



Costa Rica

Dr.rer.nat. Silvia Chacón Barrantes

RONMAC Program

SINAMOT (National Tsunami Monitoring System)

National University

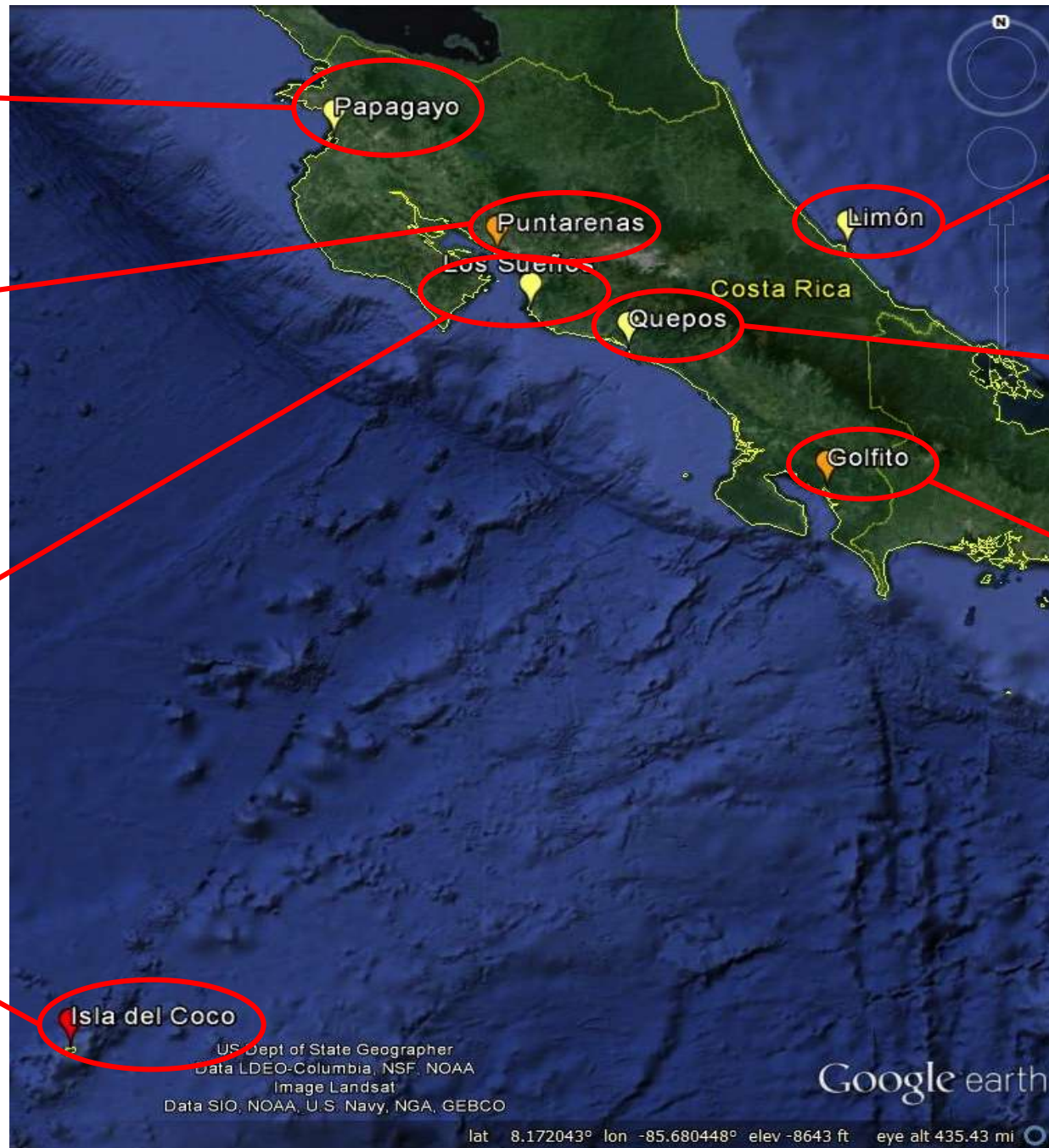
Tide Gauges

Papagayo
2014 -

Puntarenas
1957-2003

Los Sueños
2013 -

Isla del Coco
March 2018



Limón
UHSLC
1940 -

Quepos
UHSLC
1941 -

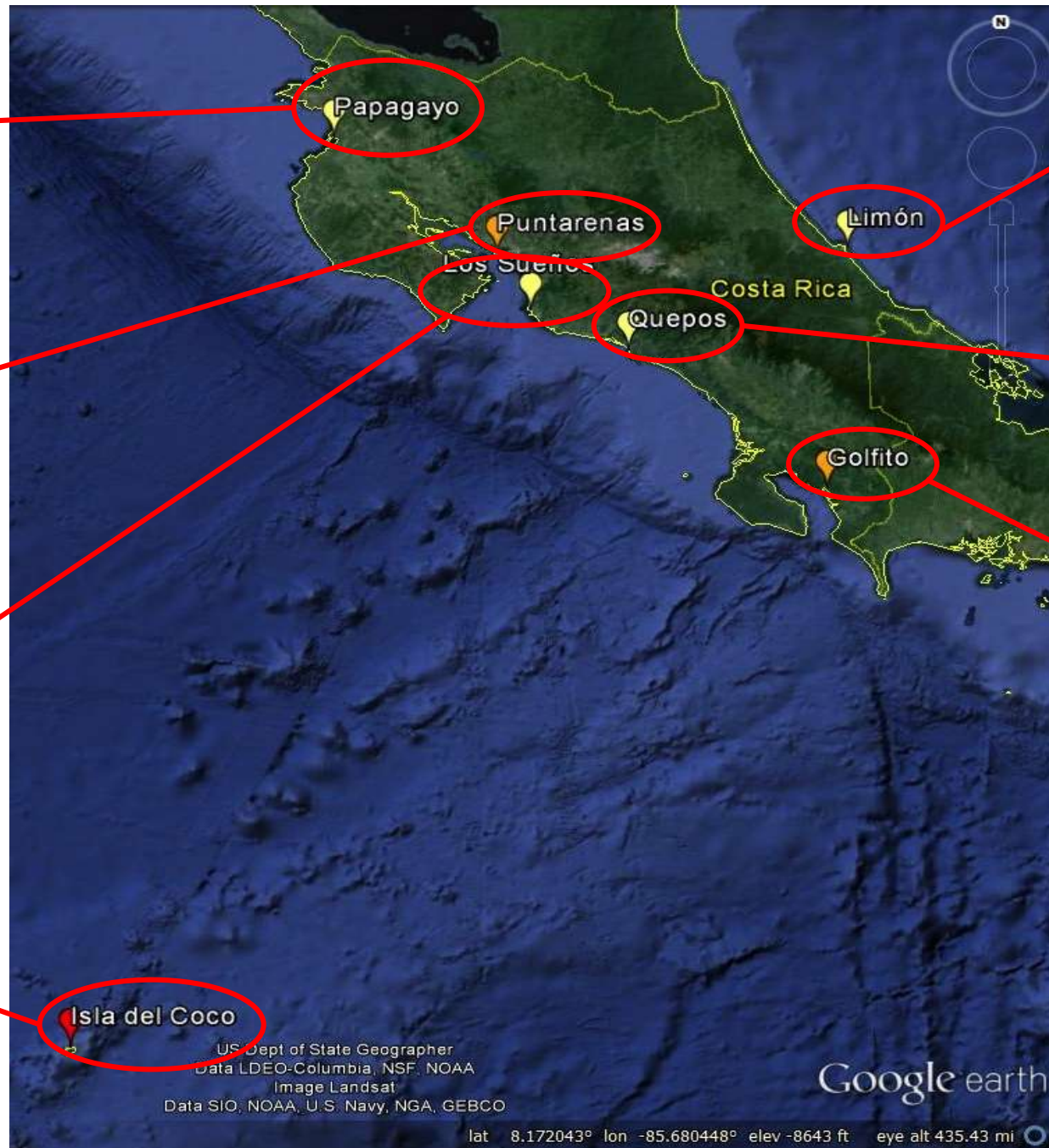
Golfito
1998 - 2003

Papagayo
Pressure
Aquatrak

Puntarenas
Pressure
Aquatrak

Los Sueños
Pressure
Aquatrak

Isla del Coco
Pressure
Radar



Limón
Pressure
Radar

Quepos
Pressure
Radar

Golfito
Pressure
Aquatrak

Record rate: 1 min
Trans. rate: 5 min

Data

Papagayo

Digital 2014 - now

Papagayo

Puntarenas

Los Sueños

Quepos

Limón

Costa Rica

Golfito

Puntarenas

Hourly Av. 1957 – 1969
Paper Rolls 1969 – 1979
Digital 1995 - 2003

Los Sueños

Digital 2013 - now

Isla del Coco

US Dept of State Geographer
Data LDEO-Columbia, NSF, NOAA
Image Landsat
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Golfito

