



BRAZILIAN NAVY NAVY HYDROGRAPHIC CENTRE



Digital Tidal Current Charts - Project -

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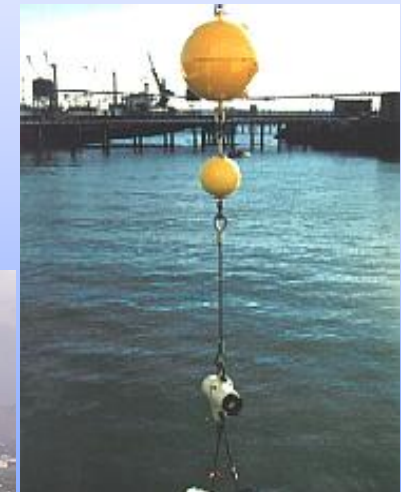
Summary



1. Motivation - Objective;
2. SisBAHIA[®] - The Hydrodynamic Model;
3. Digital Tidal Current Charts; and
4. Future Work.



Motivation



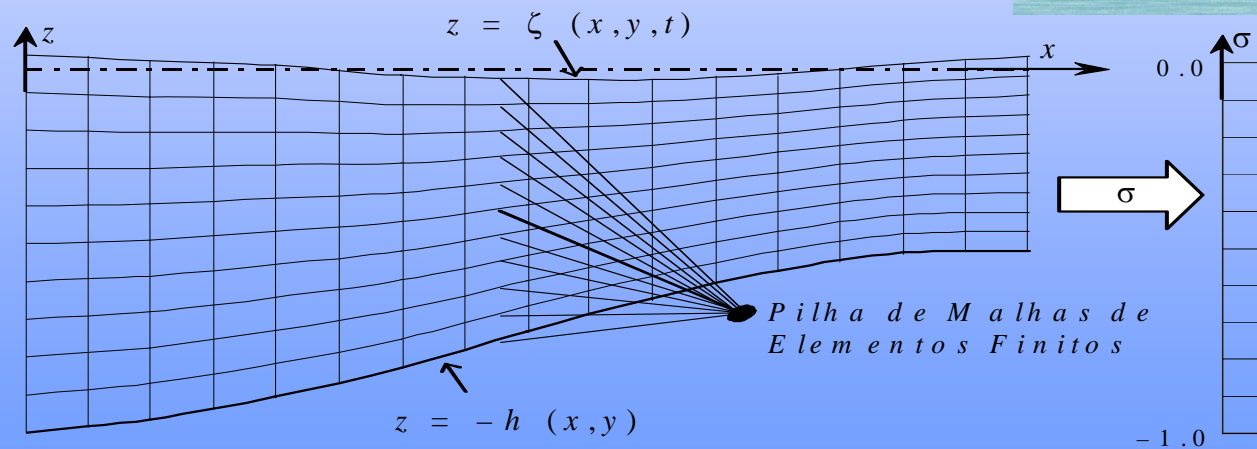
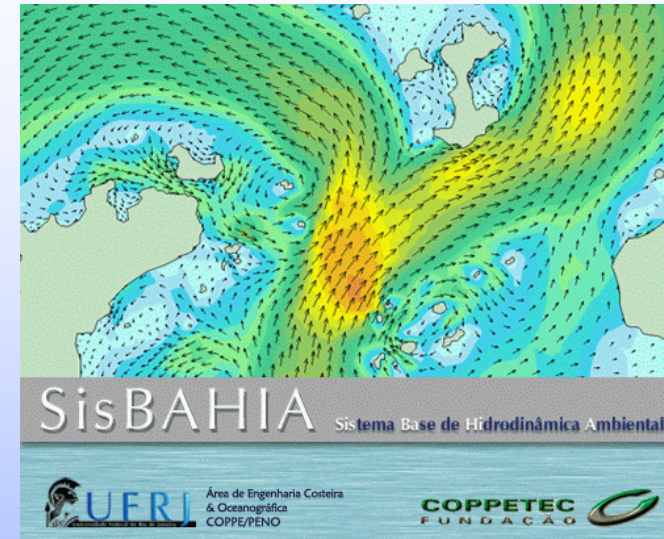


Objective



Develop Digital Tidal Current Charts by Numerical Modeling for the major Brazilian Harbors.

→ hydrodynamic model **SisBAHIA®**.





Análise de Maré

Nome da Estação: nathalie Latitude: -22.0000 Longitude: -42.0000

Dados Observados | Análise

Parâmetros | Resultados

Data Inicial: 04/05/2006 Hora Inicial: 9 Data Final: 02/08/2006 Hora Final: 7 Data Média: 18/06/2006 Hora: 19

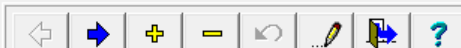
Intervalo (minutos): 60.0000 Valor Mínimo: 0.0000 Multiplicador: 1.0000 Ref. Nível: 0.0000 Critério Rayleigh: 1.0000

Inferências | Constituintes de águas rasas

| Constituinte Analisada | Frequência Analisada | Constituinte a Inferir | Frequência a Inferir | Amplitude Relativa | Fase (rad) |
|------------------------|----------------------|------------------------|----------------------|--------------------|------------|
|------------------------|----------------------|------------------------|----------------------|--------------------|------------|

Nenhuma informação a ser mostrada

Analisa



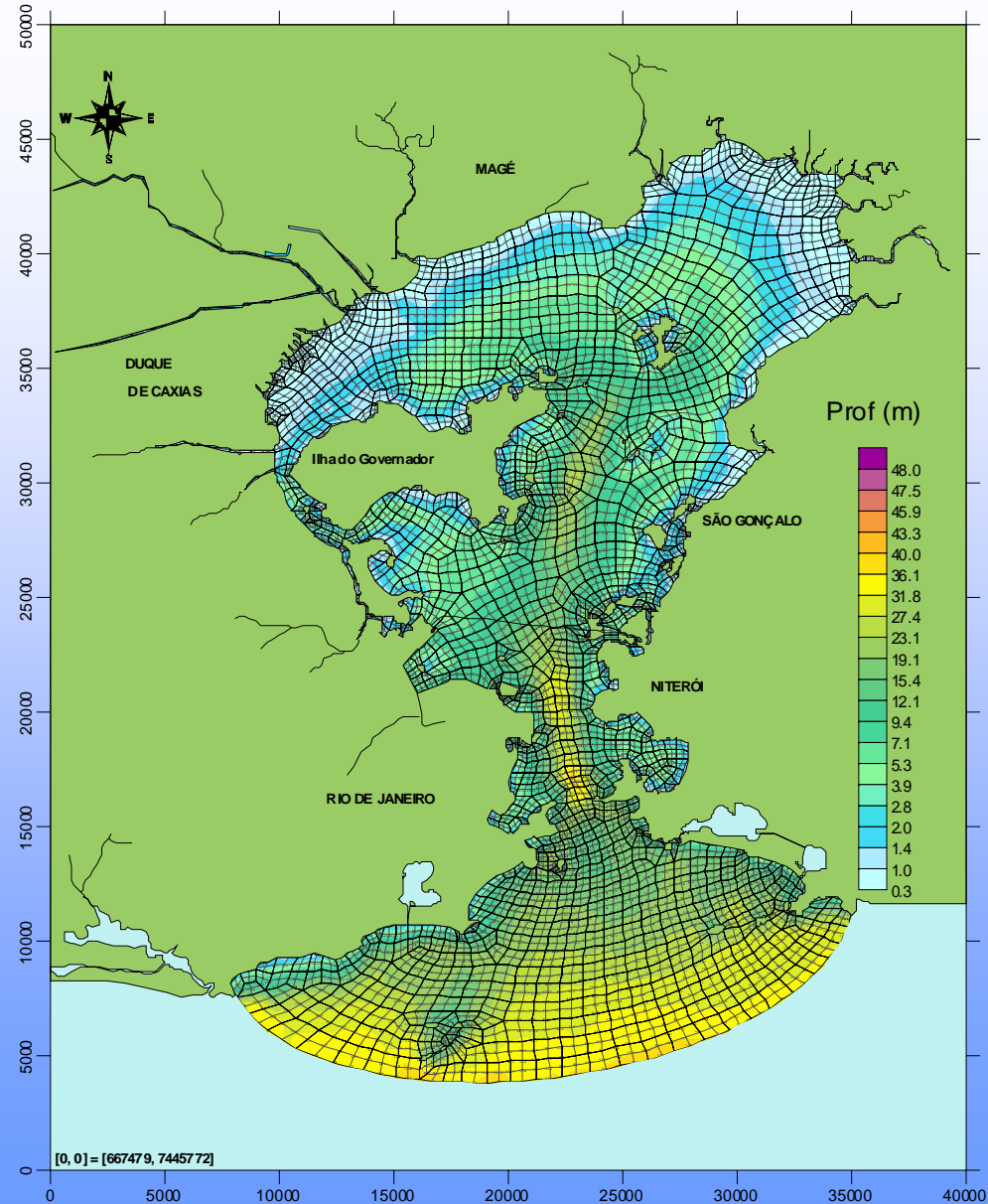
Busca:

