

Tide monitoring in Santa Catarina, Brazil

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Researcher

Tide monitoring program in Santa Catarina, Brazil

Oceanographic and meteorological conditions being monitored at Santa Catarina's coastline to support port operations, fisheries, aquaculture and tourism, as well as the population in general

But, where is Santa
Catarina?

Brazilian second
Southernmost state:

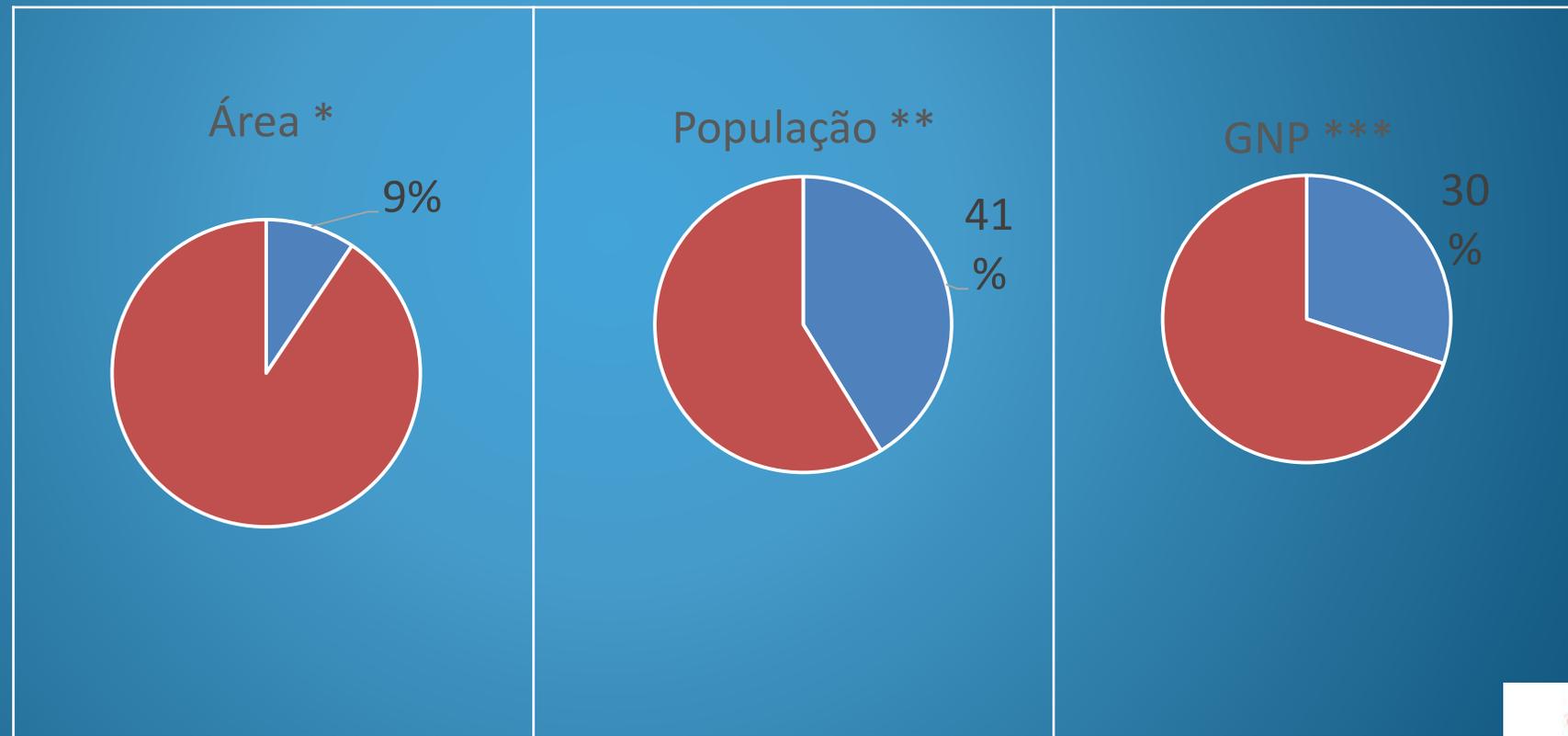
95 k km² (1.1%)

6,7 m people (3.2%)

