



Monitoreo y pronóstico de El Niño

Diciembre 2016

Comité Técnico ENFEN

16 de enero 2017



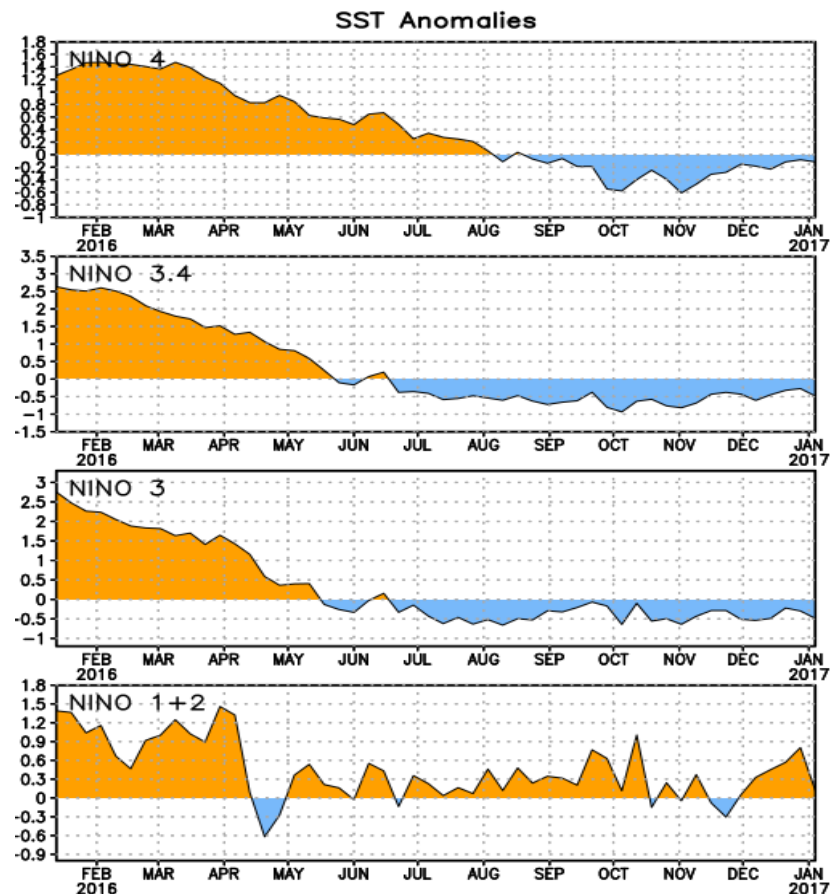
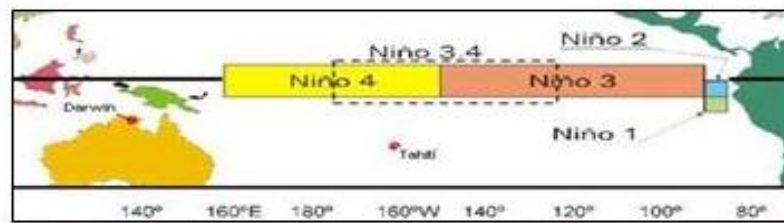
INDECI
INSTITUTO NACIONAL DE DEFENSA CIVIL



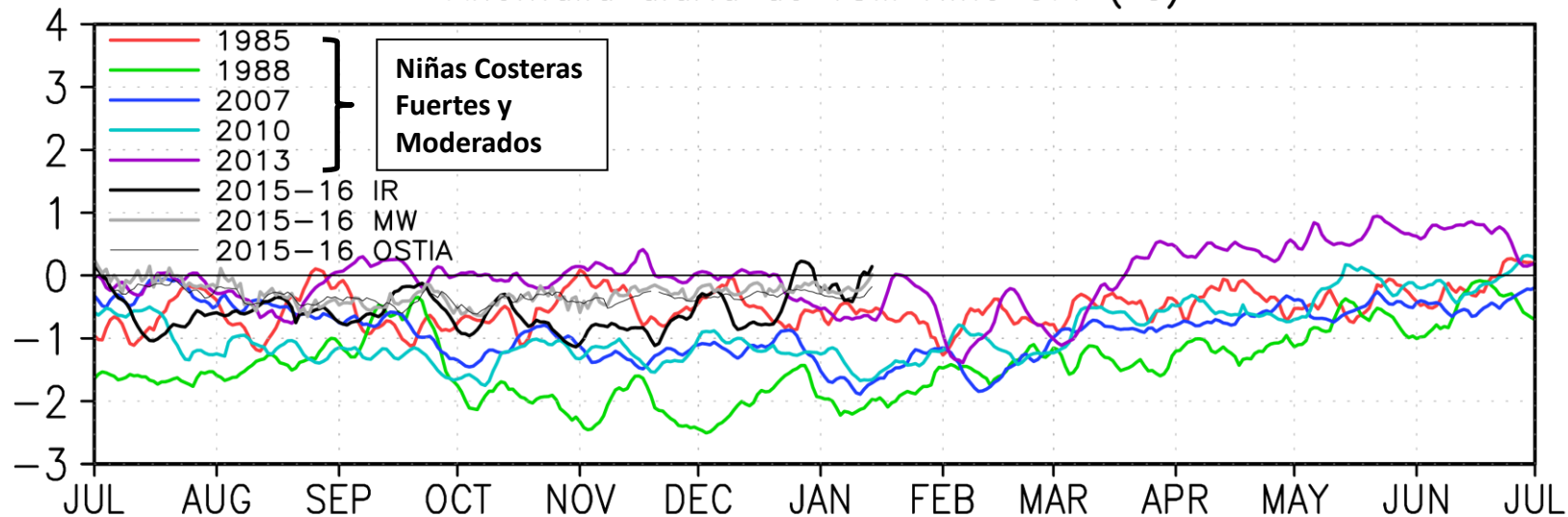


ANOMALÍAS DE LA TEMPERATURA SUPERFICIAL DEL MAR POR REGIONES NIÑO EN EL PACÍFICO ECUATORIAL

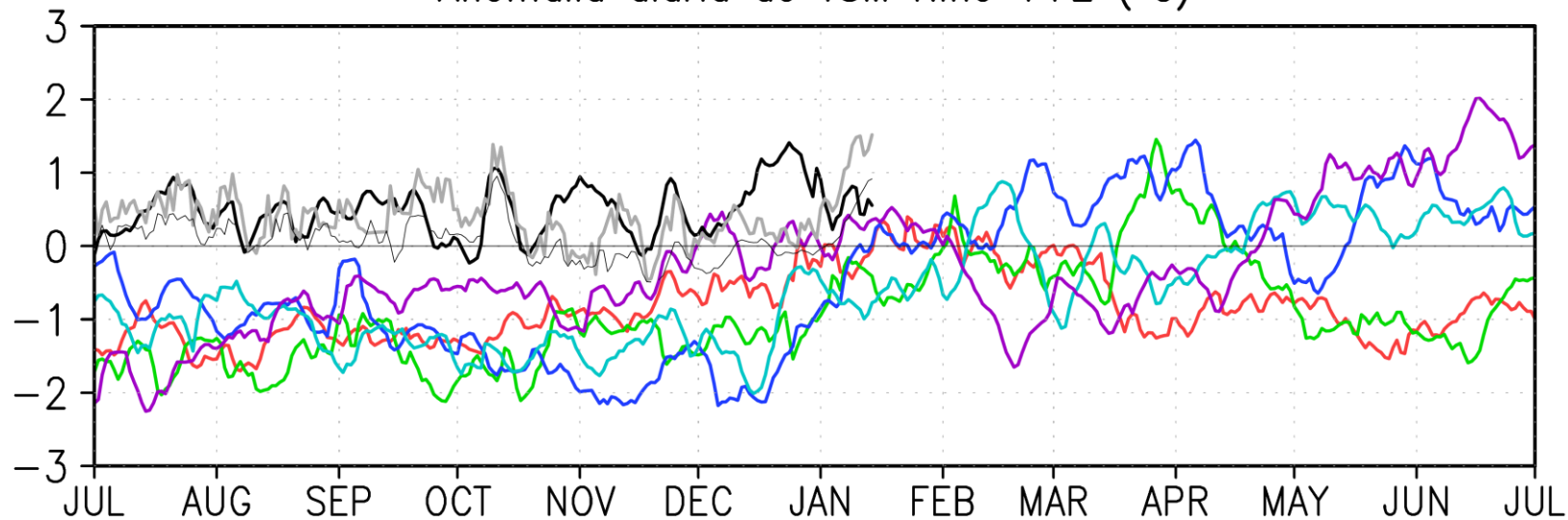
Regiones Niño	ATSM (Semanales)			
	Niño 1+2	Niño 3	Niño 3.4	Niño 4
07DEC2016	22.8 0.3	24.6 -0.5	26.0 -0.6	28.3 -0.2
14DEC2016	23.2 0.5	24.6 -0.5	26.1 -0.4	28.2 -0.2
21DEC2016	23.6 0.6	25.0 -0.2	26.2 -0.3	28.3 -0.1
28DEC2016	24.2 0.8	25.0 -0.3	26.3 -0.3	28.3 -0.1
07ENE2017	0.1	-0.5	-0.5	-0.1
Promedios mensuales 2015				
Regiones Niño	ATSM			
	Niño 1+2	Niño 3	Niño 3.4	Niño 4
Dic.2016	0.43 23.3	-0.4 24.8	-0.4 26.2	-0.1 28.4
Nov.2016	0.09 21.7	-0.4 24.5	-0.6 26.1	-0.4 28.3
Oct.2016	0.36 21.2	-0.4 24.5	-0.7 26.0	-0.4 28.3
Set.2016	0.53 20.9	-0.2 24.7	-0.6 26.1	-0.2 28.5
Ago.2016	0.4 21.0	-0.5 24.5	-0.5 26.3	0.0 28.7
Jul.2016	0.2 21.8	-0.5 25.1	-0.5 26.7	0.3 29.1
Jun.2016	0.3 23.2	-0.1 26.3	-0.1 27.5	0.5 29.4
May.2016	0.3 24.6	0.0 27.1	0.3 28.2	0.6 29.4
Abr.2016	0.2 25.8	0.8 28.3	1.1 28.8	0.9 29.4
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



Anomalia diaria de TSM Nino 3.4 (°C)



Anomalia diaria de TSM Nino 1+2 (°C)

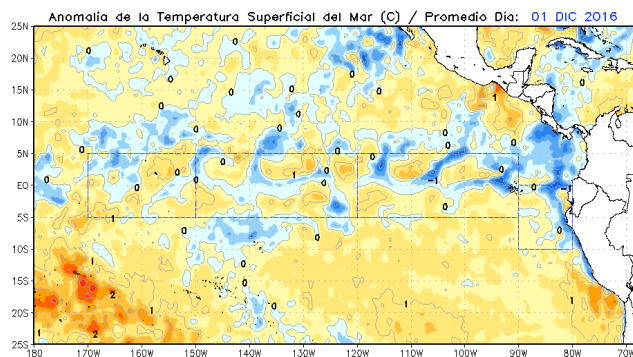
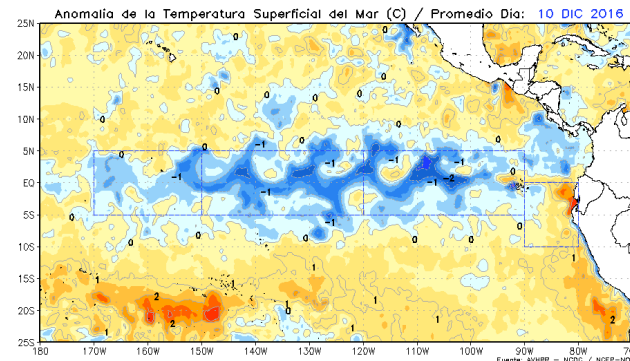
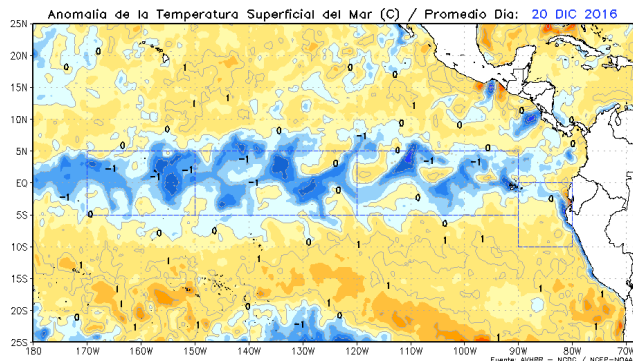
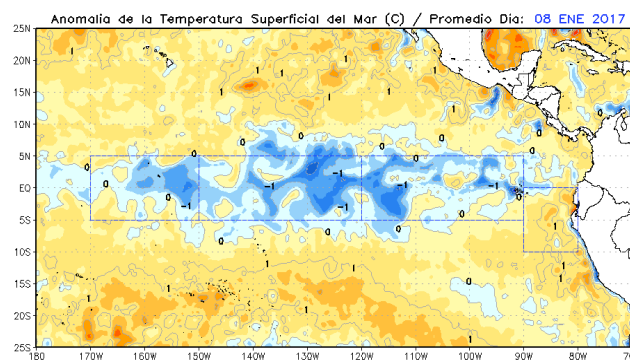
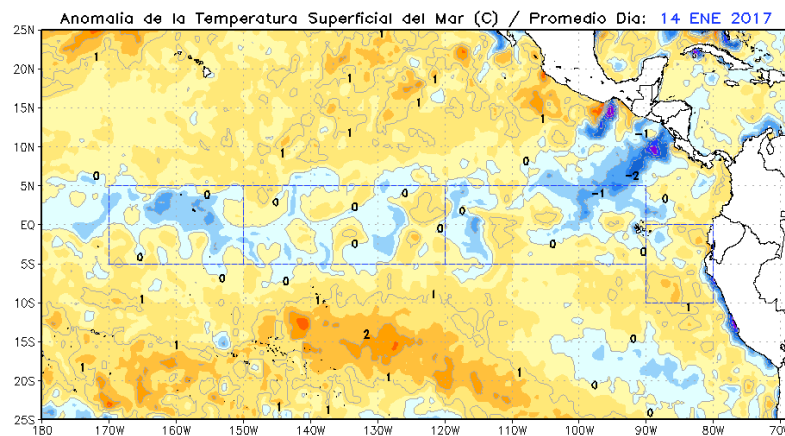
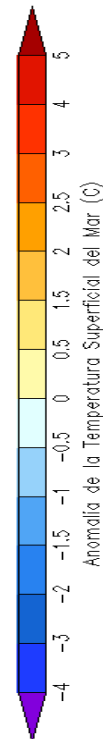


Datos: NOAA Hires OI SST, RSS MW SST, Procesamiento:IGP.

Ultimo dato-MW: 14JAN2017
 Ultimo dato-OISST: 14JAN2017
 Ultimo dato-OSTIA: 14JAN2017

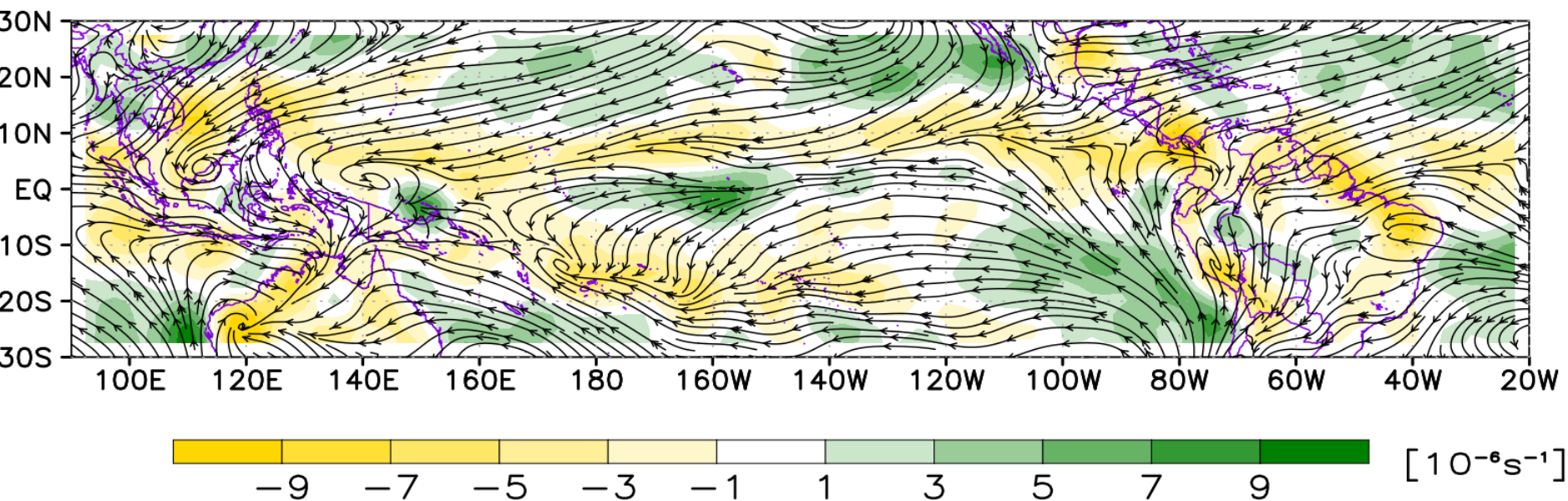


ANOMALÍAS DE LA TEMPERATURA SUPERFICIAL DEL MAR EN EL PACÍFICO ECUATORIAL

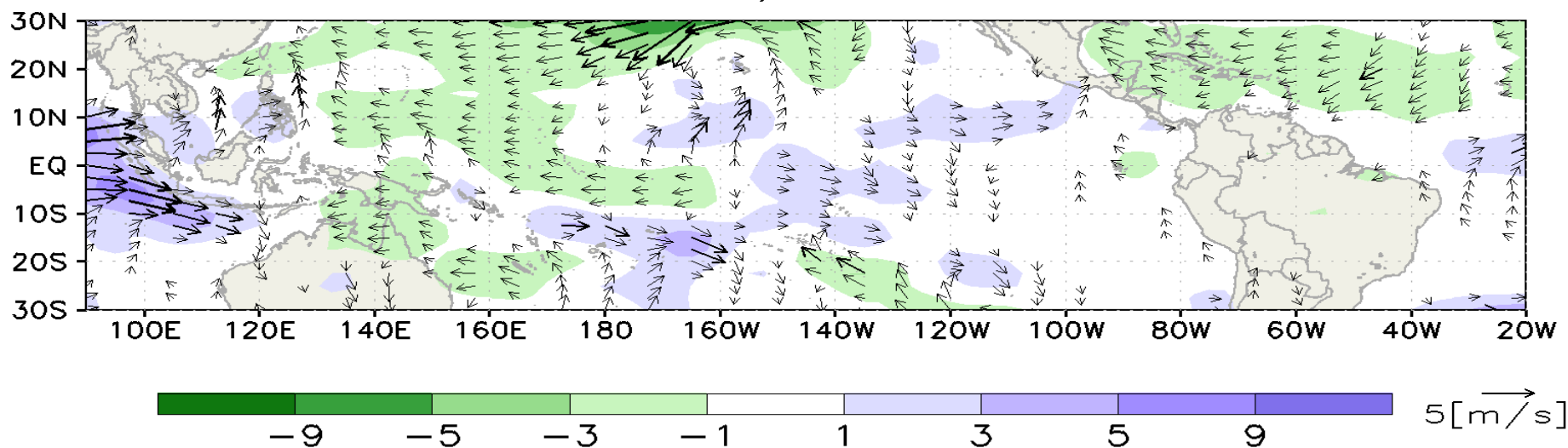


VIENTOS A 1000hPa

VIENTO PROMEDIO a 1000hPa DICIEMBRE 2016
NCEP-NOAA / SENAMHI -DCL

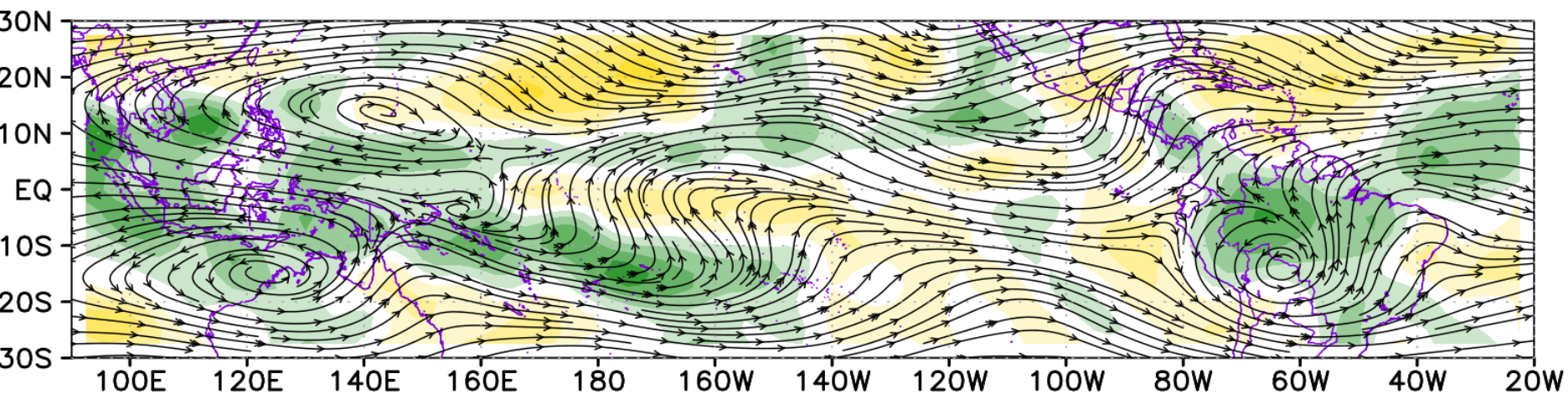
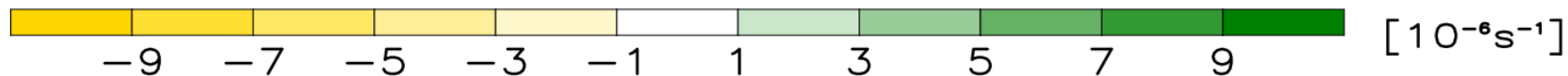


ANOMALIA DE VIENTO a 1000hPa DICIEMBRE 2016
NCEP-NOAA / SENAMHI -DCL

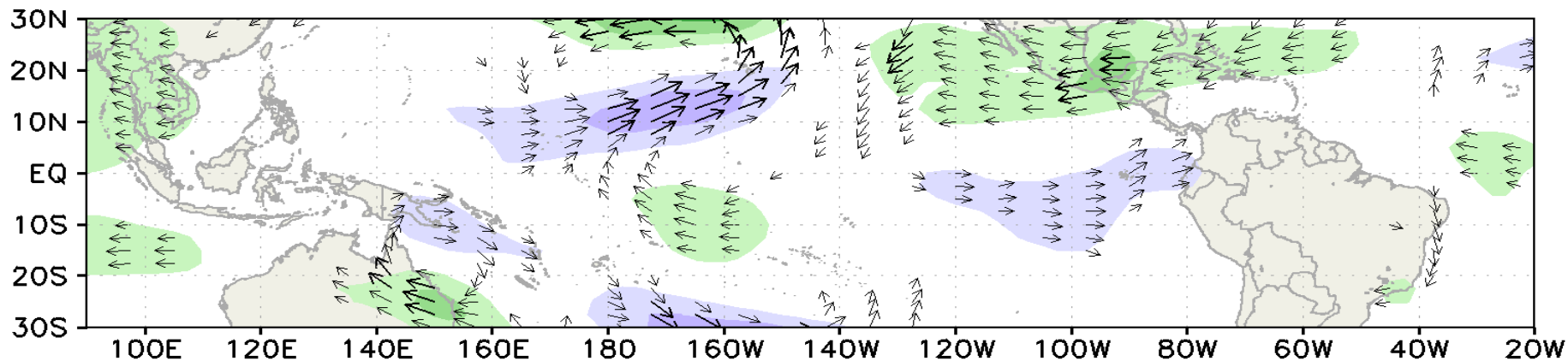
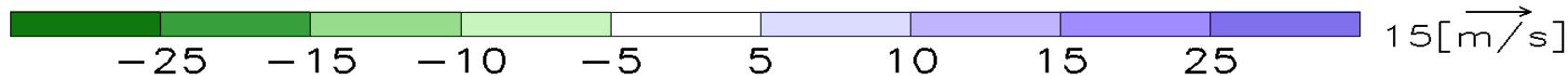


VIENTOS A 200Pa

VIENTO PROMEDIO a 200hPa DICIEMBRE 2016
NCEP-NOAA / SENAMHI -DCL

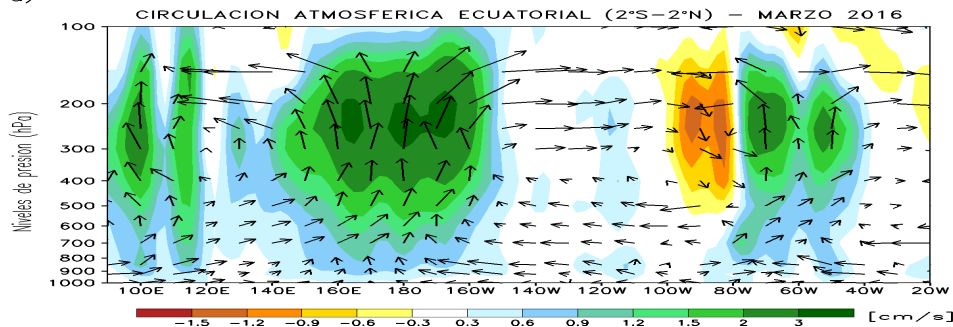


ANOMALIA DE VIENTO a 200hPa DICIEMBRE 2016
NCEP-NOAA / SENAMHI -DCL

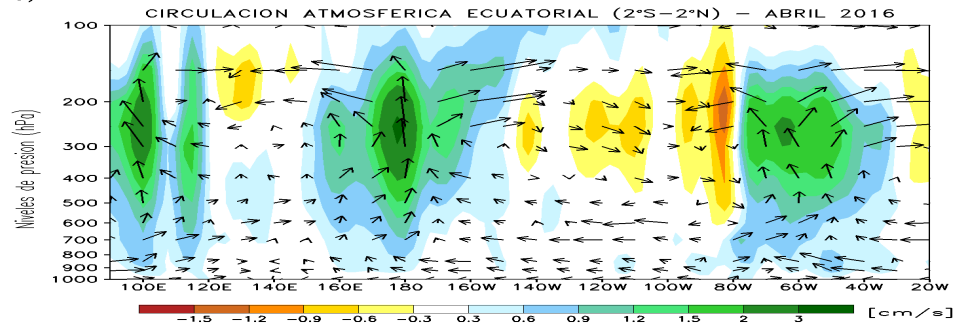


MONITOREO DE LA CIRCULACION ATMOSF. EC. 5°N-5°S

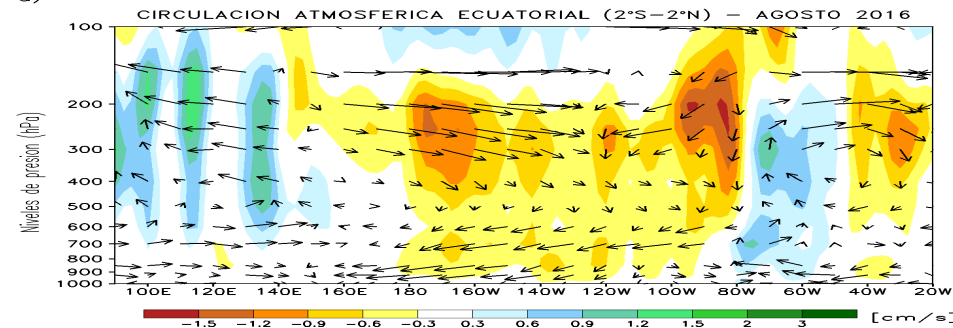
a)



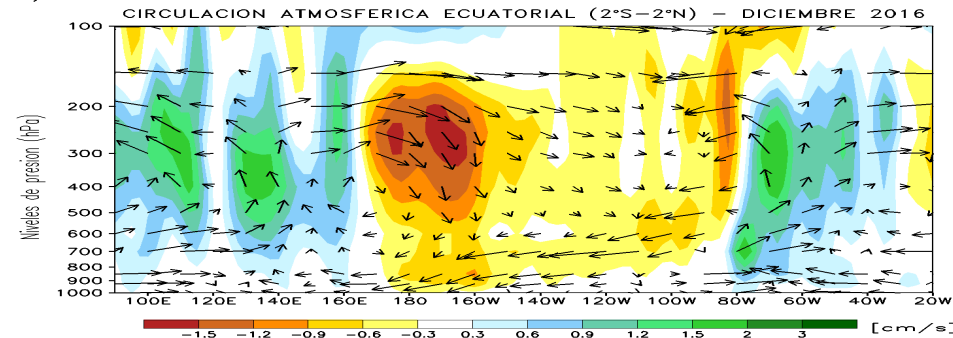
a)



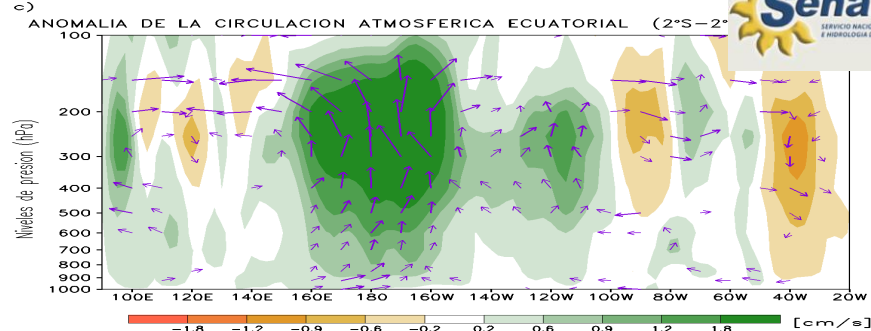
a)