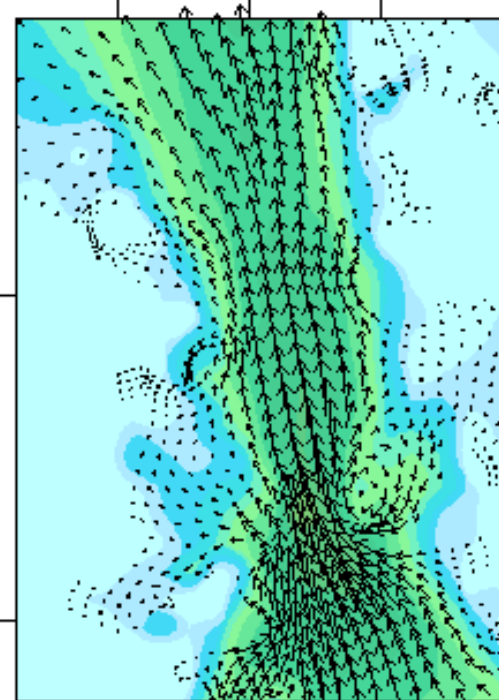
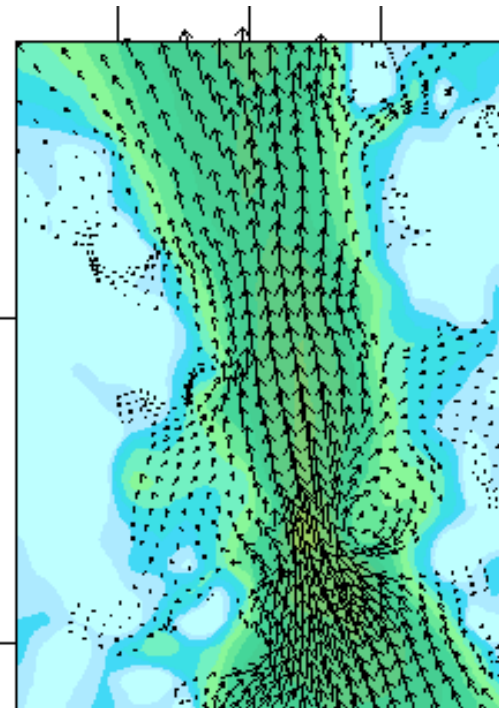
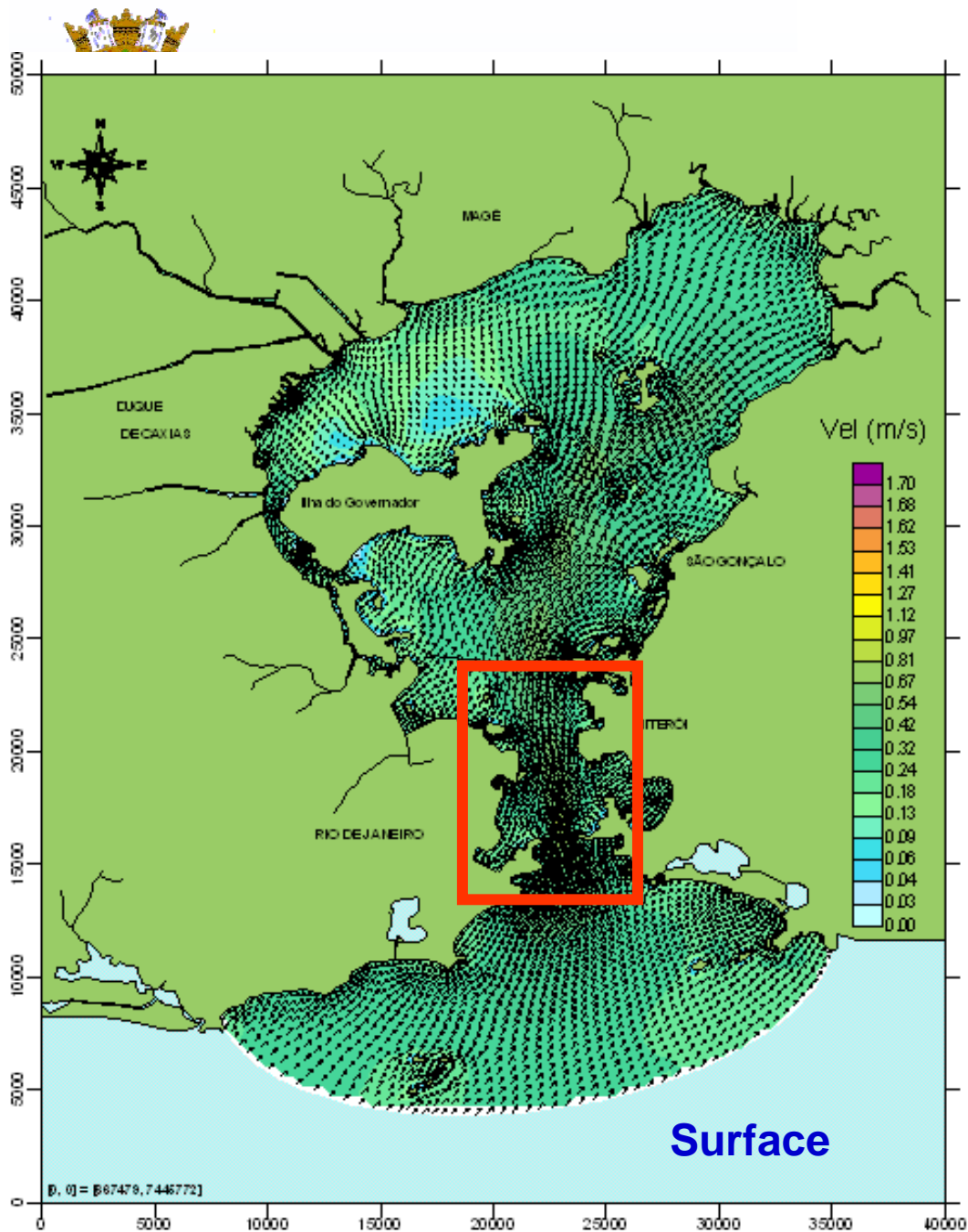
Lista de Constantes Harmônicas Disponíveis

| Constante | Δ | Frequência (grau/h) | Periodo (h) | Amplitude (m) | Correção Fase (grau) | Análise |
|-----------|---|---------------------|-------------|---------------|----------------------|-------------------------------------|
| 2(MN)8 | | 114.8476676 | 3.1345869 | | | <input checked="" type="checkbox"/> |
| 2(MN)K9 | | 129.8887363 | 2.7716029 | | | <input checked="" type="checkbox"/> |
| 2(MS)8 | | 117.9682085 | 3.0516696 | | | <input checked="" type="checkbox"/> |
| 2(MS)K6 | | 87.8860712 | 4.0962122 | | | <input checked="" type="checkbox"/> |
| 2KM(SN)2 | | 30.7086492 | 11.7230816 | | | <input checked="" type="checkbox"/> |
| 2KN2S2 | | 28.6062104 | 12.5846799 | 0.001 | | <input type="checkbox"/> |
| 2M2N09 | | 128.7907030 | 2.7952328 | 0.014 | | <input type="checkbox"/> |
| 2M2NS6 | | 84.8476674 | 4.2428980 | 0.020 | | <input type="checkbox"/> |
| 2MK5 | | 73.0092771 | 4.9308802 | 0.325 | | <input checked="" type="checkbox"/> |
| 2MK6 | | 88.0503458 | 4.0885700 | 0.070 | | <input checked="" type="checkbox"/> |
| 2MKK7 | | 103.0914143 | 3.4920464 | 0.054 | | <input type="checkbox"/> |
| 2MKS4 | | 58.0503457 | 6.2015135 | | | <input checked="" type="checkbox"/> |
| 2MKT4 | | 58.0914124 | 6.1971294 | 0.003 | | <input type="checkbox"/> |
| 2MN2S2 | | 26.4079381 | 13.6322646 | | | <input checked="" type="checkbox"/> |
| 2MN6 | | 86.4079380 | 4.1662839 | 0.108 | | <input checked="" type="checkbox"/> |
| 2MNK7 | | 101.4490065 | 3.5485808 | 0.084 | | <input type="checkbox"/> |
| 2MNK8 | | 116.4900753 | 3.0903920 | | | <input checked="" type="checkbox"/> |
| 2MNO7 | | 100.3509737 | 3.5874091 | | | <input checked="" type="checkbox"/> |
| 2MNS4 | | 56.4079380 | 6.3820805 | | | <input checked="" type="checkbox"/> |
| 2MNSK10 | | 146.4900753 | 2.4575044 | | | <input checked="" type="checkbox"/> |
| 2M05 | | 71.9112441 | 5.0061712 | 0.233 | | <input checked="" type="checkbox"/> |
| 2MP3 | | 43.0092770 | 8.3702872 | 0.109 | | <input type="checkbox"/> |
| 2MP5 | | 72.9271398 | 4.9364338 | | | <input checked="" type="checkbox"/> |
| 2MQ3 | | 44.5695475 | 8.0772640 | 0.044 | | <input type="checkbox"/> |
| 2MS2K2 | | 27.8039339 | 12.9478081 | | | <input checked="" type="checkbox"/> |
| 2MS2N2 | | 31.0887493 | 11.5797518 | | | <input checked="" type="checkbox"/> |
| 2MS6 | | 87.9682085 | 4.0923875 | 0.261 | | <input checked="" type="checkbox"/> |
| 2MSK4 | | 57.8860712 | 6.2191127 | | | <input checked="" type="checkbox"/> |
| 2MSK8 | | 118.0503458 | 3.0495463 | | | <input checked="" type="checkbox"/> |
| 2MSN8 | | 116.4079381 | 3.0925726 | | | <input checked="" type="checkbox"/> |
| 2MSNK6 | | 86.3258006 | 4.1702480 | 0.026 | | <input type="checkbox"/> |
| 2MSP7 | | 102.9271437 | 3.4976196 | 0.069 | | <input type="checkbox"/> |
| 2MST4 | | 58.0092751 | 6.2059041 | 0.013 | | <input type="checkbox"/> |
| 2MTS4 | | 57.9271417 | 6.2147033 | 0.013 | | <input type="checkbox"/> |
| 2Mv6 | | 86.4907915 | 4.1622928 | 0.020 | | <input type="checkbox"/> |
| 2N2 | | 27.8953549 | 12.9053744 | 0.023 | 0.000 | <input checked="" type="checkbox"/> |