9 h flight from Miami

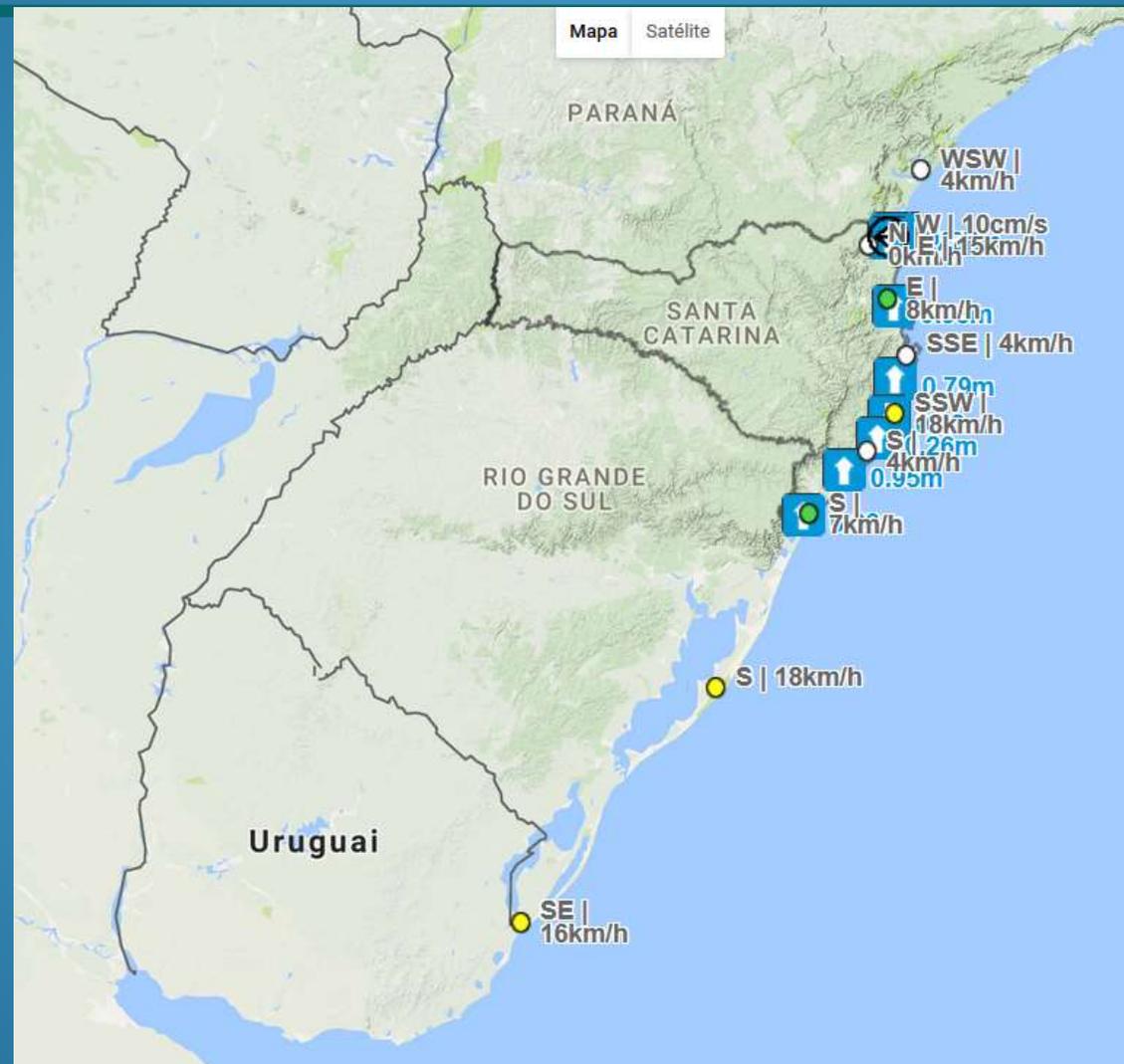


Santa Catarina coast zone statistics...



* Ibge (2015); ** ibge (2016); *** ibge (2014)

E. Litoral On-Line



Nine tide gauges:

- ✓ 1st in 2012
- ✓ 3 more in 2014
- ✓ 3 more in 2016
- ✓ 1 more in 2017

5 in open sea cond.
4 in bays/rivers cond.



1. Florianópolis
(Sul da Ilha)
Jan/2012



2. Porto de Itapoá
Jun/2014



3. Laguna Ago/2014



4. Porto de São
Francisco do Sul
Set/2014



5. Balneário Rincão Dez/2015



6. Bal Camboriú Fev/2016



7. Porto Imbituba Fev/2016



8. Ilha da paz (SFS)
Junho/2016



9. Passo de Torres
Abril/2017



	Litoral Norte 2901-Ilha da Paz	Litoral Norte 2903-Itapoá	Litoral Norte 2909-São Francisco	Litoral Norte 2927-Bal Camboriú	Fpolis Litorânea 2951-Florianópolis	Litoral Sul 2963-Imbituba	Litoral Sul 2969-Laguna	Litoral Sul 2975-Bal Rincão	Litoral Sul 2981-Passo de Torres
Operation (months)	18	42	39	24	48	24	40	24	6
15 min readings	52,340	122,361	113,528	69,798	139,596	69,798	116,409	69,798	17,523
Failures (#)	127	2,583	2,585	1,408	466	461	903	6,525	2
Failures (%)	0.2%	2.1%	2.3%	2.0%	0.3%	0.7%	0.8%	9.3%	0.0%

	Litoral Norte 2901-Ilha da Paz	Litoral Norte 2903-Itapoá	Litoral Norte 2909-São Francisco	Litoral Norte 2927-Bal Camboriú	Fpolis Litorânea 2951-Florianópolis	Litoral Sul 2963-Imbituba	Litoral Sul 2969-Laguna	Litoral Sul 2975-Bal Rincão	Litoral Sul 2981-Passo de Torres
Average (cm)	85	87	90	64	55	47	13	53	36
Maximum (cm)	213	250	247	170	176	157	83	193	144
Minimum (cm)	-58	-68	-58	-65	-62	-67	-65	-49	-20
Amplitude (cm)	270	318	304	235	238	224	148	242	164
Operation (months)	18	42	39	24	48	24	40	24	6