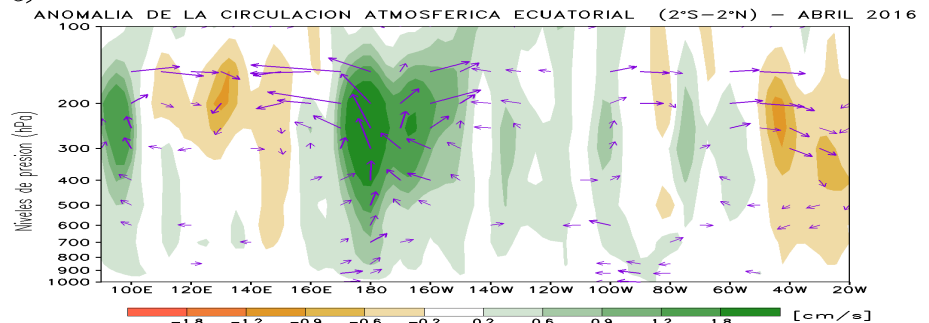
a)



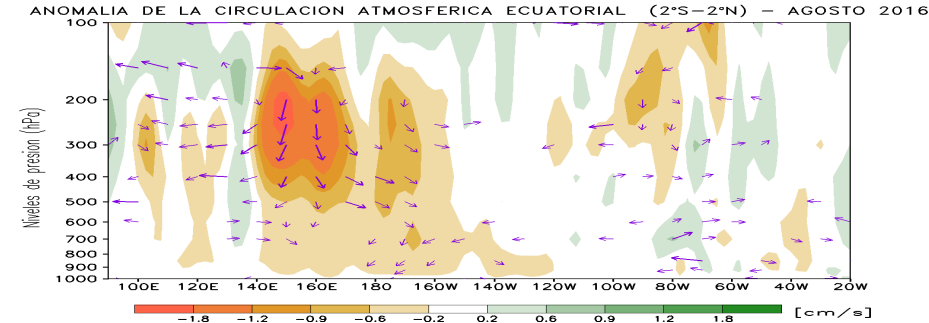
c)



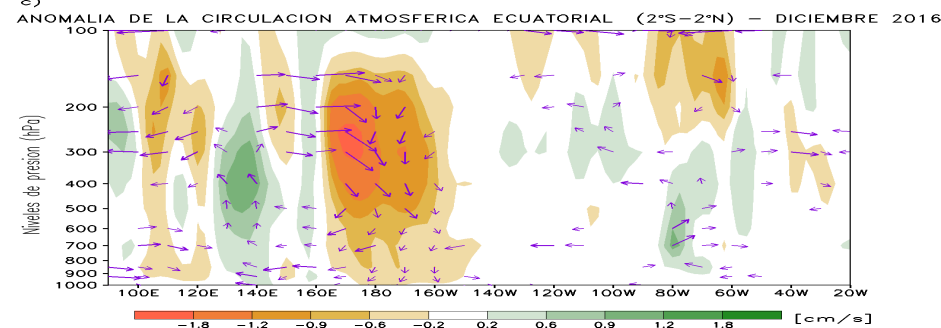
c)



c)

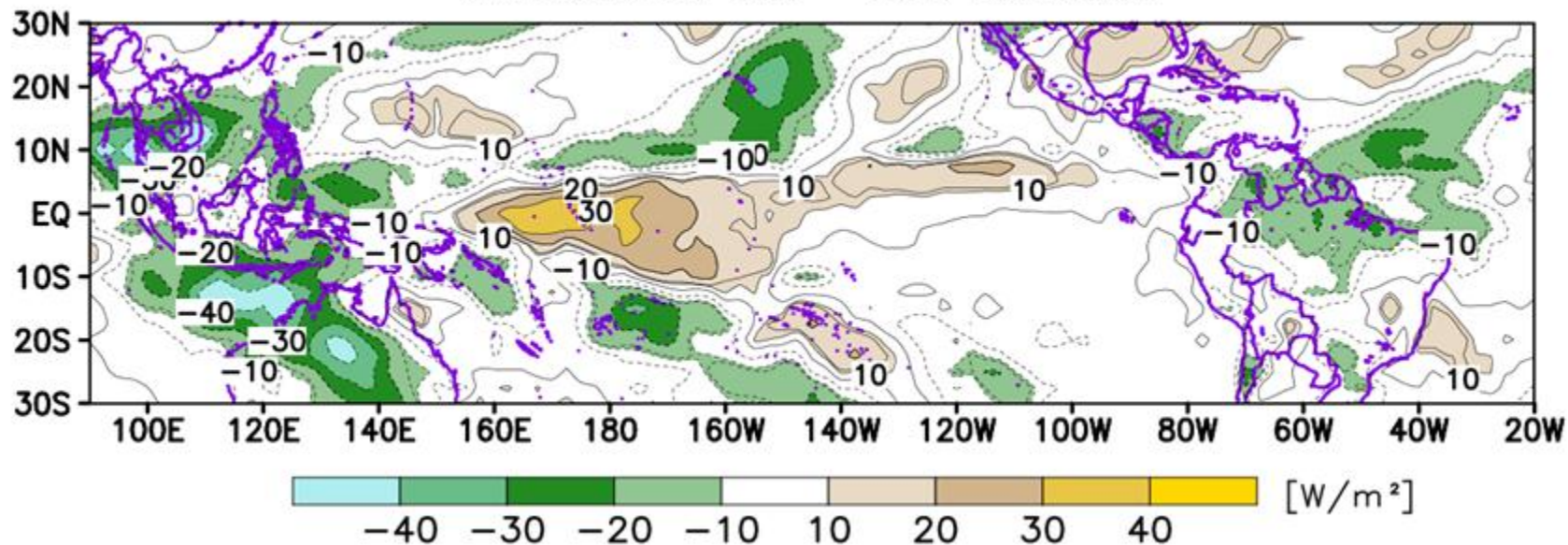


c)

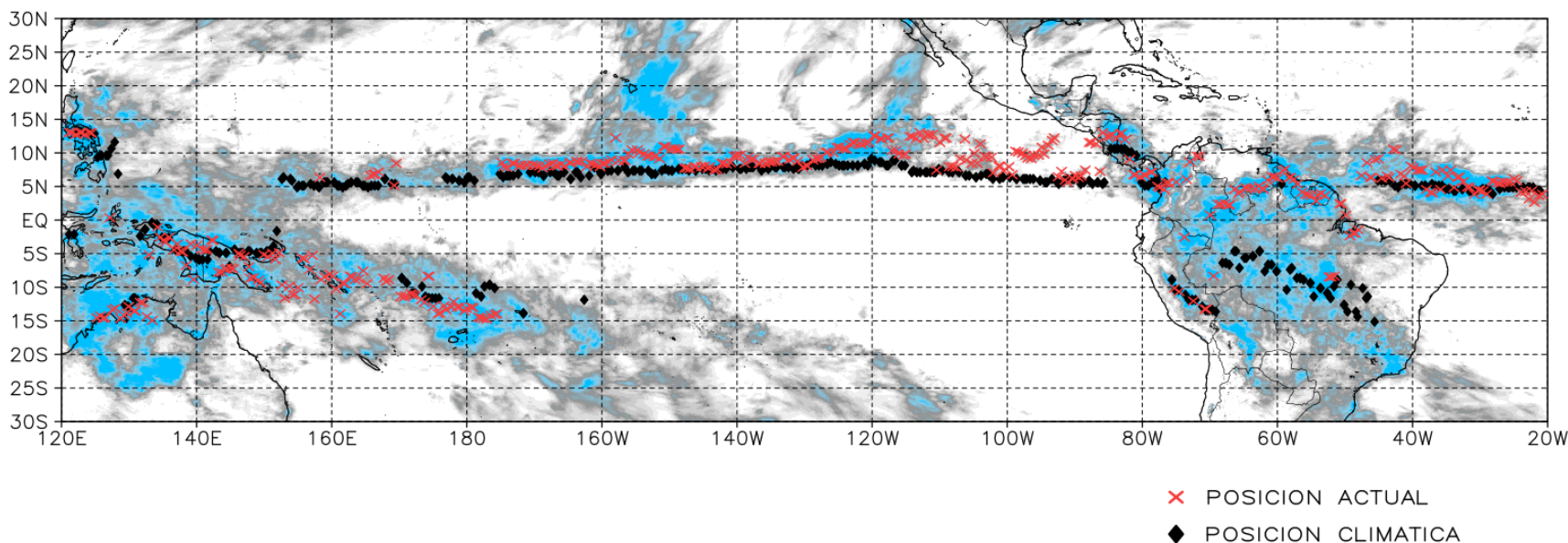


CONVECCIÓN & PRECIPITACIÓN

ANOMALIA DE OLR – 2016 DICIEMBRE

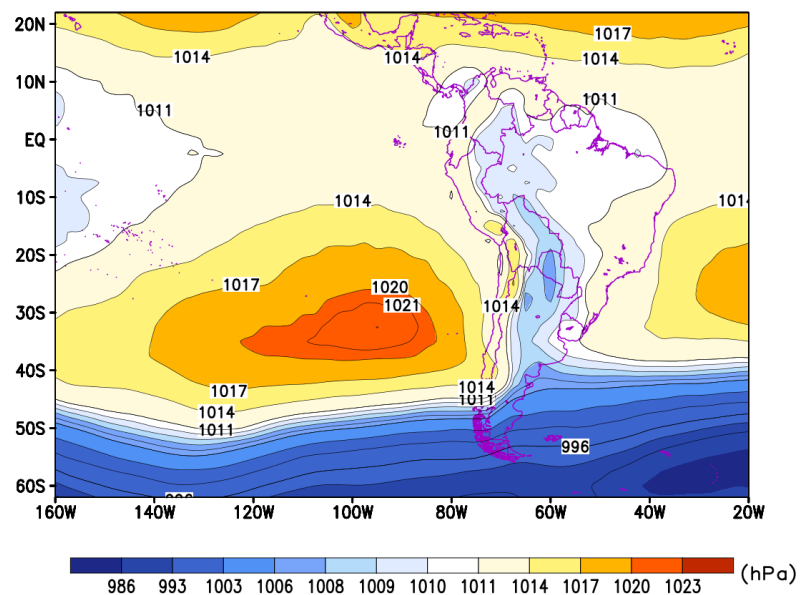


ZCIT – DICIEMBRE DE 2016

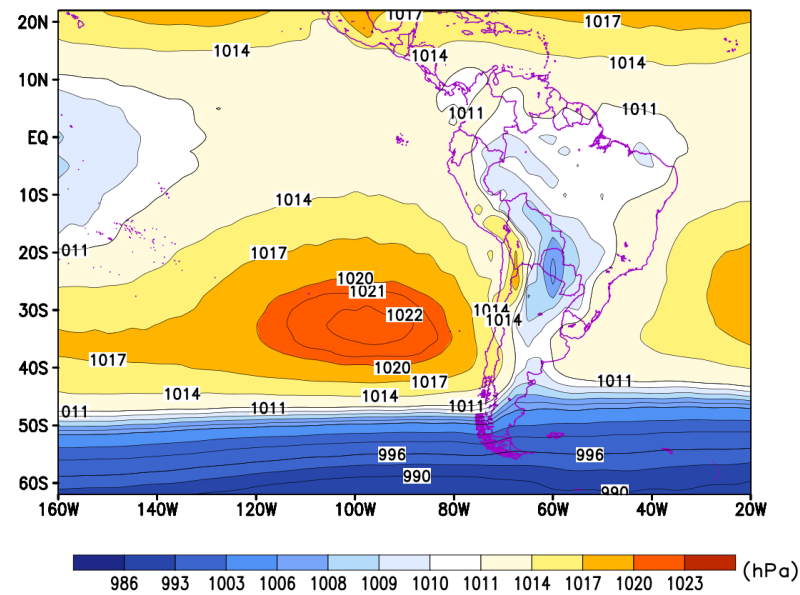


CAMPOS DE PRESIONES

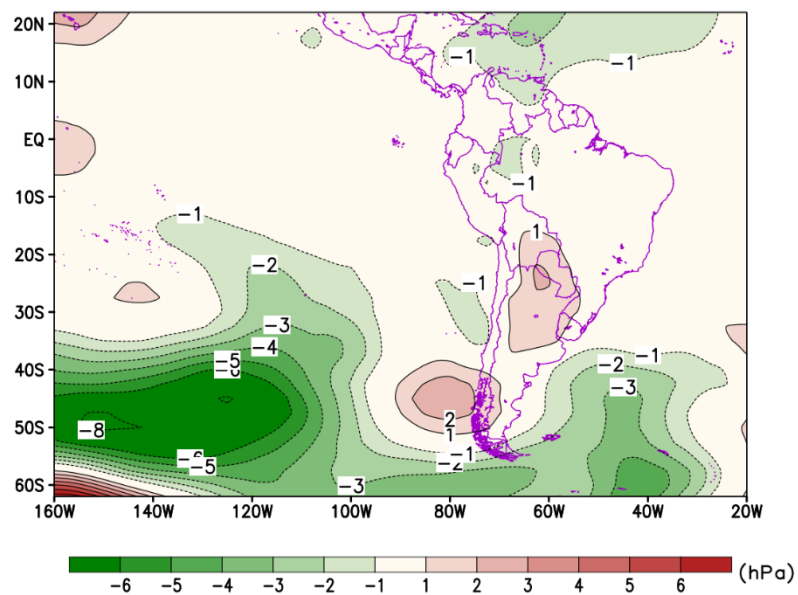
PRESION A NIVEL DEL MAR – 2016 DICIEMBRE



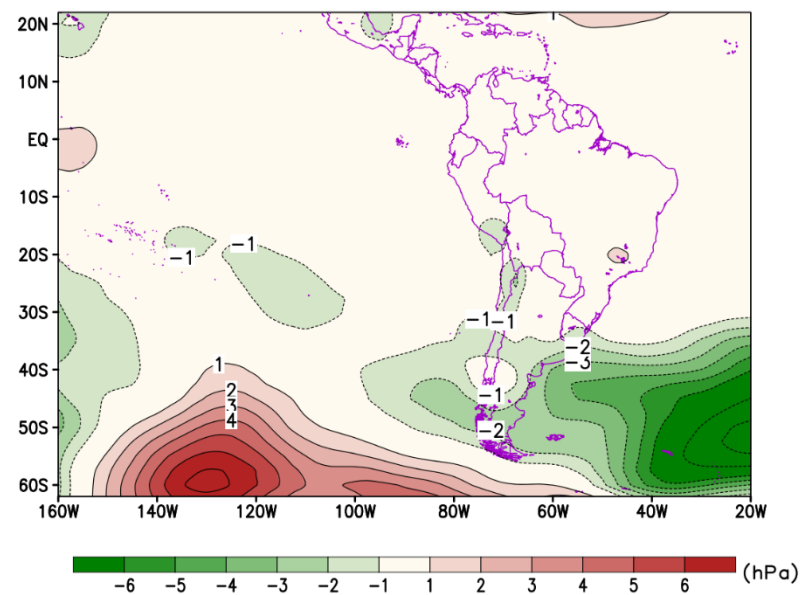
CLIMATOLOGIA DE LA PRESION A NIVEL DEL MAR – DICIEMBRE



