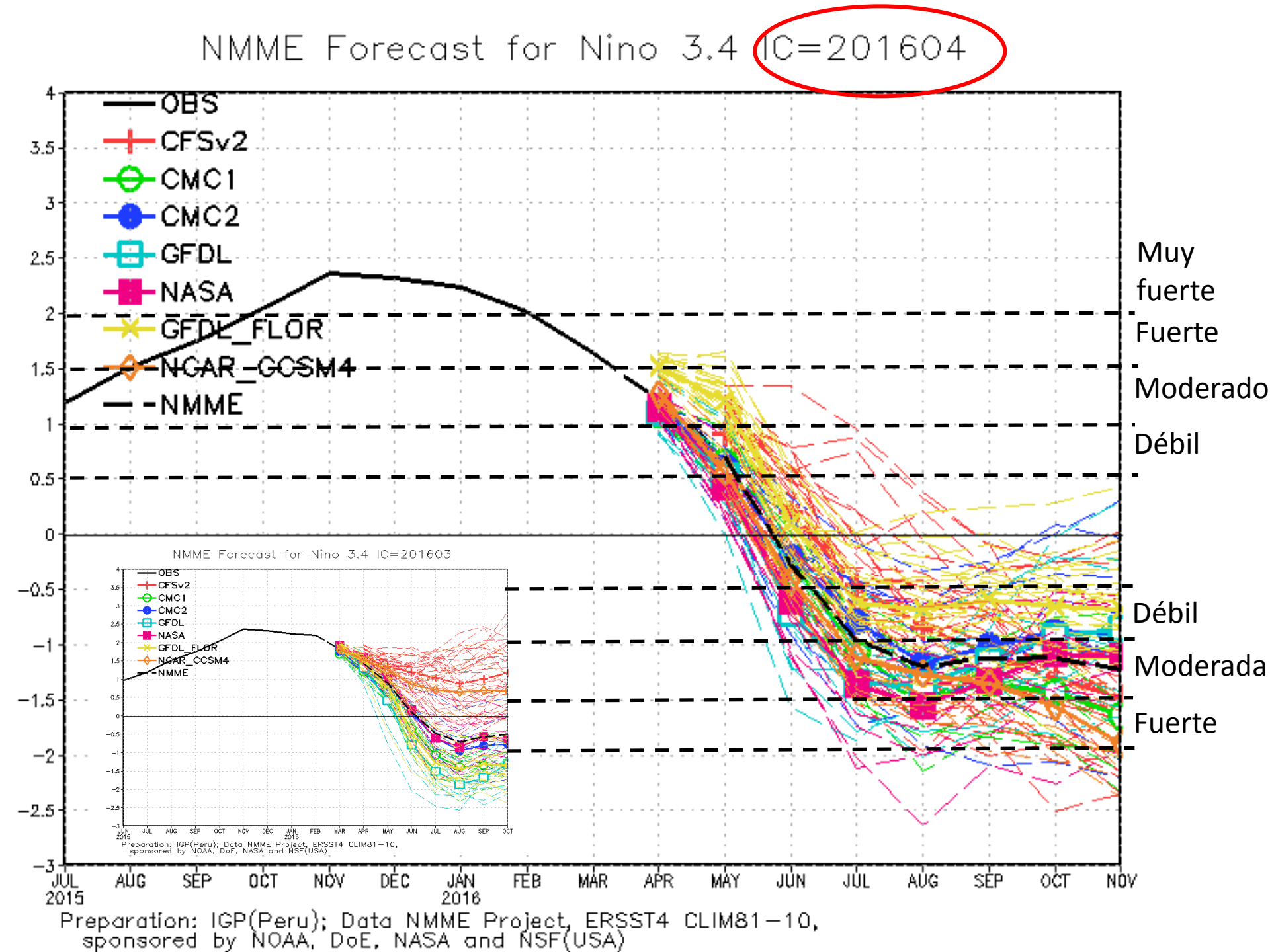


Corrida reciente

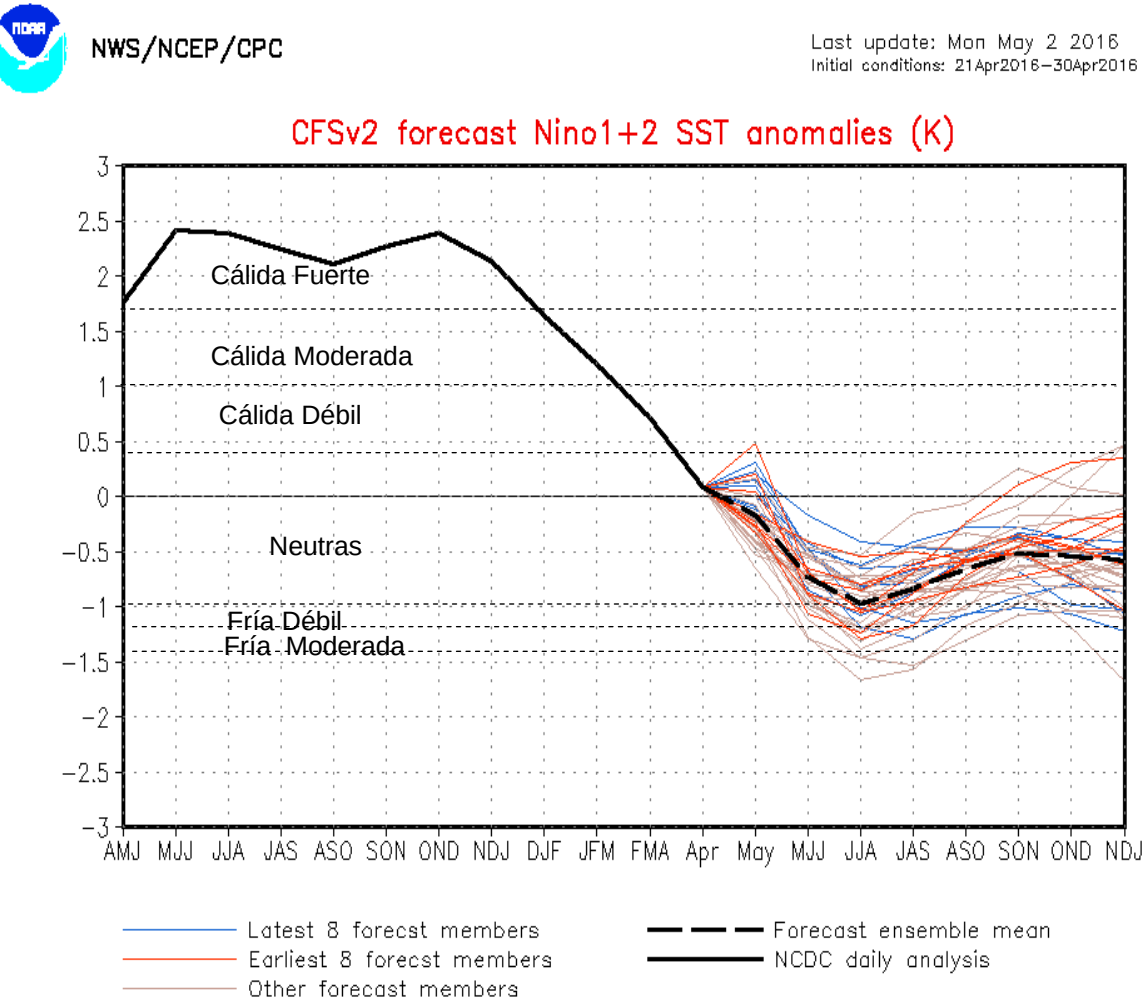


Según la evaluación experta NOAA/IRI, la probabilidad de La Niña en el Pacífico central es de 58% en agosto y >70% para fines de 2016 .

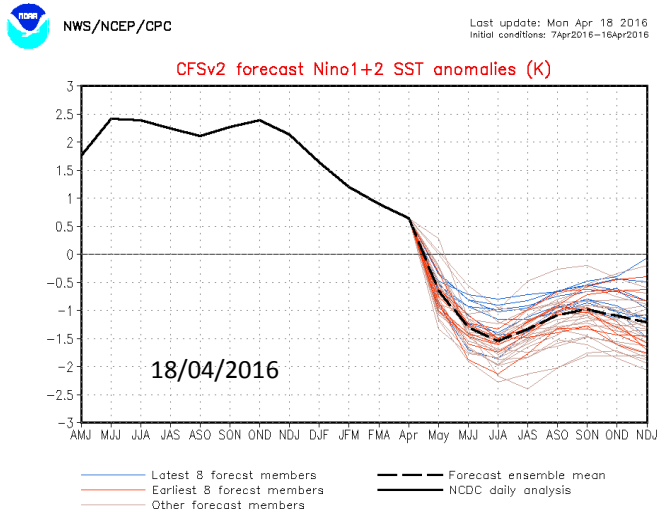
Publicado 14 de abril de 2016


NMME Forecast for Nino 3.4 IC=201604
OBS
CFSv2
CMC1
CMC2
GFDL
NASA
GFDL_FLOR
NCAR_CCSM4
NMME
Muy fuerte
Fuerte
Moderado
Débil
Débil
Moderada
Fuerte
NMME Forecast for Nino 3.4 IC=201603
Preparation: IGP(Peru); Data NMME Project, ERSST4 CLIM81-10, sponsored by NOAA, DoE, NASA and NSF(USA)
Preparation: IGP(Peru); Data NMME Project, ERSST4 CLIM81-10, sponsored by NOAA, DoE, NASA and NSF(USA)