BAÍA DE GUANABARA





**1 level
below
surface**

**8 levels
below
surface**

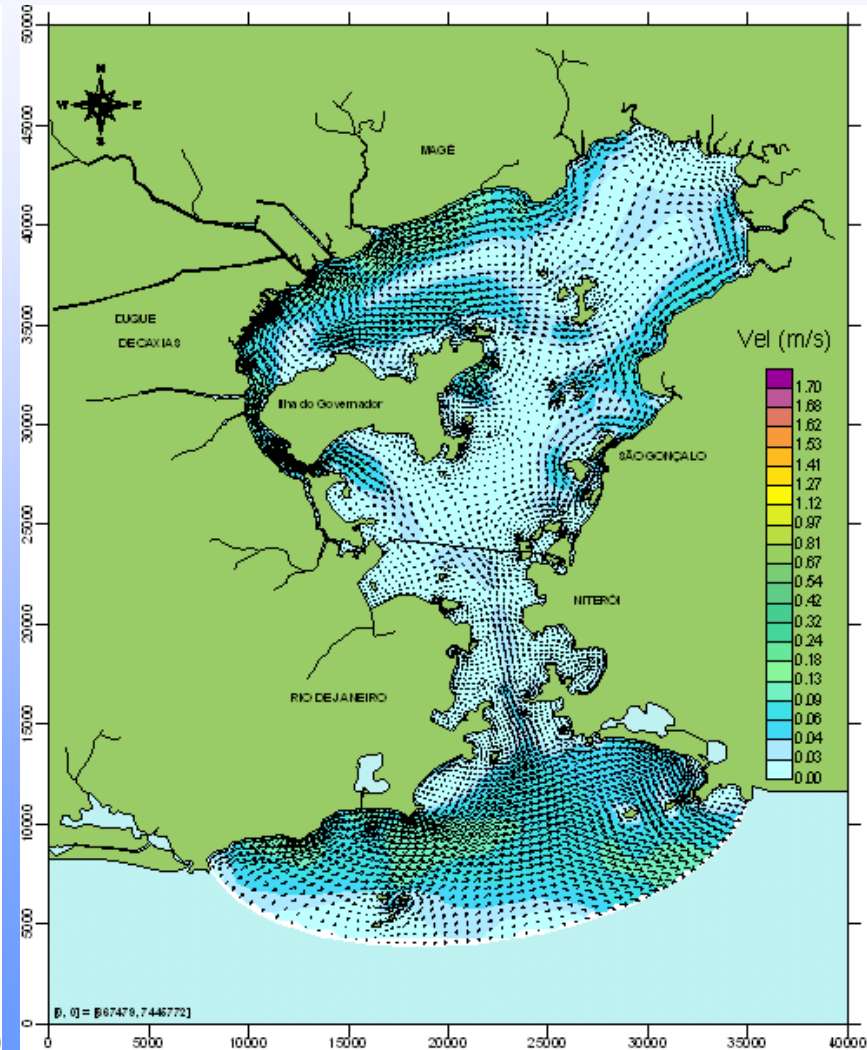
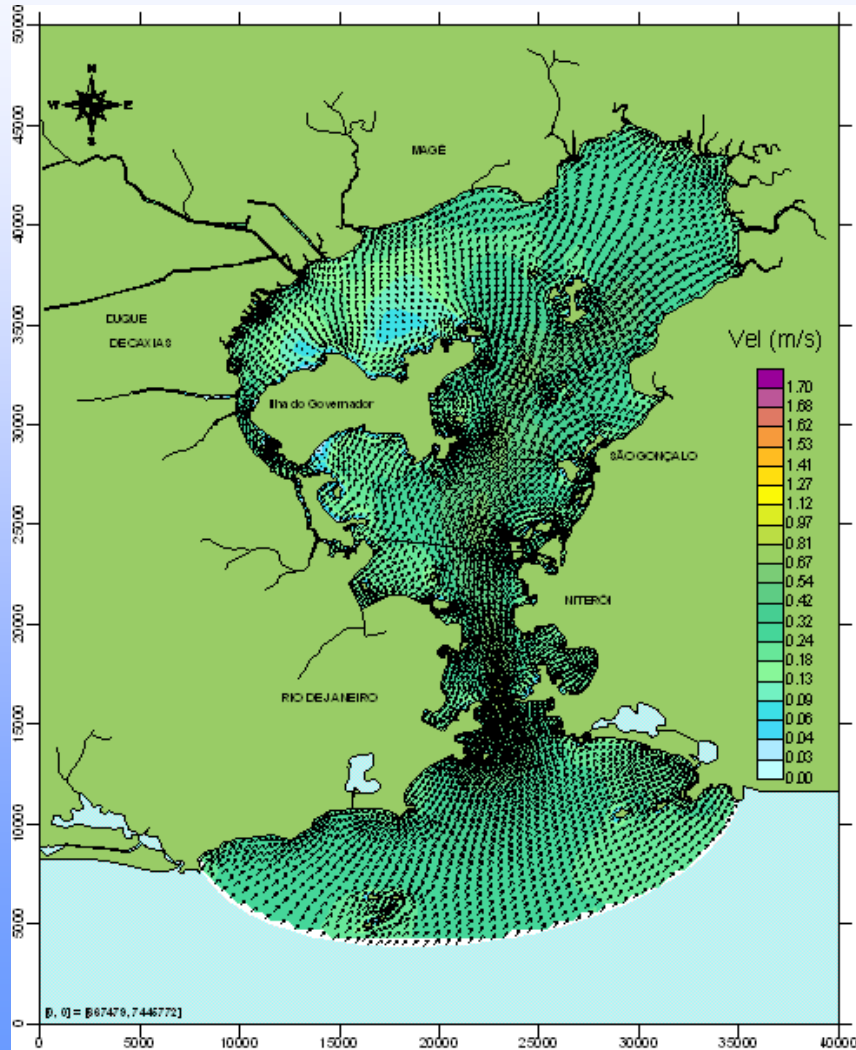