ANOMALIA DE LA PRESION A NIVEL DEL MAR – 2016 NOVIEMBRE

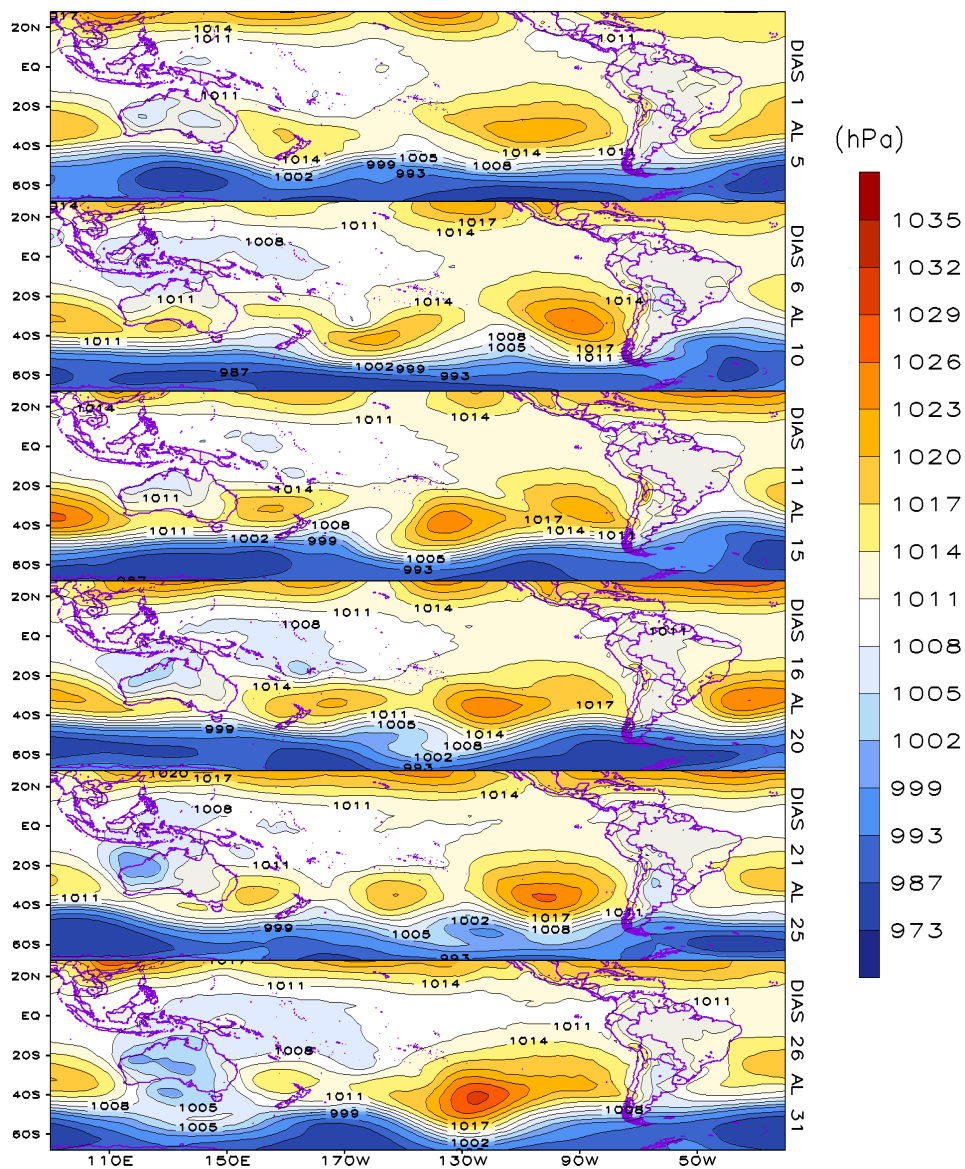


ANOMALIA DE LA PRESION A NIVEL DEL MAR – 2016 DICIEMBRE

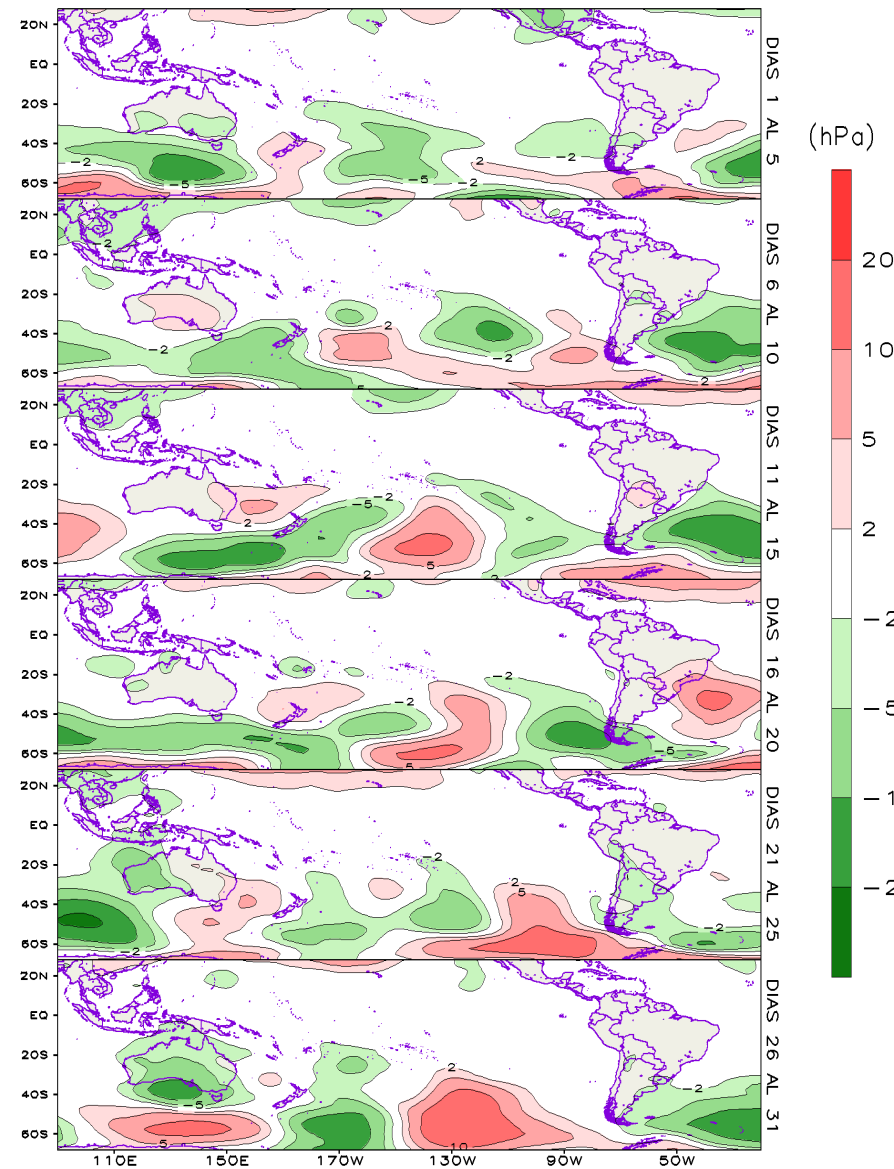


CAMPO DE PRESION Y ANOMALÍAS CADA 5 DIAS

PRESION A NIVEL DEL MAR – DICIEMBRE 2016

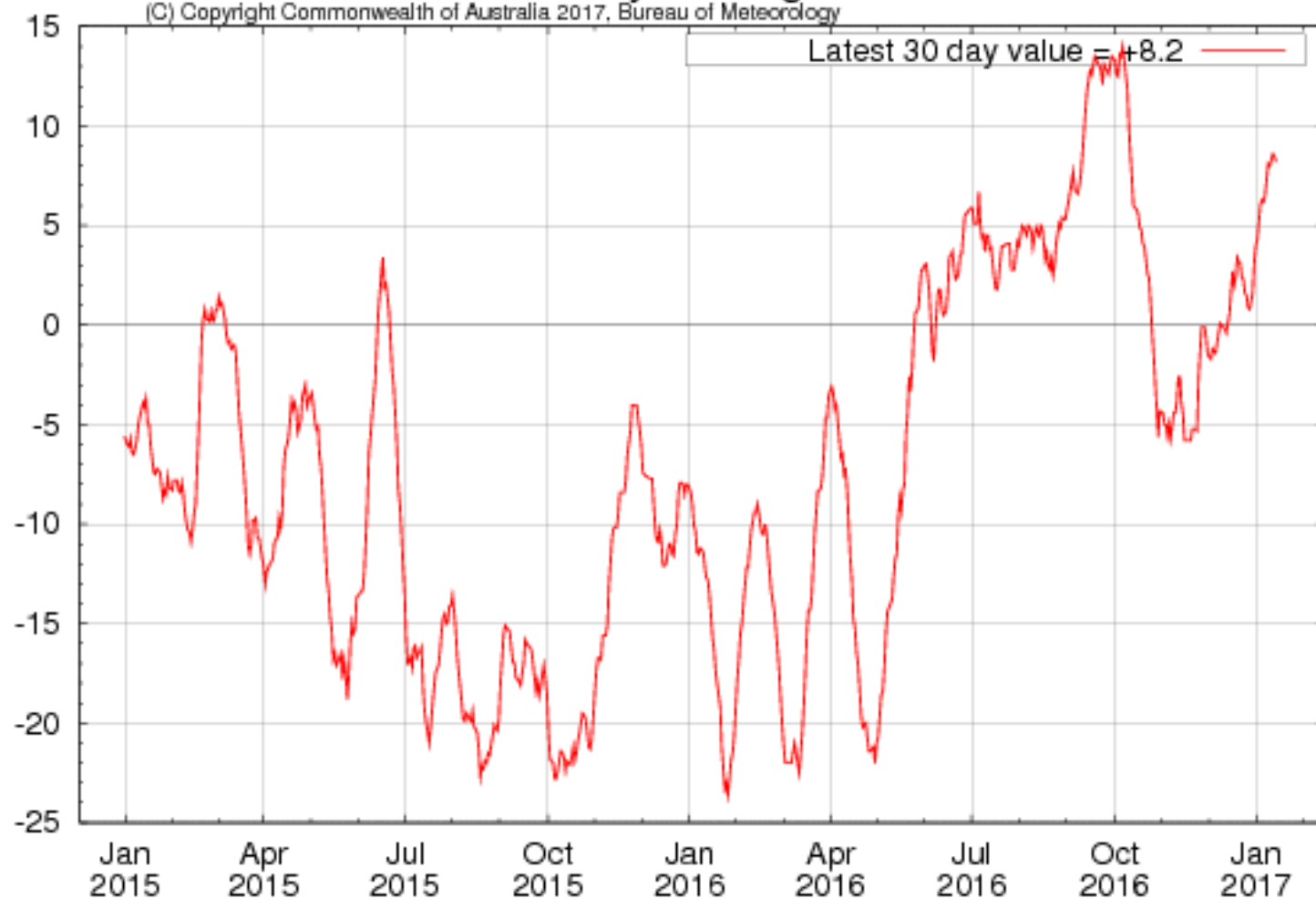


ANOMALIA DE LA PRESION A NIVEL DEL MAR – DICIEMBRE 2016



30 Day Moving SOI

(C) Copyright Commonwealth of Australia 2017, Bureau of Meteorology

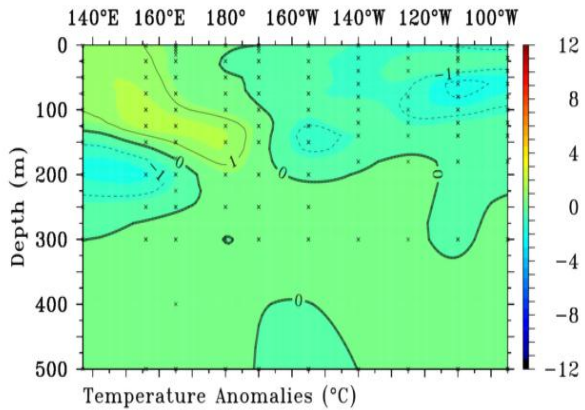




ANOMALÍAS DE LA TEMPERATURA SUPERFICIAL EN

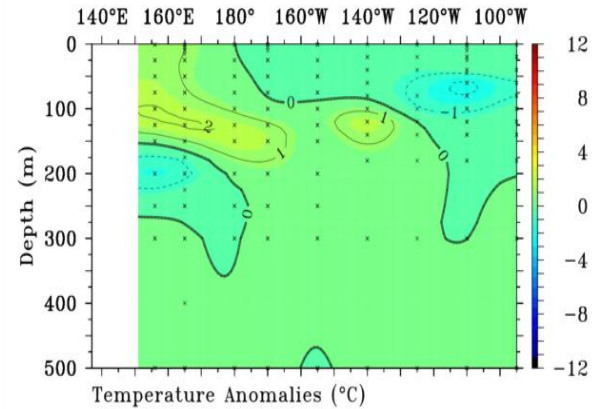
Five-Day Data

Ending On December 5 2016 2°S to 2°N Average



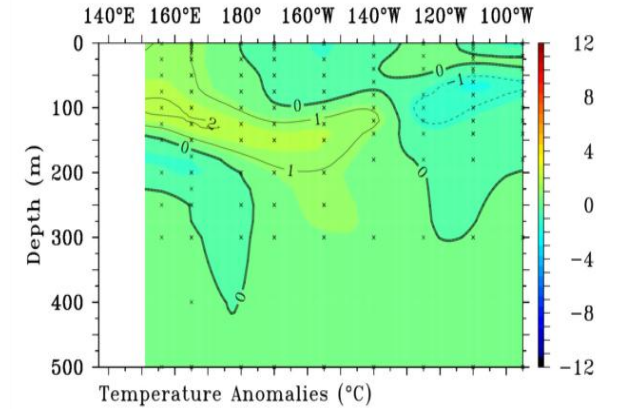
Five-Day Data

Ending On December 15 2016 2°S to 2°N Average



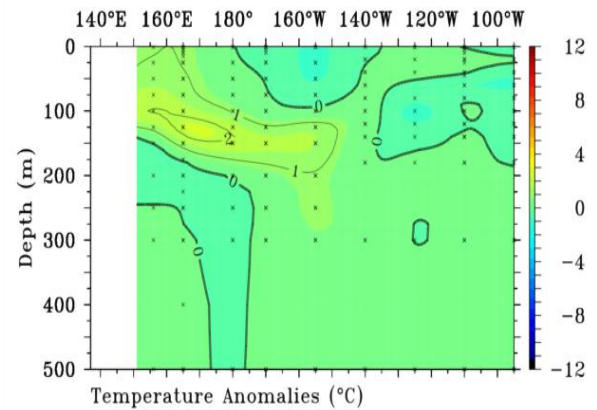
Five-Day Data

Ending On December 20 2016 2°S to 2°N Average



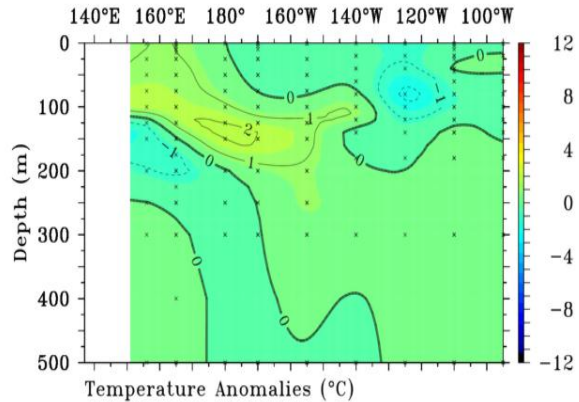
Five-Day Data

Ending On December 25 2016 2°S to 2°N Average



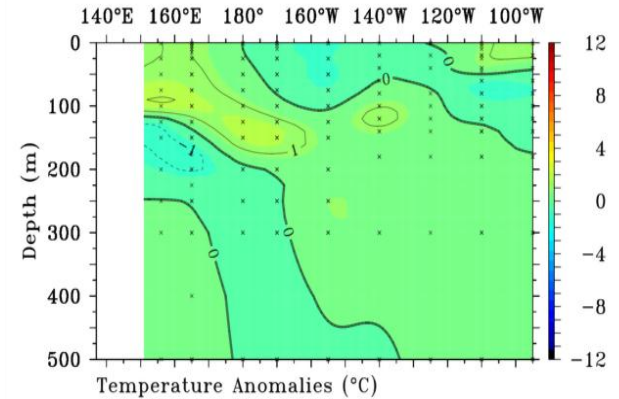
Five-Day Data

Ending On January 8 2017 2°S to 2°N Average



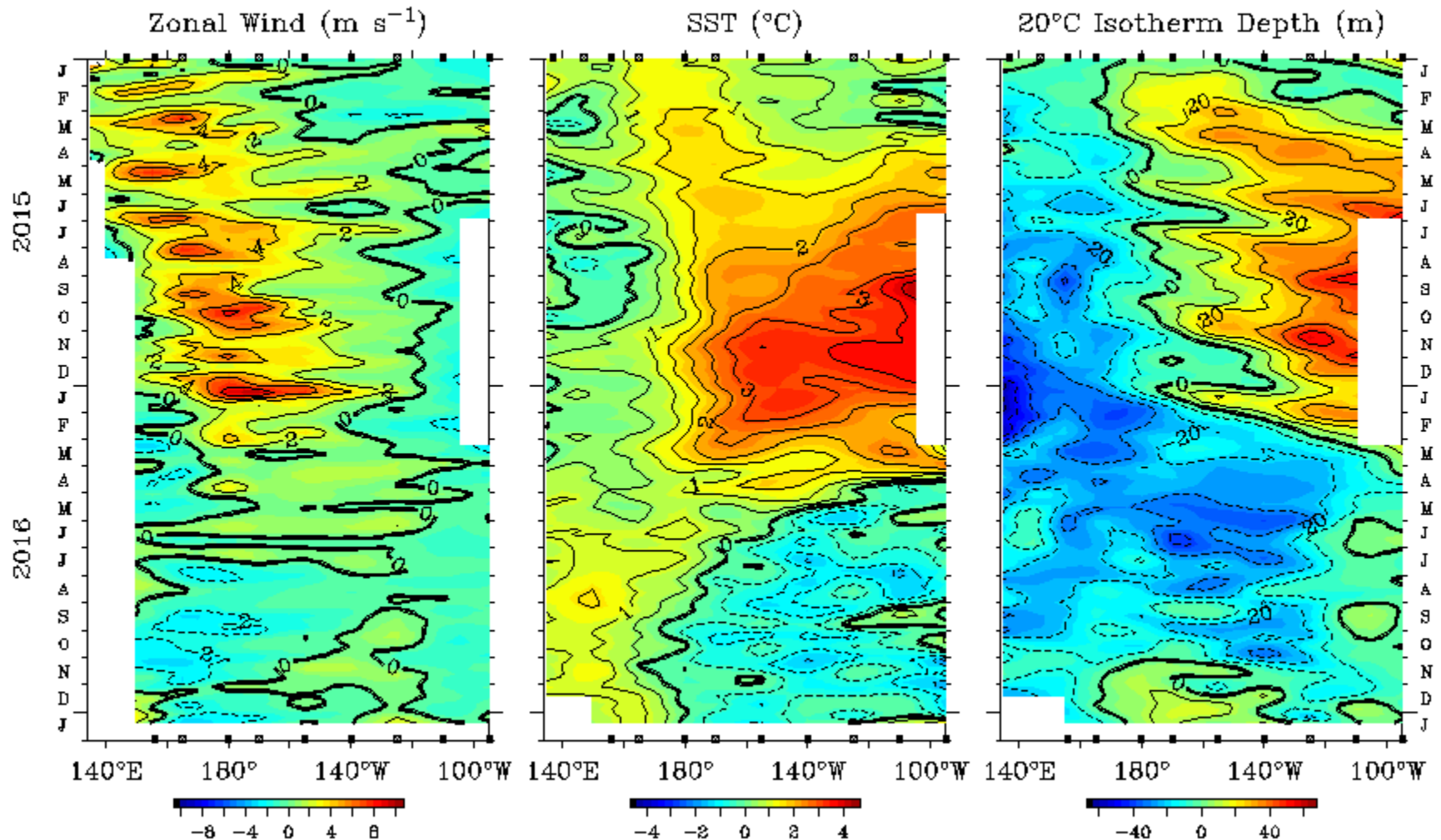
Five-Day Data

Ending On January 14 2017 2°S to 2°N Average

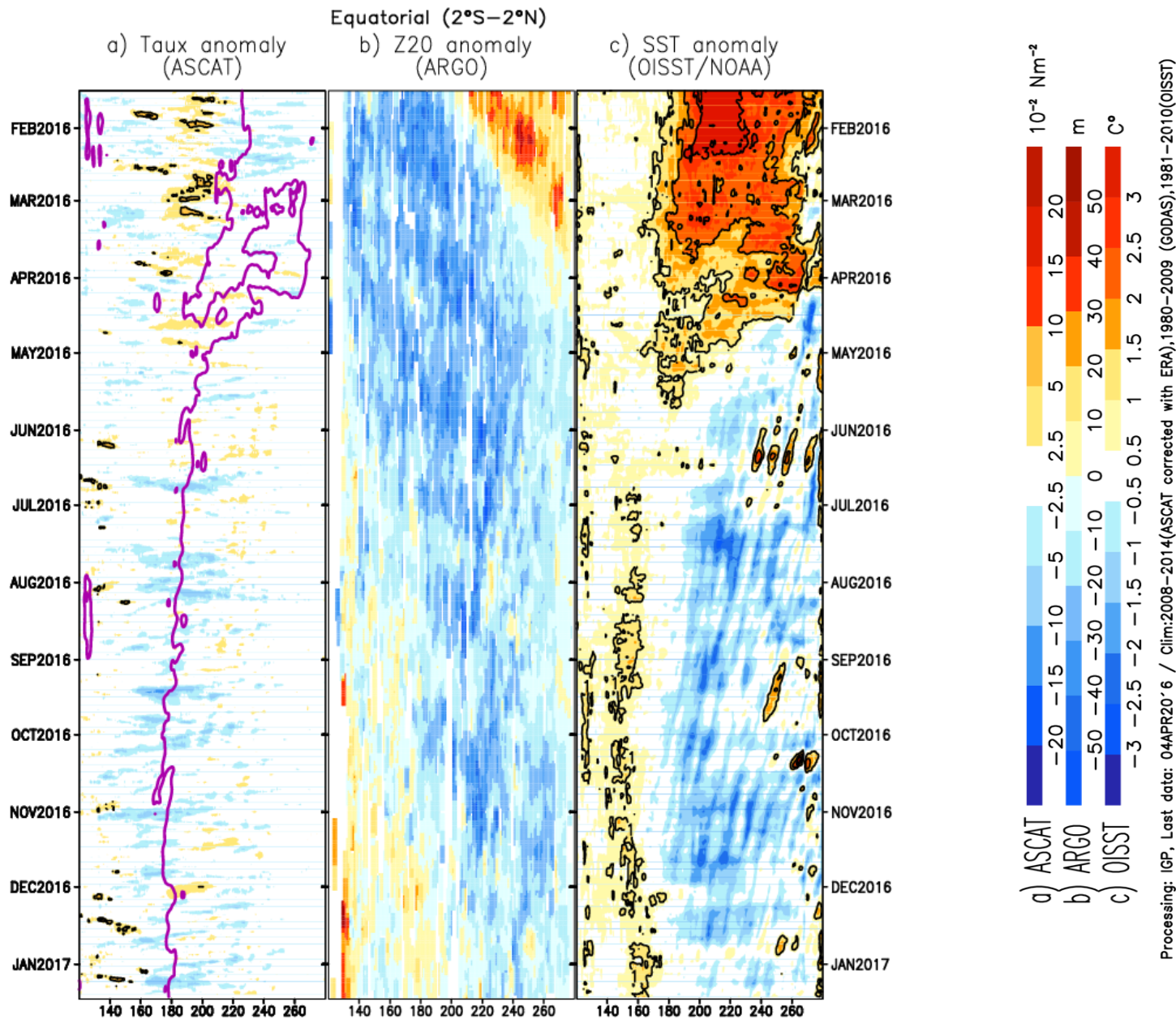


TAO a lo largo de la línea ecuatorial

Five Day Zonal Wind, SST, and 20°C Isotherm Depth Anomalies 2°S to 2°N Average



Esfuerzo de viento, termoclina y ATSM en la línea ecuatorial

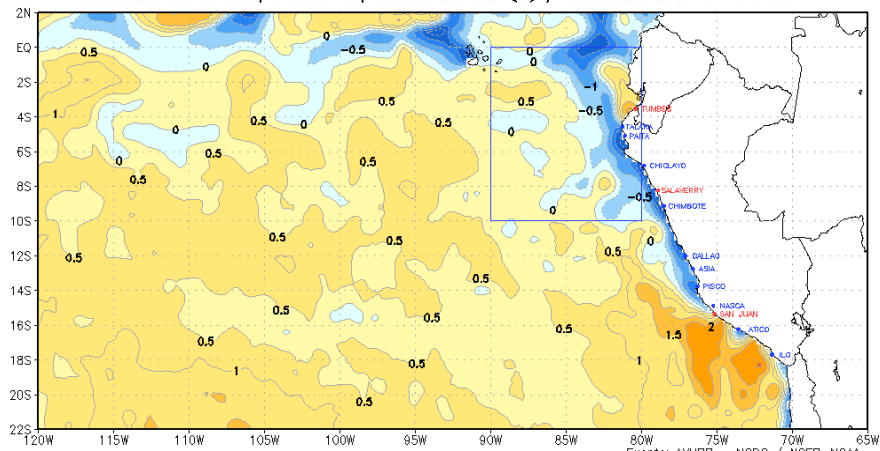




TEMPERATURA SUPERFICIAL DEL MAR EN EL PACÍFICO SUDORIENTAL

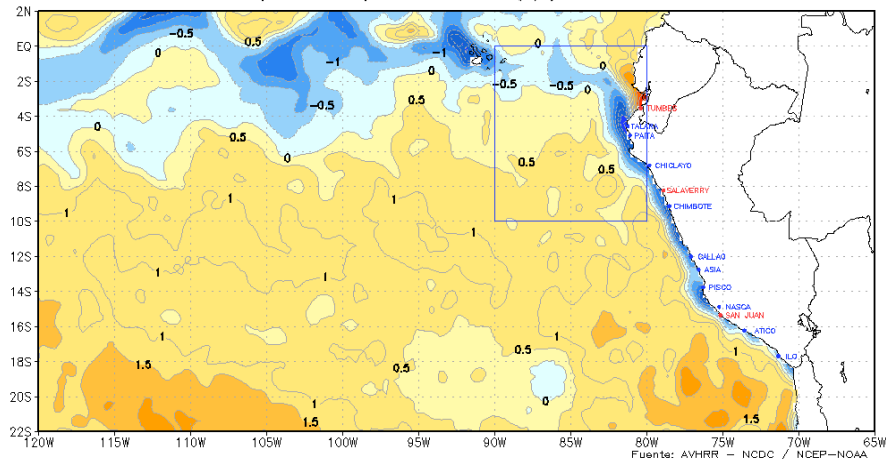
DIRECCION DE HIDROGRAFIA Y NAVEGACION
DPTO OCEANOGRAFIA – DIV METEOROLOGIA

Anomalia de la Temperatura Superficial del Mar (C) / Promedio Dia: 01 DIC 2016



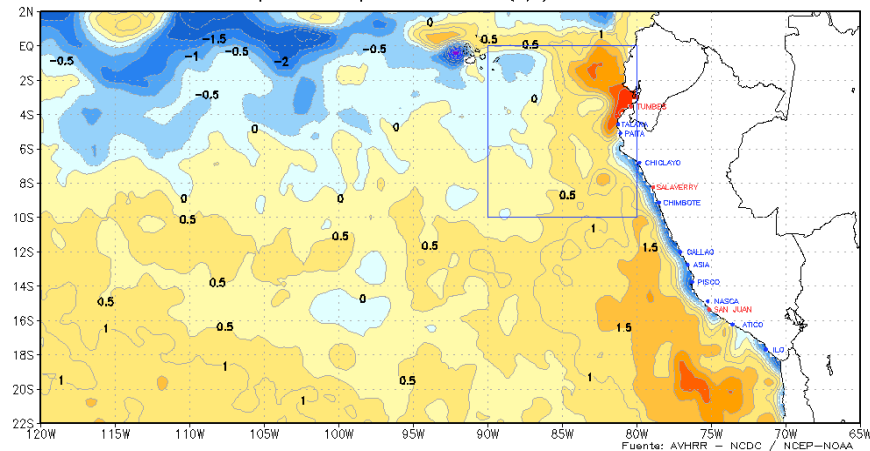
DIRECCION DE HIDROGRAFIA Y NAVEGACION
DPTO OCEANOGRAFIA – DIV METEOROLOGIA

Anomalia de la Temperatura Superficial del Mar (C) / Promedio Dia: 20 DIC 2016



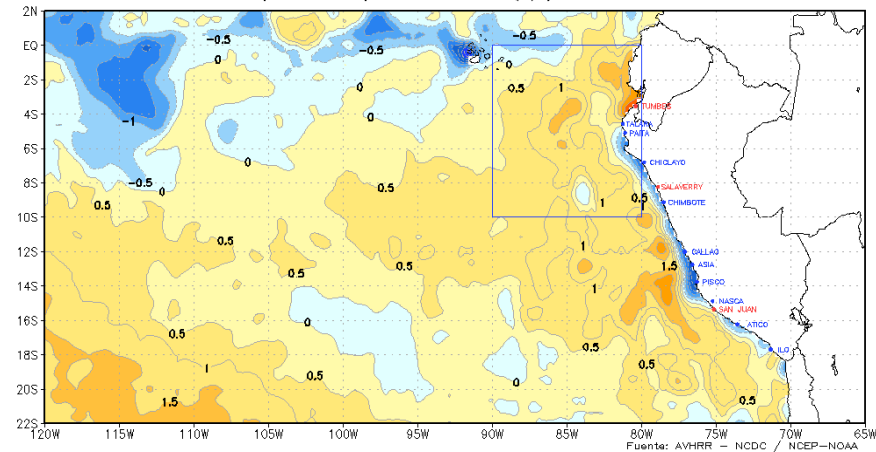
DIRECCION DE HIDROGRAFIA Y NAVEGACION
DPTO OCEANOGRAFIA – DIV METEOROLOGIA

Anomalia de la Temperatura Superficial del Mar (C) / Promedio Dia: 10 DIC 2016

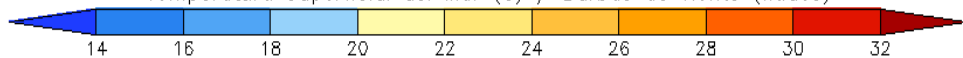


DIRECCION DE HIDROGRAFIA Y NAVEGACION
DPTO OCEANOGRAFIA – DIV METEOROLOGIA

Anomalia de la Temperatura Superficial del Mar (C) / Promedio Dia: 08 ENE 2017



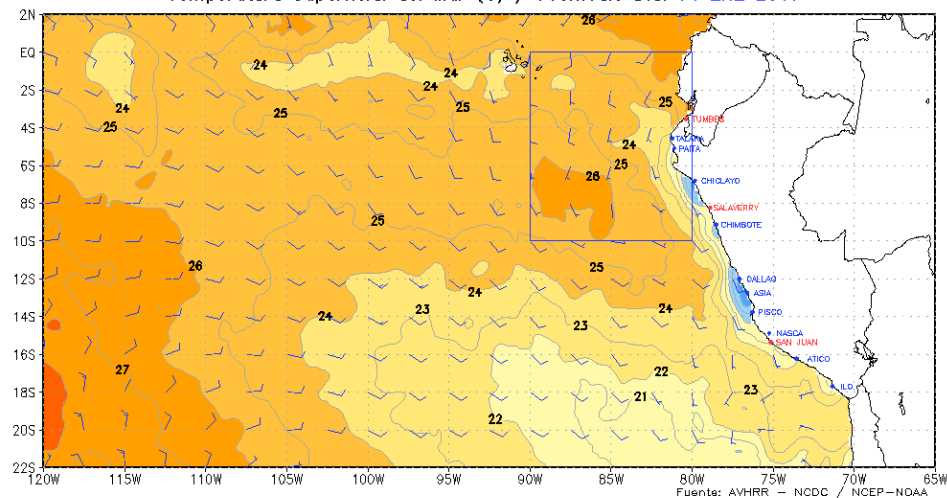
Temperatura Superficial del Mar (C) / Barbas de viento (nudos)



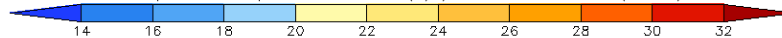


TSM Y ATSM EN EL PACÍFICO SUDORIENTAL

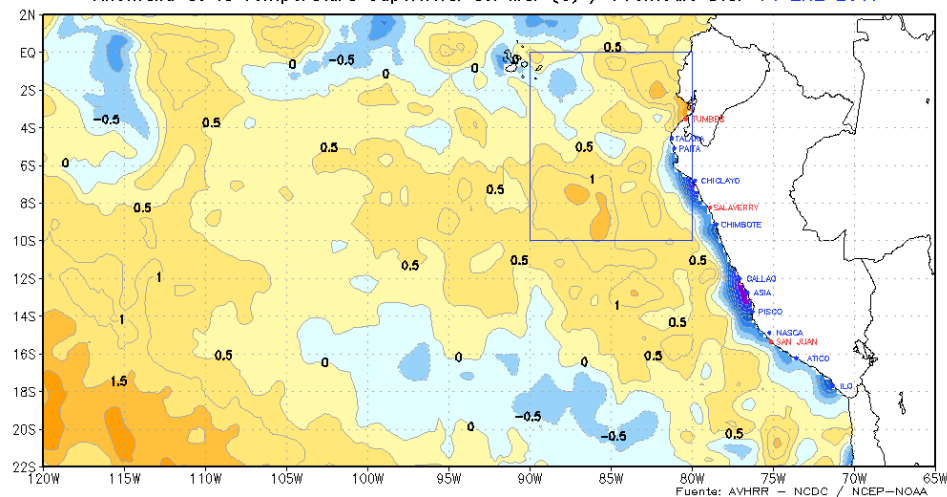
Temperatura Superficial del Mar (C) / Promedio Dia: 14 ENE 2017



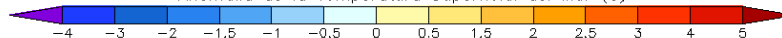
Temperatura Superficial del Mar (C) / Barbas de viento (nudos)



Anomalia de la Temperatura Superficial del Mar (C) / Promedio Dia: 14 ENE 2017



Anomalia de la Temperatura Superficial del Mar (C)



Valores del Índice Costero El Niño

El Niño
costero
duró hasta
junio →

Mes	ICEN	Categoría
03/2016	1.07	Cálida Moderada
04/2016	0.77	Cálida Débil
05/2016	0.54	Cálida Débil
06/2016	0.43	Cálida Débil
07/2016	0.29	Neutra
08/2016	0.17	Neutra
09/2016	0.14	Neutra
10/2016	0.22	Neutra
11/2016	0.37	Neutra

Mes	ICENtmp	Categoría
12/2016	0.48*	Cálida Débil
01/2017	0.54**	Cálida Débil

* Se usaron los datos de (Nov. Y Dic. 2016) ERSST3v, (Ene. 2017) NMME.

** Se usaron los datos de (Dic. 2016) ERSST3v, (Ene. Y Feb. 2017) NMME
NMME CI 2017 01

Valores del Oceanic Niño Index (ONI)

El Niño en
el Pacífico
Central →
duró hasta
mayo

Mes	ONI	Categoría
03/2016	1.58	Cálida Fuerte
04/2016	1.09	Cálida Moderada
05/2016	0.60	Cálida Débil
06/2016	0.10	Neutra
07/2016	-0.32	Neutra
08/2016	-0.58	Fría Débil
09/2016	-0.75	Fría Débil
10/2016	-0.84	Fría Débil
11/2016	-0.84	Fría Débil

<http://www.cpc.ncep.noaa.gov/data/indices/oni.ascii.txt>

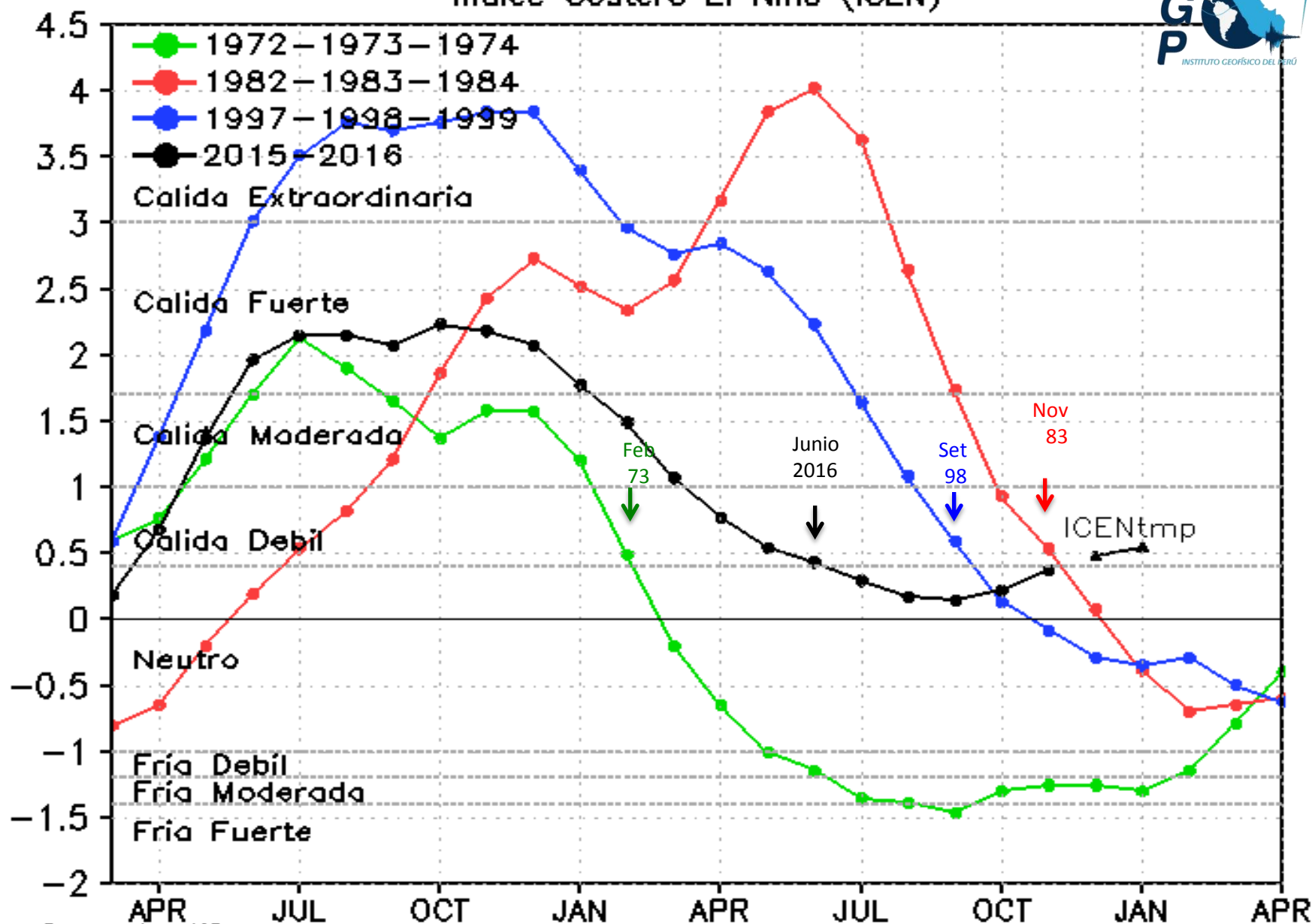
Mes	ONItmp	Categoría
12/2016	-0.65*	Fría Débil
01/2017	-0.35**	Neutra

* Se usaron los datos de (Nov. Y Dic 2016) ERSST4, (Ene. 2017) .

** Se usaron los datos de (Dic. 2016) ERSST4, (Ene. Y Feb. 2017)

NMME (CI 2017 01)

Indice Costero El Nino (ICEN)

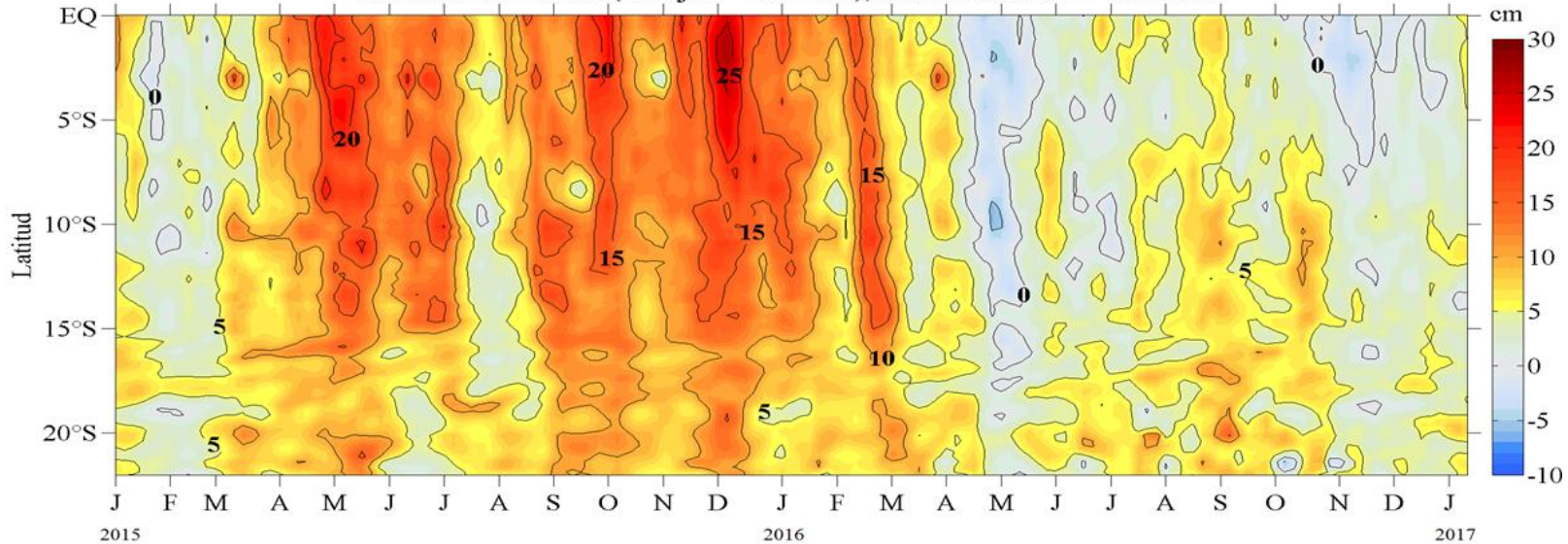


Preparacion: IGP.

Actualizado: 09-01-2016.