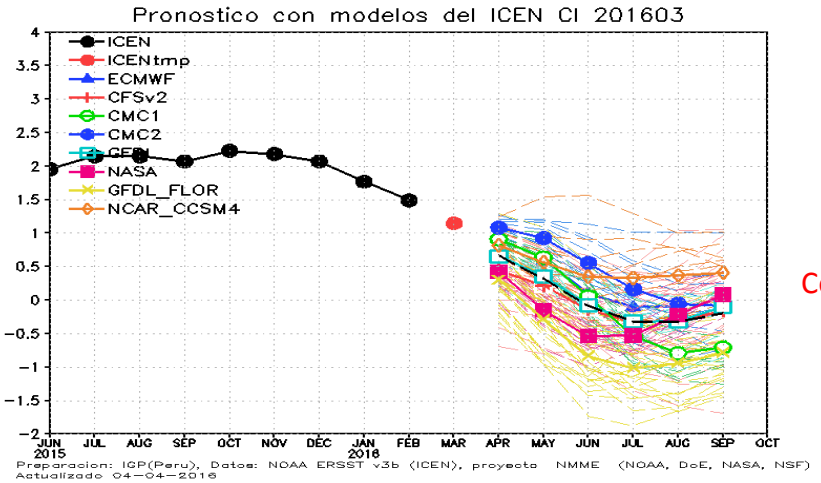
Pronóstico Niño 1+2 de CFS2



Corrida actual

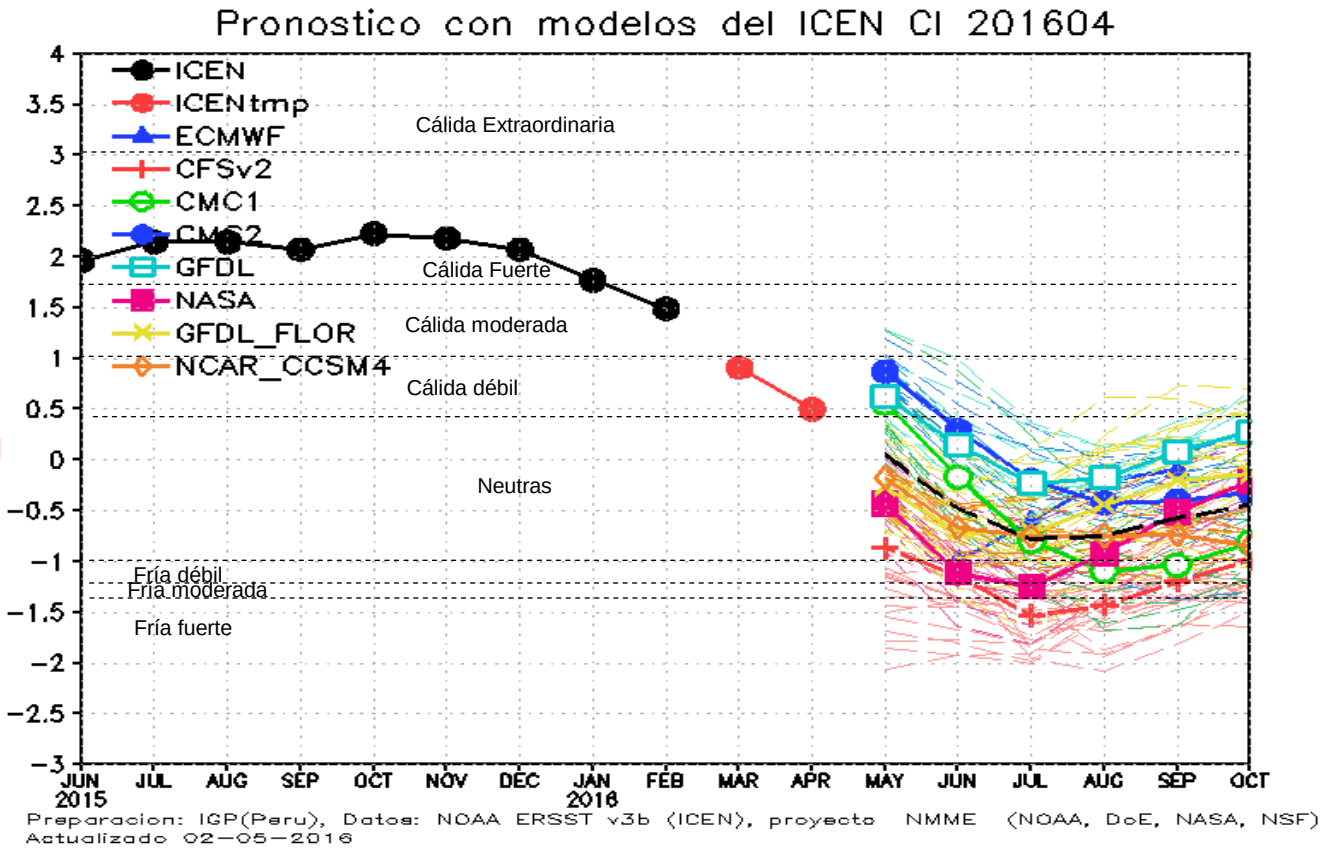


Corrida anterior

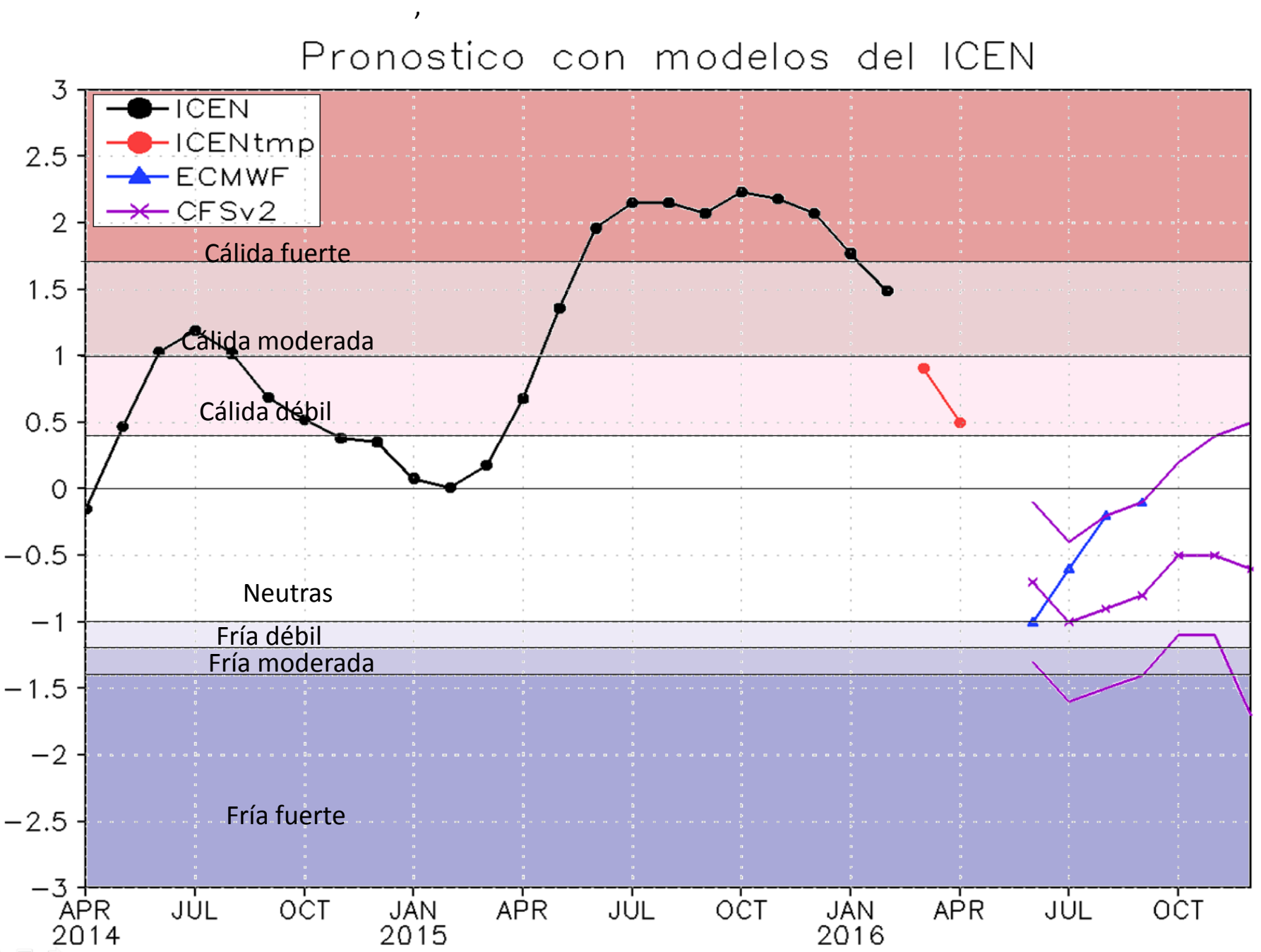


Corrida anterior

Corrida actual



Nota: Los pronósticos de los modelos CFSv2, CMC1, CMC2, GFDL, NASA , NCAR y GFDL_FLOR tienen como condiciones inicial el mes de abril de 2016.
El modelo ECMWF tiene como condición inicial el mes de abril de 2016