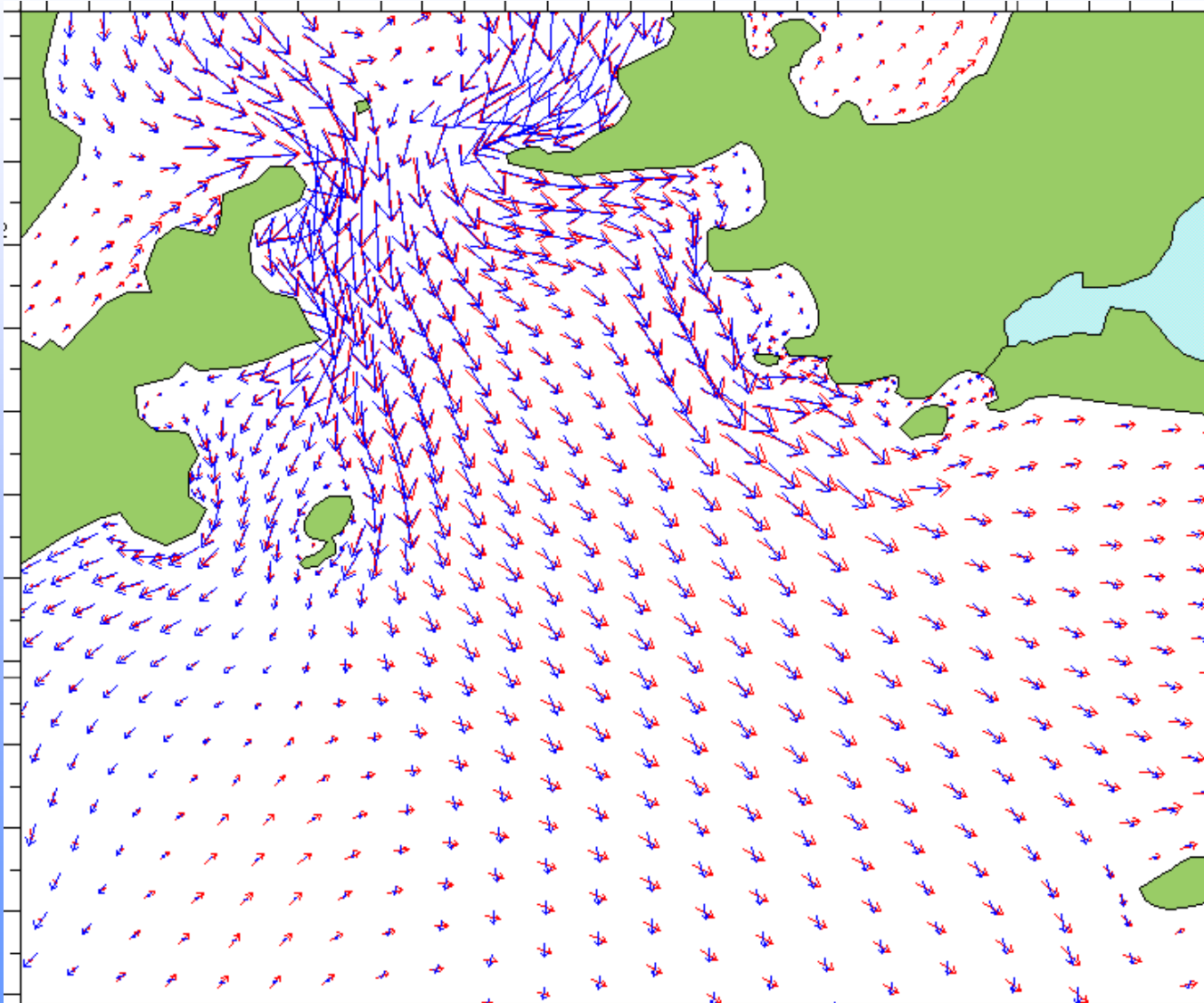
SW winds



spring

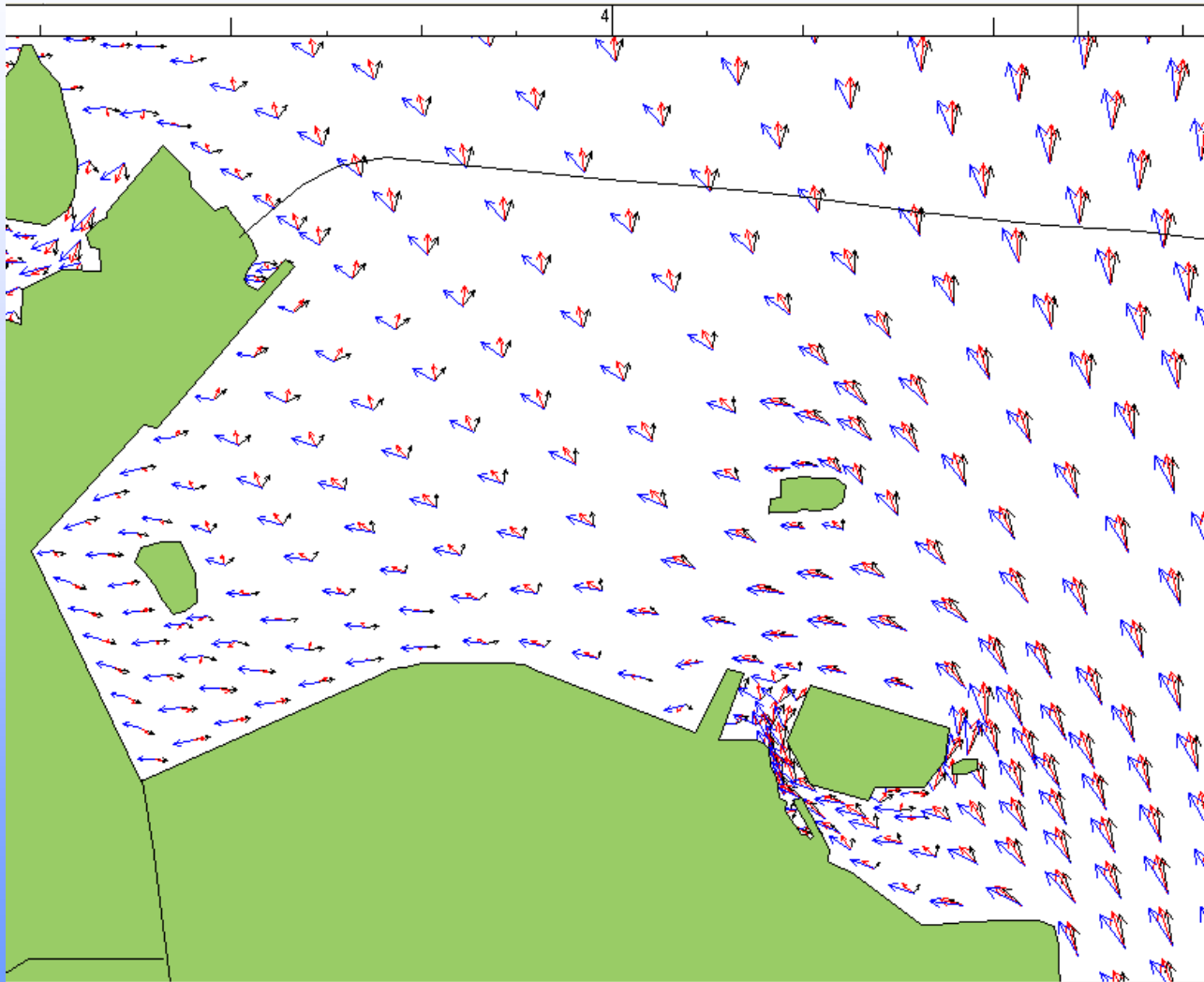
neap





No wind

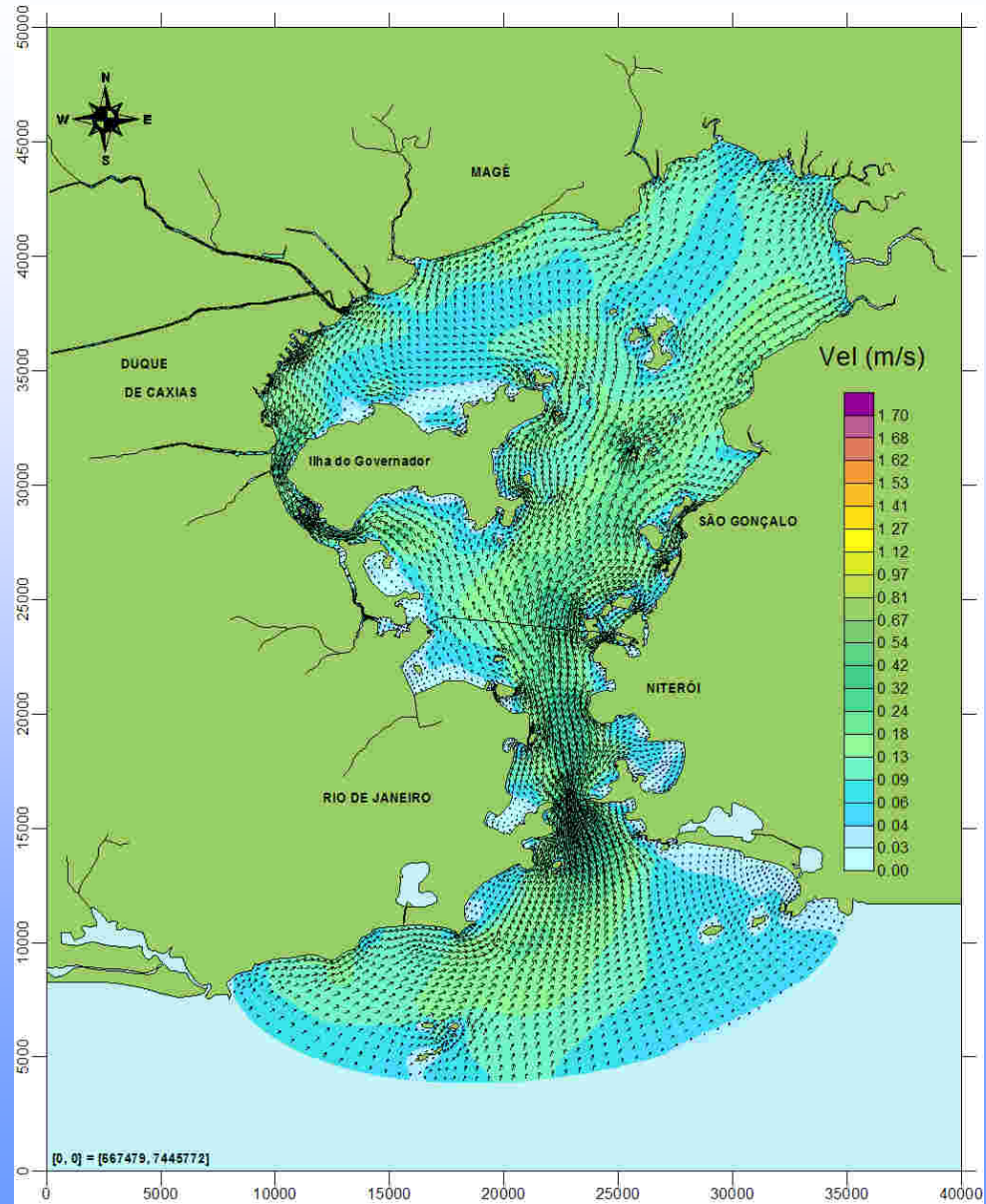
SW wind 15'