Instrumento



Leituras e
Processamento



Transmissão

TC65

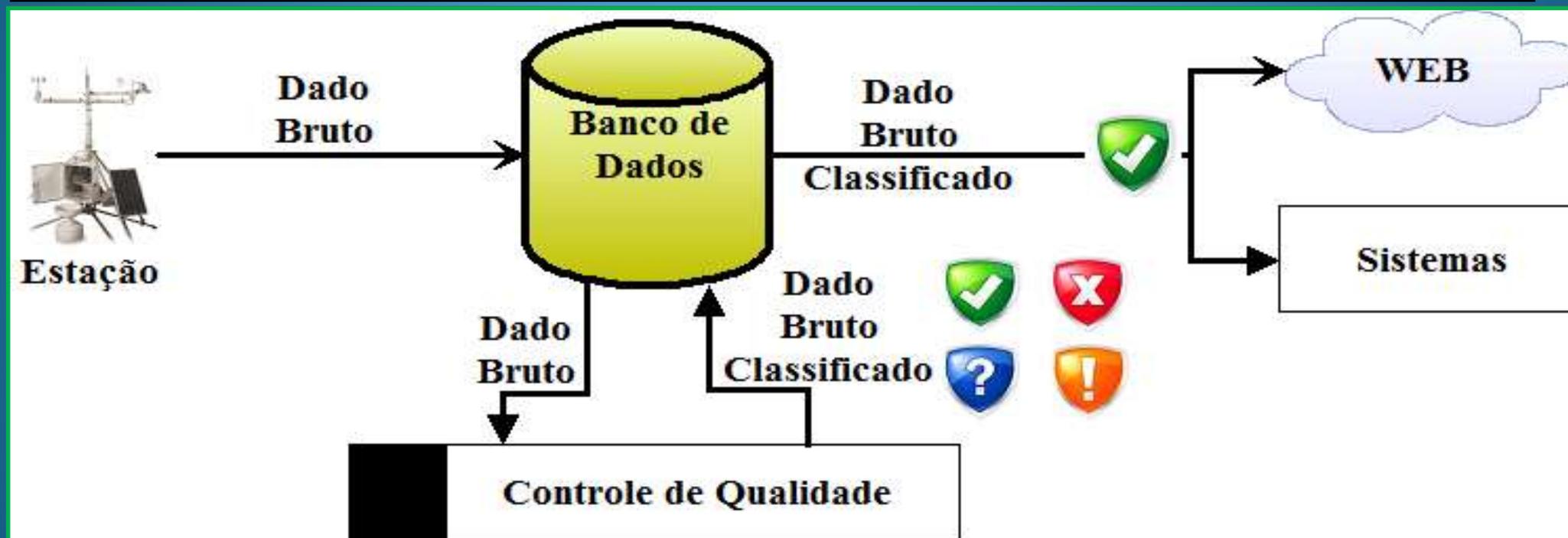
GPRS/Internet

• DATA BANK

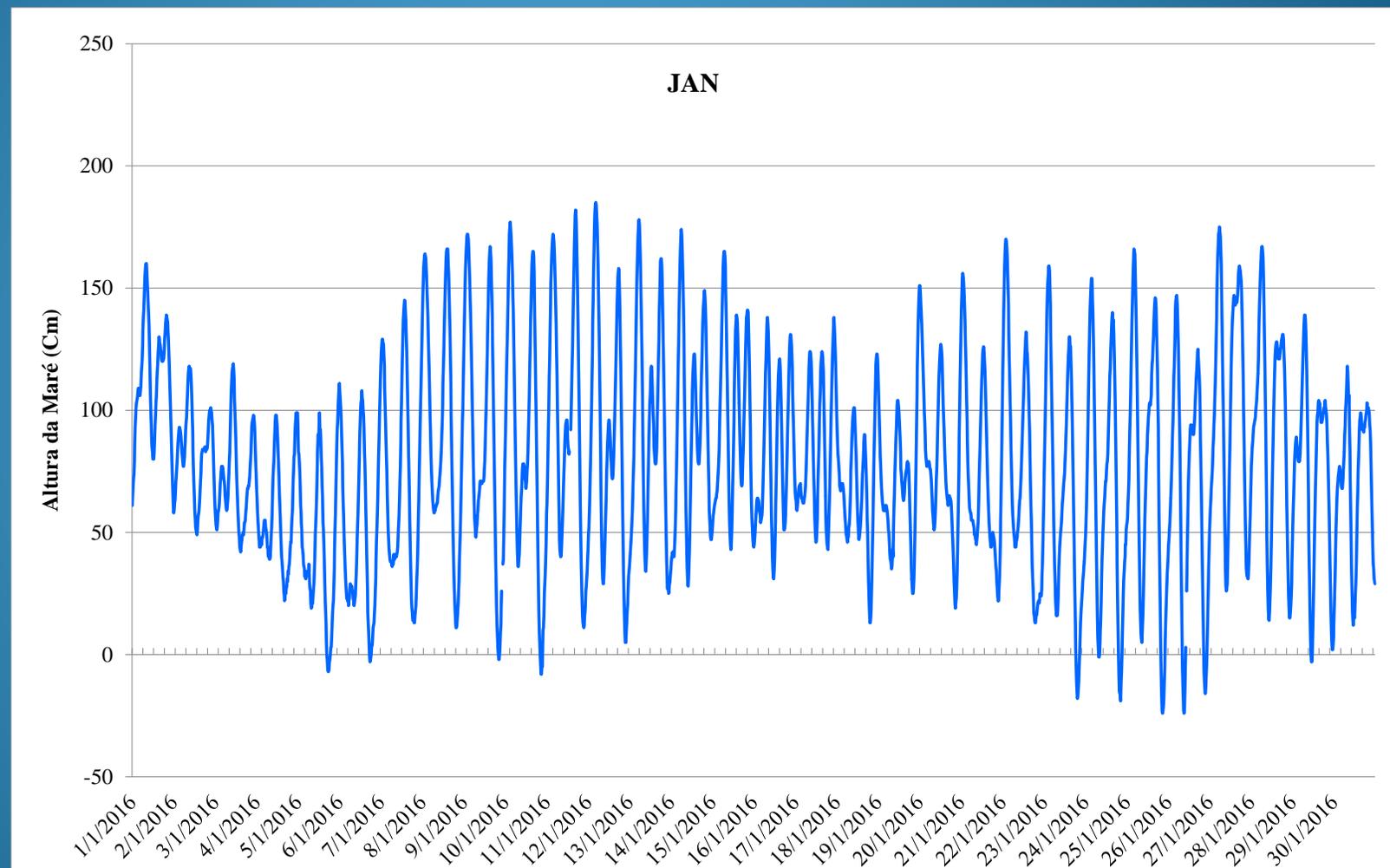
• Infrastructure

- 29 Physical servers;
- 6 Virtual servers;
- 2 Clusters
 - 1 with 360 units, 480 RAM
 - 1 with 160 units, 80 RAM