ANOMALÍAS DEL NIVEL MEDIO DEL MAR EN EL LITORAL PERUANO

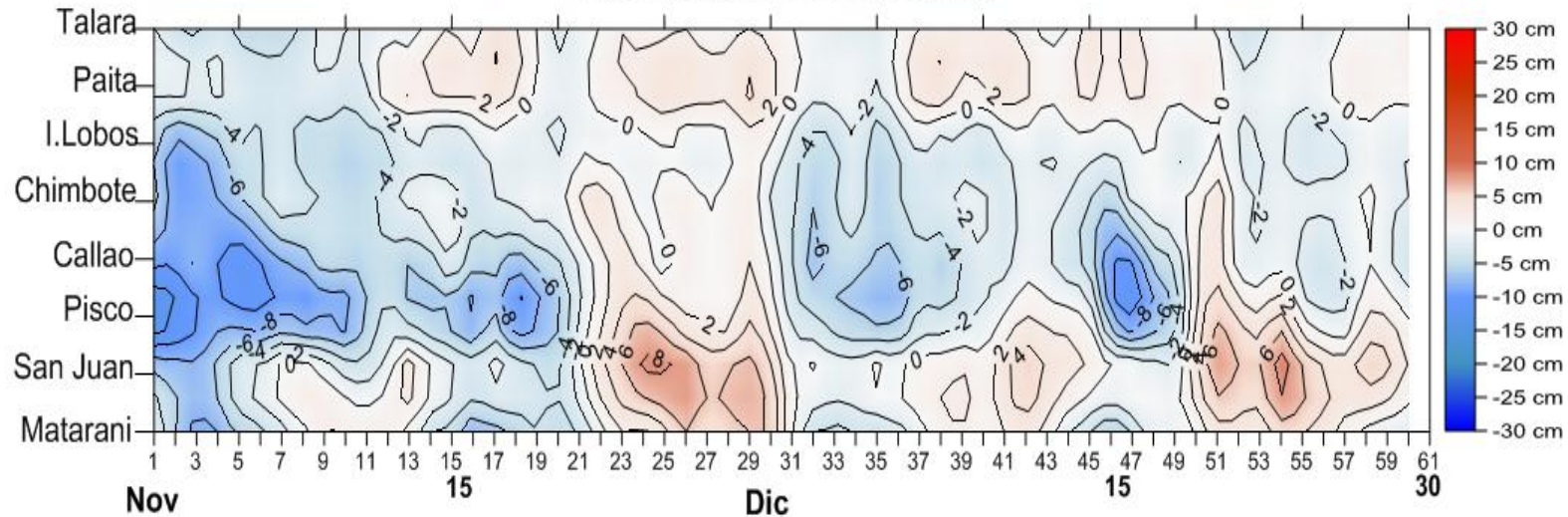
ANMM en Pentadas(franja 0 - 100 km), Actualizado al 14-Jan-2017



Fuente: CMEMS/ Procesado por Laboratorio de Hidro-Física marina/ IMARPE



ANOMALÍA DEL NMM (cm)



+10





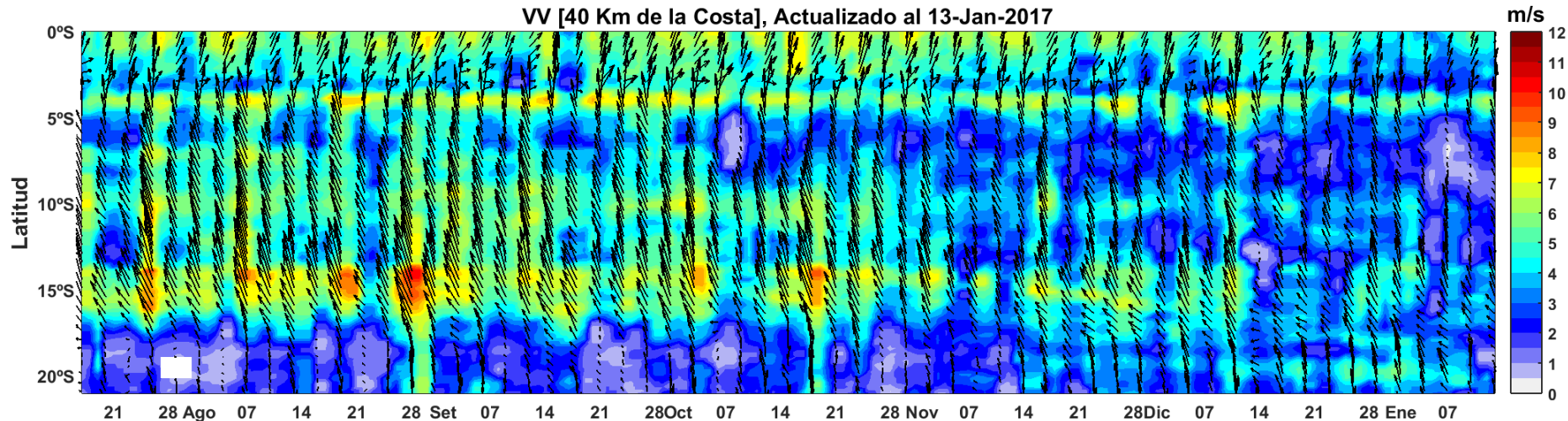
ANOMALÍAS DEL NIVEL MEDIO DEL MAR EN EL LITORAL PERUANO

Estación	Nivel Medio del Mar (NMM, m)							
	11/01/2017		12/01/2017		13/01/2017		14/01/2017	
	NMM	ANMM	NMM	ANMM	NMM	ANMM	NMM	ANMM
Talara	0.96	+0.06	0.96	+0.06	0.98	+0.08	1.00	+0.10
Paita	0.88	+0.08	0.89	+0.09	0.91	+0.11	0.91	+0.11
I. Lobos de Afuera	0.75	+0.03	0.75	+0.03	0.78	+0.06	0.80	+0.08
Chimbote	0.63	+0.02	0.61	0.00	0.64	+0.03	0.66	+0.05
Callao	0.59	+0.03	0.56	0.00	0.55	-0.01	0.56	0.00
Pisco	0.54	+0.07	0.51	+0.04	0.50	+0.03	0.50	+0.03
San Juan	0.49	+0.05	0.49	+0.05	0.51	+0.07	0.48	+0.04
Matarani	0.53	-0.01	0.52	-0.02	0.53	-0.01	0.54	0.00

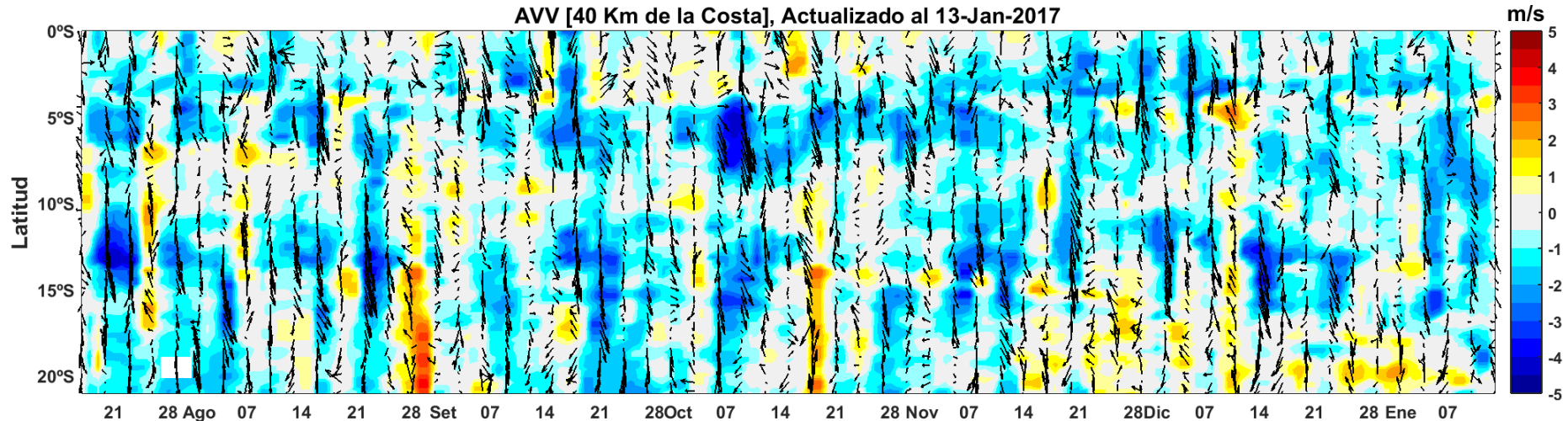
Velocidad y Anomalías del Viento



VV [40 Km de la Costa], Actualizado al 13-Jan-2017



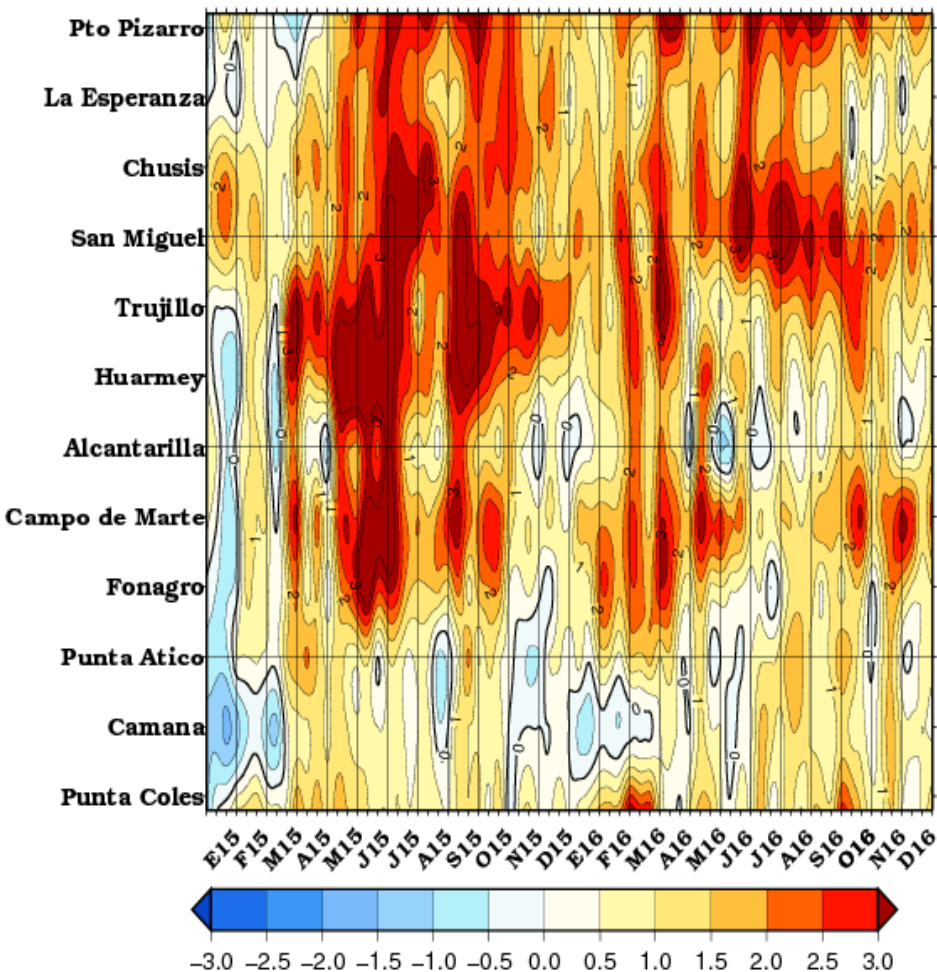
AVV [40 Km de la Costa], Actualizado al 13-Jan-2017



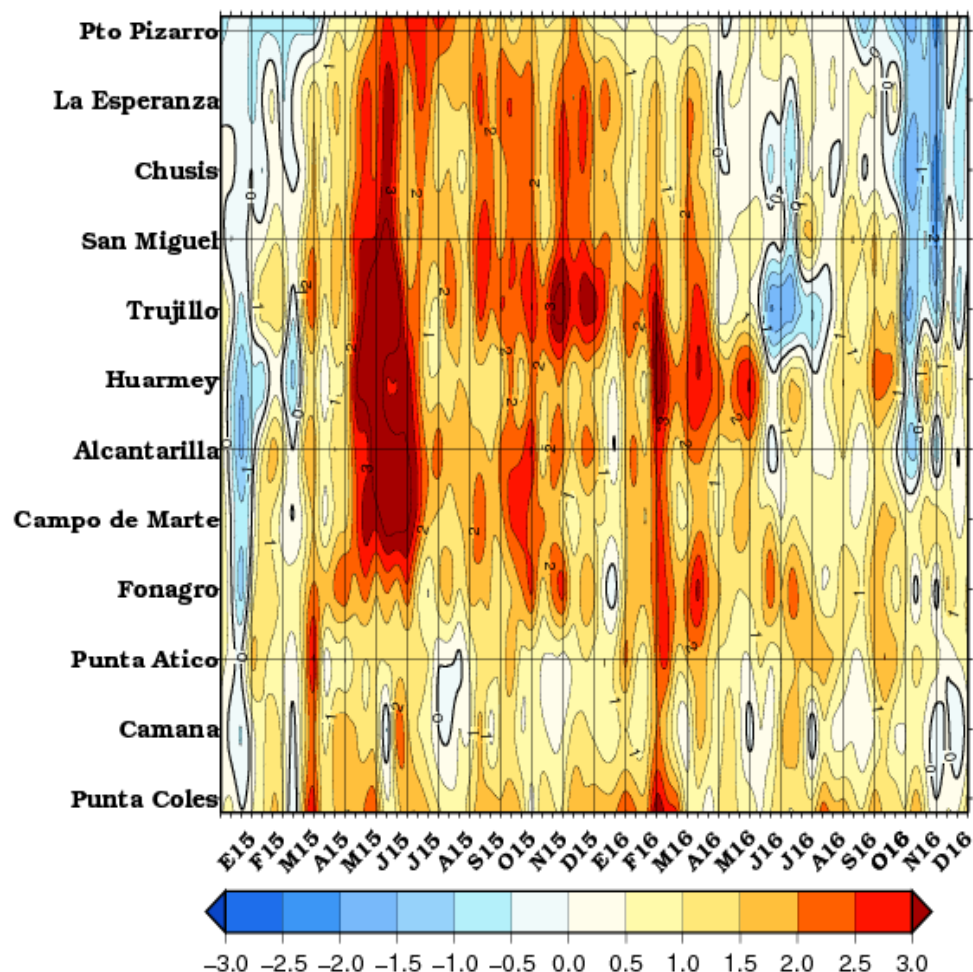
Viento Satelital (40 Km frente a la costa del Perú): a) Velocidad del viento (m/s), b) Anomalía de la velocidad del viento (m/s). Fuente: Satélite ASCAT, Procesamiento: Laboratorio de Hidro-Física Marina, IMARPE

TEMPERATURAS EXTREMAS DEL AIRE

Anomalías de la
Temperatura Máxima



Anomalía de la
Temperatura Mínima



TEMPERATURAS EXTREMAS DEL AIRE

Distribución de las estaciones meteorológicas en el litoral peruano

ANOMALIAS PROMEDIO TEMPERATURA MÁXIMA

Estación	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEPT	OCT	NOV	DIC
Costa Norte	1.4	1.7	1.9	1.5	1.6	2.1	2.2	2.4	2.1	2.0	1.3	1.5
Costa Centro	1.0	1.7	2.0	1.3	1.8	1.2	0.8	0.8	1.2	2.3	1.4	1.2
Costa Sur	0.3	1.0	1.4	0.7	0.9	0.5	1.0	1.2	1.1	0.9	1.0	0.5

ANOMALIAS PROMEDIO TEMPERATURA MÍNIMA

Estación	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEPT	OCT	NOV	DIC
Costa Norte	1.6	1.5	1.2	1.0	0.4	-0.1	0.0	0.0	0.1	0.1	-1.4	-0.2
Costa Centro	1.0	2.0	1.8	2.1	1.9	0.5	0.7	0.8	1.0	1.1	0.7	0.7
Costa Sur	0.2	1.8	1.5	1.3	0.7	0.9	1.2	1.1	0.8	1.0	0.2	0.2

DATA EXTENDIDA

Estación	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEPT	OCT	NOV	DIC
Puerto Pizarro	1.1	1.9	2.1	2.7	2.1	2.7	2.6	3.1	2.4	3.0	1.6	1.8
La Esperanza	1.2	1.3	1.2	1.4	1.7	2.1	1.7	1.7	1.5	1.1	0.4	0.8
Chusis	1.5	1.7	2.4	1.7	2.1	2.5	2.3	2.1	2.0	1.2	1.2	1.5
San Miguel	1.8	2.3	1.9	1.8	2.3	3.3	3.3	3.3	2.9	2.6	2.1	2.1
Trujillo	1.4	1.8	2.3	1.7	0.8	0.9	1.4	2.0	1.9	2.4	1.2	1.3
Huarmey	1.0	1.8	2.2	1.1	2.0	1.6	1.1	0.7	0.8	2.2	0.9	0.7
Alcantarilla	0.3	1.2	1.8	0.7	0.5	0.2	0.2	0.4	0.9	1.5	0.8	0.7
Campo de Marte	1.7	2.0	2.1	2.1	2.9	1.6	1.2	1.4	1.8	3.1	2.5	2.1
Fonagro	1.3	2.2	2.5	1.5	1.3	0.5	0.1	1.2	0.8	1.3	1.5	0.8
Punta Atico	0.7	1.0	1.5	0.7	0.4	0.2	1.0	1.5	1.3	0.6	0.8	0.4
Camana	-0.6	-0.4	0.1	0.4	0.7	0.1	1.2	1.3	0.8	0.6	1.2	0.5
Punta Coles	0.8	1.7	1.8	0.5	1.2	0.5	1.0	1.0	1.6	1.3	1.0	0.7
Ite	0.2	1.0	1.0	0.7	1.2	1.2	1.3	1.5	1.6	1.1	1.2	0.9
La Yarada	-0.4	0.6	1.2	0.4	0.6	0.4	1.2	0.5	0.6	0.5	0.5	-0.1

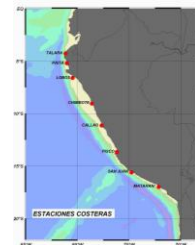
DATA EXTENDIDA

Estación	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEPT	OCT	NOV	DIC
Puerto Pizarro	0.7	0.7	0.5	0.4	0.7	0.6	0.7	0.2	-0.6	-1.0	-1.5	-0.2
La Esperanza	1.8	1.3	1.2	0.9	0.4	0.3	0.4	0.3	0.7	0.7	-1.4	-0.4
Chusis	1.4	1.4	1.2	1.0	0.1	-0.2	-0.1	0.2	0.3	-0.7	-1.6	-0.4
San Miguel	1.7	1.6	1.7	1.4	0.7	0.4	0.7	0.7	1.4	1.2	-1.3	0.0
Trujillo	2.0	2.6	1.4	1.7	0.5	-1.4	-1.3	0.2	0.9	1.3	-0.8	0.2
Huarmey	1.1	2.1	2.3	2.7	2.6	0.9	1.0	1.0	1.6	1.8	0.8	1.0
Alcantarilla	0.8	2.1	1.8	1.7	1.5	0.3	0.8	0.6	0.5	0.1	-0.4	0.5
Campo de Marte	1.2	1.9	1.4	2.0	1.5	0.3	0.2	0.8	0.8	1.5	1.7	0.7
Fonagro	0.5	1.9	2.3	2.3	1.1	1.7	1.9	0.8	1.4	0.7	0.2	1.2
Punta Atico	1.4	1.4	1.9	1.3	0.6	0.9	1.6	1.5	0.9	1.7	0.9	0.5
Camana	0.8	1.3	0.7	1.2	0.6	0.7	0.9	0.5	0.3	0.7	0.2	0.0
Punta Coles	1.8	2.2	1.8	0.7	0.9	0.9	1.2	1.6	1.2	1.3	0.8	0.6
Ite	0.1	1.4	0.9	0.8	0.9	0.6	0.8	1.2	1.0	1.2	0.0	0.1
La Yarada	-3.3	2.5	1.5	1.3	0.2	0.4	0.9	1.1	0.2	0.5	-1.1	-1.4

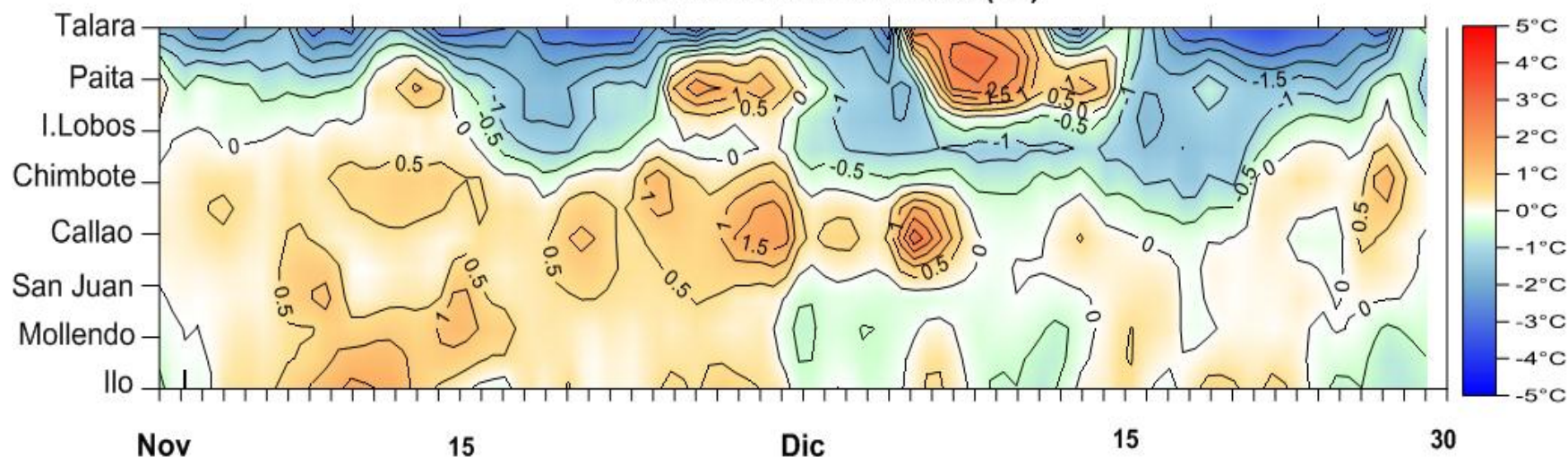




ANOMALÍAS DE LA TEMPERATURA SUPERFICIAL DEL MAR EN EL LITORAL PERUANO

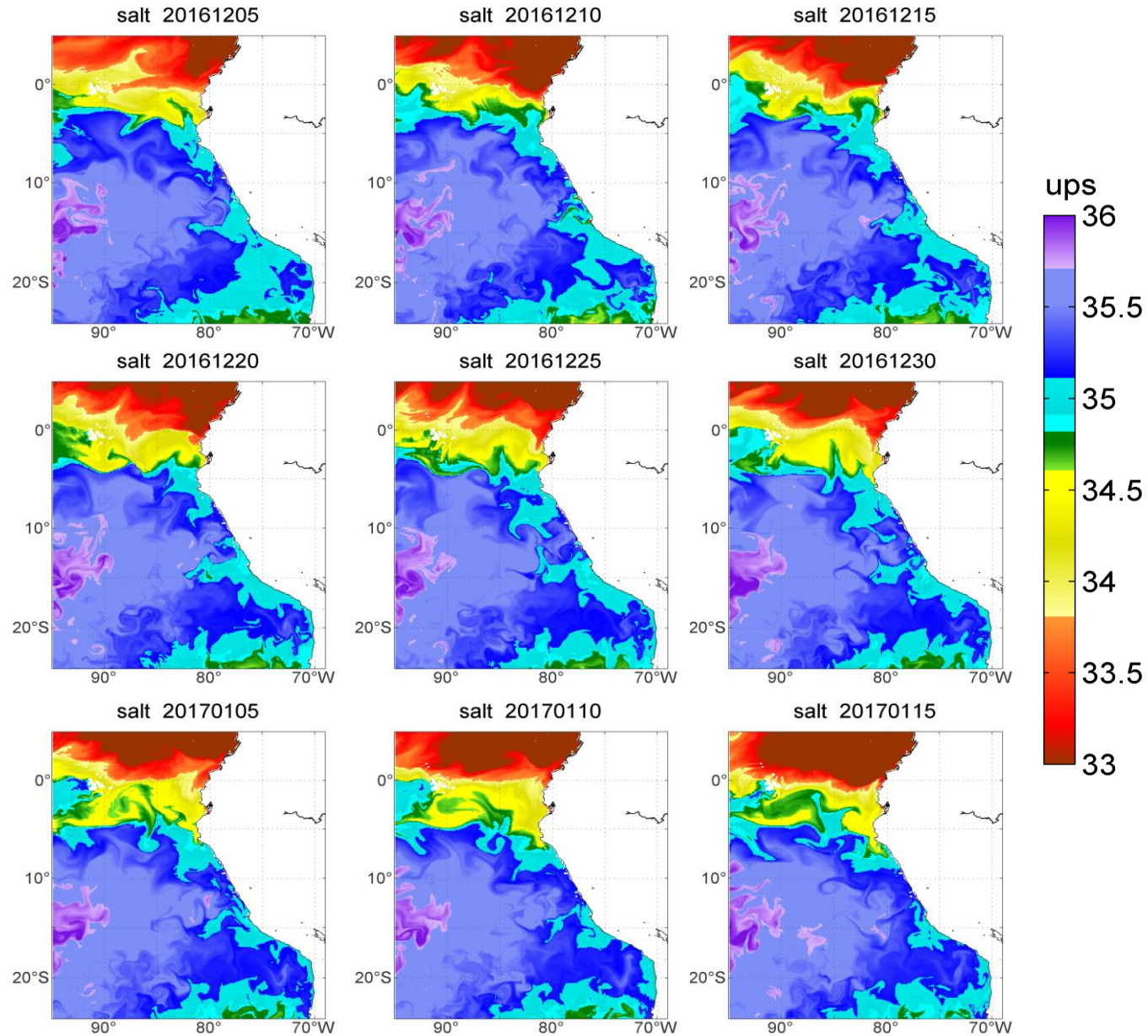


ANOMALÍA DE LA TSM (°C)



Estación	2016 ATSM (°C)											
	Ene	Feb	Mar.	Abr.	May.	Jun.	Jul.	Ago.	Set.	Oct.	Nov.	Dic.
Talara	1.3	-0.8	0.2	0.2	-0.9	-1.9	-1.4	-0.9	-0.7	-1.7	-2.3	-1.3
Paíta	1.6	-0.1	0.8	0.7	0.2	0.1	0.0	0.3	0.6	-0.2	-0.1	-0.1
Isla Lobos de Afuera	2.4	0.5	1.0	0.9	-0.3	0.9	0.6	0.8	0.3	0.4	-0.5	-1
Chimbote	2.7	1.5	1.3	0.7	0.7	0.1	0.4	0.8	0.9	1.1	0.6	-0.2
Callao	3.5	2.9	1.7	1.7	1.1	0.5	0.3	0.3	0.5	1.0	0.6	0.4
San Juan	2.0	1.8	1.4	1.6	0.6	0.1	0.4	0.4	0.1	0.4	0.4	0
Mollendo	2.3	2.4	1.9	0.8	1.0	0.7	0.9	0.9	0.5	0.4	0.4	-0.2
Ilo	2.0	2.5	1.8	0.7	0.4	0.5	0.6	1.1	1.0	1.0	0.5	-0.1

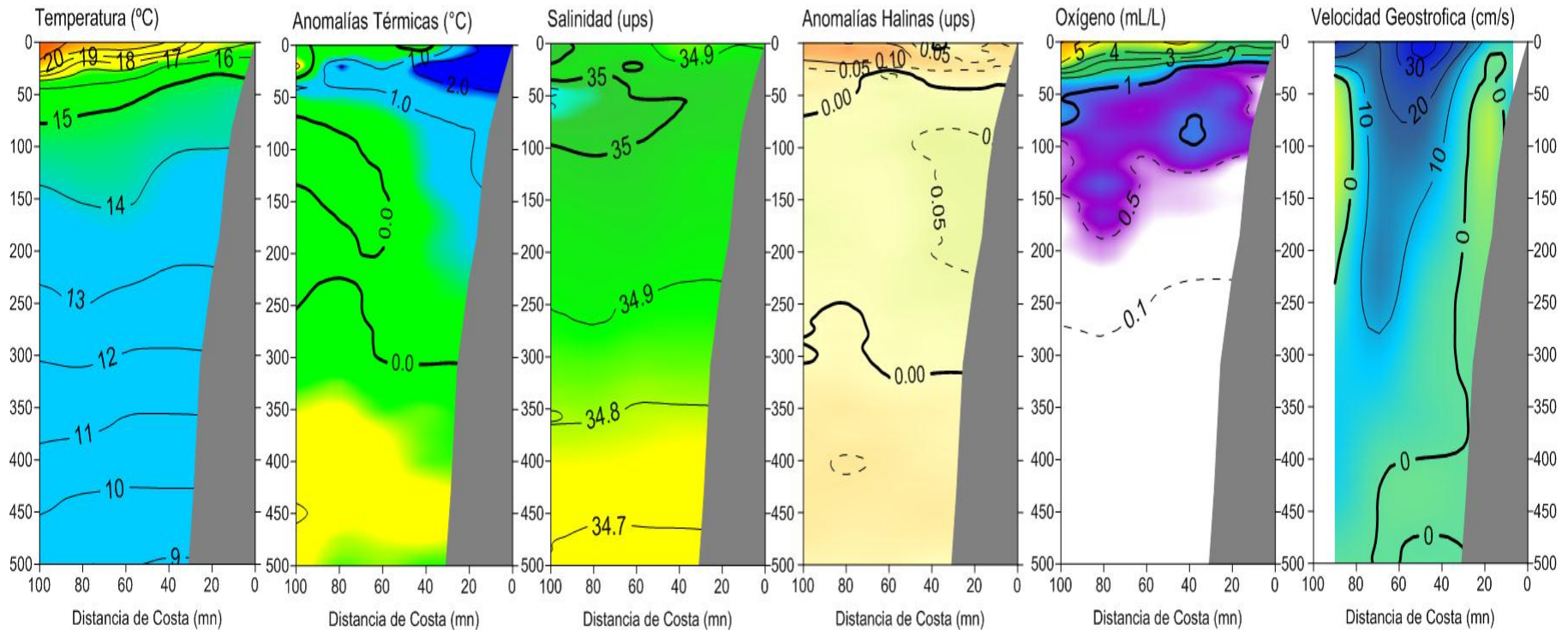
Distribución espacial de Salinidad Superficial del Mar (HYCOM), cada 5 días desde el 05-Dic-2016 al 15-Ene-2017