Digital 1998 - 2003

Limón

Hourly Av. 1940 – 1969
Paper Rolls 1971 – 1993
Digital 1997 – 2001
2009 - now

Quepos

Hourly Av. 1941 – 1969
Paper Rolls 1969 – 1996
Digital 1999 – 2003
2006 – 2007
2009 - now

Google earth

lat 8.172043° lon -85.680448° elev -8643 ft eye alt 435.43 mi

Analogic data – before 1969

- Started by USGS with IGN as local partner
- IGN sent the paper rolls to USGS, they processed them and sent them back to IGN
- IGN stored until 1969 when they decided to burn them to make room for new rolls
- They started to storage them again until 1980's when UNA collected them and SerMar Program was created (Mareographic Service)
- Data before 1969 **only hourly averages and maximum tsunami heights**

Paper rolls – after 1969

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	
Limón			Red	Yellow	Yellow		Red						Red												Yellow				
Puntarenas	Red	Red		Red							Red																		
Quepos	Green	Green		Yellow	Yellow	Yellow	Green	Green		Red			Red	Yellow	Green	Green	Red				Green	Green	Red	Yellow		Red		Yellow	Red

Digital data

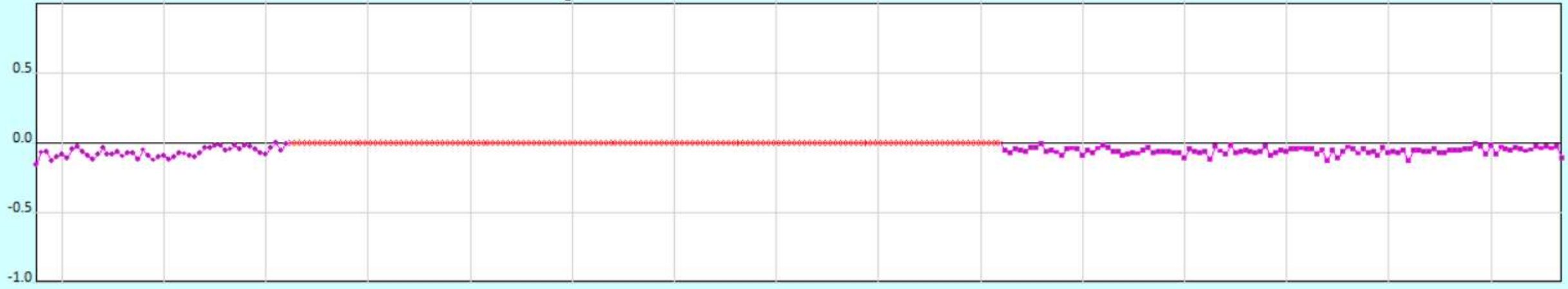
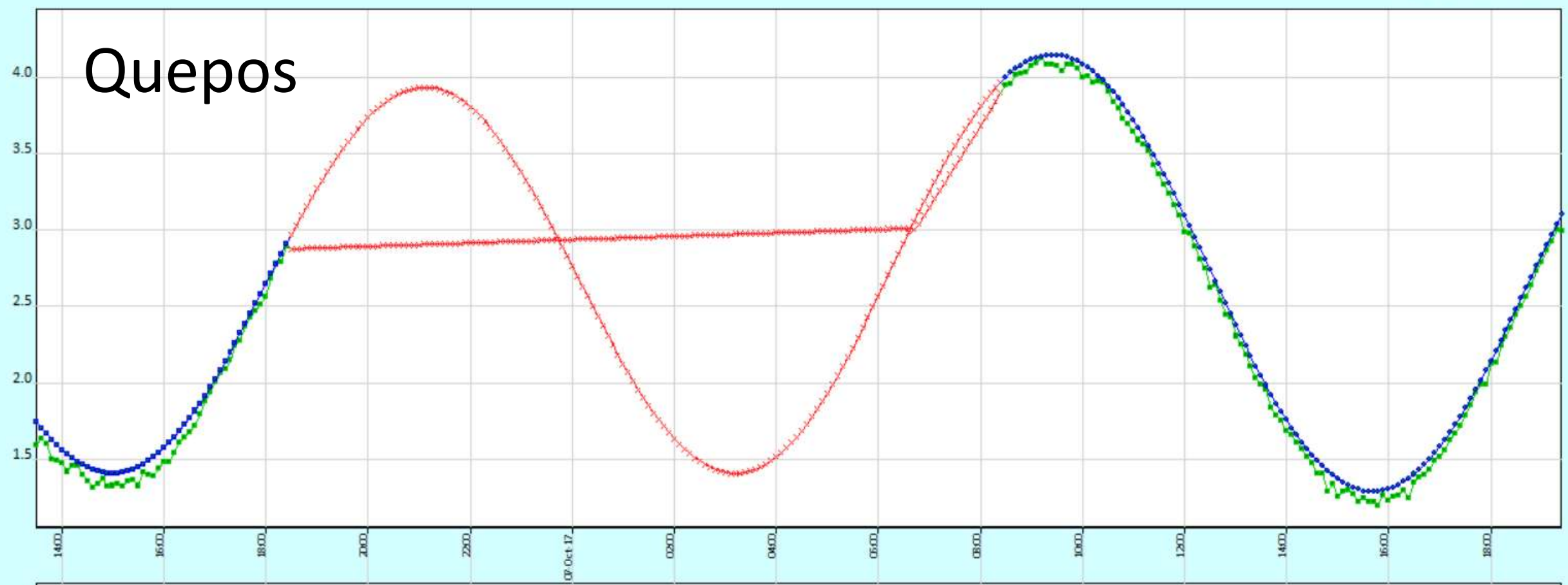
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Limón			■	■	■	■	■								■	■	■	■	■	■	■	■	■	■
Quepos					■	■	■	■	■			■	■		■	■	■	■	■	■	■	■	■	■
Los Sueños																			■	■	■	■	■	
Papagayo																				■	■	■	■	
Golfito				■	■	■	■	■	■														?	
Puntarenas	■	■	■	■	■	■	■	■	■														?	
Caldera				■	■	■	■	■	■															
Isla del Coco																							?	

Predicciones Mareales
Altura en Pies
Referidas a Nivel de Bajamares
Año : 2017
Estación : LIMON

Diciembre	Hora	Altura
Do 31	01:08	-00.22
	09:31	01.03
	17:33	-00.55
	23:59	-00.15
Enero		
Lu 1	02:00	-00.18
	10:23	01.06
	18:25	-00.61
Ma 2	01:34	-00.09
	03:28	-00.09
	11:21	01.03
	19:18	-00.64
Mi 3	02:29	00.05
	05:09	-00.02
	12:27	01.00
	20:08	-00.64
Ju 4	03:14	00.18
	06:34	00.01
	13:37	00.93
	20:55	-00.64