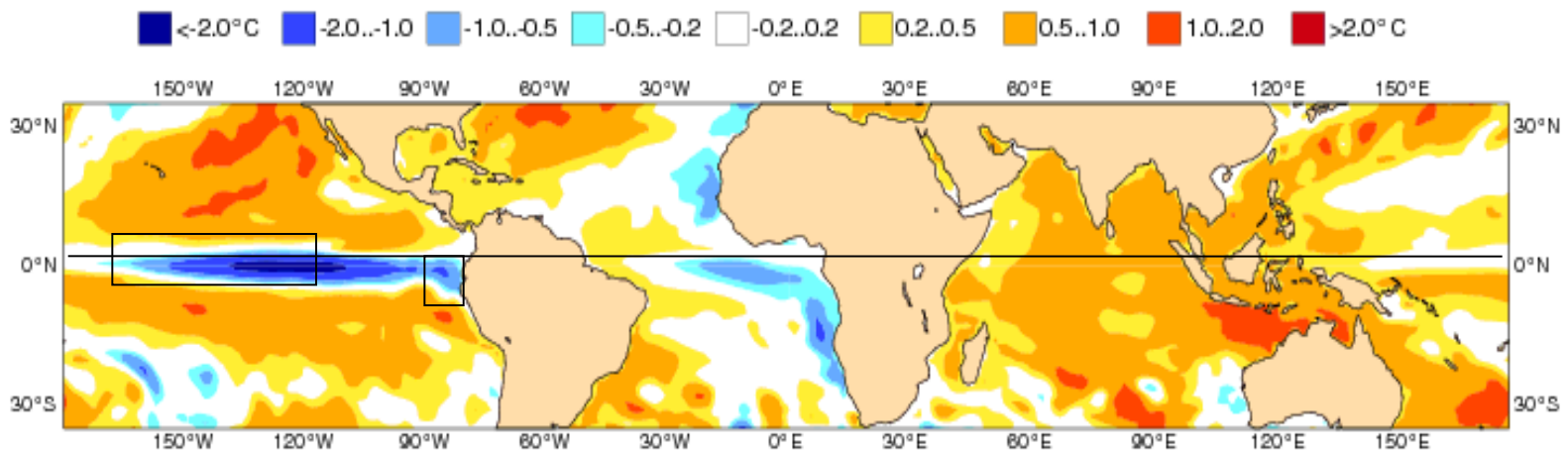
Nota: Las líneas delgadas en los pronósticos indican los máximos y mínimos en los “ensembles” de CFS2. Para ECMWF no se cuenta con datos del “ensemble”. ECMWF, tiene condiciones iniciales el mes abril

ECMWF Seasonal Forecast
Mean forecast SST anomaly
Forecast start reference is 01/04/16
Ensemble size = 51, climate size = 450

