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
<table>
<thead>
<tr>
<th>Location</th>
<th>Operation (months)</th>
<th>15 min readings</th>
<th>Failures (#)</th>
<th>Failures (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Litoral Norte</td>
<td>18</td>
<td>52,340</td>
<td>127</td>
<td>0.2%</td>
</tr>
<tr>
<td>Litoral Norte</td>
<td>42</td>
<td>122,361</td>
<td>2,583</td>
<td>2.1%</td>
</tr>
<tr>
<td>Litoral Norte</td>
<td>39</td>
<td>113,528</td>
<td>2,585</td>
<td>2.3%</td>
</tr>
<tr>
<td>Litoral Norte</td>
<td>24</td>
<td>69,798</td>
<td>1,408</td>
<td>2.0%</td>
</tr>
<tr>
<td>Fpolis Litorânea</td>
<td>24</td>
<td>139,596</td>
<td>466</td>
<td>0.3%</td>
</tr>
<tr>
<td>Litoral Sul</td>
<td>48</td>
<td>69,798</td>
<td>461</td>
<td>0.7%</td>
</tr>
<tr>
<td>Litoral Sul</td>
<td>24</td>
<td>116,409</td>
<td>903</td>
<td>0.8%</td>
</tr>
<tr>
<td>Litoral Sul</td>
<td>40</td>
<td>69,798</td>
<td>6,525</td>
<td>9.3%</td>
</tr>
<tr>
<td>Litoral Sul</td>
<td>24</td>
<td>17,523</td>
<td>2</td>
<td>0.0%</td>
</tr>
<tr>
<td>Location</td>
<td>Average (cm)</td>
<td>Maximum (cm)</td>
<td>Minimum (cm)</td>
<td>Amplitude (cm)</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Litoral Norte 2901-Ihla da Paz</td>
<td>85</td>
<td>213</td>
<td>-58</td>
<td>270</td>
</tr>
<tr>
<td>Litoral Norte 2903-Itapoá</td>
<td>87</td>
<td>250</td>
<td>-68</td>
<td>318</td>
</tr>
<tr>
<td>Litoral Norte 2909-São Francisco</td>
<td>90</td>
<td>247</td>
<td>-58</td>
<td>304</td>
</tr>
<tr>
<td>Litoral Norte 2927-Bal Camboriú</td>
<td>64</td>
<td>170</td>
<td>-65</td>
<td>235</td>
</tr>
<tr>
<td>Fpolis Litorânea 2951-Florianópolis</td>
<td>55</td>
<td>176</td>
<td>-62</td>
<td>238</td>
</tr>
<tr>
<td>Litoral Sul 2963-Imbituba</td>
<td>47</td>
<td>157</td>
<td>-67</td>
<td>224</td>
</tr>
<tr>
<td>Litoral Sul 2969-Laguna</td>
<td>13</td>
<td>83</td>
<td>-65</td>
<td>148</td>
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<tr>
<td>Litoral Sul 2975-Bal Rincão</td>
<td>53</td>
<td>193</td>
<td>-49</td>
<td>242</td>
</tr>
<tr>
<td>Litoral Sul 2981-Passo de Torres</td>
<td>36</td>
<td>144</td>
<td>-20</td>
<td>164</td>
</tr>
</tbody>
</table>
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

Estação: Data/Horário: 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