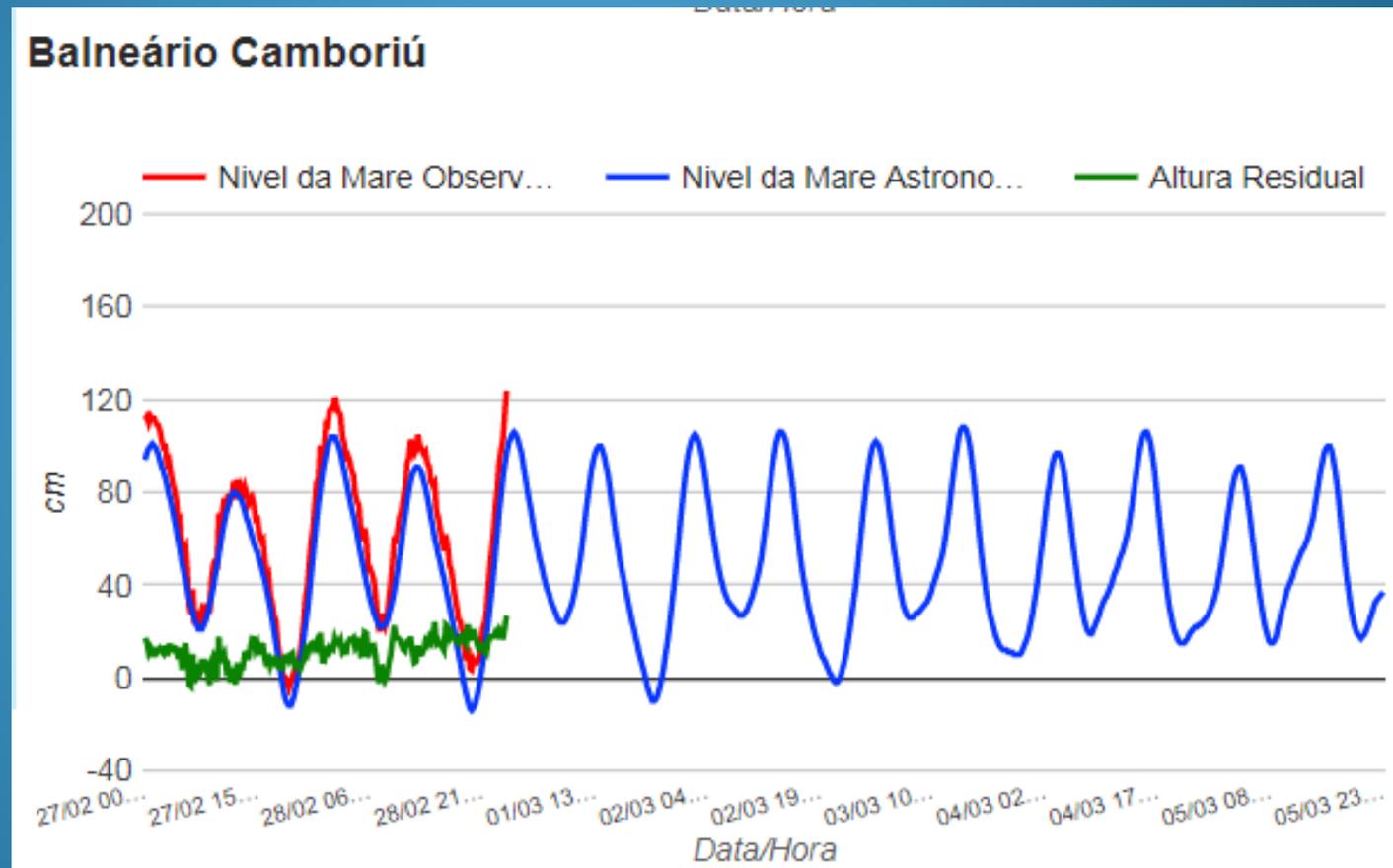
Fluxograma



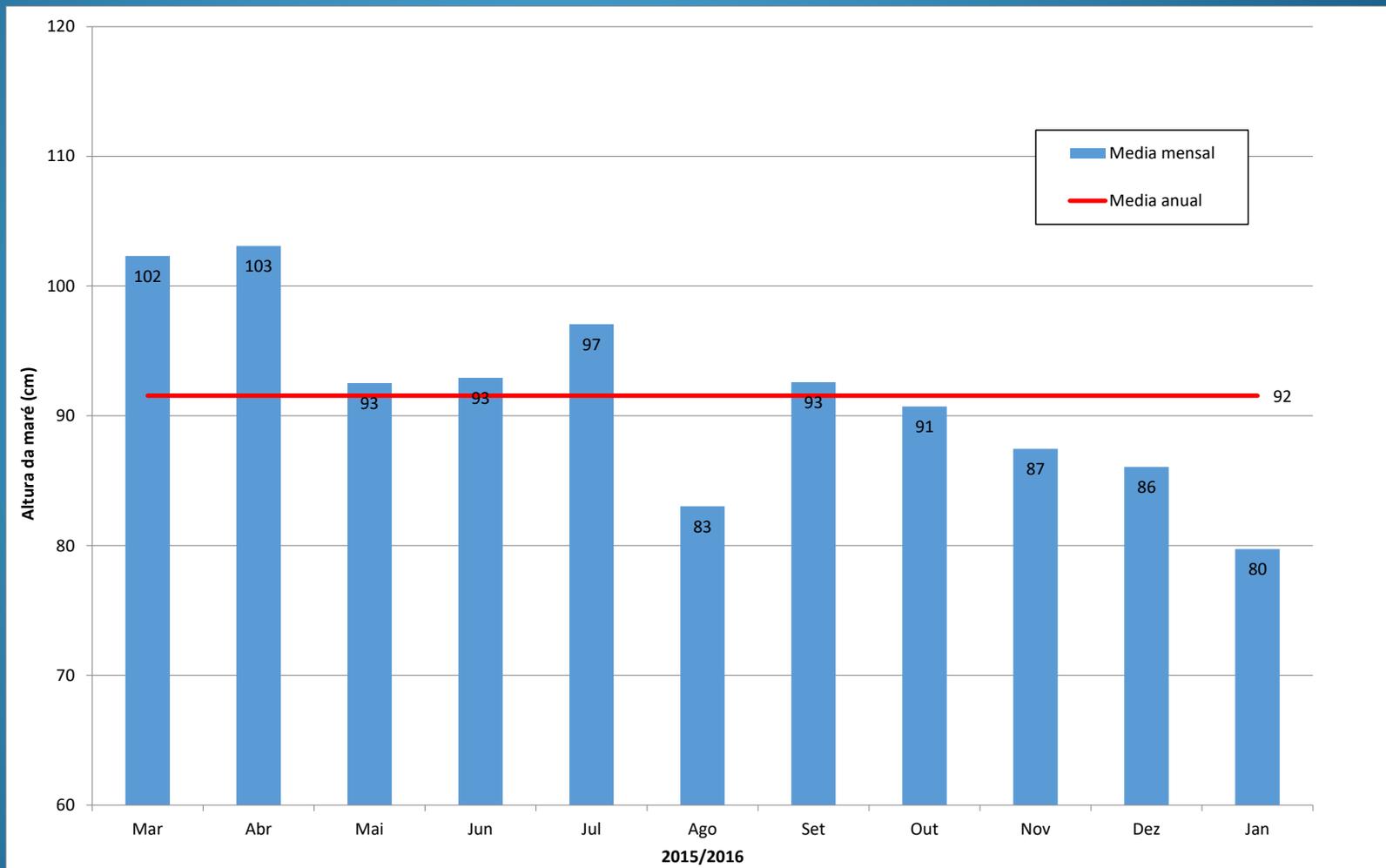
A. Monthly Tide evolution



B. Histórico de dados



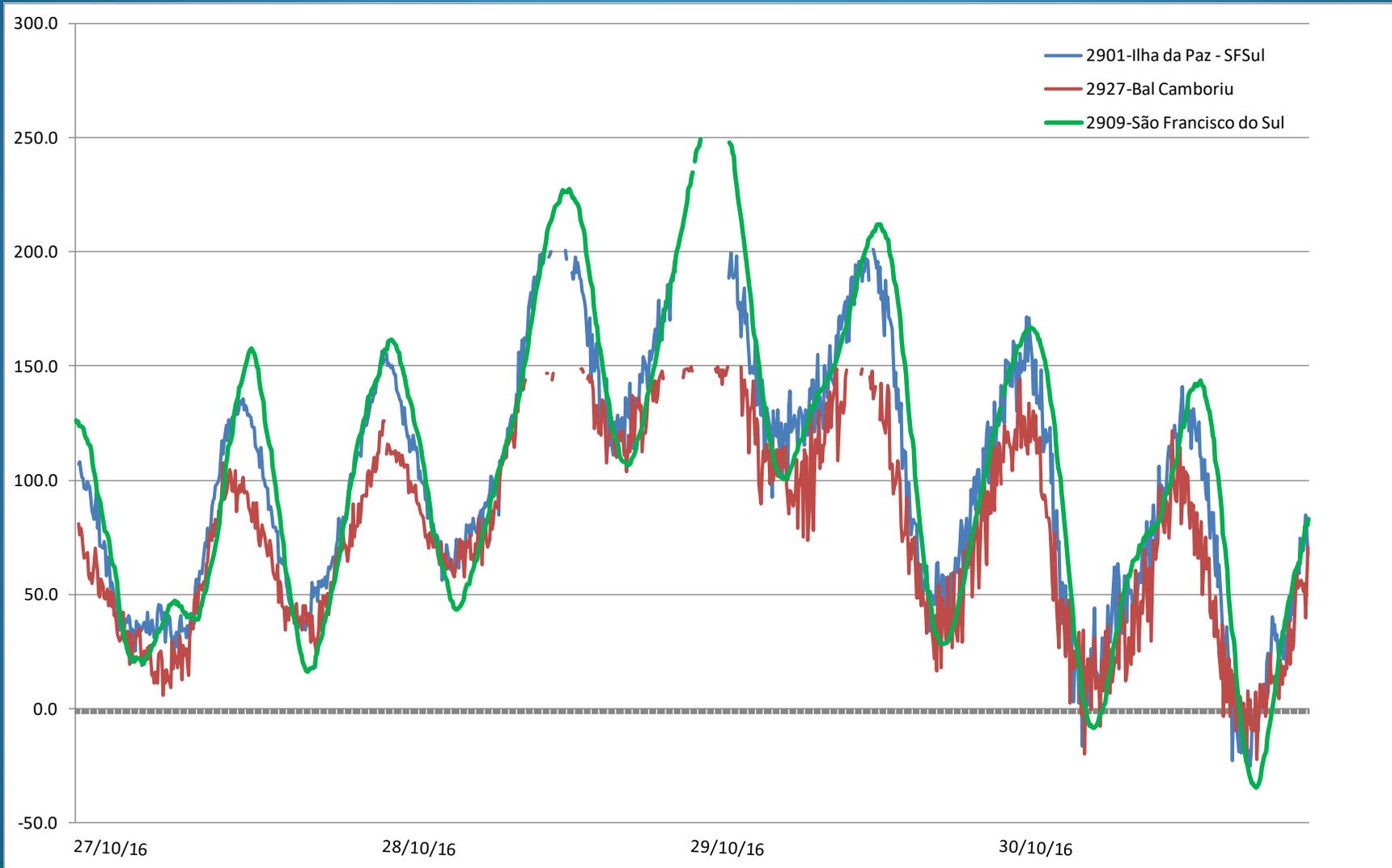
B. Histórico de dados















Maregrafos - Bateria Semana

1 message

ciram@epagri.sc.gov.br <ciram@epagri.sc.gov.br>

To: argeuvanz@epagri.sc.gov.br, matias@epagri.sc.gov.br, nathan@epagri.sc.gov.br

Estacao; Data/Horario; Bateria 04 hs;

2901; 13-11-2017 05:00:44; 13,06;

2903; 13-11-2017 05:00:44; 12,84;

2909; 13-11-2017 05:00:44; 12,81;

2910; 13-11-2017 05:00:44; 12,83;

2927; 13-11-2017 05:00:44; 12,8;

2951; 13-11-2017 05:00:44; 12,88;

2963; 13-11-2017 05:00:44; 12,82;