MJJ 2016

System 4
MJJ 2016

ECMWF



Pac. Cen.
-1.7 ° C

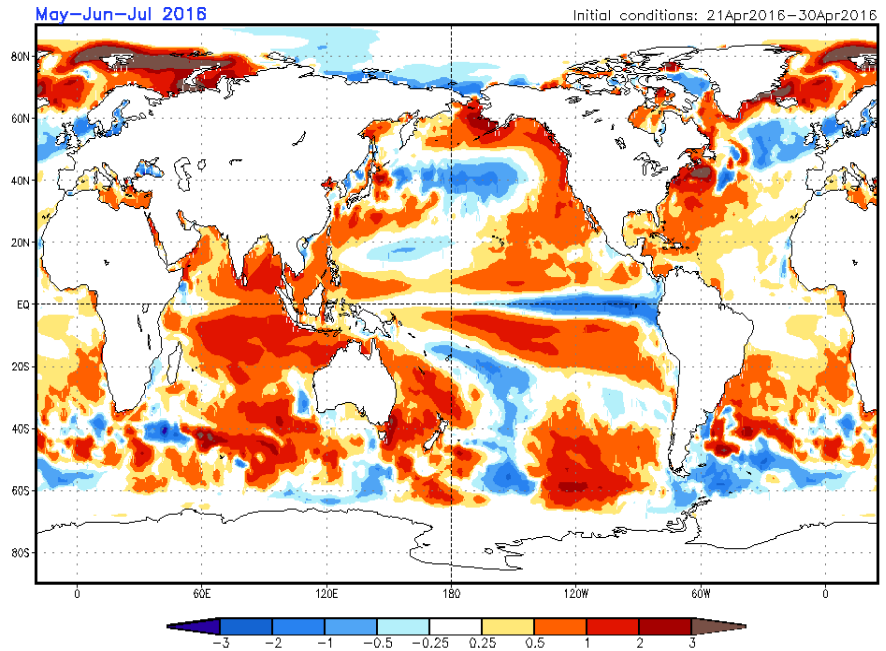
Pac. Or.
-1.0°C

CFS2

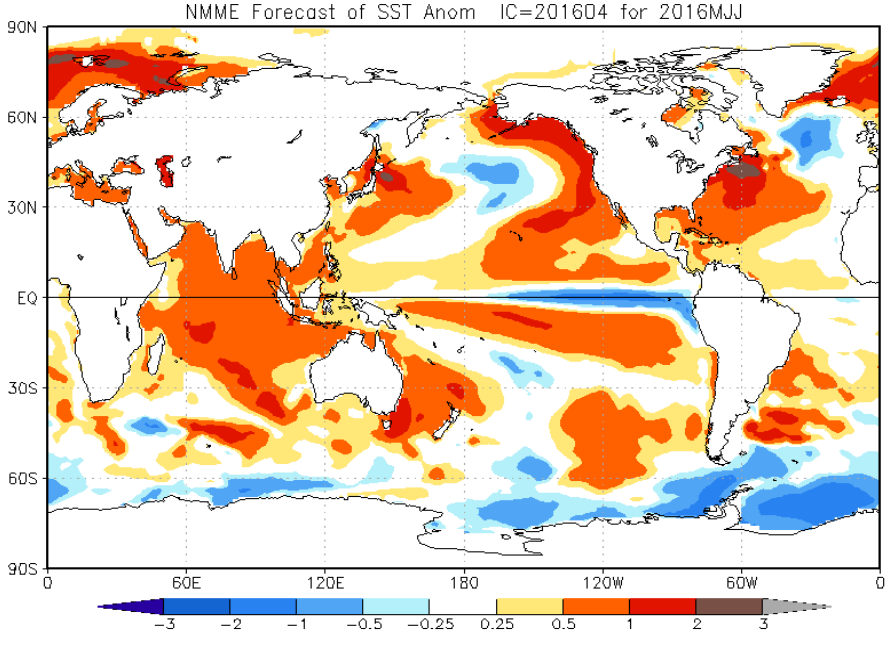
Actualizado

CFSv2 seasonal SST anomalies (K)

NWS/NCEP/CPC



NMME

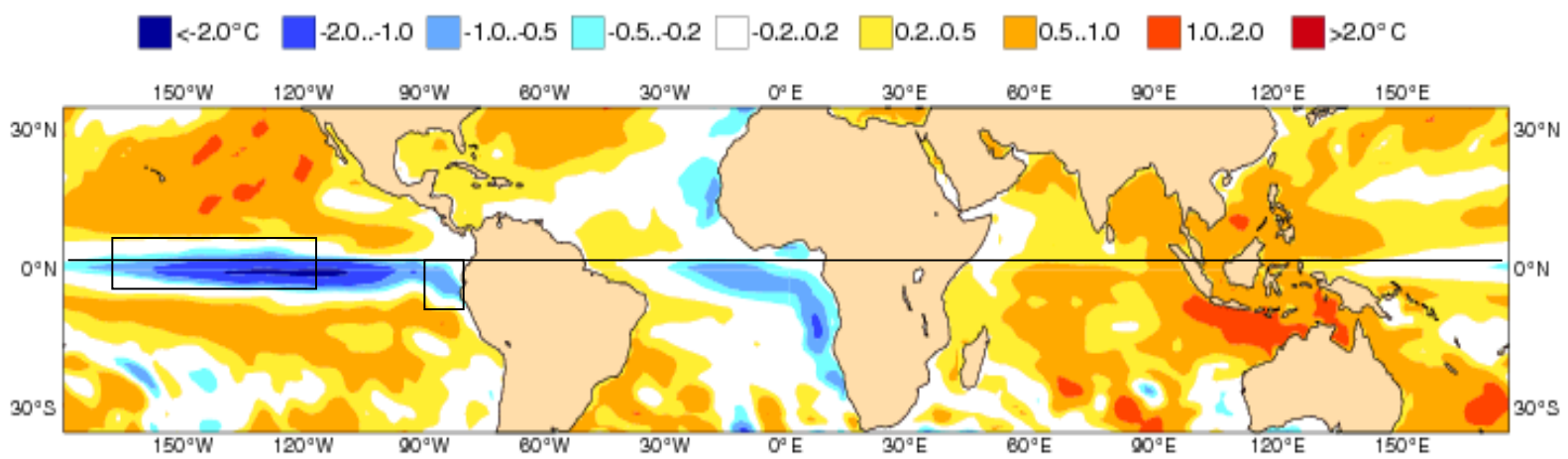


JJA 2016

ECMWF Seasonal Forecast
Mean forecast SST anomaly
Forecast start reference is 01/04/16
Ensemble size = 51, climate size = 450