level 1

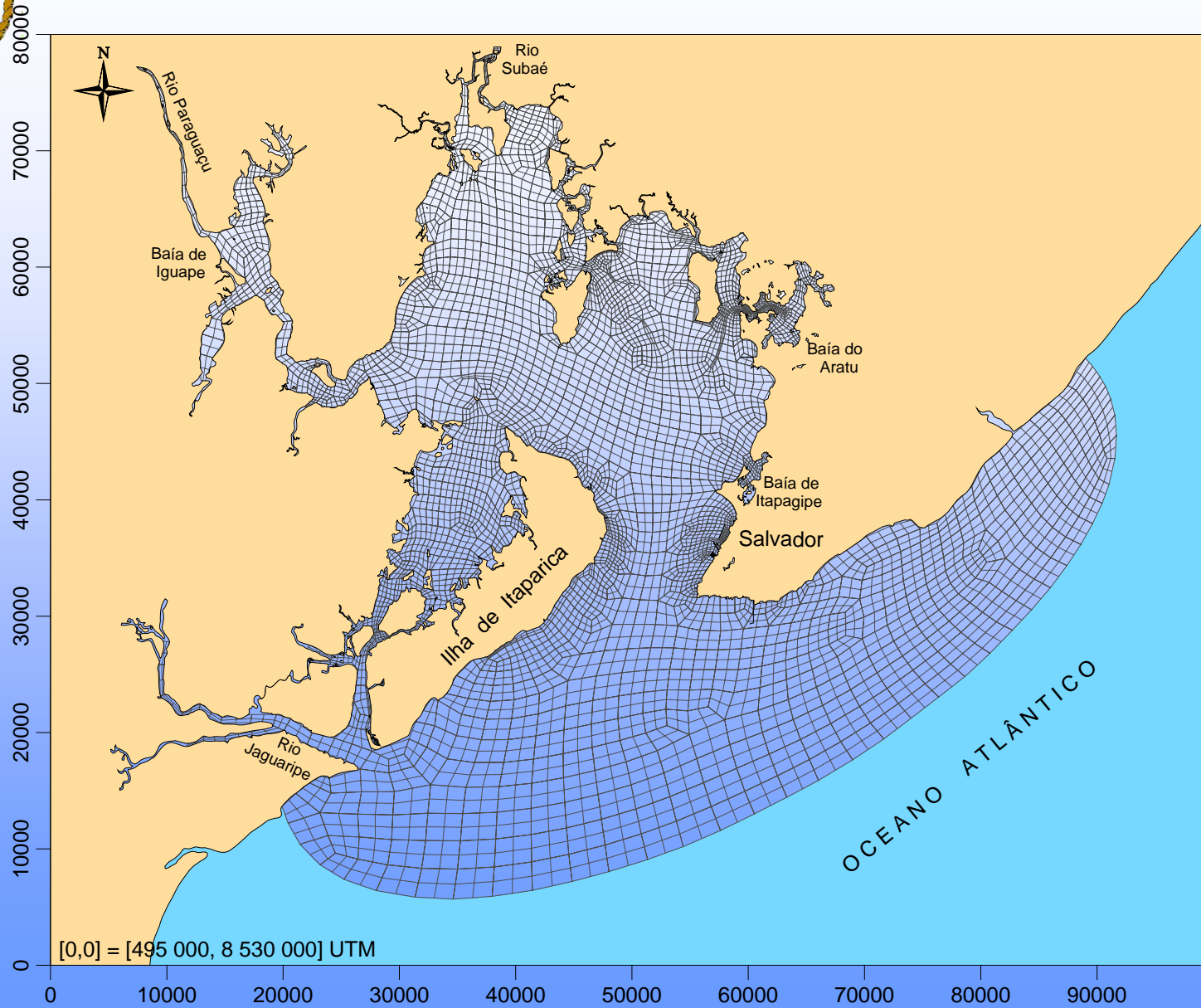
level 4

level 8



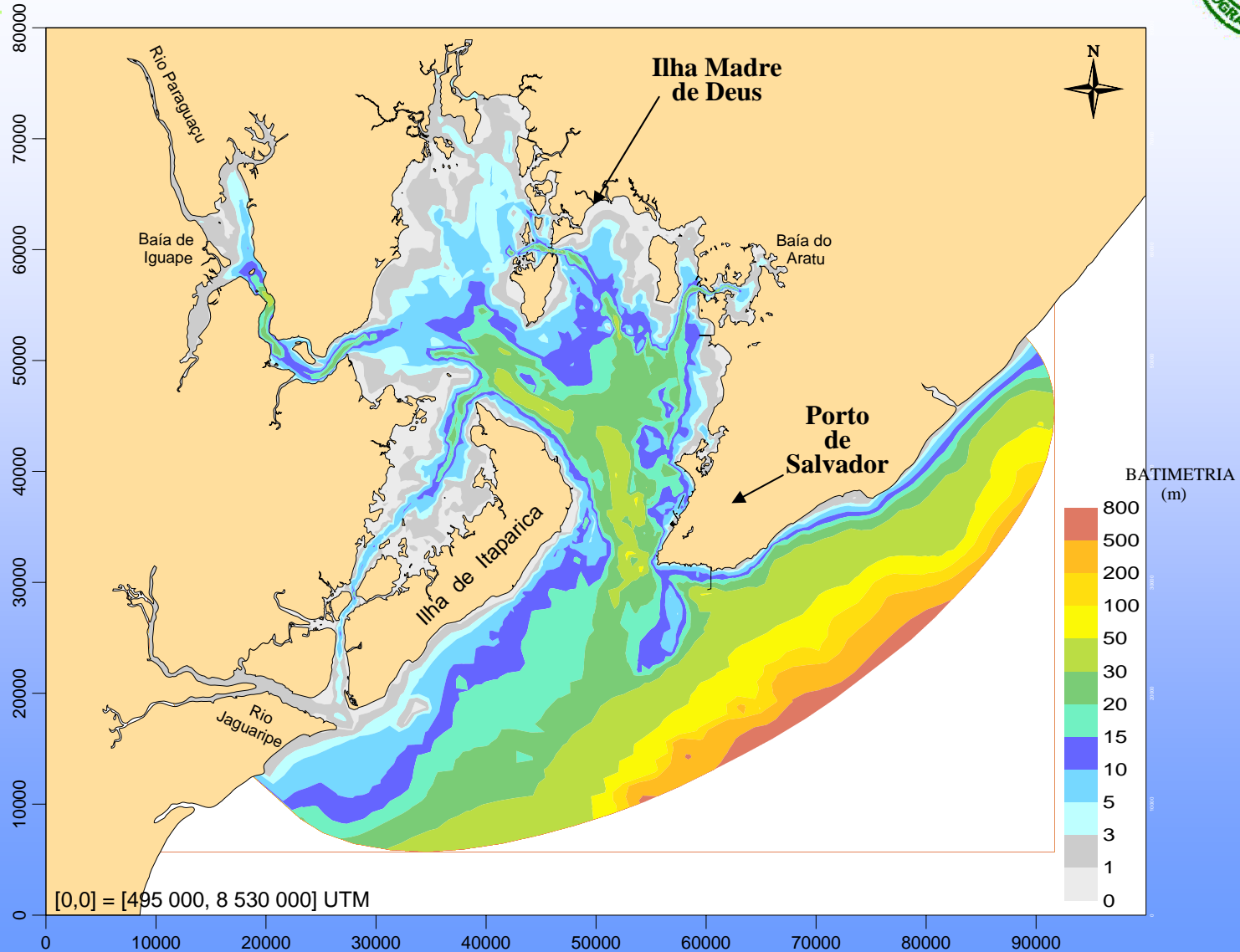


SALVADOR



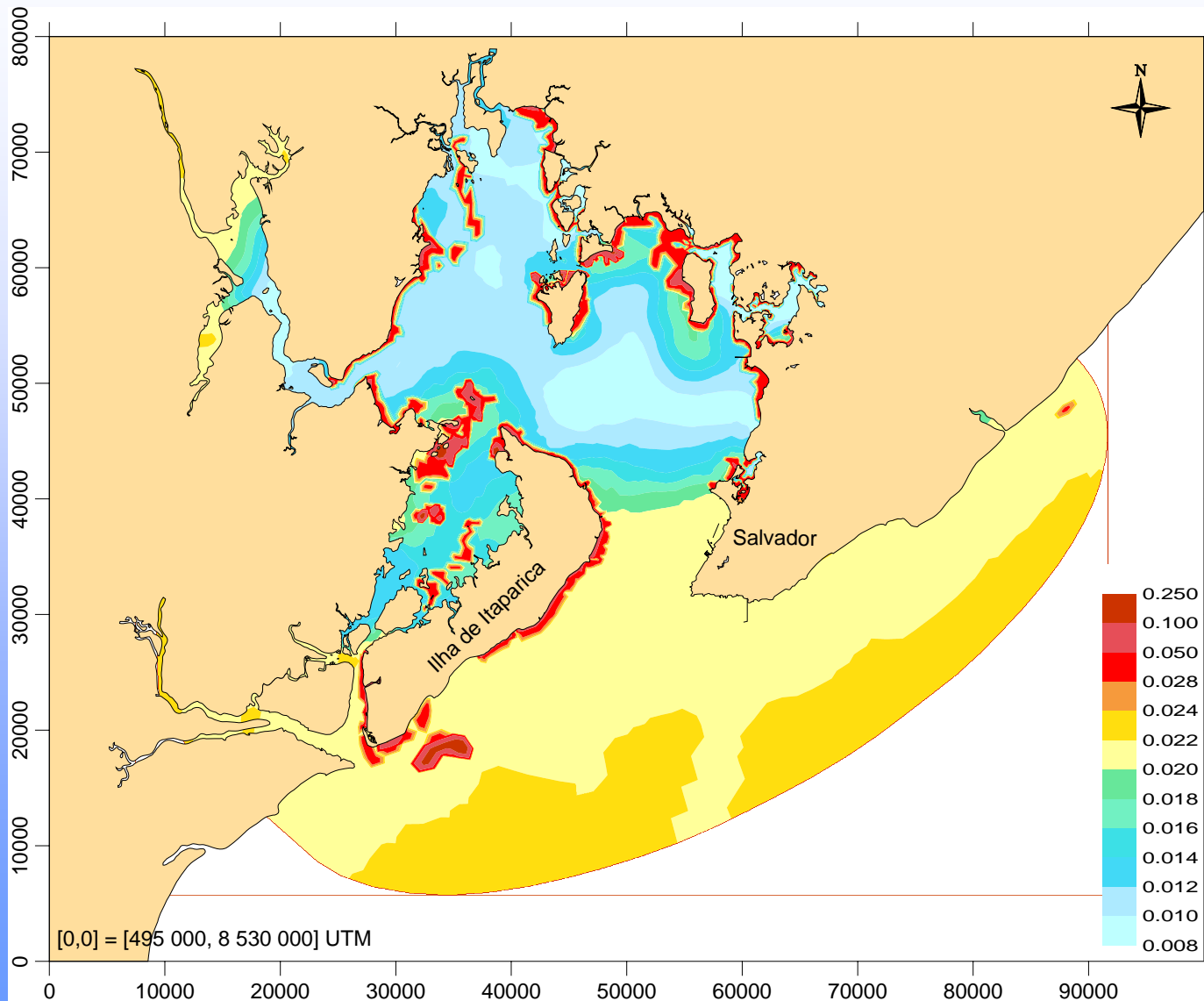


Bathymetry

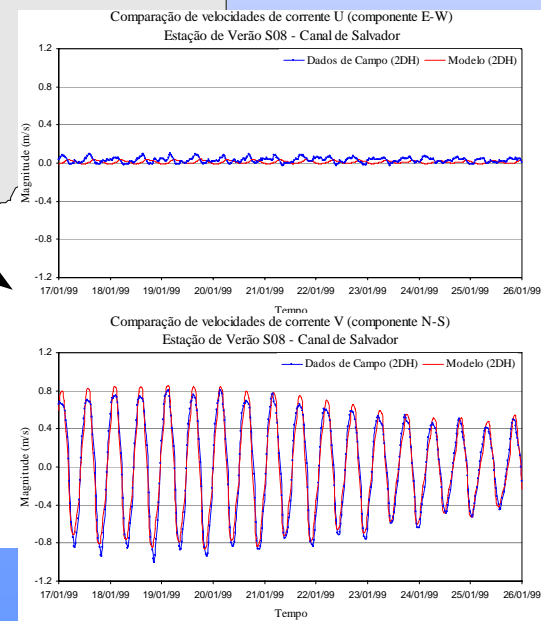
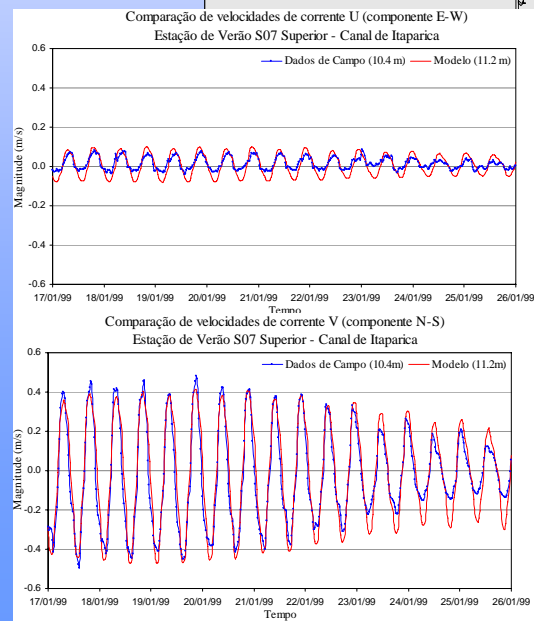
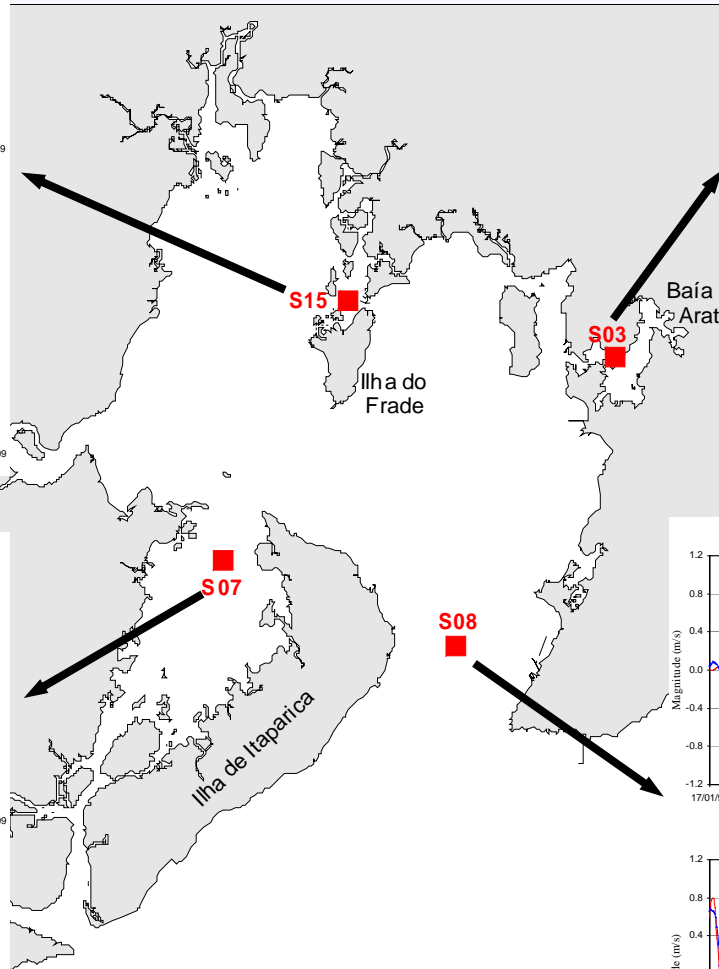
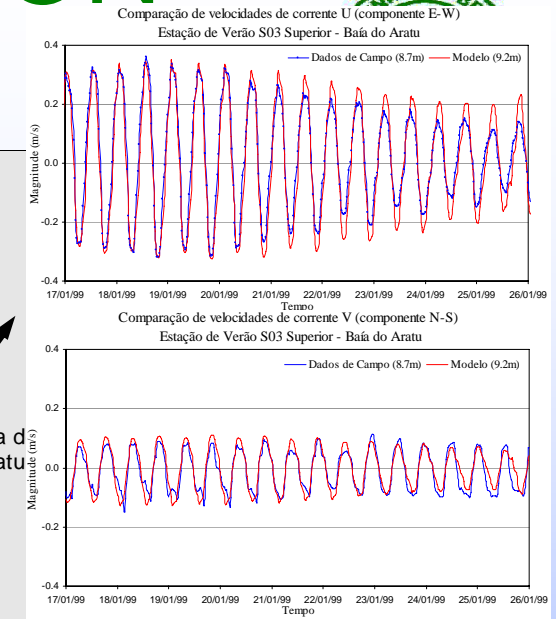
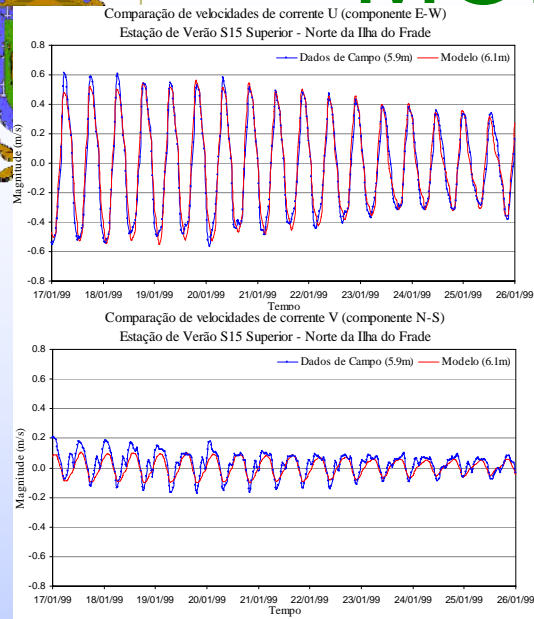
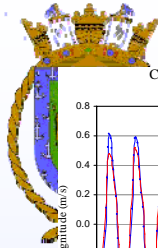