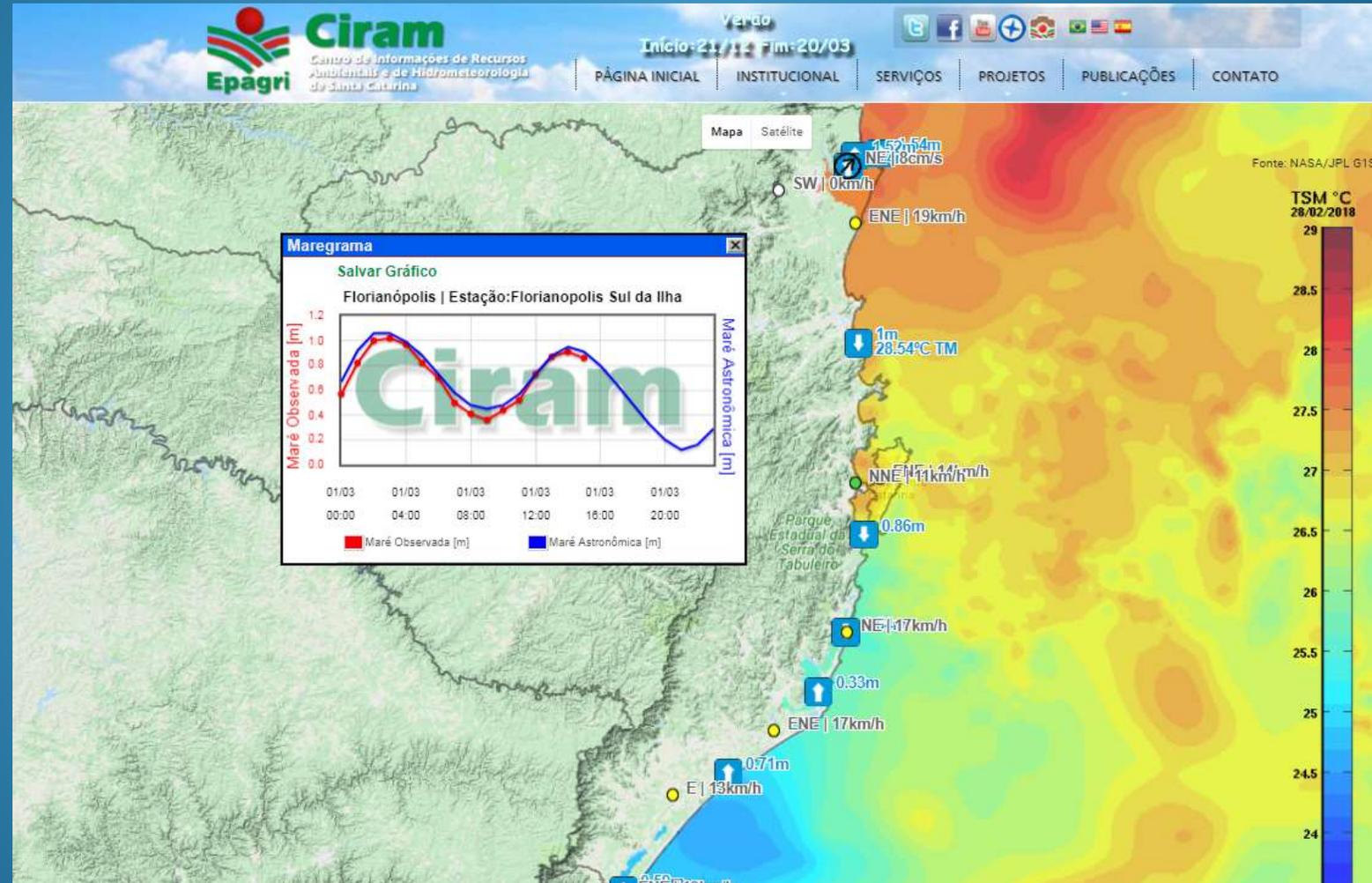
2969; 13-11-2017 05:00:44; 12,82;

2975; 13-11-2017 