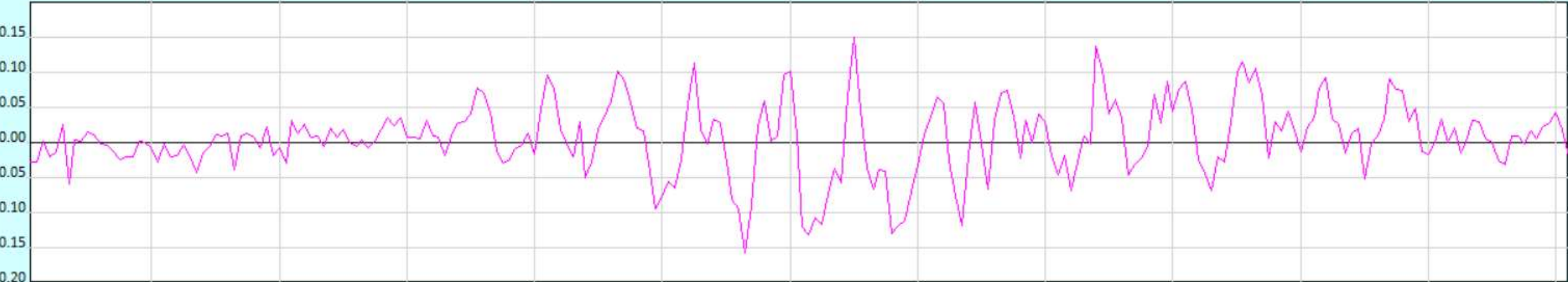
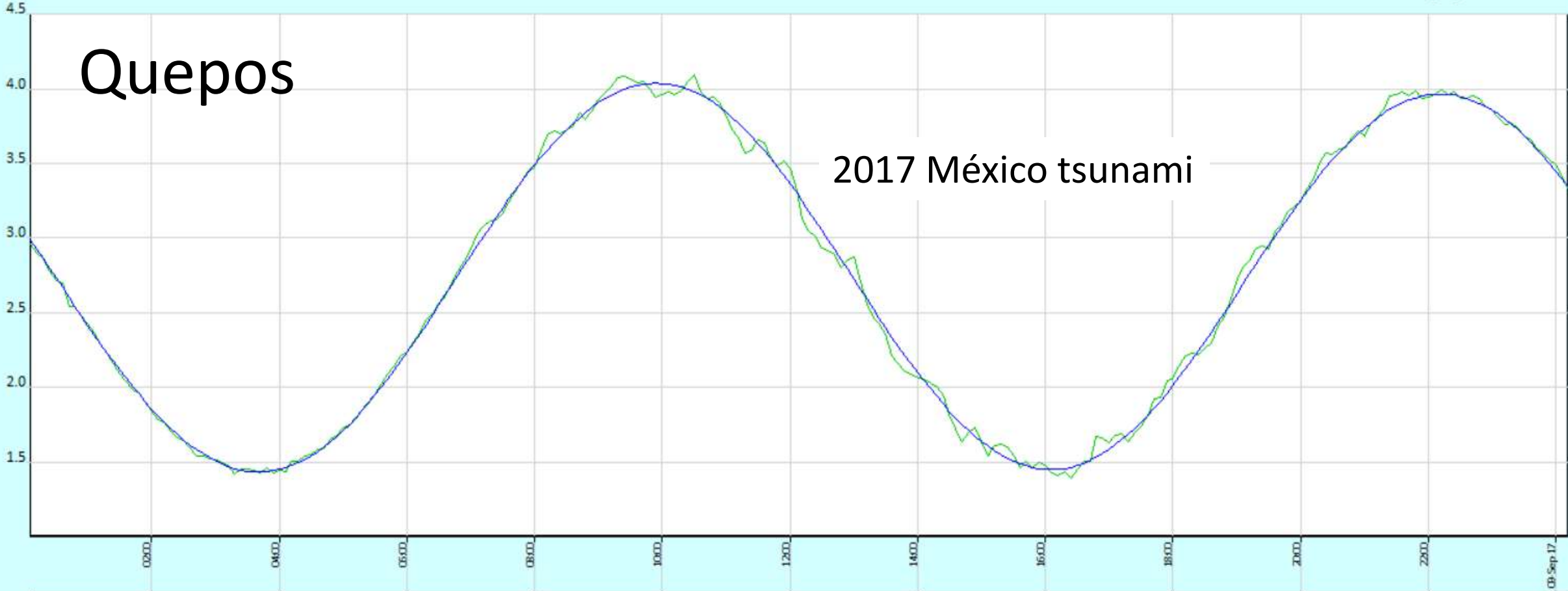
TASK processing