SECCIONES OCEANOGRÁFICAS



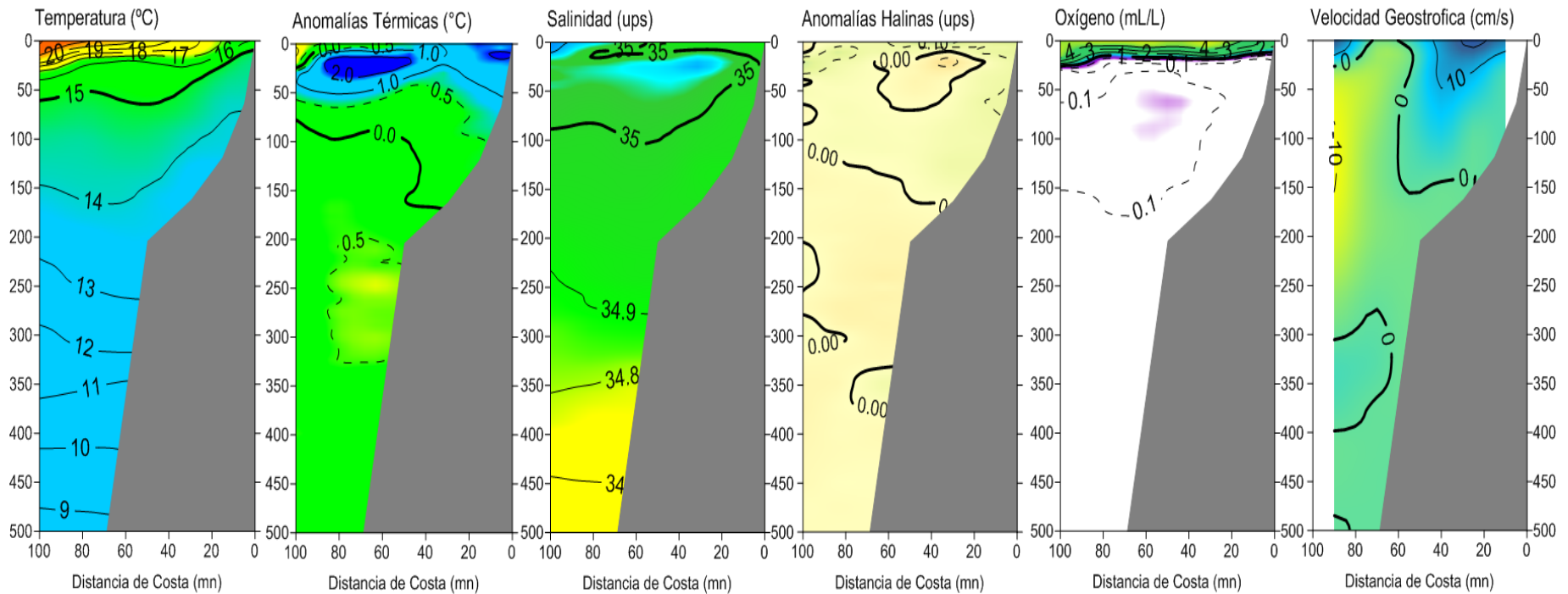
SECCION PAITA (19 de Diciembre del 2016)



SECCIONES OCEANOGRÁFICAS



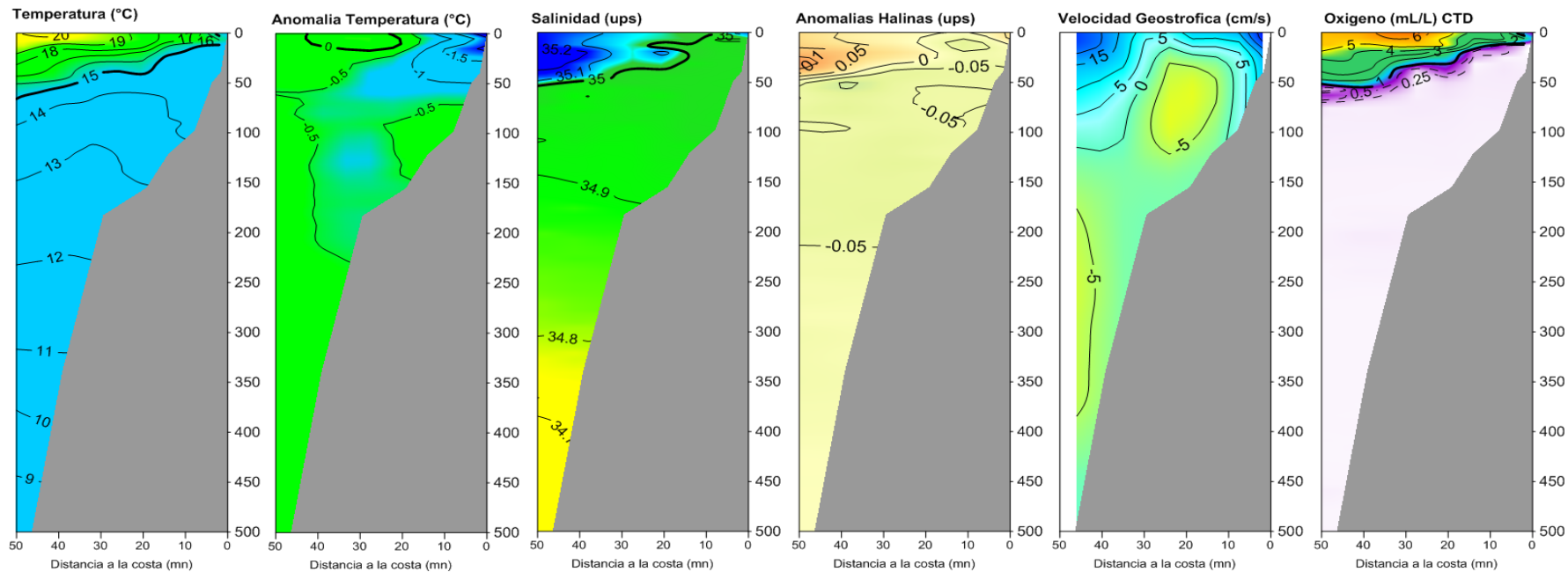
SECCION CHICAMA (16-17 de Diciembre del 2016)



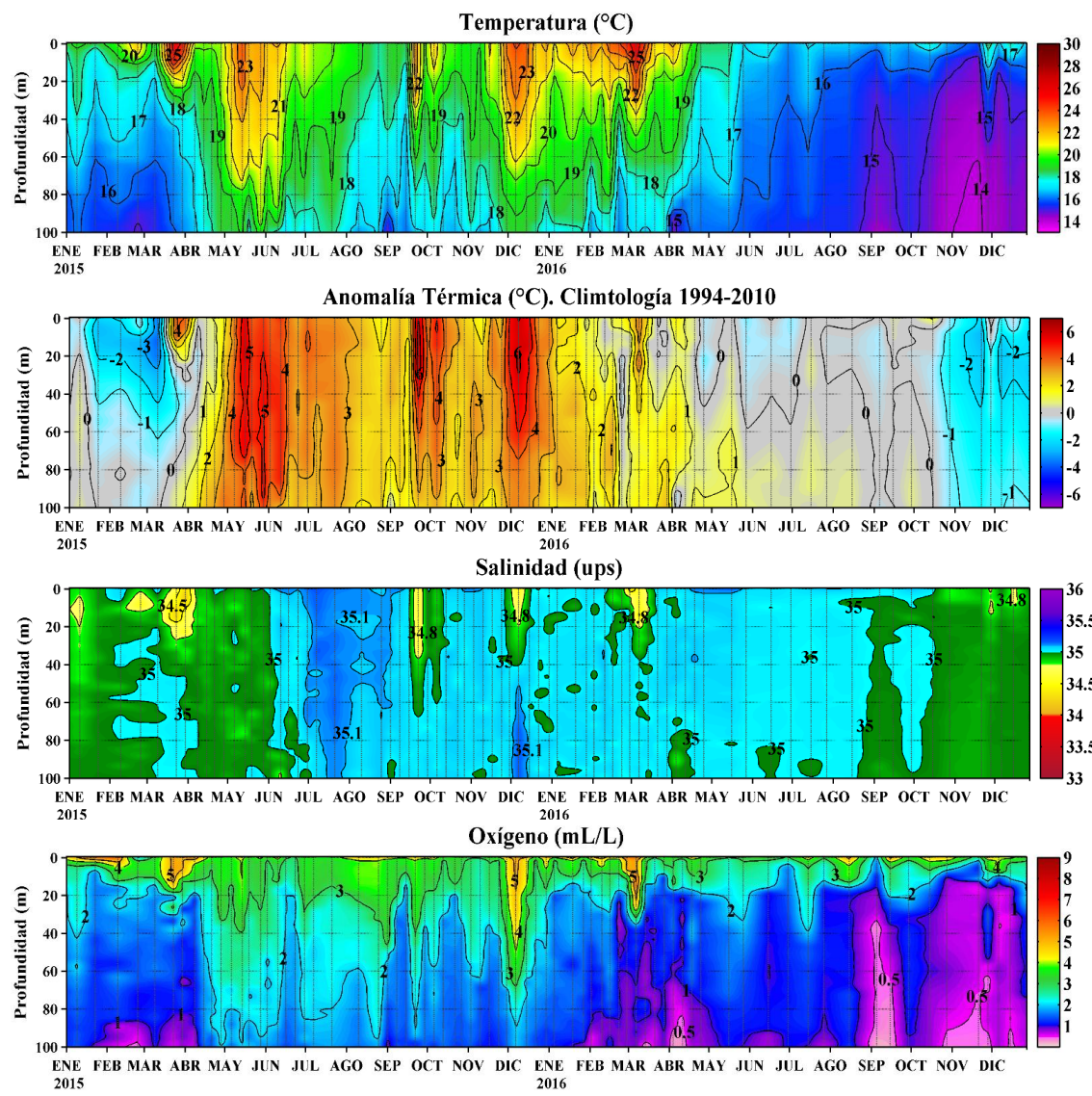
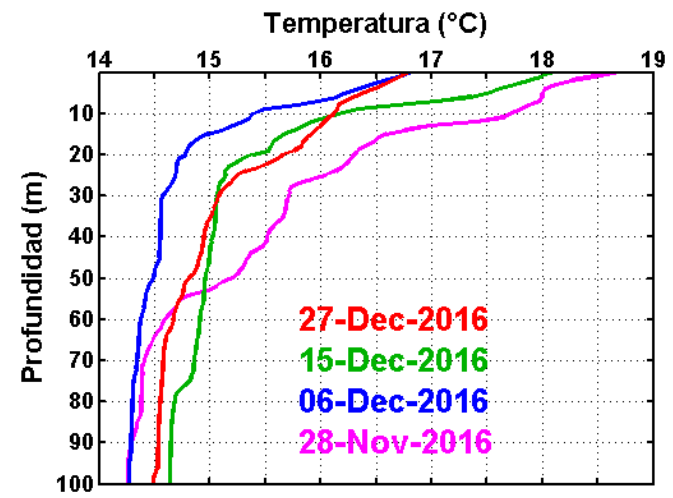
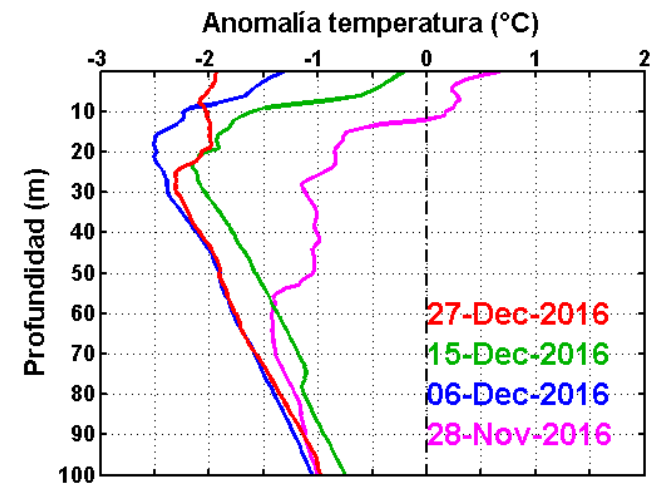
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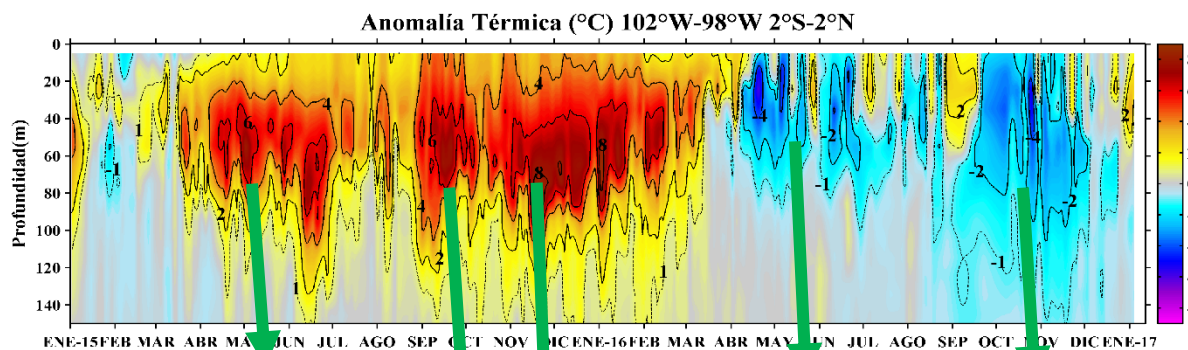
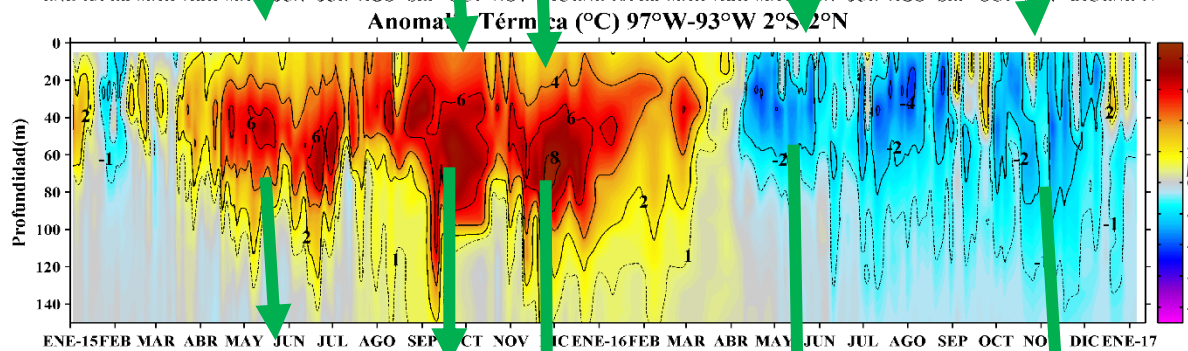
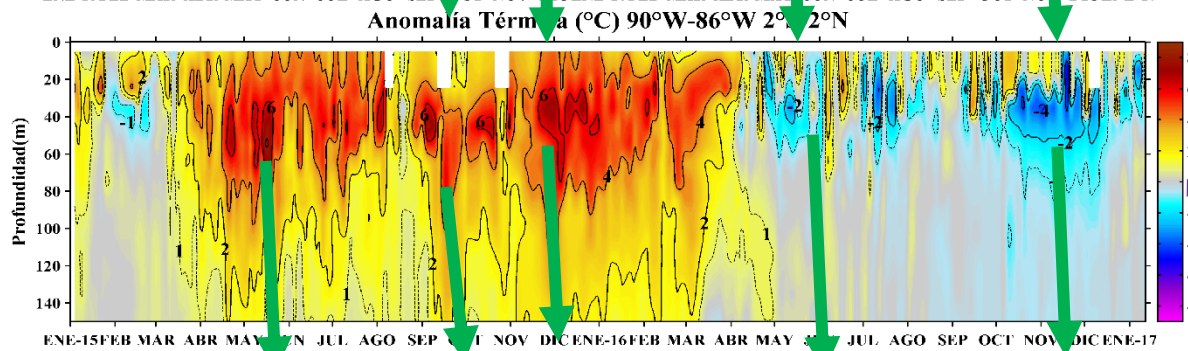
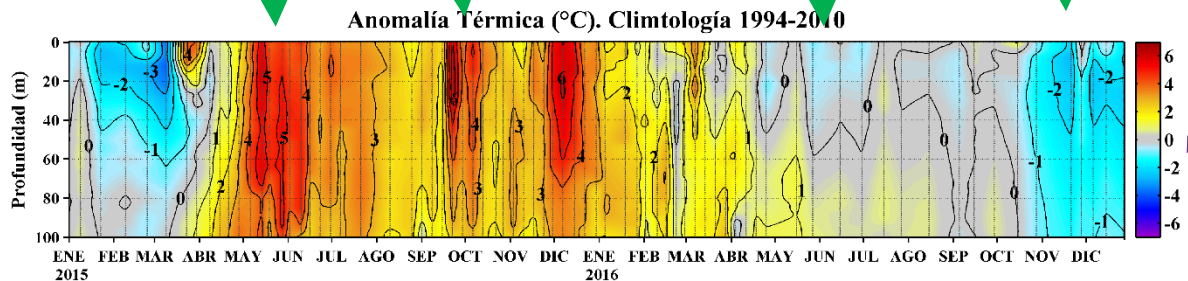
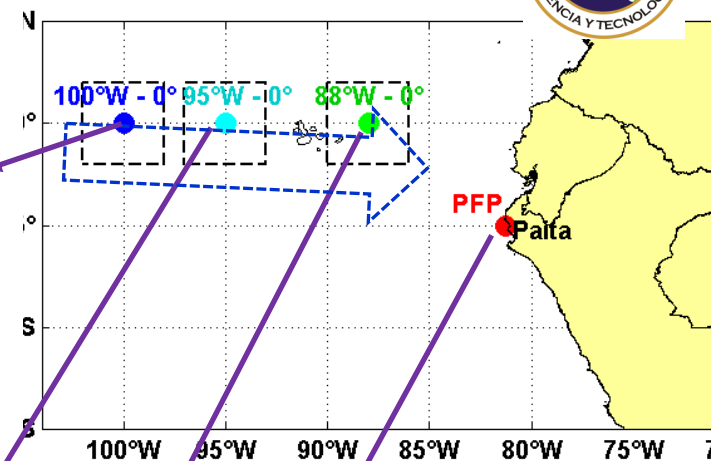


Callao (06-07 Diciembre 2016)
BIC Luis Flores P.



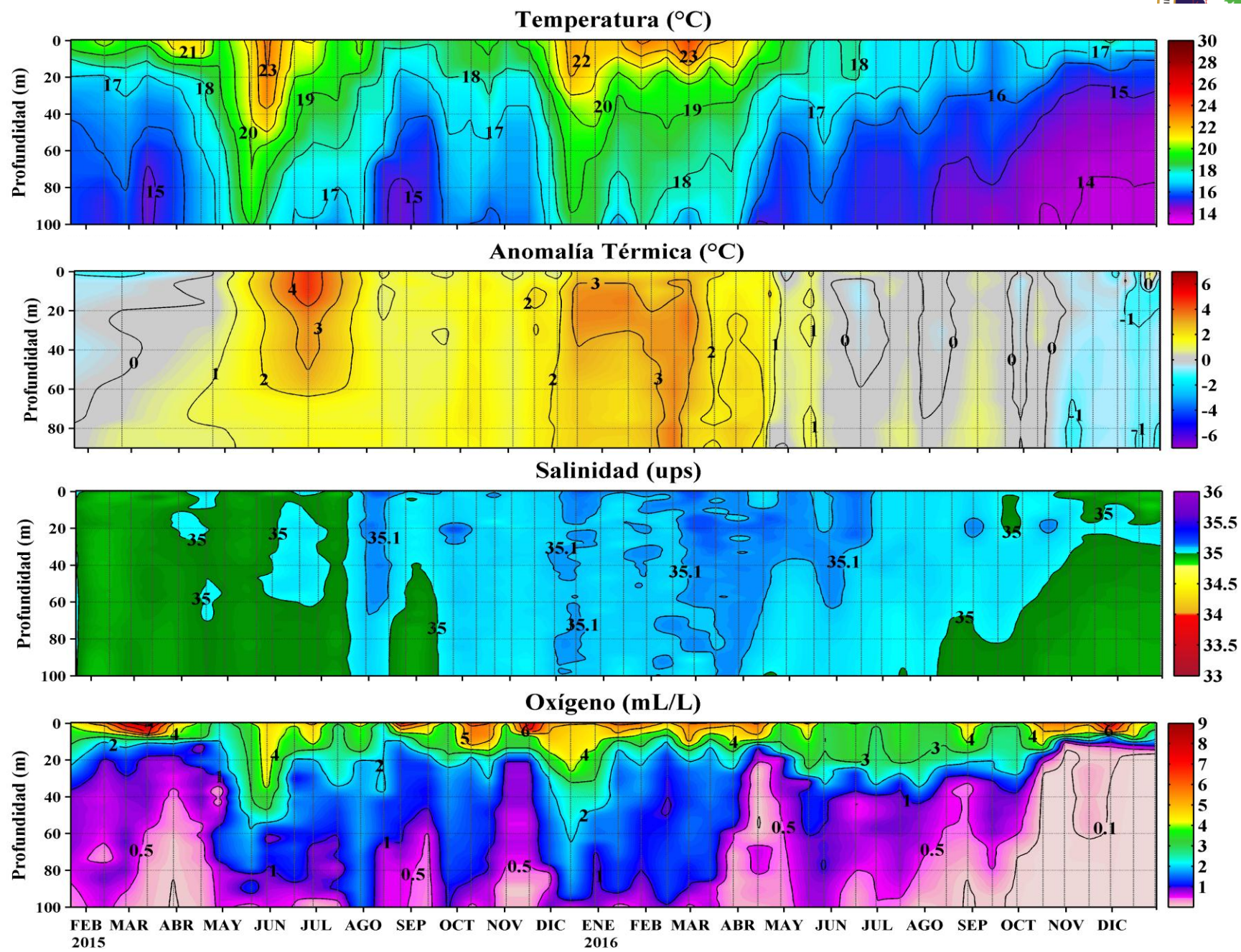
PUNTO FIJO DE PAITA (27 DE DICIEMBRE 2016)



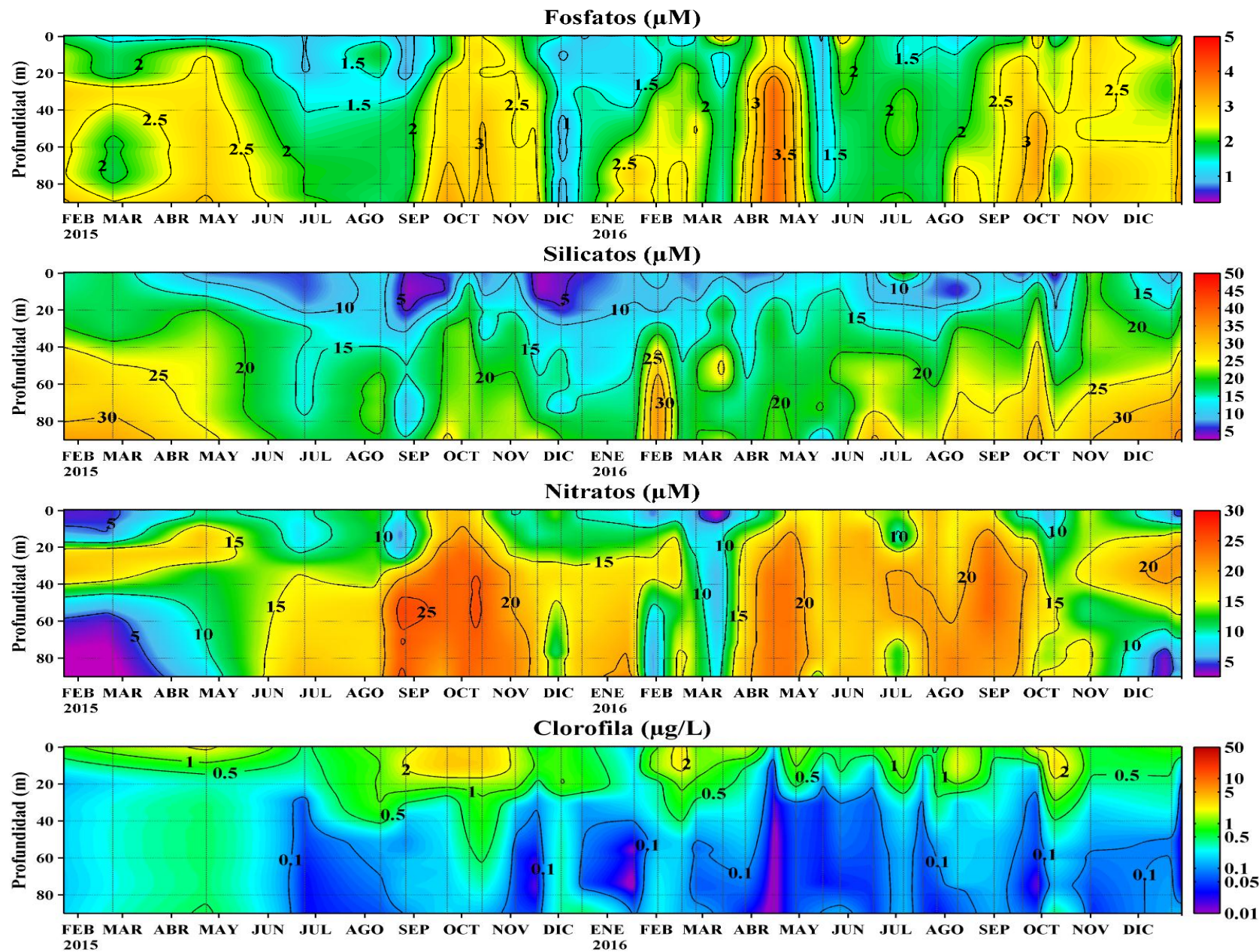


Serie de tiempo de anomalía térmica usando datos ARGOS (enero 2015 - 12 de enero 2017), climatología GODAS (1993-2015) y punto fijo de Paita (enero 2015 - 27 de diciembre de 2016)

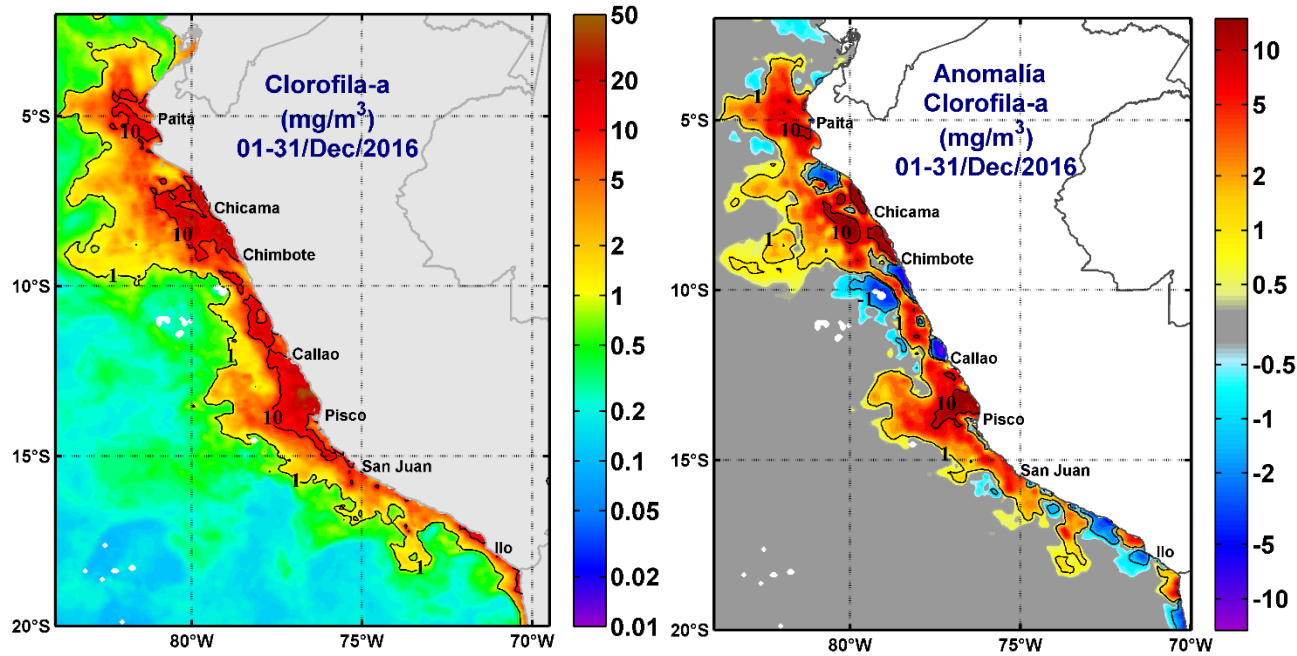
PUNTO FIJO DE CALLAO (28 DE DICIEMBRE 2016)



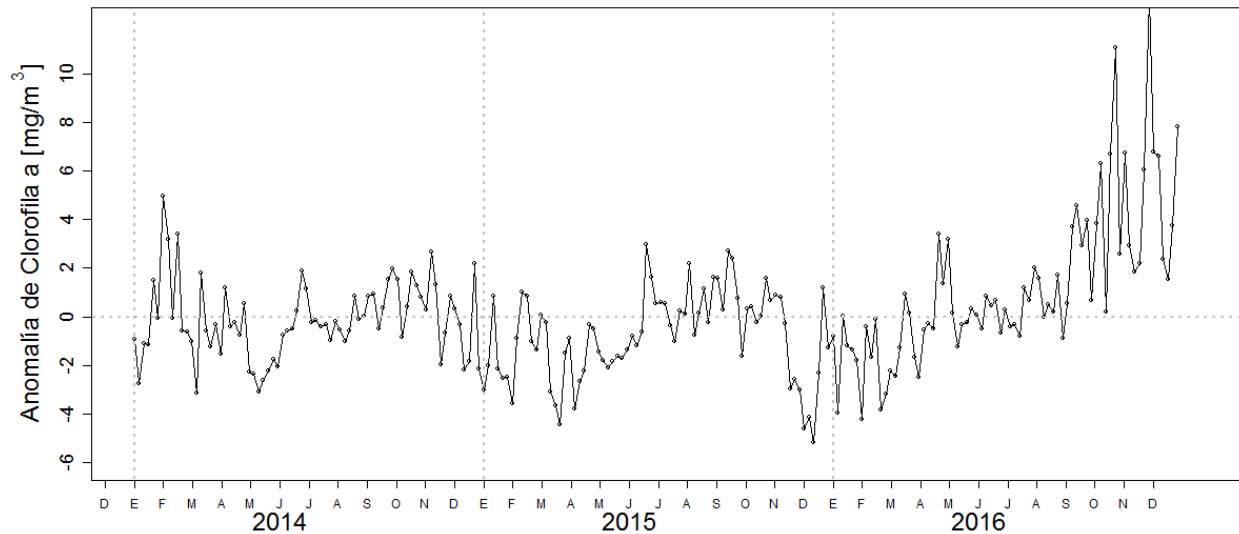
PUNTO FIJO DE CALLAO (28 DE DICIEMBRE 2016)



Distribución de clorofila-a en superficie

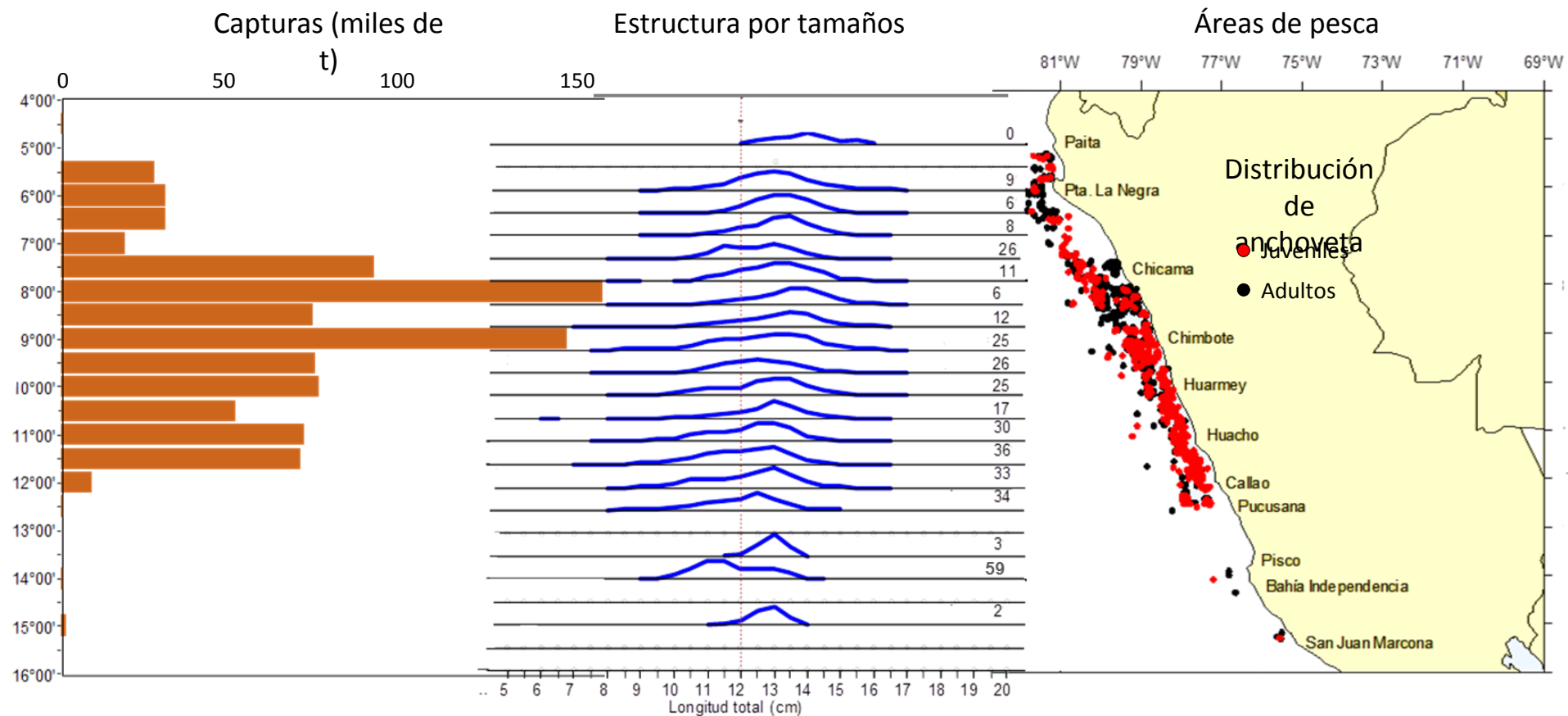


Clorofila-a superficial 2016/12/31



Serie pentadal de
anomalía de cl-a
(0-100km, 4S-16S).