05:00:44; 12,74;

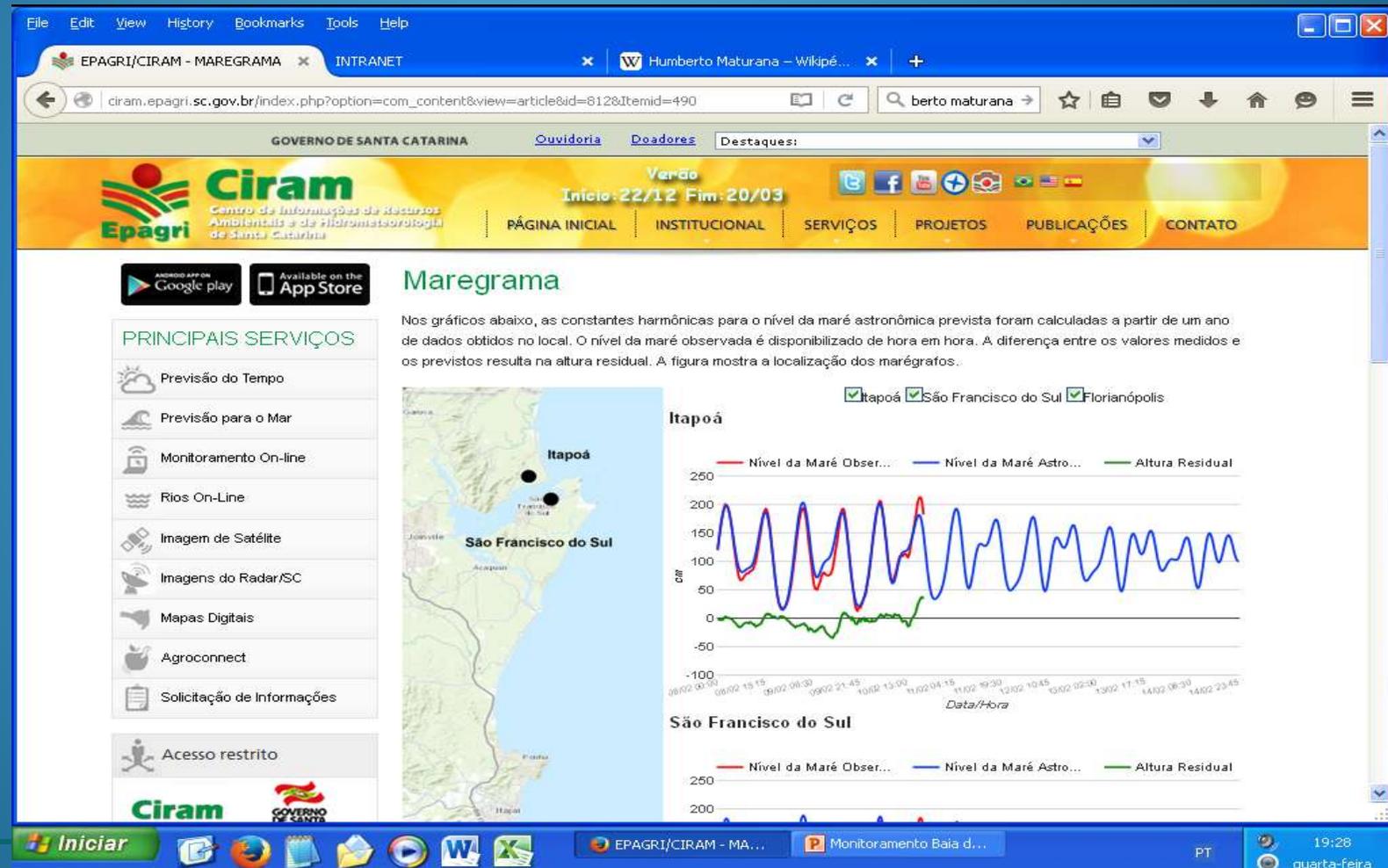
2981; 13-11-2017 05:00:44; 12,88;