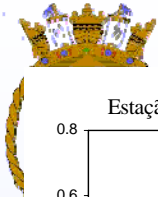
Bottom Roughness



MODEL VALIDATION

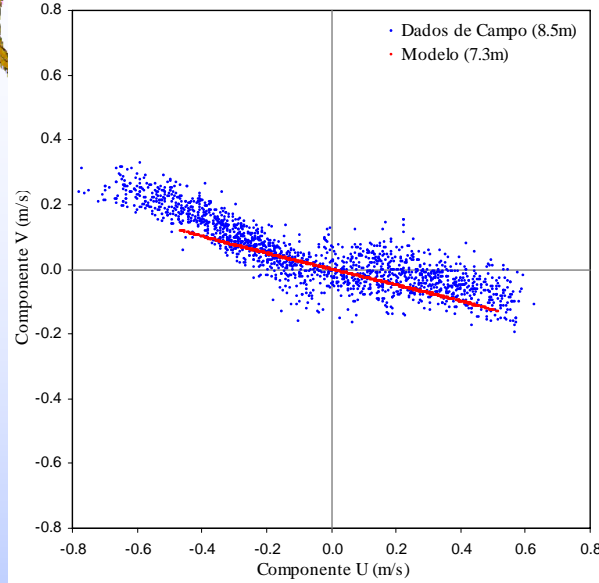


MODEL VALIDATION



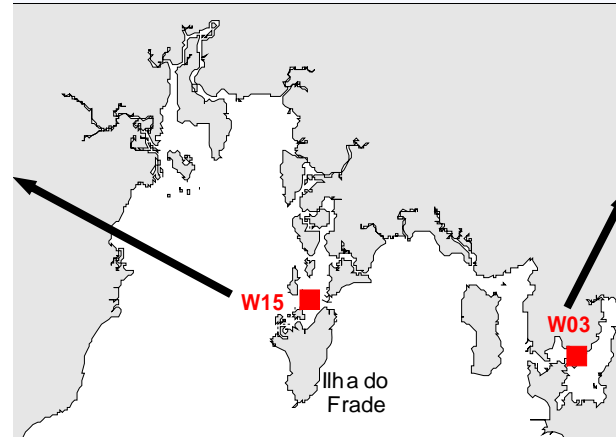
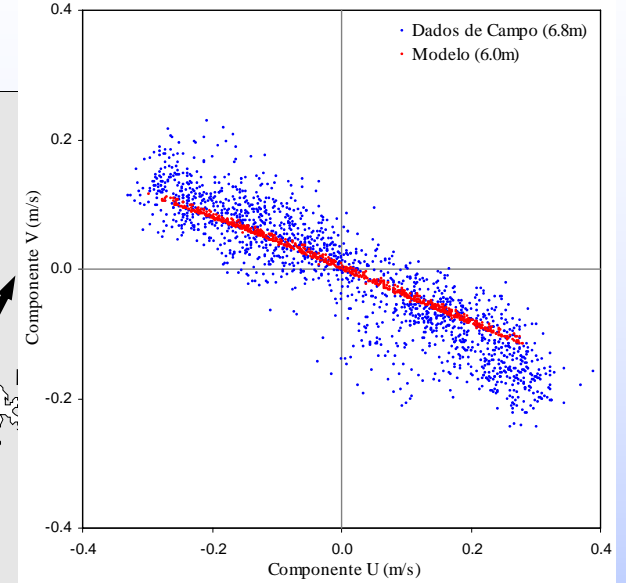
Elipses de Correntes

Estação de Inverno W15 Superior - Norte Ilha do Frade



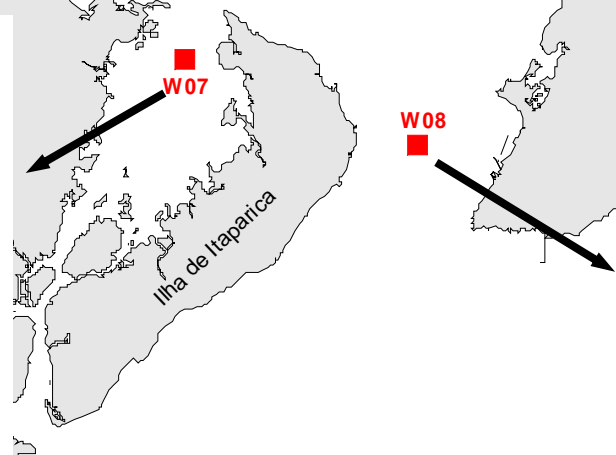
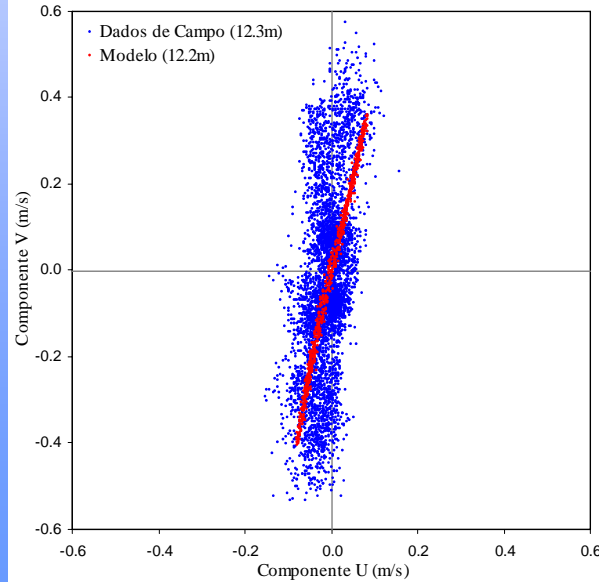
Elipses de Correntes

Estação de Inverno W03 Superior - Baía do Aratu



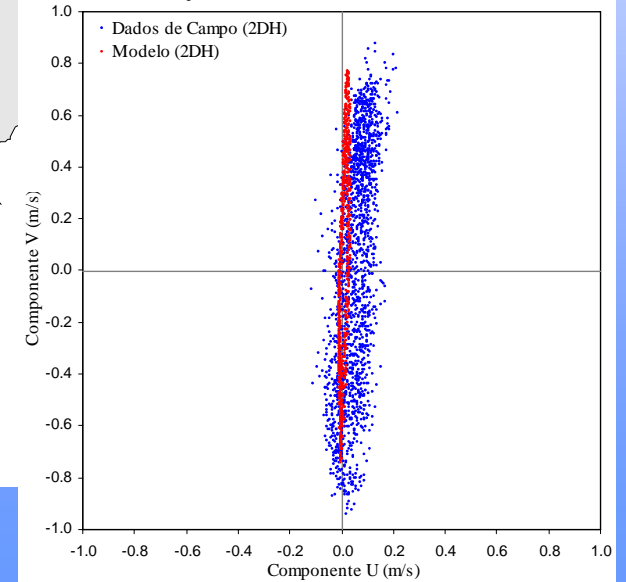
Elipses de Correntes

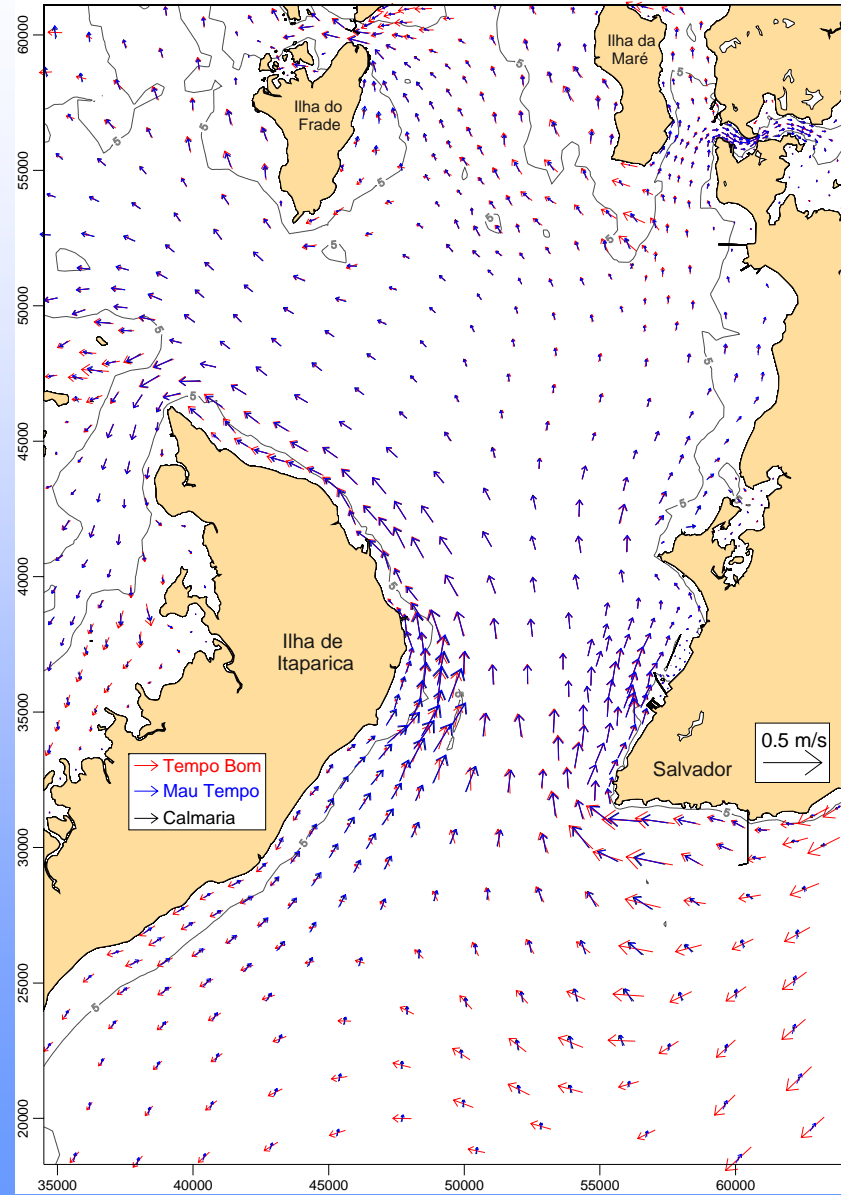
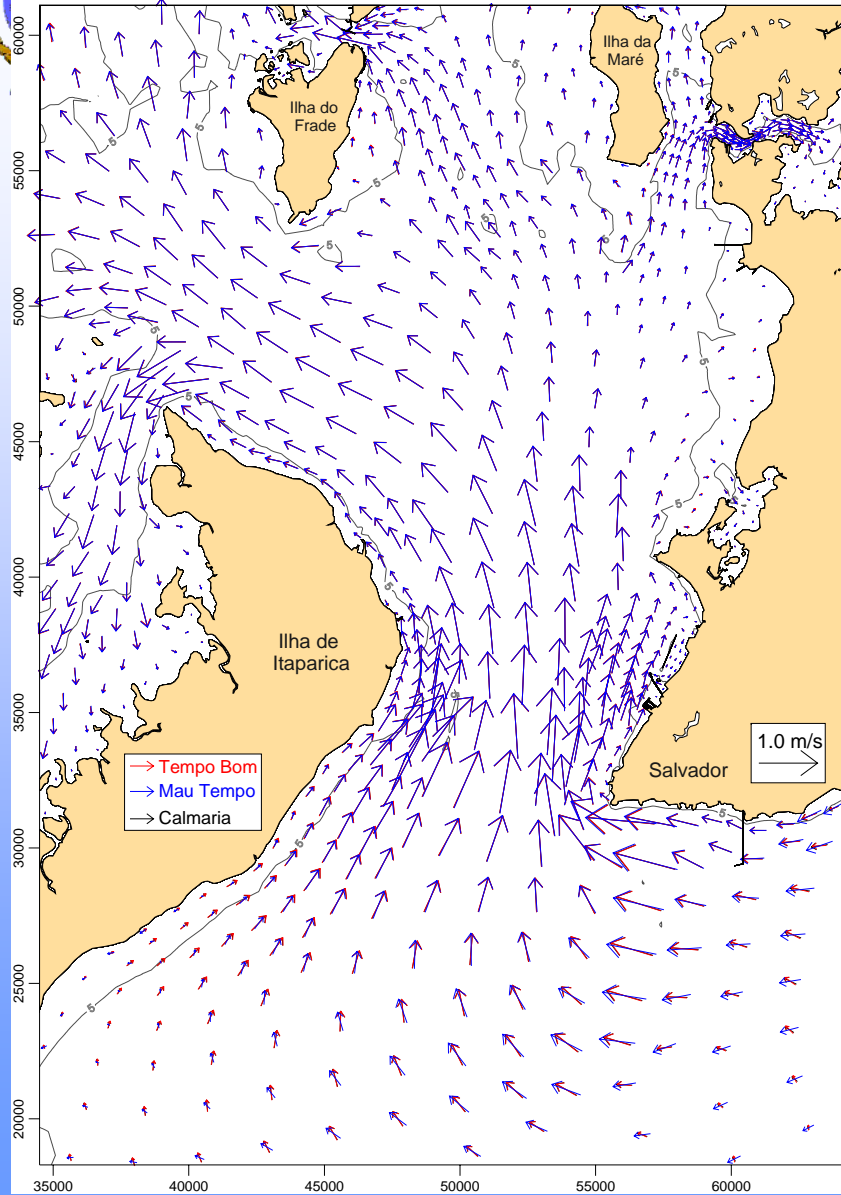
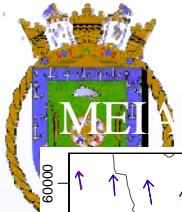
Estação de Inverno W07 Superior - Canal de Itaparica