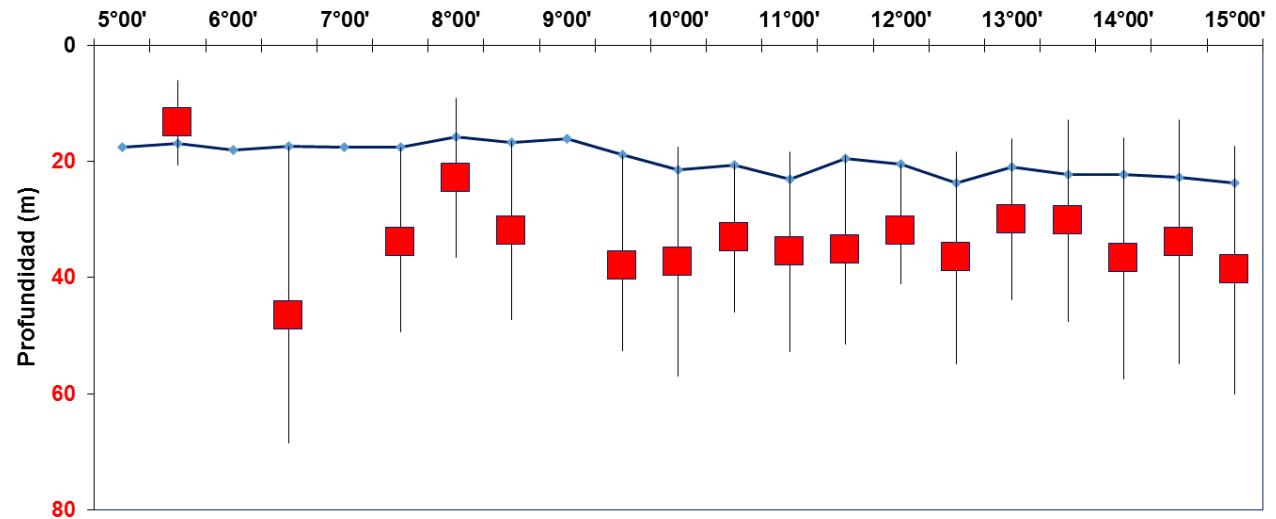
Distribución espacial de capturas, tallas de anchoveta. Diciembre del 2016



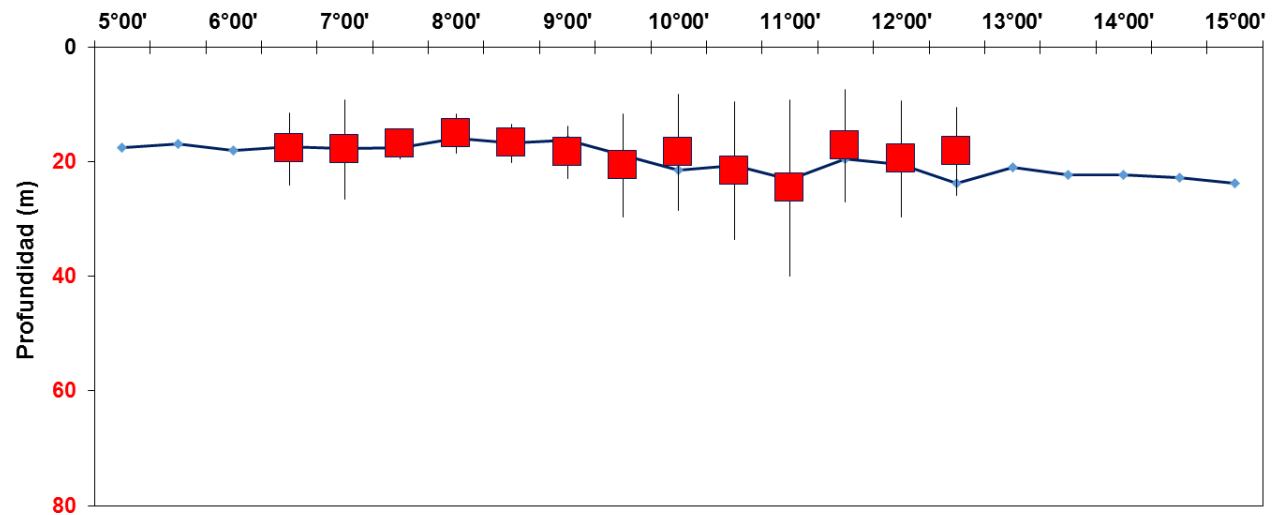
Distribución vertical de anchoveta: Diciembre 2015/2016



2015

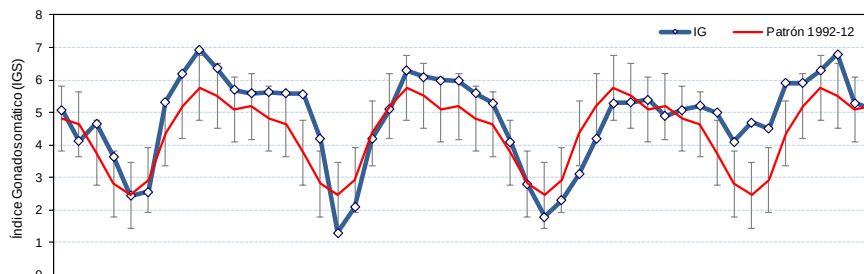


2016

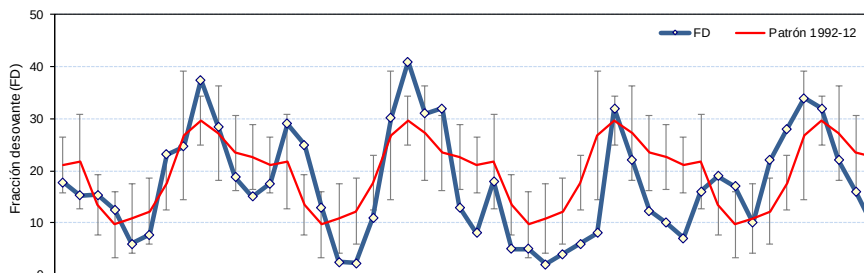


Condición reproductiva de anchoveta (Diciembre 2016)

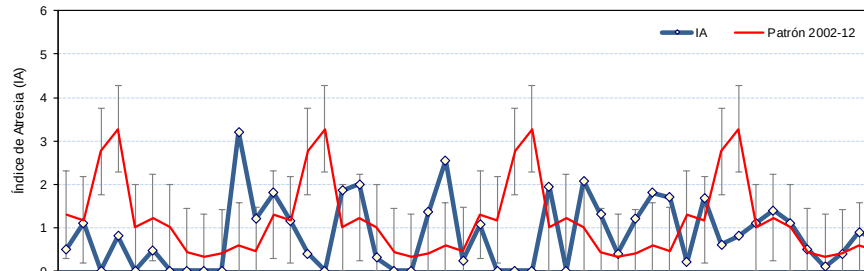
Índice Gonadosomático



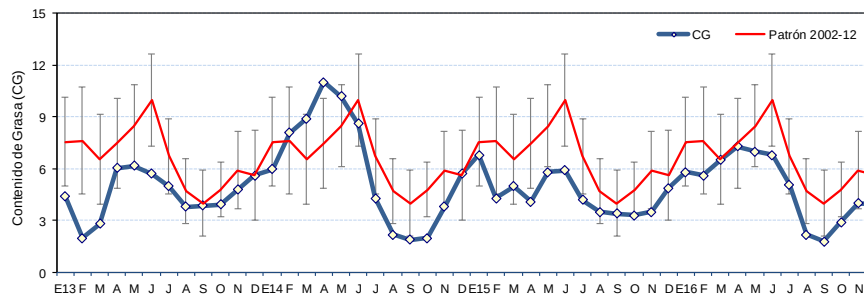
Fracción desovante



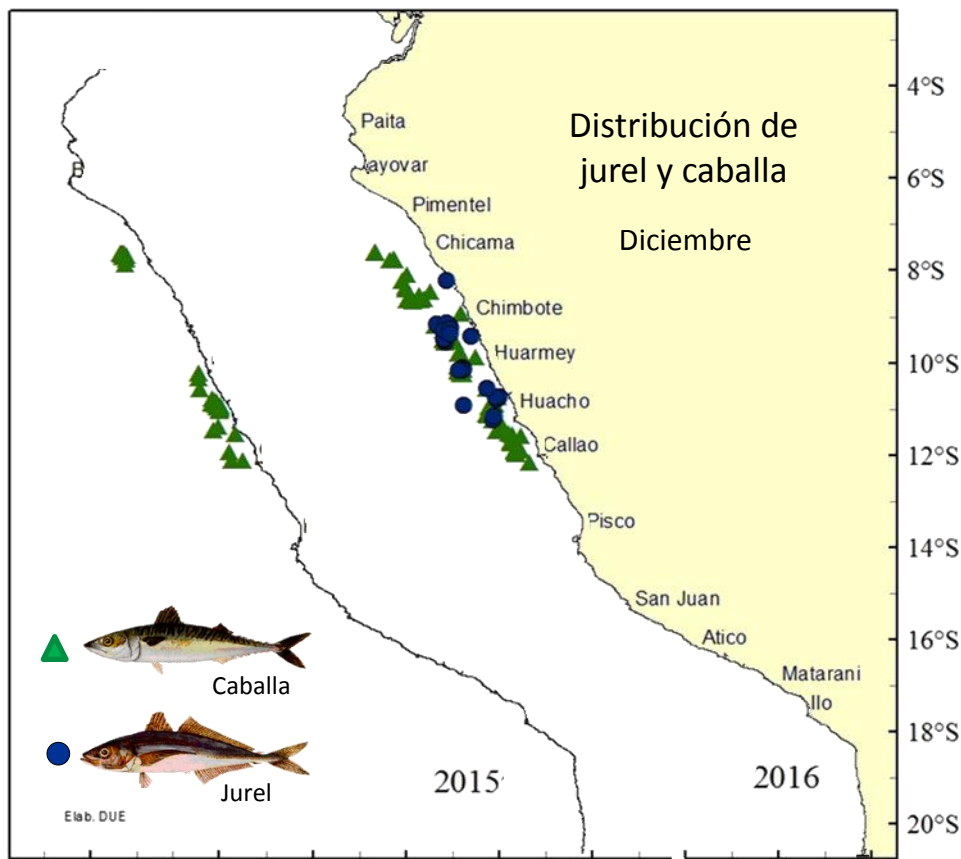
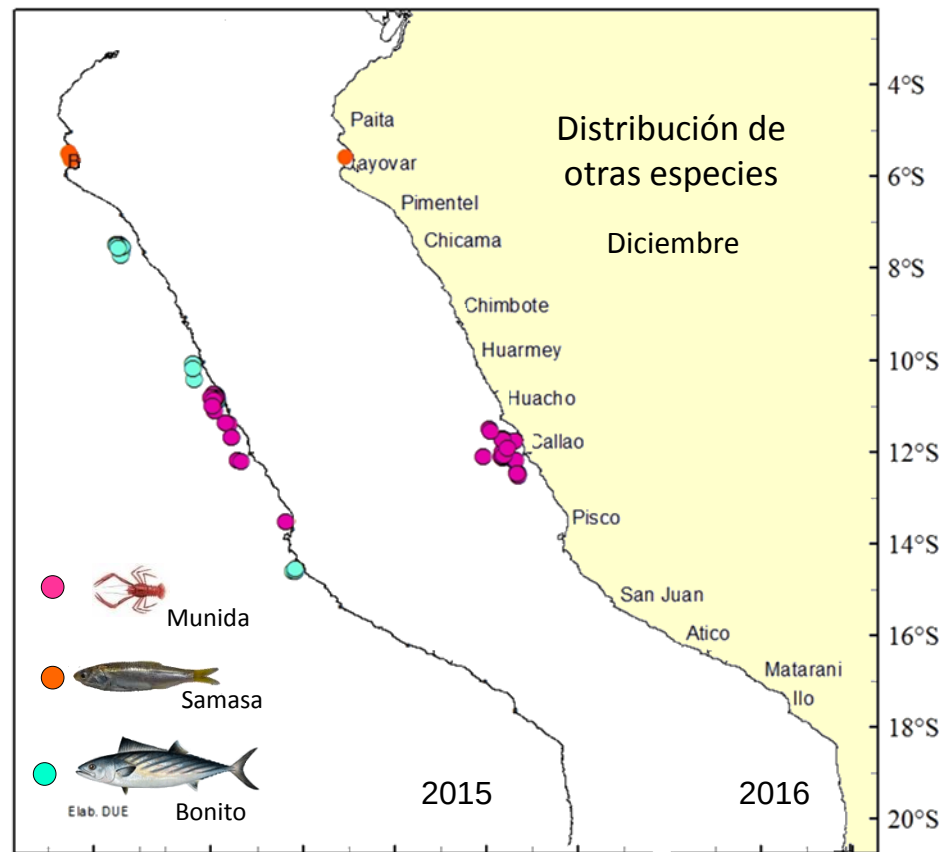
Índice de atresia



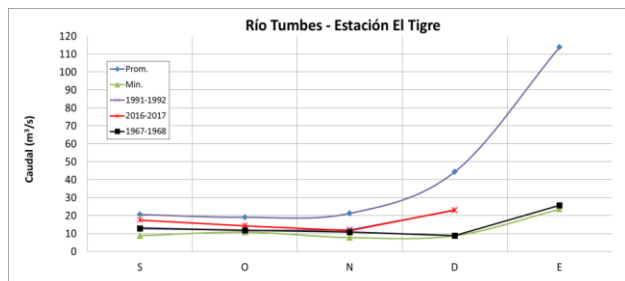
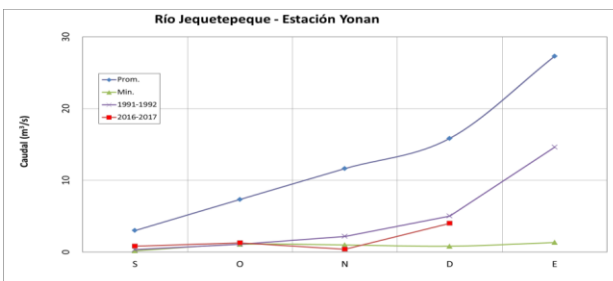
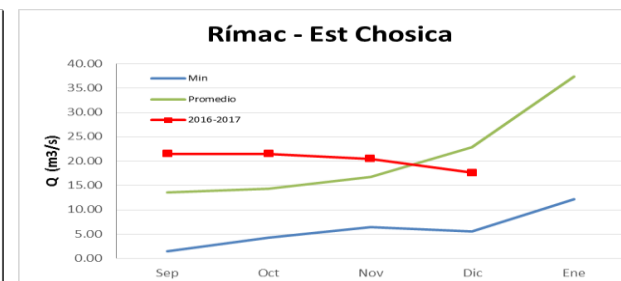
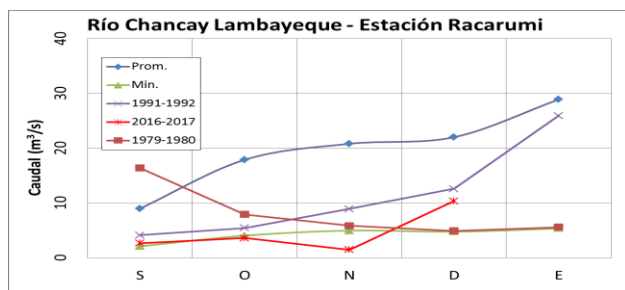
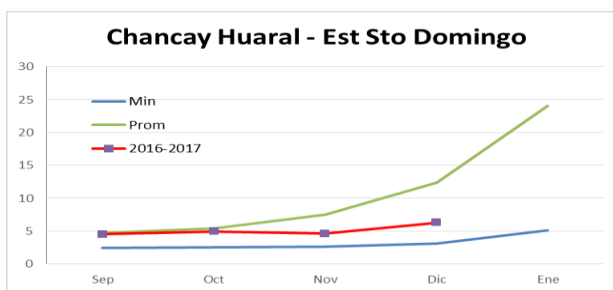
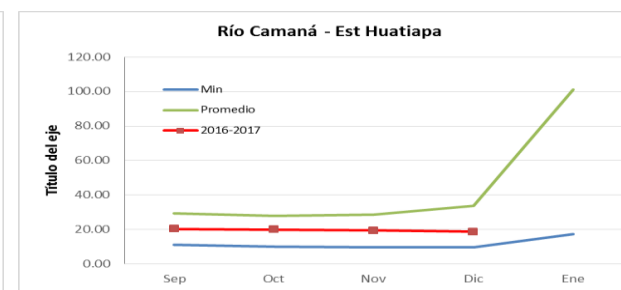
Contenido graso



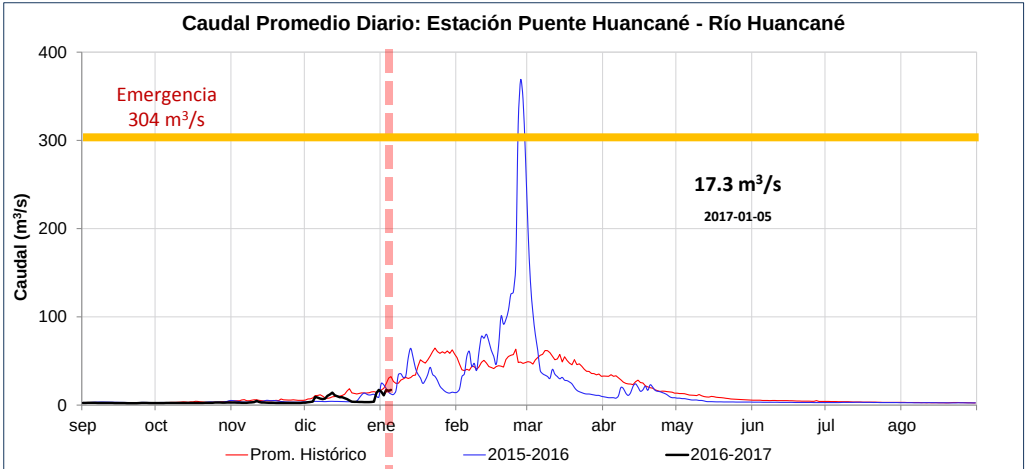
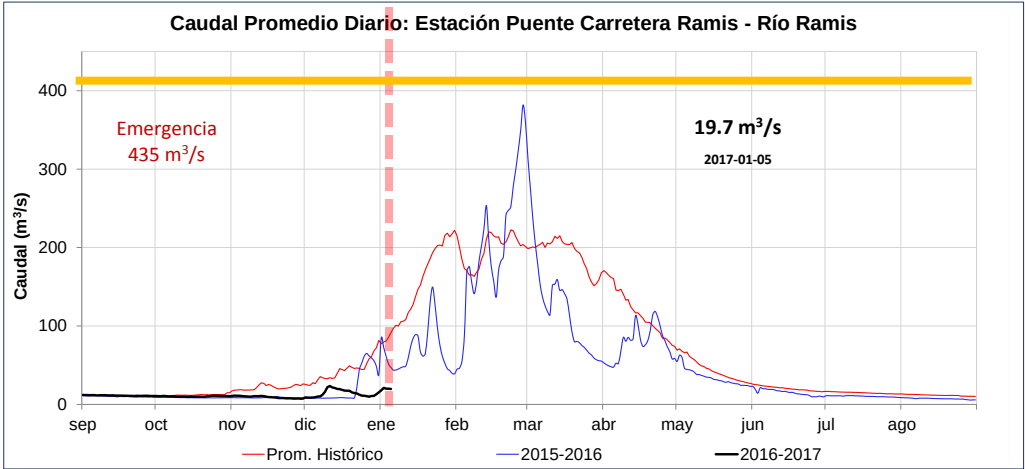
Otras especies: Diciembre 2015/2016



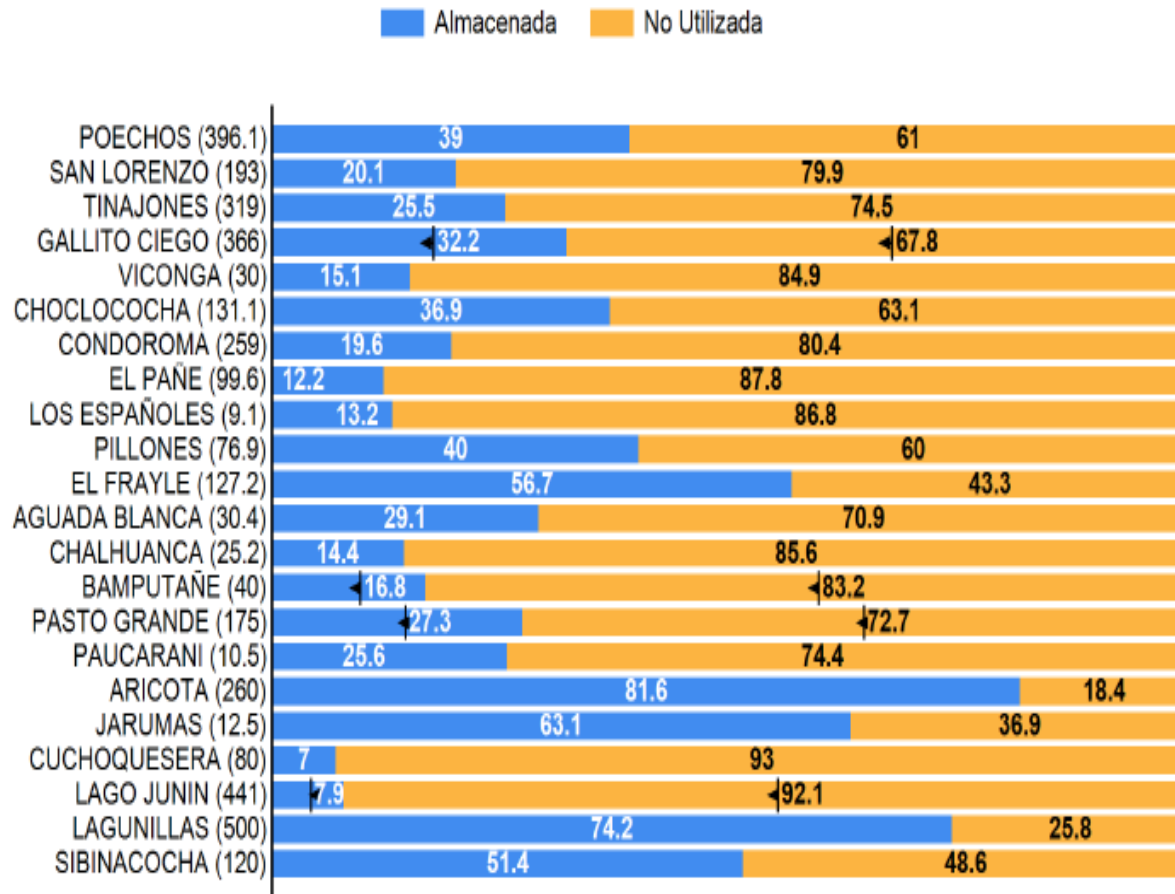
Caudales promedio (setiembre – diciembre 2016)



Río	Tumbes	Chancay - Lambayeque	Jequetepeque	Chancay - Huaral	Rímac	Camaná
Q Prom mensual DIC 2016	23	10.35	4.03	6.33	17.6	18.8
Q prom minimo	8.72	4.75	0.82	3.09	5.61	9.64
Q promedio histórico	44.3	22	15.85	12.33	22.86	33.69
Diferencia	-21.30	-11.65	-11.82	-6.00	-5.26	-14.89
Serie	63-2010	60-2011	60-2011	60-2010	60-2013	65-2009



Resumen del estado de los principales embalses



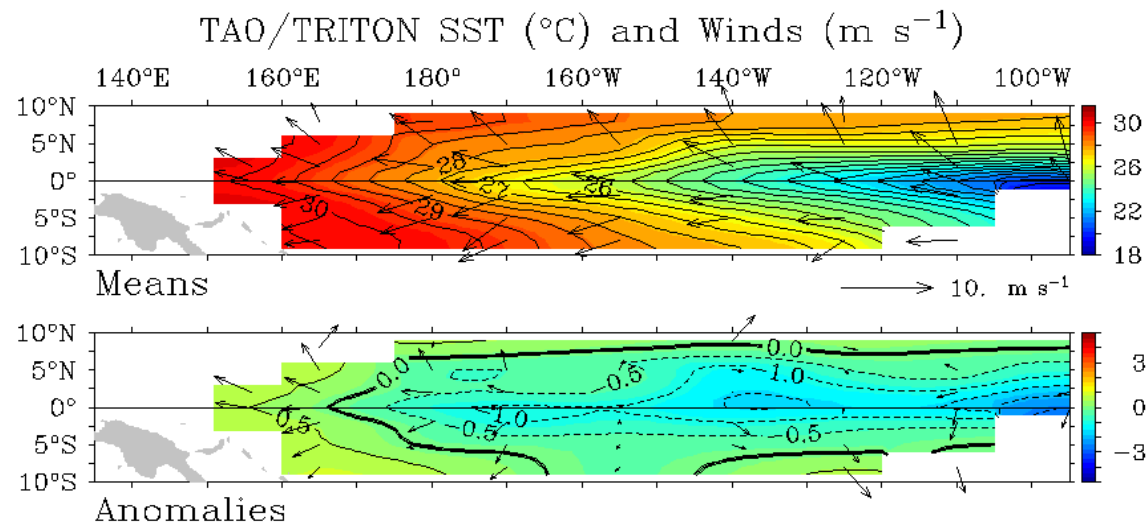
Fuente: http://snirh.ana.gob.pe/fen/EFEN_EstadoEmbalses.aspx

Las reservas hídricas en la costa norte promediaron el 20% respecto a la capacidad hidráulica de los principales embalses, lo que representa una disponibilidad hídrica limitada (26% para el 09 de Enero)

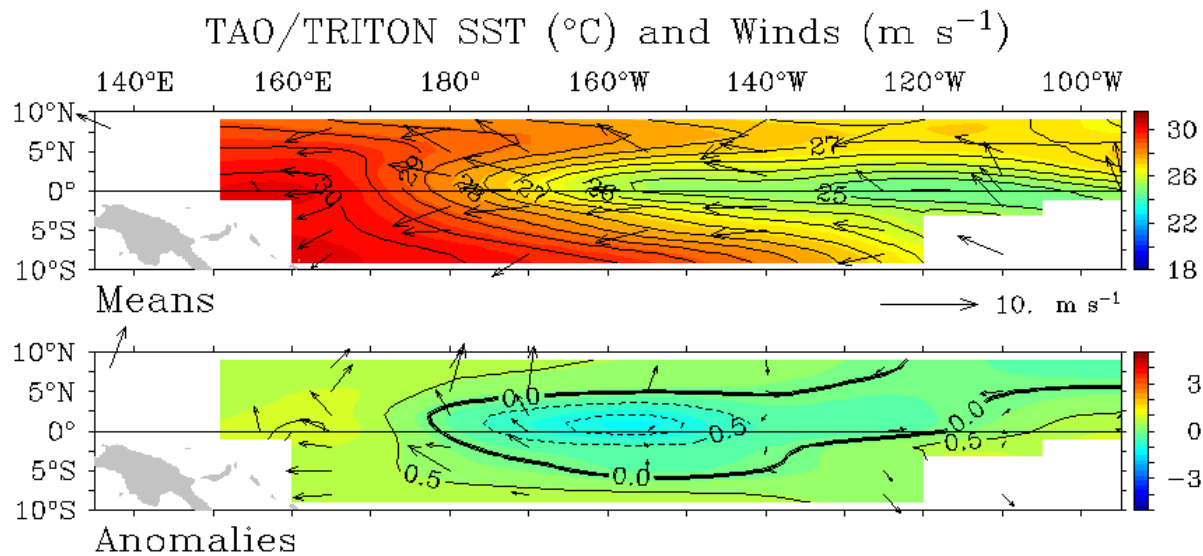
En el sur, el sistema hidráulico Colca – Chili (Arequipa) operan en promedio al 27%, mostrando hidrogramas ascendentes, que aún representa disponibilidad hídrica limitada En Pasto Grande (Moquegua), el nivel llegó hasta el 26%. Los de Tacna (Aricota, Jarumas y Paucarani) están en promedio al 65% de su capacidad hidráulica.