Quepos



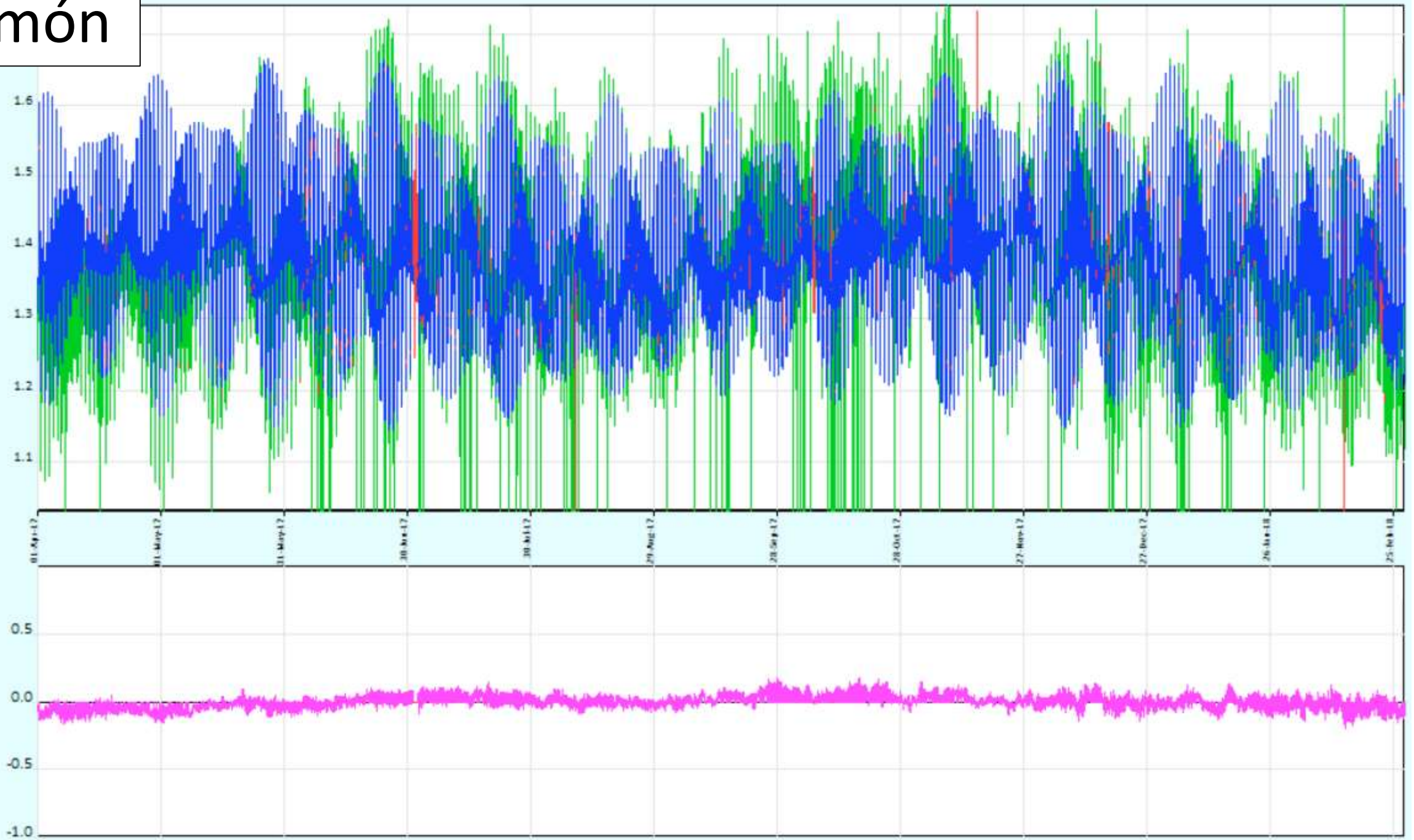
Quepos

2017 México tsunami



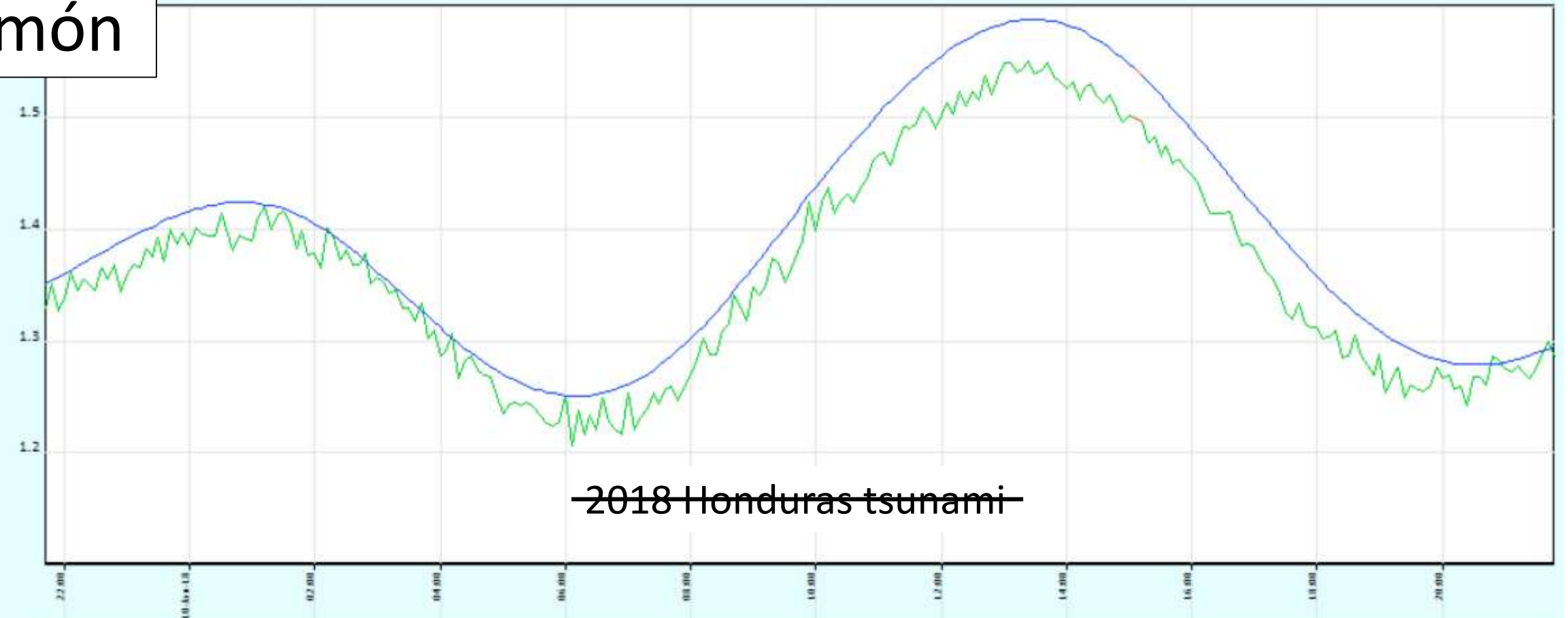
Limón

Flagging Mode: Inactive