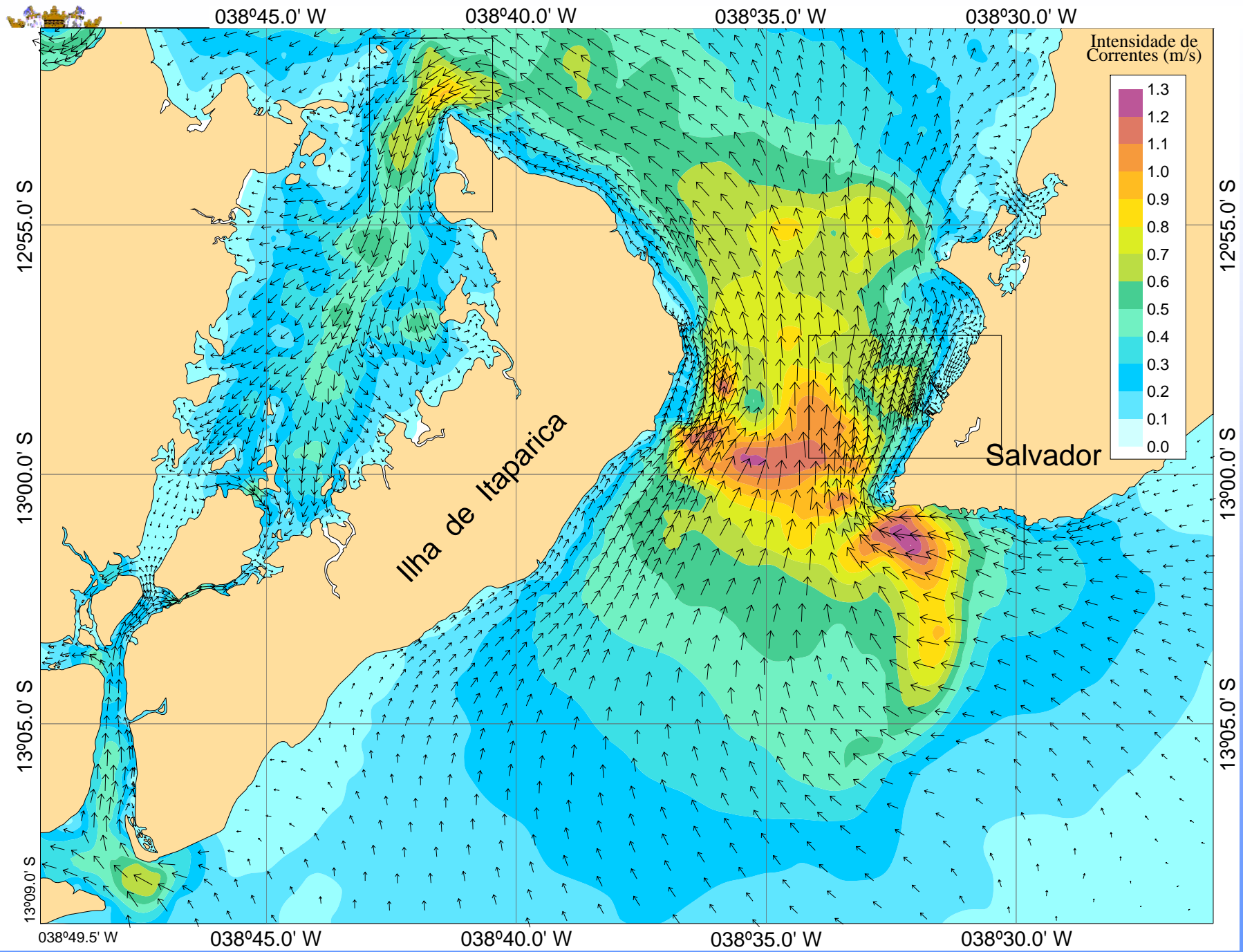


Elipses de Correntes

Estação de Inverno W08 - Canal de Salvador

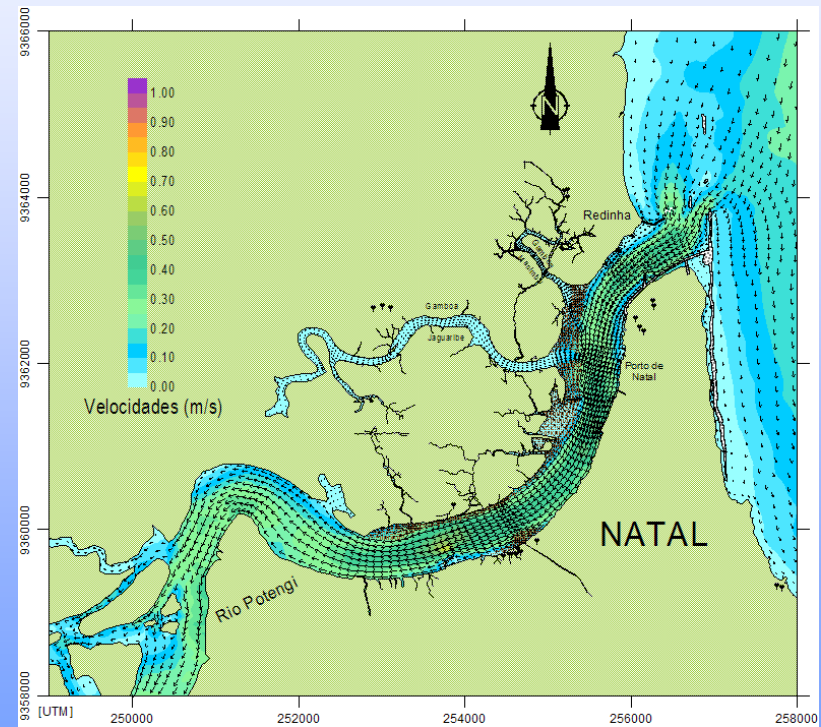
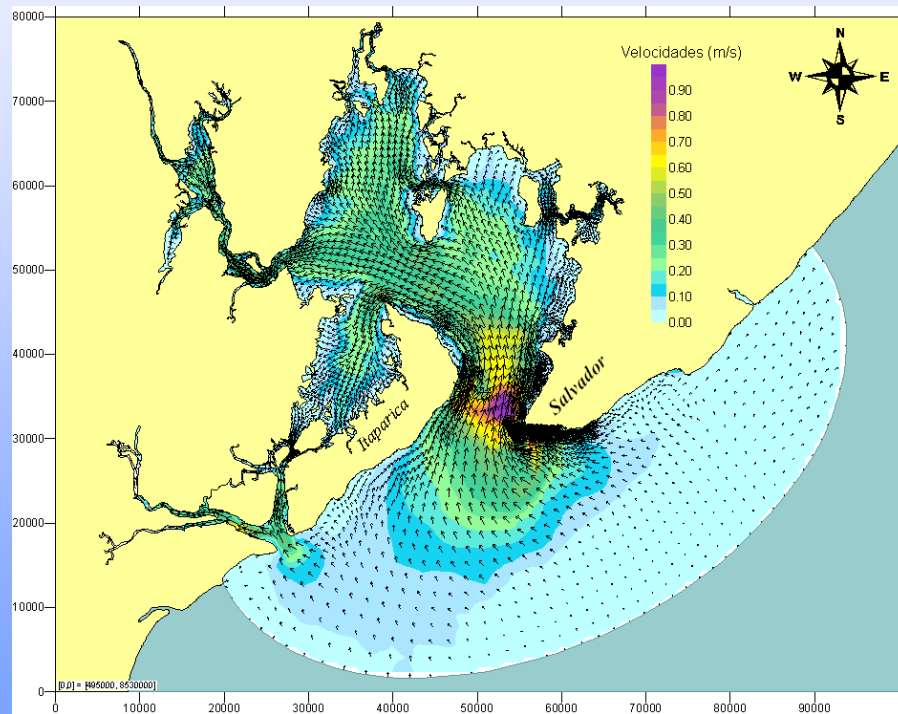