Para la primera semana del mes de enero ; se ha presentado el incremento de caudales y volúmenes útiles de los embalses.

Perspectivas

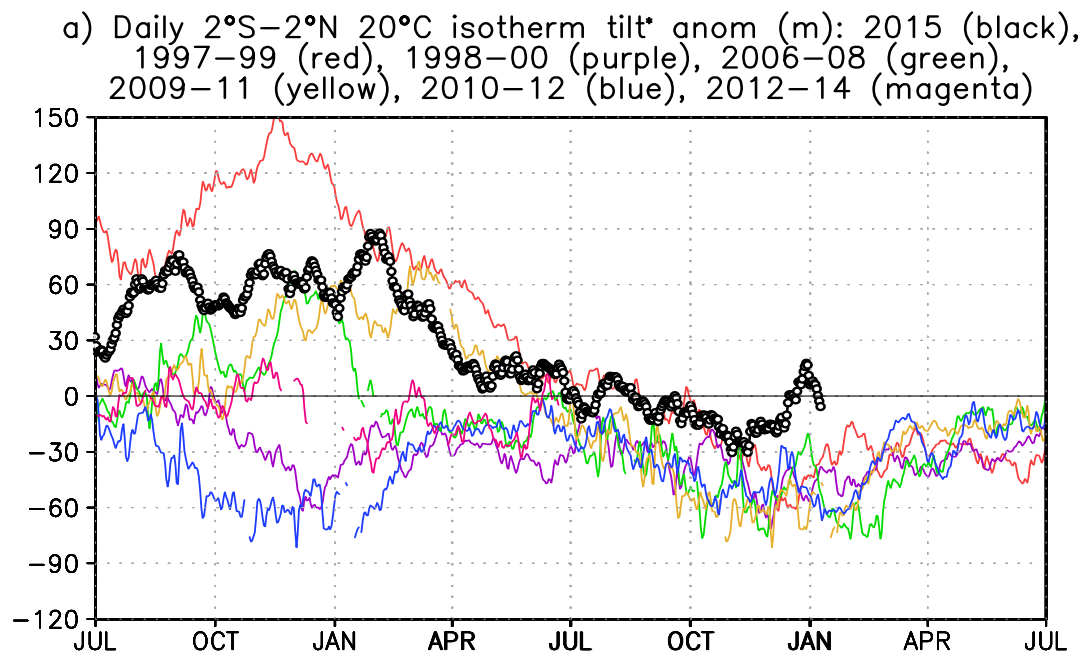


Five-Day Mean Ending on November 5 2016

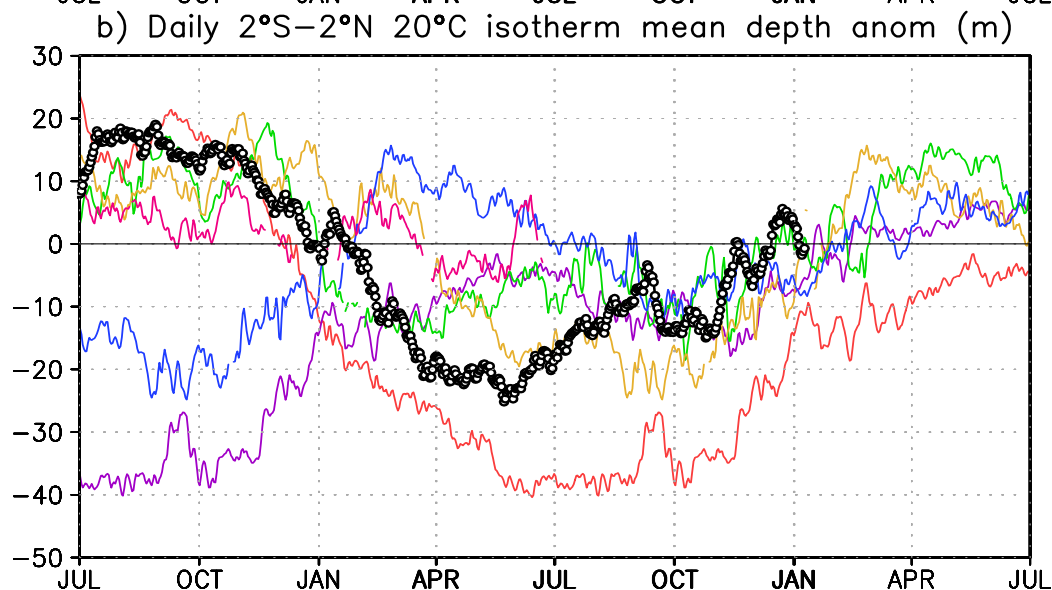


Five-Day Mean Ending on January 14 2017

Inclinación de
termoclina

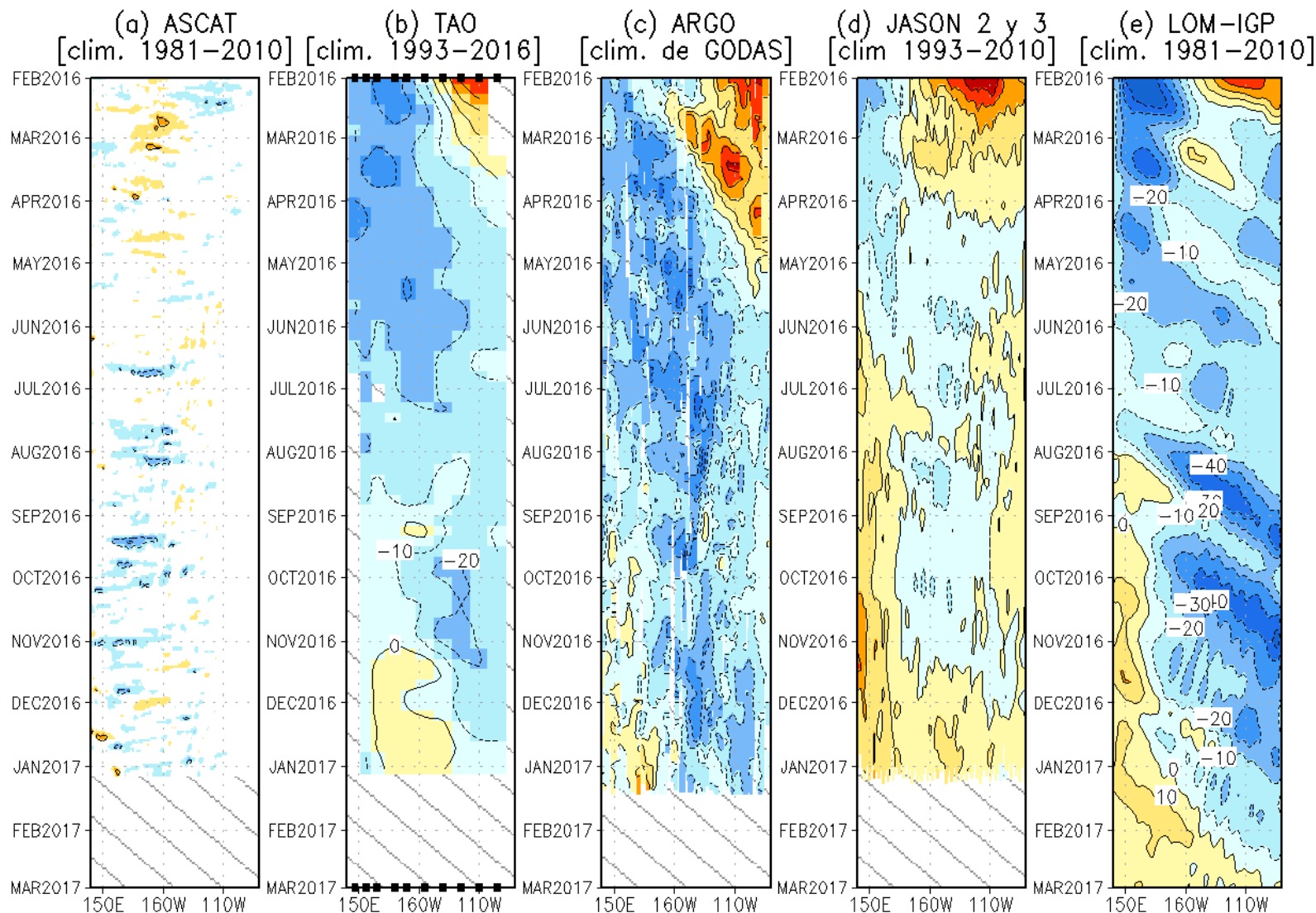
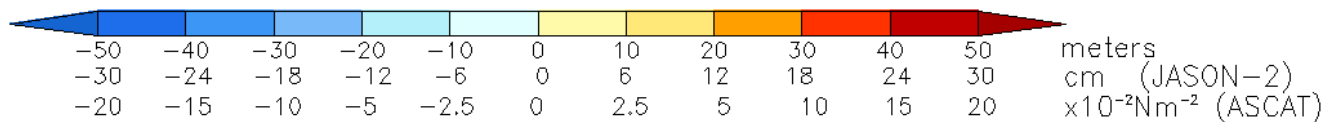


Contenido
de calor



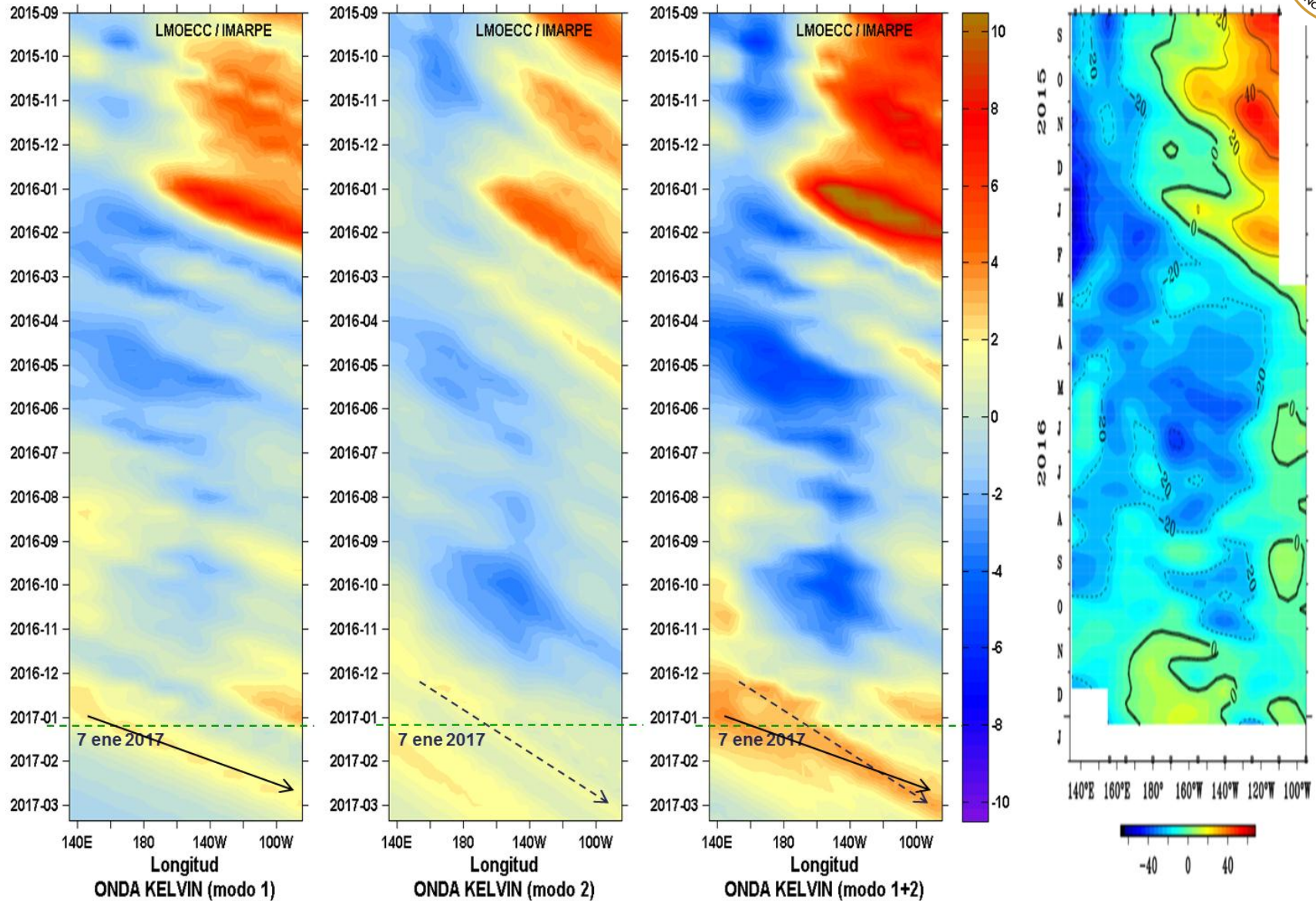
* Zonal depth difference from linear regression fit to longitude (137°E–95°W)
Only for days with at least 10 out of 11 lons. 1–2–1 smoothing. (Clim 1993–2012)
Data: TAO/TRITON (last: 08JAN2017). Processing: @KTakahashiG (IGP)

Simulación de la propagación de las ondas Kelvin Ecuatoriales



Kelvin + Rossby

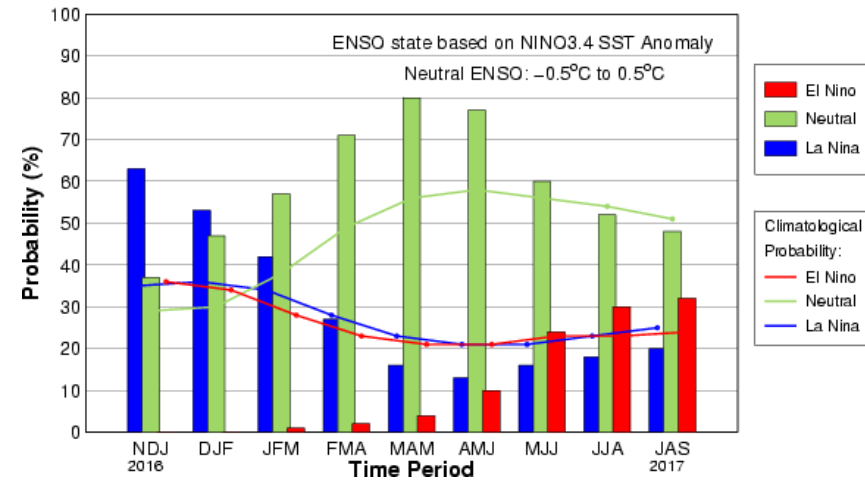
Simulación de la propagación de las ondas Kelvin Ecuatoriales



Probabilidades de El Niño según solo según porcentaje de **modelos** (IRI)

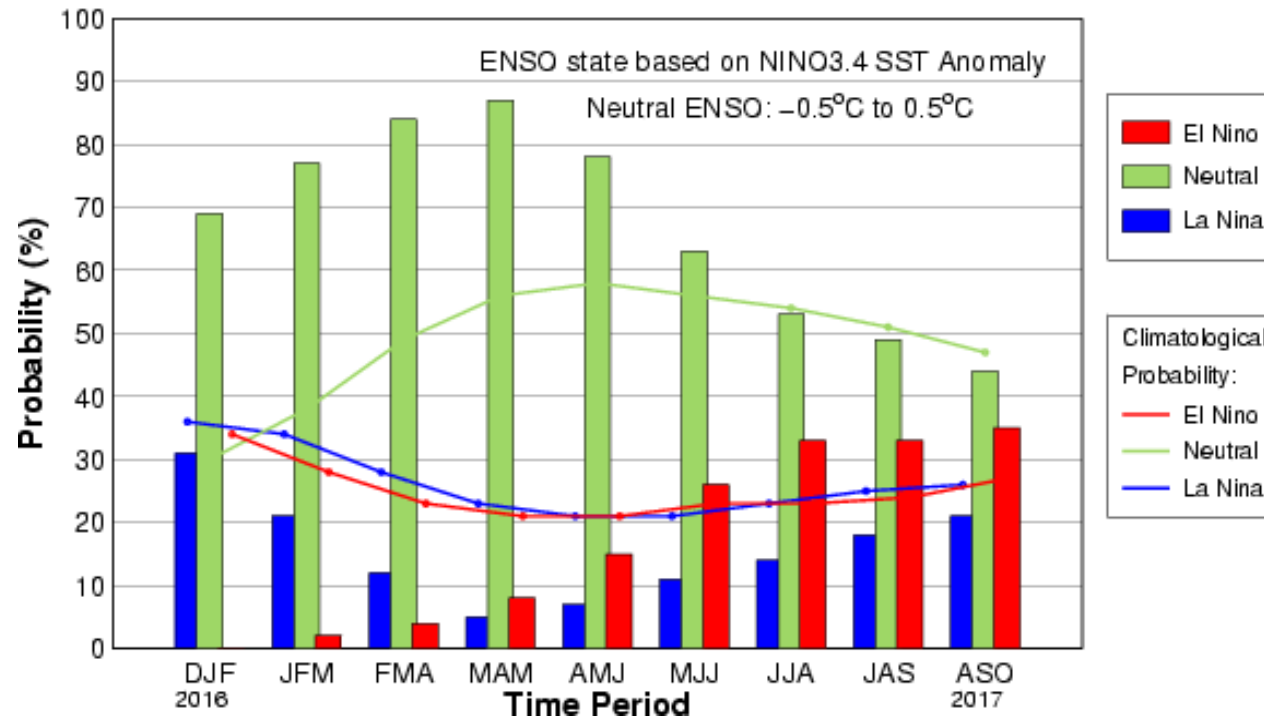
Corrida del mes anterior

Mid-Nov IRI/CPC Model-Based Probabilistic ENSO Forecast



Corrida reciente

Mid-Dec IRI/CPC Model-Based Probabilistic ENSO Forecast

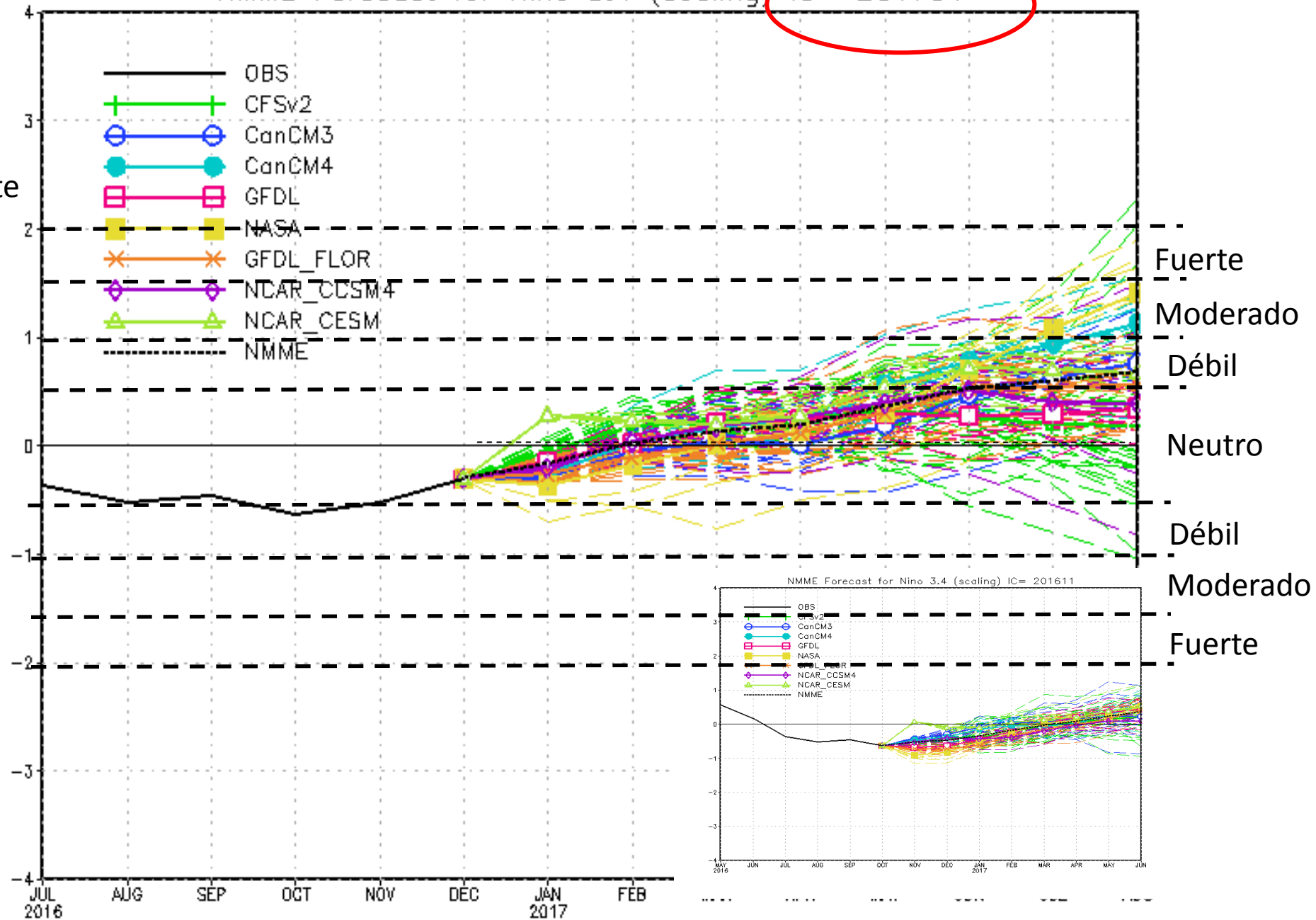


Según la evaluación NOAA/IRI, la probabilidad de La Niña en el Pacífico central es de 21% para febrero, para el mes de marzo es 12%

Publicado 15 de Diciembre de 2016

NMME Forecast for Nino 3.4 (scaling) IC= 201701

luy
erte



Pronósticos de ONI por modelos de NMME (promedios trimestrales de los

CI 2016 12

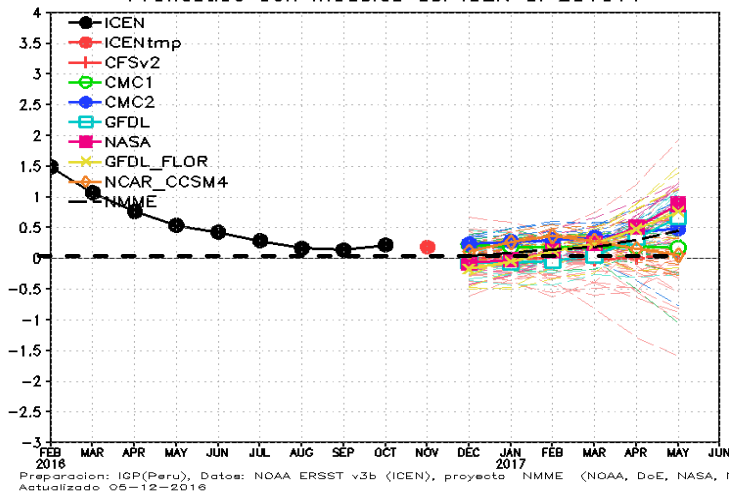
pronósticos de las anomalías en Niño 3.4)

Modelo	OND	NDE	DEF	EFM	FMA	MAM	AMJ	AMJ
CFS2		-0.60	-0.27	-0.26	-0.23	-0.21	-0.19	-0.13
CMC1		-0.57	-0.34	-0.28	-0.15	0.00	0.20	0.40
CMC2		-0.45	-0.11	0.05	0.21	0.36	0.53	0.66
GFDL		-0.54	-0.27	-0.10	0.13	0.33	0.47	0.58
NASA		-0.86	-0.76	-0.49	-0.16	0.14	0.34	0.61
GFDL_FLOR		-0.60	-0.41	-0.30	-0.13	0.09	0.33	0.60
NCAR_CCSM4		-0.45	-0.11	0.03	0.13	0.17	0.21	0.20
NMME		-0.58	-0.32	-0.19	-0.03	0.13	0.27	0.42
ONItmp	-0.75							

CI 2017 01

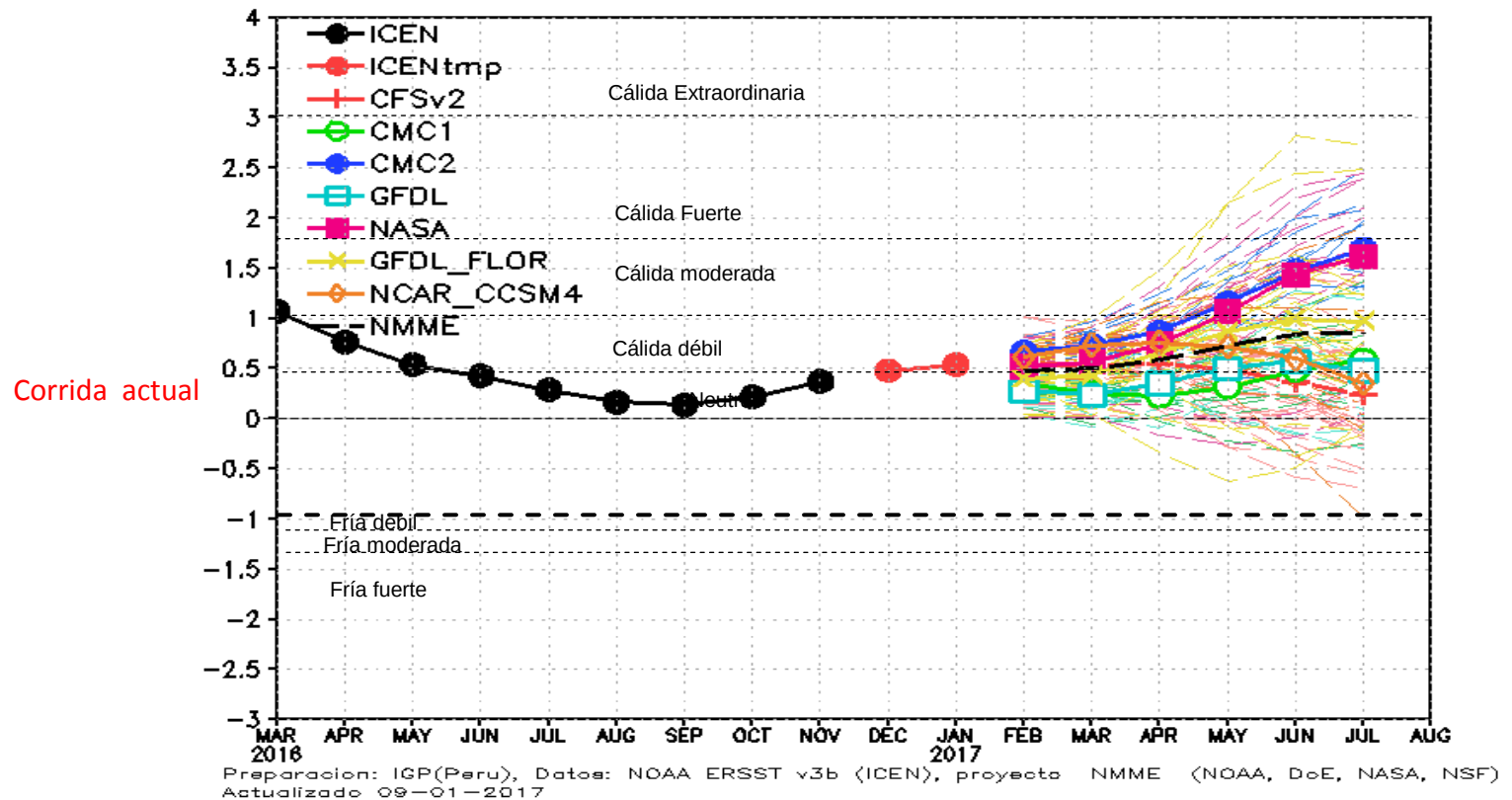
Modelo	NDE	DEF	EFM	FMA	MAM	AMJ	MJJ	JJA
CFS2		-0.26	0.25	0.29	0.34	0.36	0.33	0.28
CMC1		-0.37	-0.12	-0.02	0.05	0.18	0.43	0.70
CMC2		-0.34	0.00	0.28	0.57	0.87	1.22	1.53
GFDL		-0.29	0.05	0.25	0.41	0.47	0.52	0.54
NASA		-0.48	-0.23	0.01	0.25	0.50	0.82	1.20
GFDL_FLOR		-0.38	-0.14	0.00	0.15	0.35	0.57	0.76
NCAR_CCSM4		-0.30	-0.01	0.14	0.25	0.37	0.45	0.50
NMME		-0.35	-0.03	0.14	0.29	0.44	0.62	0.79
ONItmp	-0.65							

Pronostico con modelos del ICEN CI 201611



Corrida anterior

Pronostico con modelos del ICEN CI 201701



Nota: Los pronósticos de los modelos CFSv2, CMC1, CMC2, GFDL, NASA, NCAR y GFDL_FLOR tienen como condiciones inicial el mes de enero de 2017.