System 4
JJA 2016

ECMWF



Pac. Cen.
-1.5 ° C

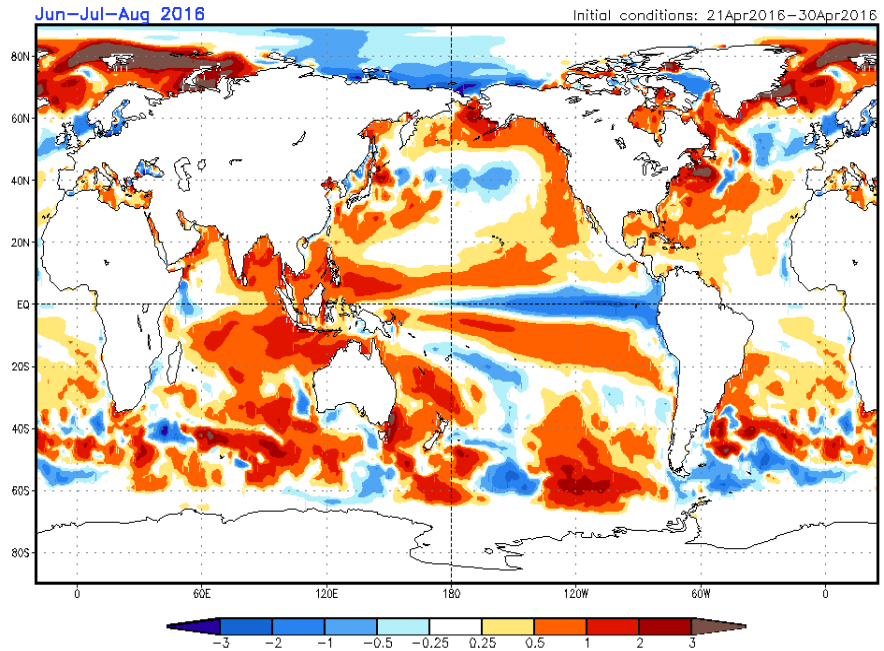
Pac. Or.
-0.6°C

CFS2

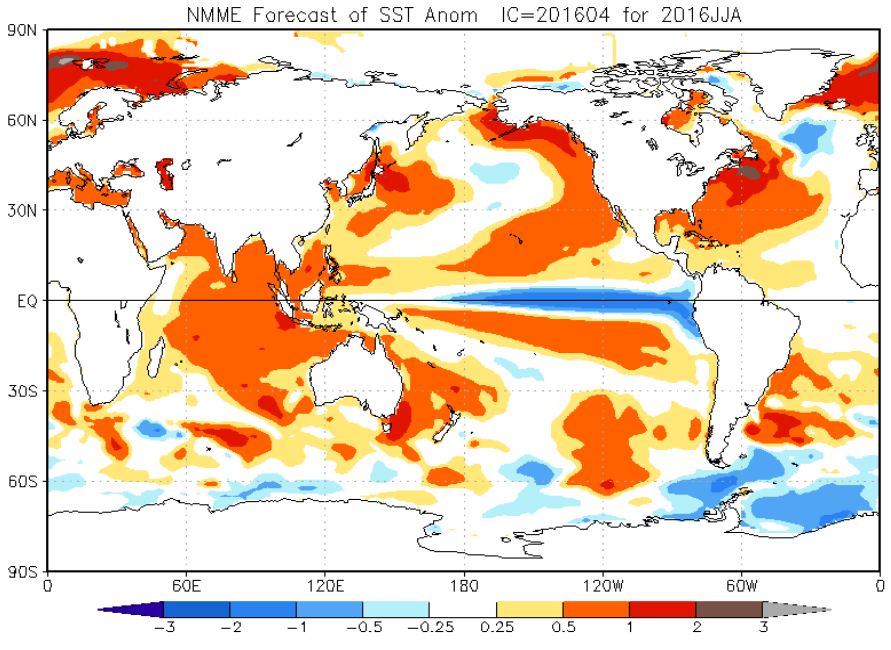
Actualizado

CFSv2 seasonal SST anomalies (K)