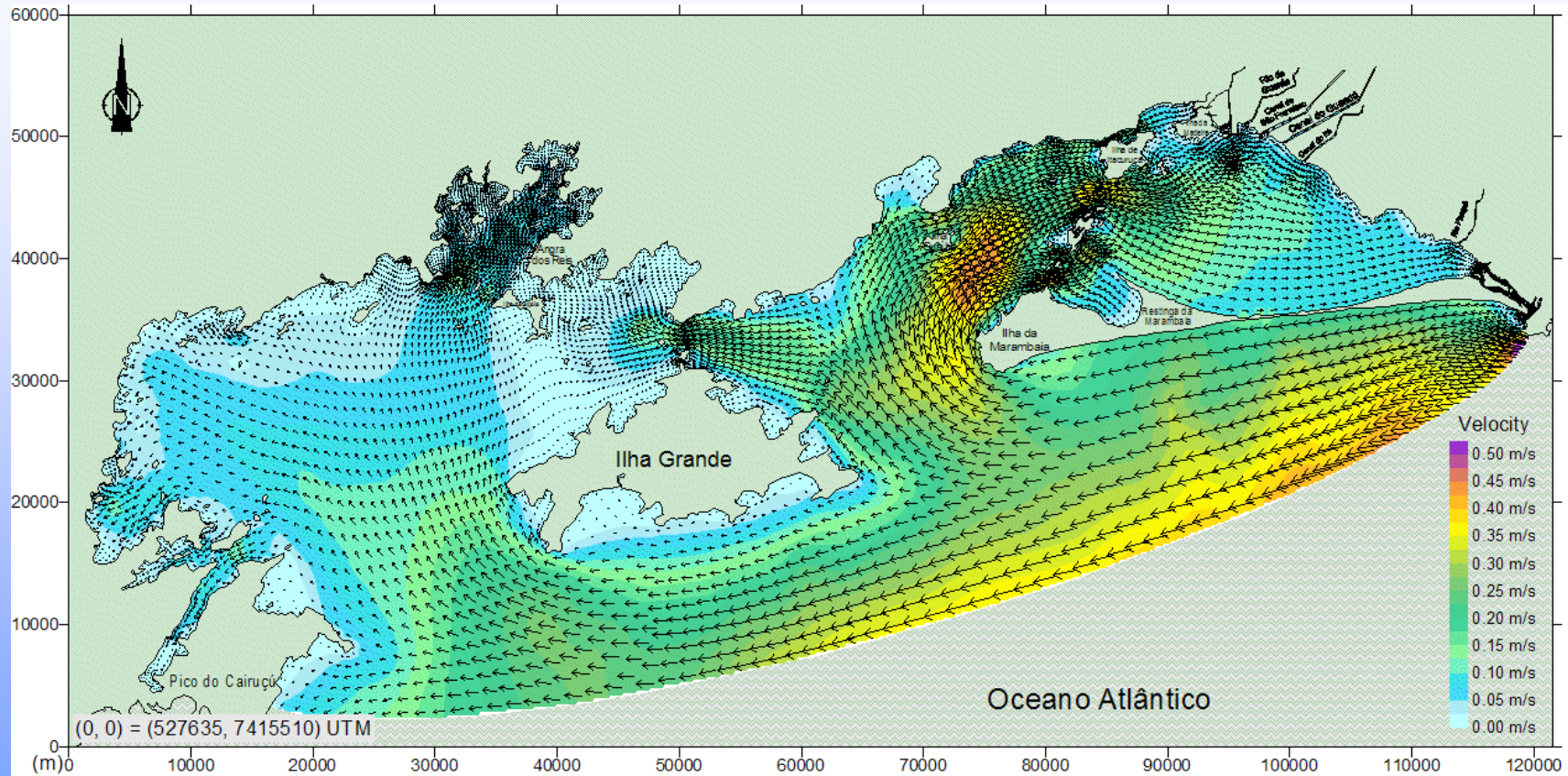


Future Work



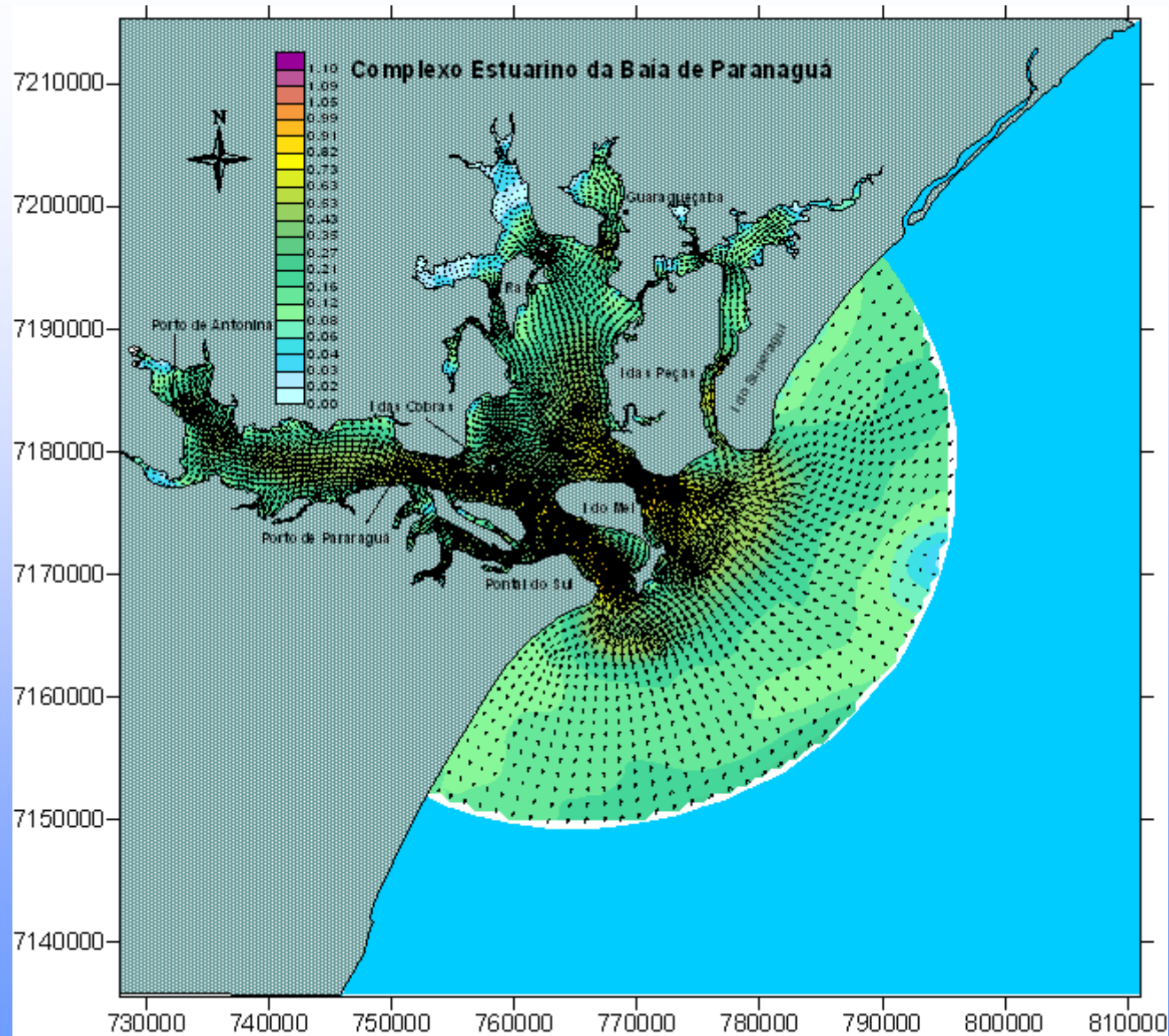


Future Work



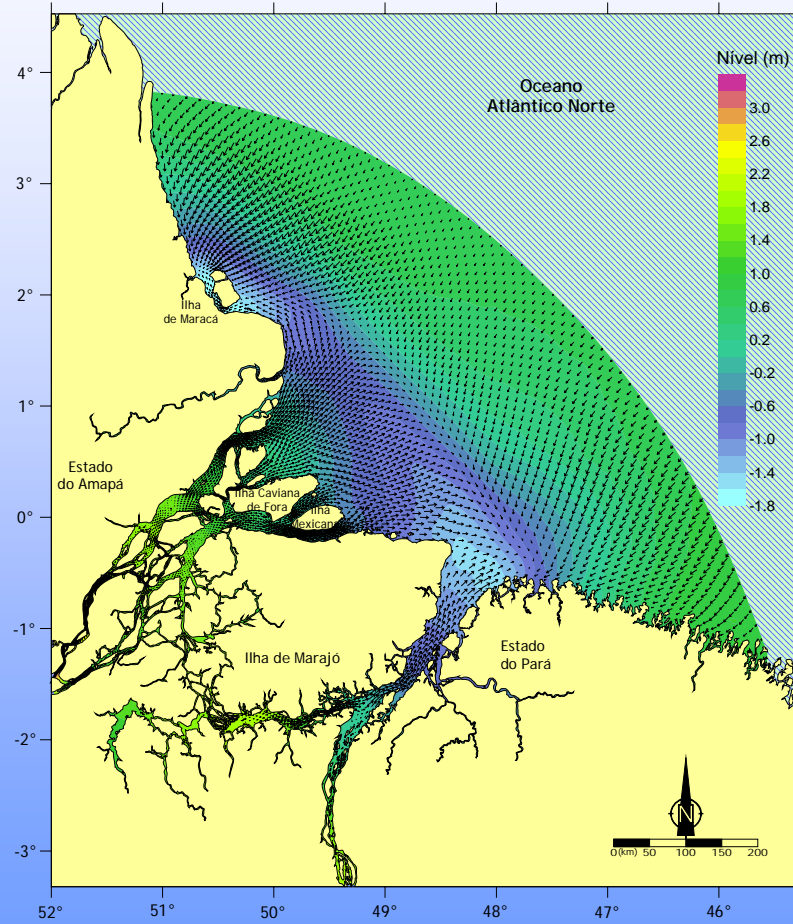
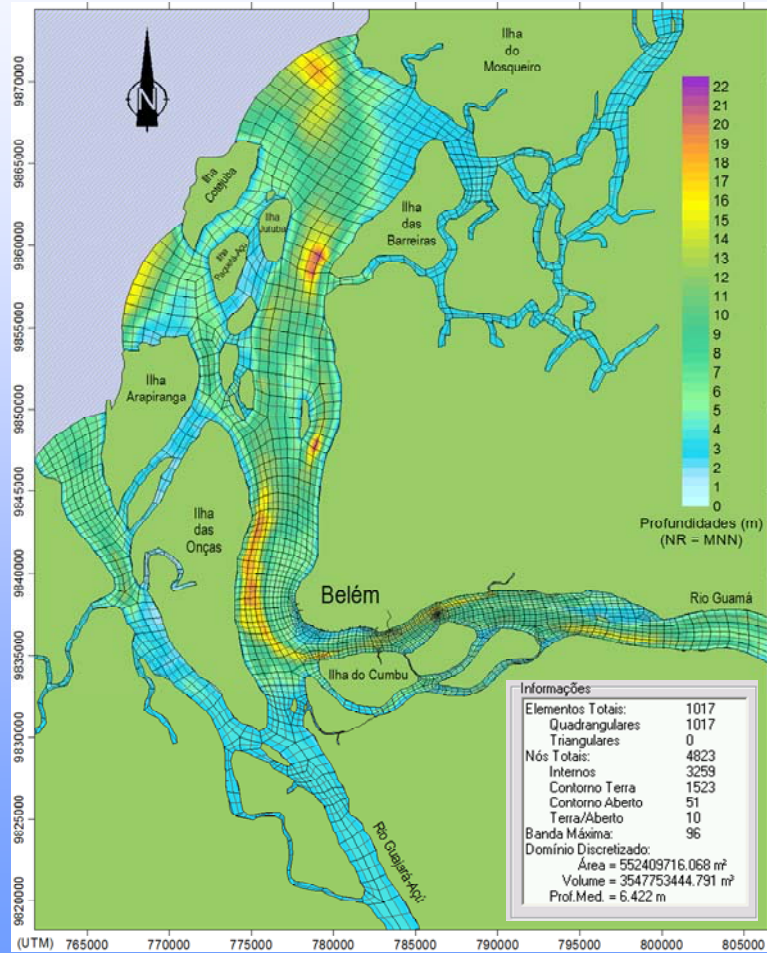


Future Work





Future Work





Future Work



→ Take part of a
real time
monitoring system





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