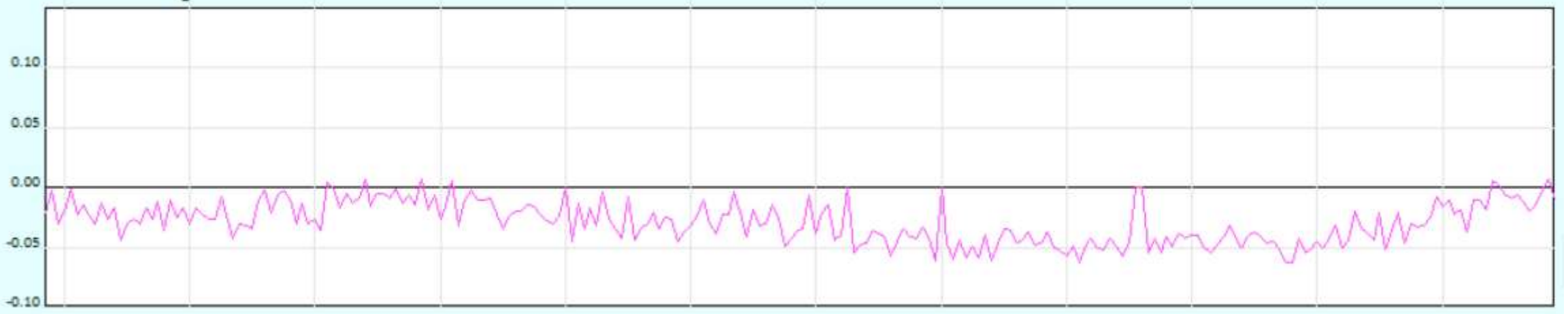


Limón

Flagging Mode: Inactive



~~2018 Honduras tsunami~~



Thank you!!!



Esterillos, Central Pacific