NWS/NCEP/CPC



NMME

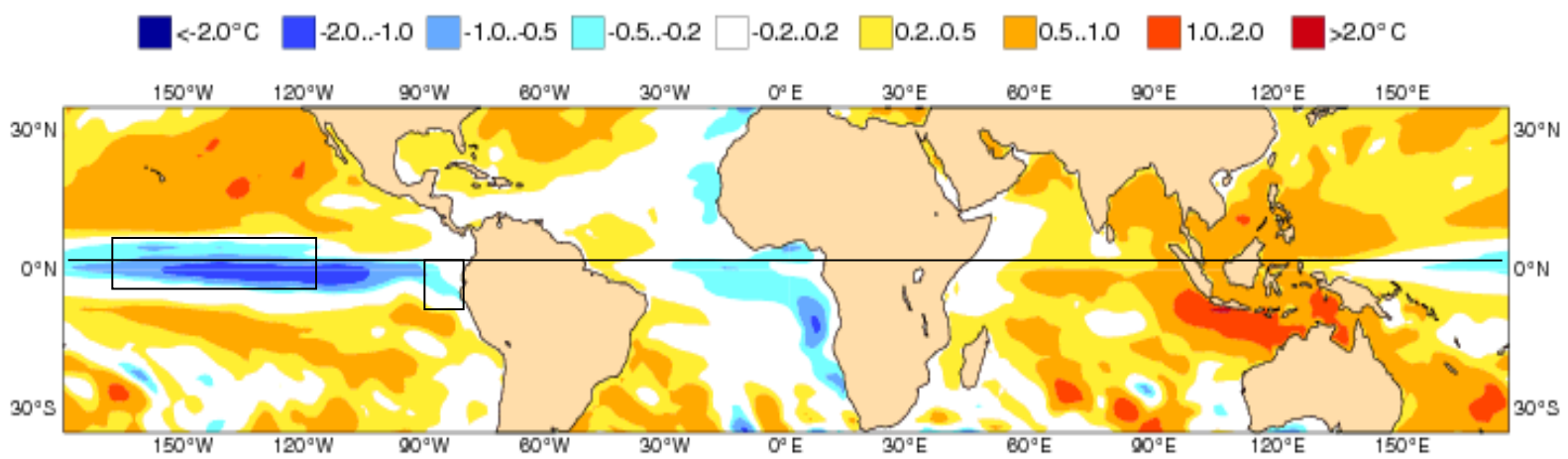


JAS 2016

ECMWF Seasonal Forecast
Mean forecast SST anomaly
Forecast start reference is 01/04/16
Ensemble size = 51, climate size = 450

System 4
JAS 2016

ECMWF



Pac. Cen.
-1.2 ° C

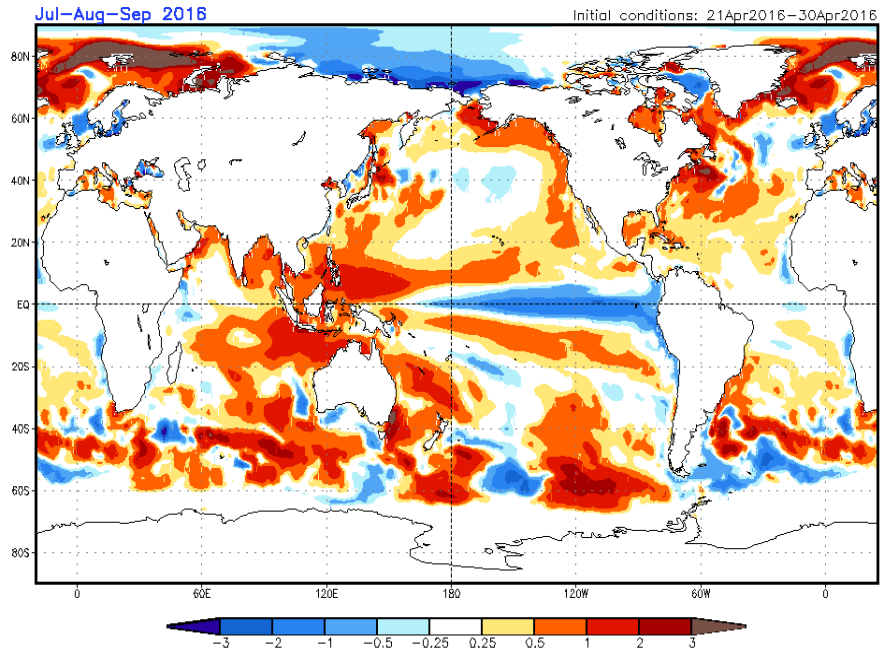
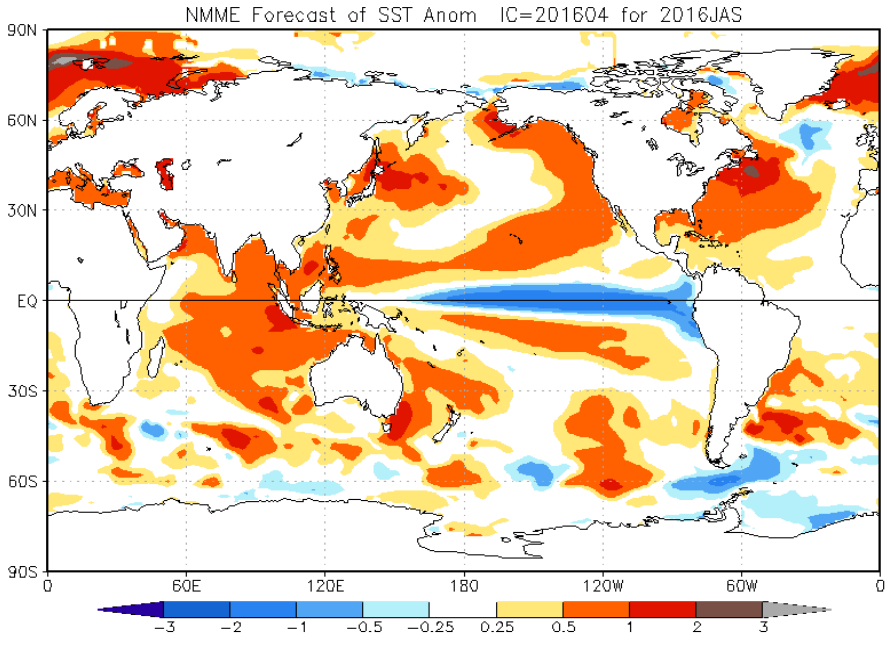
Pac. Or.
-0.2°C

CFS2

Actualizado

CFSv2 seasonal SST anomalies (K)

NWS/NCEP/CPC



NMME