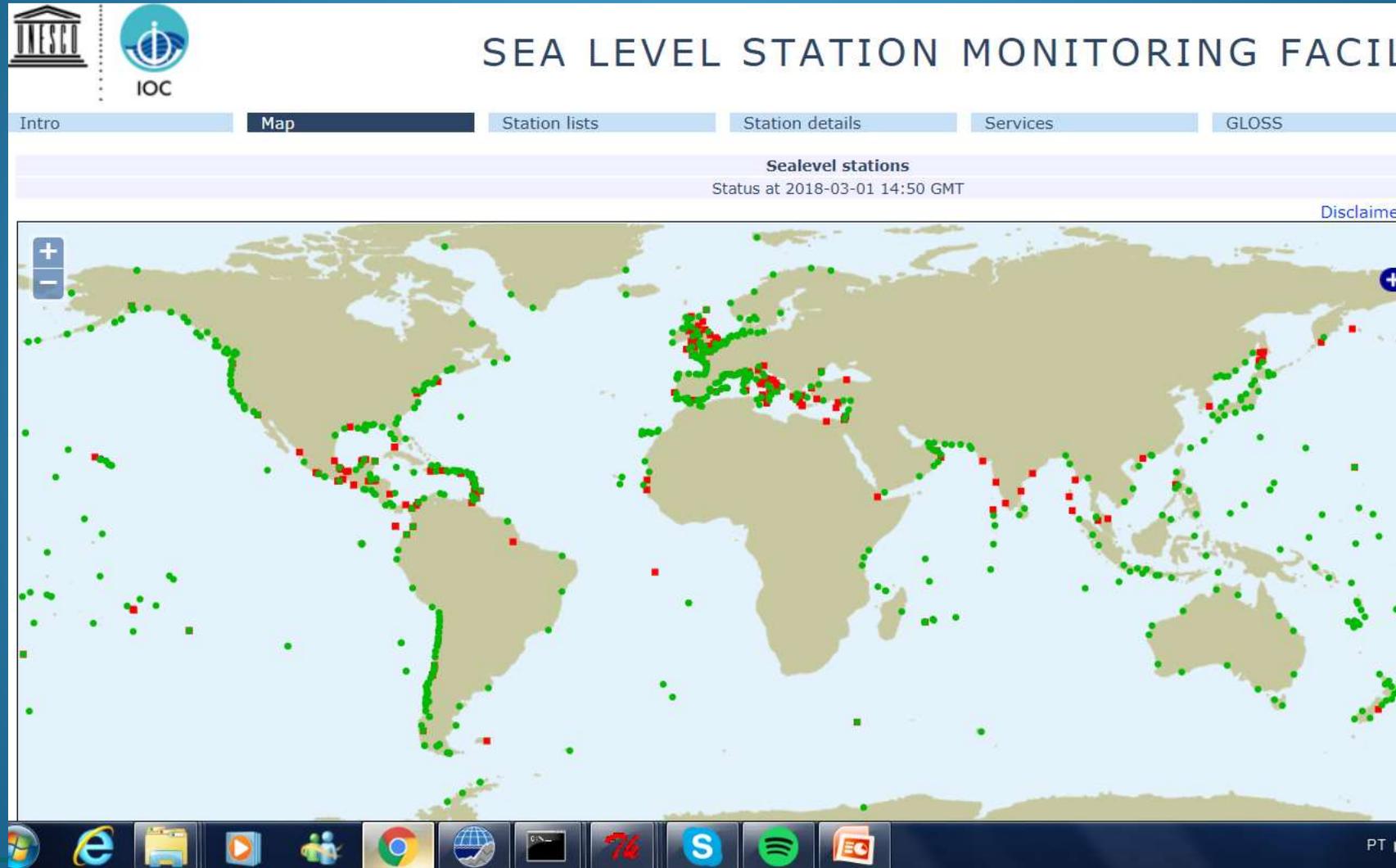


E. Litoral On-Line



D. Marigram





The screenshot shows the 'SEA LEVEL STATION MONITORING FACILITY' website. At the top left are the UNESCO and IOC logos. The main title is 'SEA LEVEL STATION MONITORING FACILITY'. Below the title is a navigation menu with tabs: 'Intro', 'Map' (selected), 'Station lists', 'Station details', 'Services', and 'GLOSS'. The main content area is titled 'Sealevel stations' with a subtitle 'Status at 2018-03-01 14:50 GMT'. A world map displays numerous sea level stations, marked with green dots and red squares. A 'Disclaim' link is visible on the right. At the bottom of the screenshot is a Windows taskbar with various application icons.