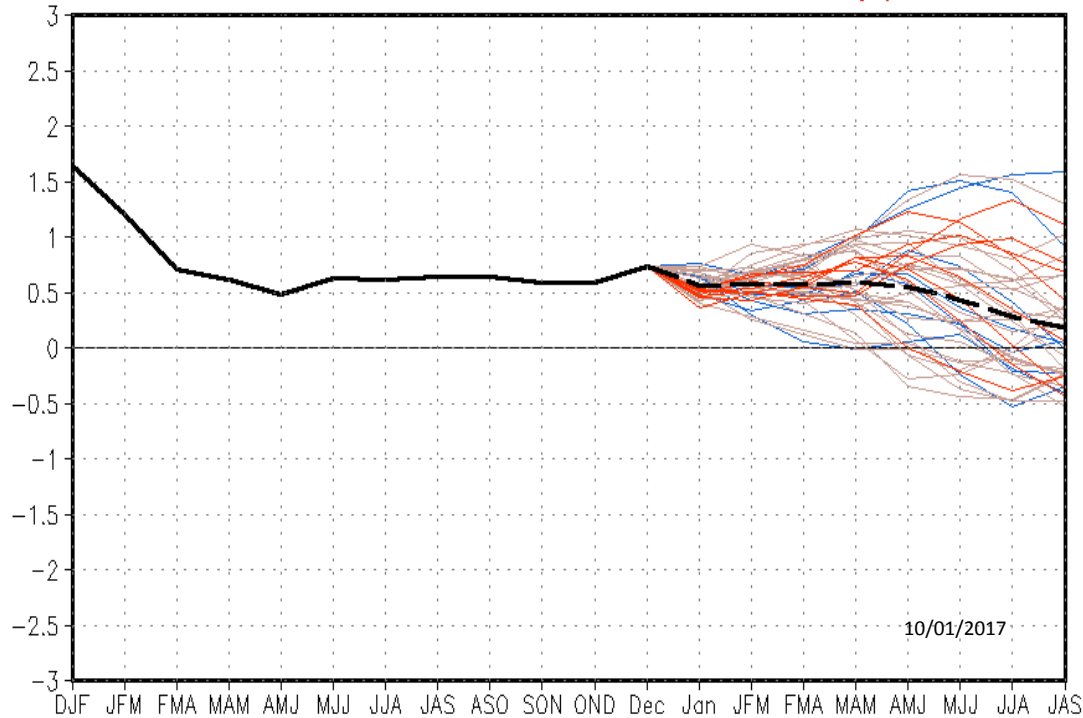
Pronóstico Niño 1+2 de CFS2



NWS/NCEP/CPC

Last update: Tue Jan 10 2017
Initial conditions: 30Dec2016-8Jan2017

CFSv2 forecast Nino1+2 SST anomalies (K)



— Latest 8 forecast members
— Earliest 8 forecast members
— Other forecast members
--- Forecast ensemble mean
— NCDC daily analysis

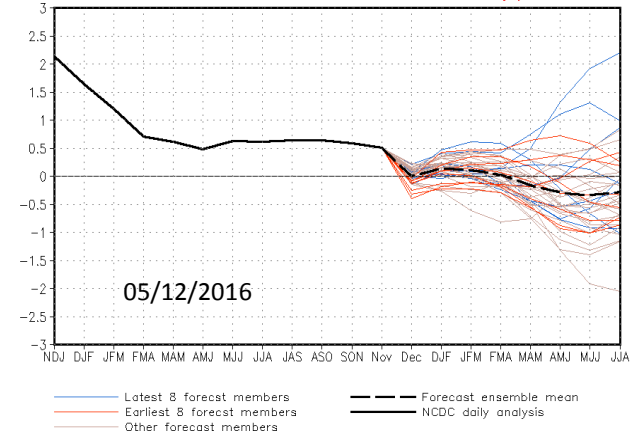
Corrida actual



NWS/NCEP/CPC

Last update: Mon Dec 5 2016
Initial conditions: 24Nov2016-30Dec2016

CFSv2 forecast Nino1+2 SST anomalies (K)



05/12/2016

Corrida anterior

Pronósticos de ICEN por modelos de NMME (promedios trimestrales de los

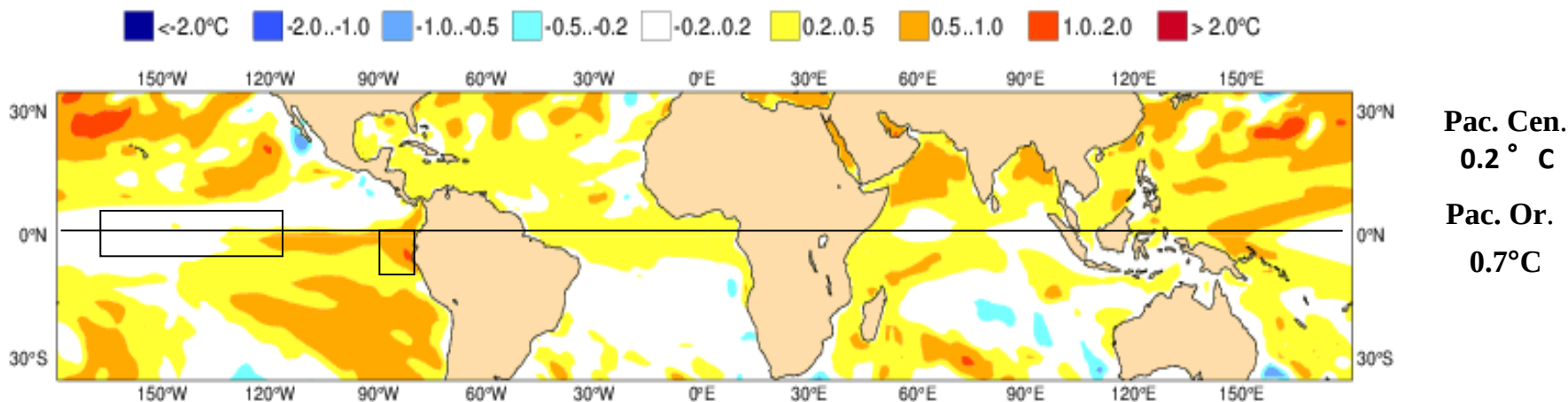
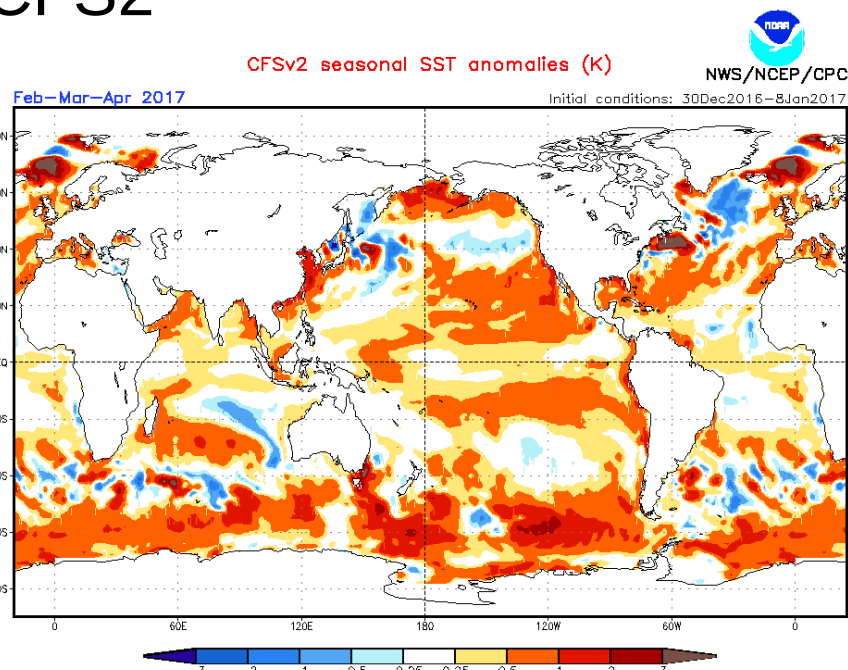
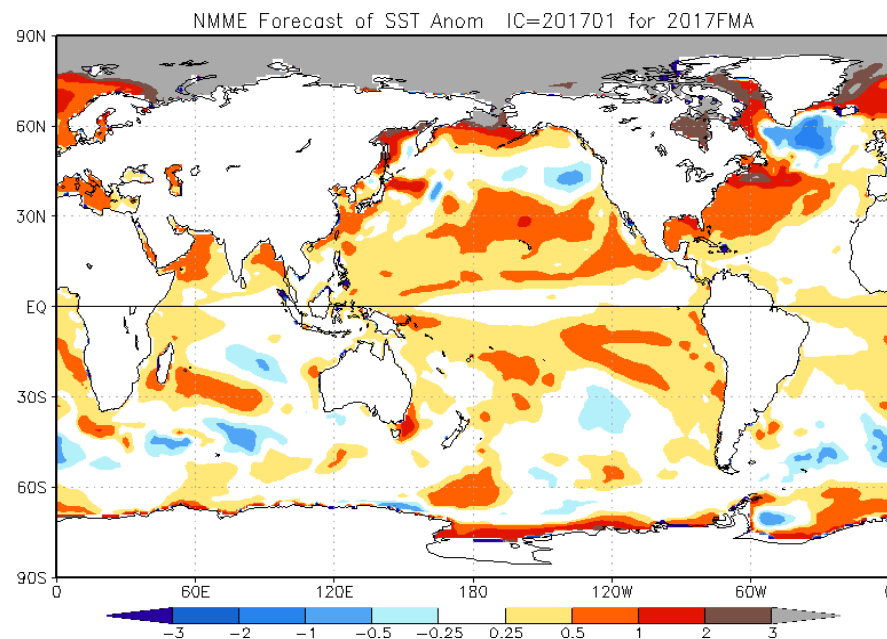
CI 2016 12

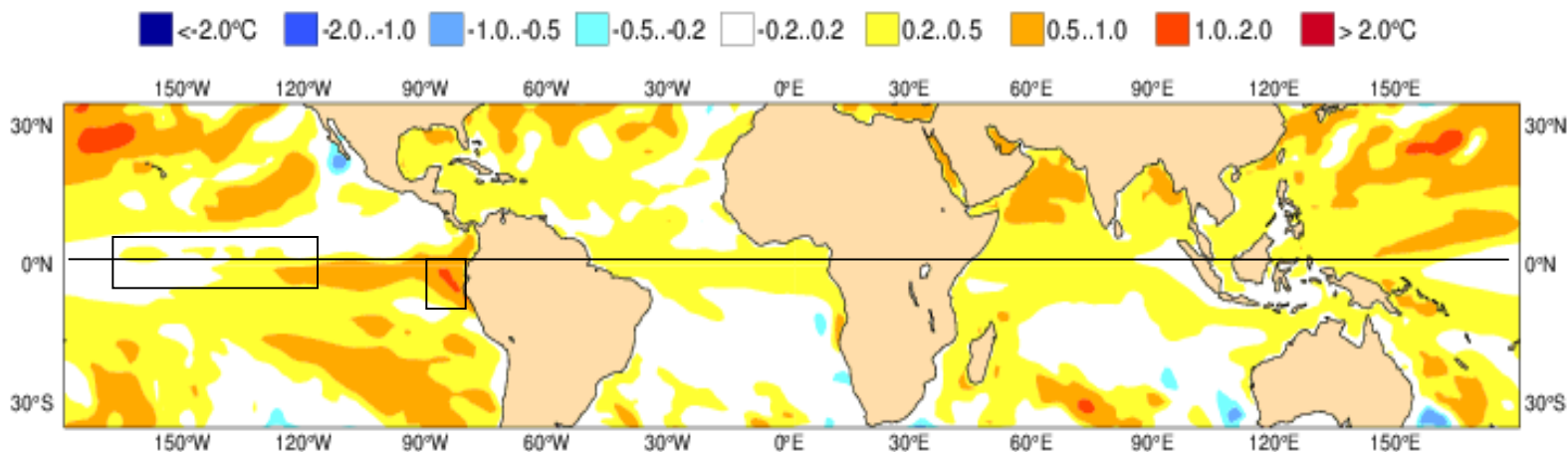
pronósticos de las anomalías en Niño 1+2)

Modelo	OND	NDE	DEF	EFM	FMA	MAM	AMJ	AMJ
CFS2		0.22	0.17	0.15	0.09	-0.05	-0.25	-0.36
CMC1		0.28	0.19	0.08	0.00	0.01	0.02	0.04
CMC2		0.30	0.35	0.41	0.46	0.42	0.37	0.35
GFDL		-0.10	-0.17	-0.05	0.07	0.18	0.48	0.61
NASA		0.02	-0.03	0.12	0.26	0.46	0.80	1.16
GFDL_FLOR		0.07	0.06	0.22	0.27	0.46	0.70	0.90
NCAR_CCSM4		0.15	0.26	0.54	0.67	0.61	0.41	0.16
NMME		0.13	0.12	0.21	0.26	0.30	0.36	0.41
ICENtmp	0.16							

CI 2017 01

Modelo	NDE	DEF	EFM	FMA	MAM	AMJ	MJJ	JJA
CFS2		0.62	0.55	0.54	0.55	0.49	0.37	0.24
CMC1		0.50	0.35	0.26	0.23	0.32	0.49	0.59
CMC2		0.65	0.67	0.73	0.87	1.16	1.47	1.69
GFDL		0.42	0.28	0.24	0.35	0.50	0.55	0.48
NASA		0.55	0.52	0.57	0.74	1.07	1.44	1.62
GFDL_FLOR		0.51	0.40	0.44	0.66	0.86	1.00	0.97
NCAR_CCSM4		0.59	0.61	0.73	0.76	0.72	0.60	0.35
NMME		0.55	0.48	0.50	0.59	0.73	0.85	0.85
ICENtmp	0.48							





Pac. Cen.
0.5 ° C

Pac. Or.
0.8°C

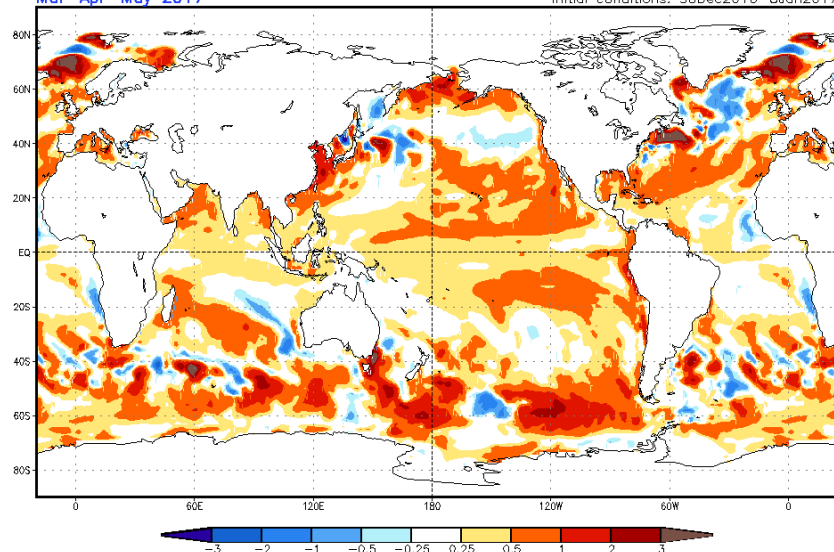
CFS2

CFSv2 seasonal SST anomalies (K)



Mar-Apr-May 2017

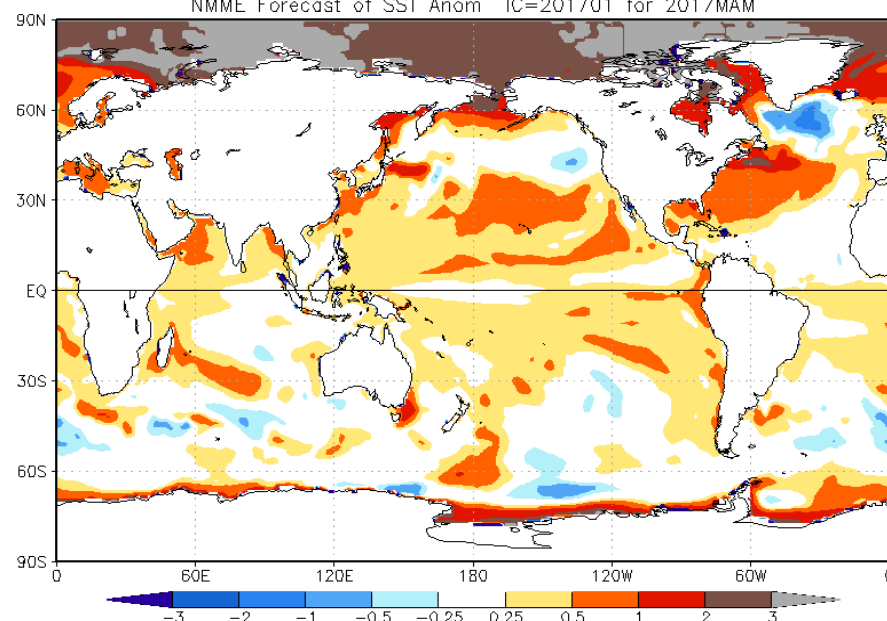
Initial conditions: 30Dec2016-8Jan2017



NMME

C.I. Enero

NMME Forecast of SST Anom IC=201701 for 2017MAM



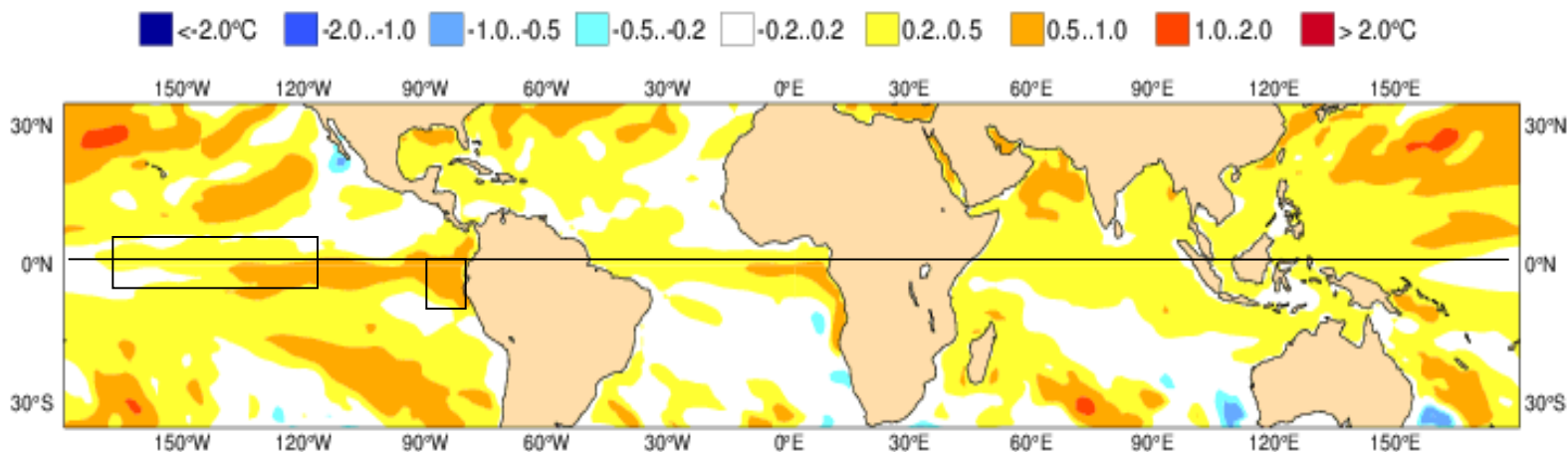
ECMWF Seasonal Forecast
Mean forecast SST anomaly
Forecast start reference is 01/12/16
Ensemble size = 51, climate size = 450

AMJ 2017

System 4
AMJ 2017

ECMWF

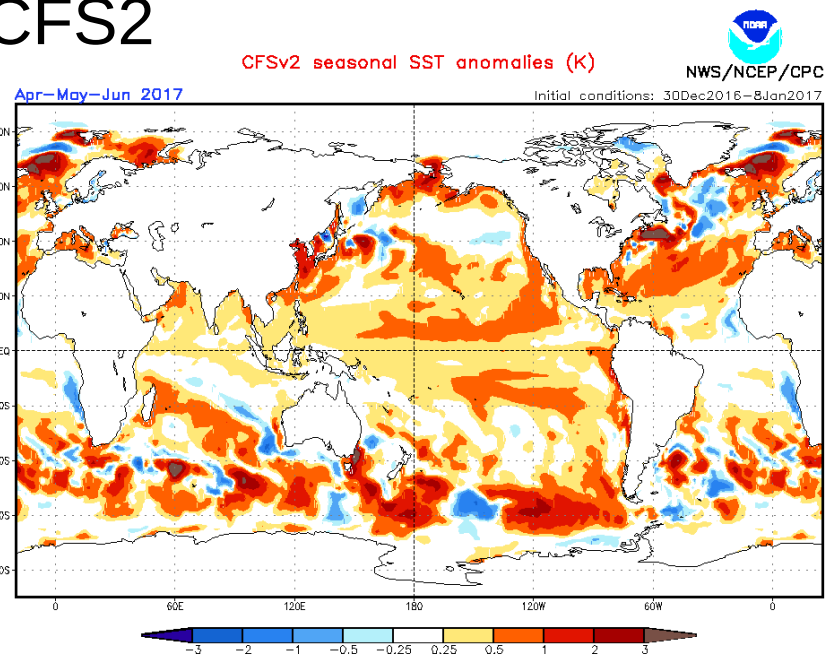
C.I. Dicembre



Pac. Cen.
0.6 ° C

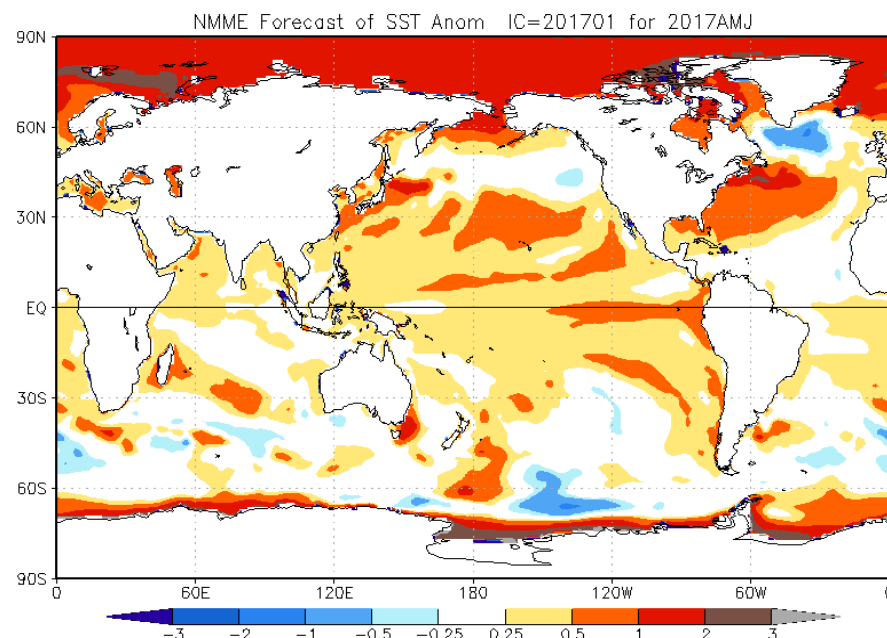
Pac. Or.
0.7°C

CFS2



NMME

C.I. Enero



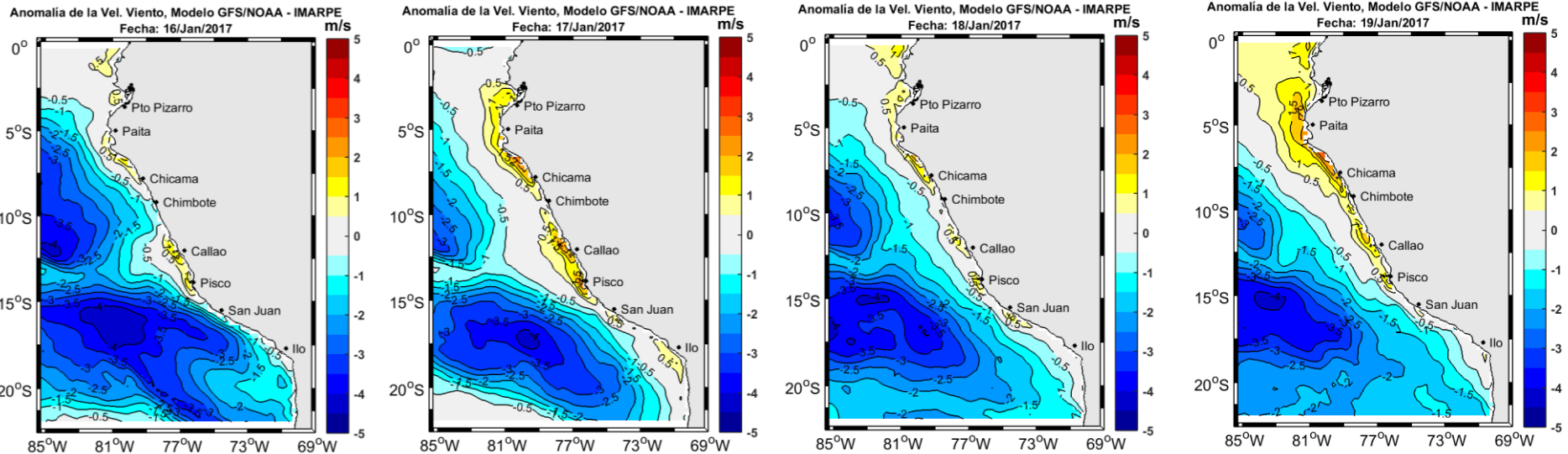
´ Pacífico Central (Niño 3.4)

Magnitud del evento durante Diciembre 2016-marzo 2017	Probabilidad de ocurrencia
La Niña moderado-fuerte	1%
La Niña débil	13%
Neutro	80%
El Niño débil	5%
El Niño moderado-fuerte-extraordinario	1%

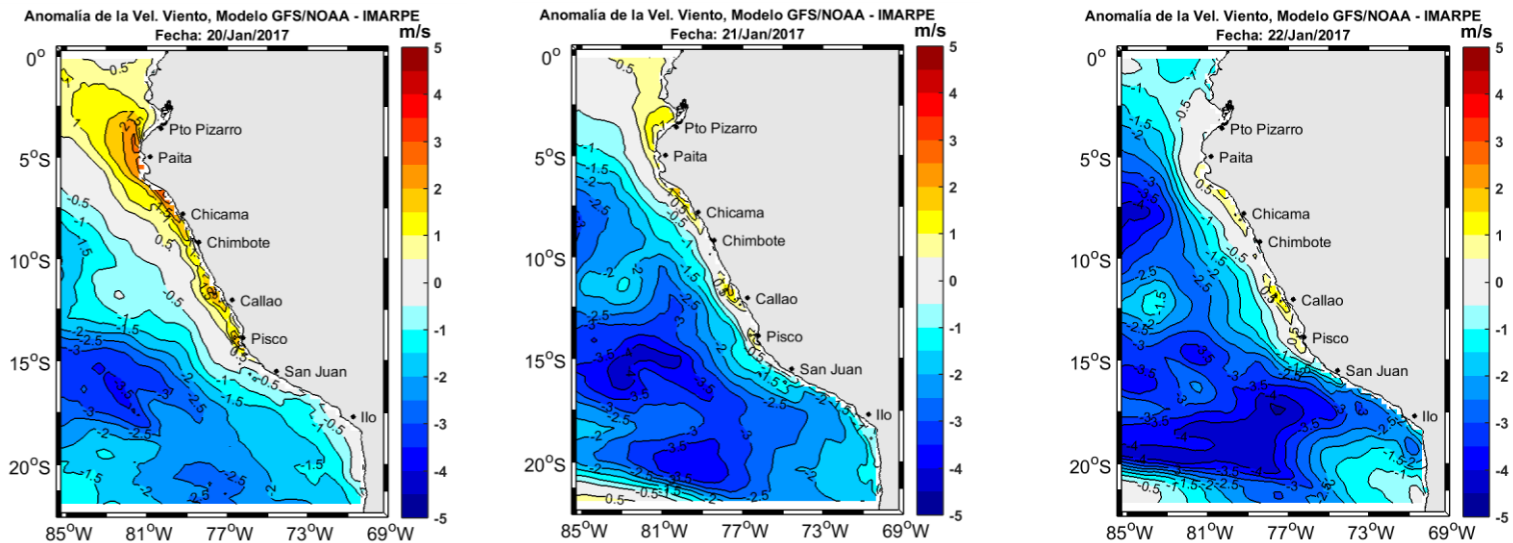
´ Pacífico Oriental (Niño 1+2)

Magnitud del evento durante Diciembre 2016-marzo 2017	Probabilidad de ocurrencia
La Niña moderado-fuerte	1%
La Niña débil	2%
Neutro	66%
El Niño débil	30%
El Niño moderado-fuerte-extraordinario	1%

Pronóstico de la anomalía del viento (Modelo GFS)



Se esperan anomalías de viento entre negativas a ligeramente positivas, entre -2.0 a $+1.0$ m/s frente a toda la costa peruana



Mapas de la Anomalía de la velocidad del viento pronosticado por el modelo GFS (frente a la costa de Perú): Fuente: Modelo GFS-NOAA, Procesamiento: Laboratorio de Hidro-Física Marina, IMARPE