



Universidade Federal do Ceará

Modelagem epidemiológica do COVID19 para o Estado do Ceará empregando o modelo SEIIR

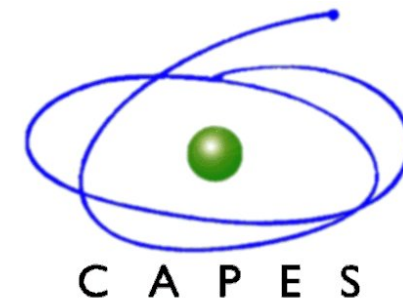
Equipe Cientista-Chefe de Dados (UFC & CAPP-IPECE):

José Soares de Andrade (UFC-Física)

Humberto Carmona (UFC-Física)

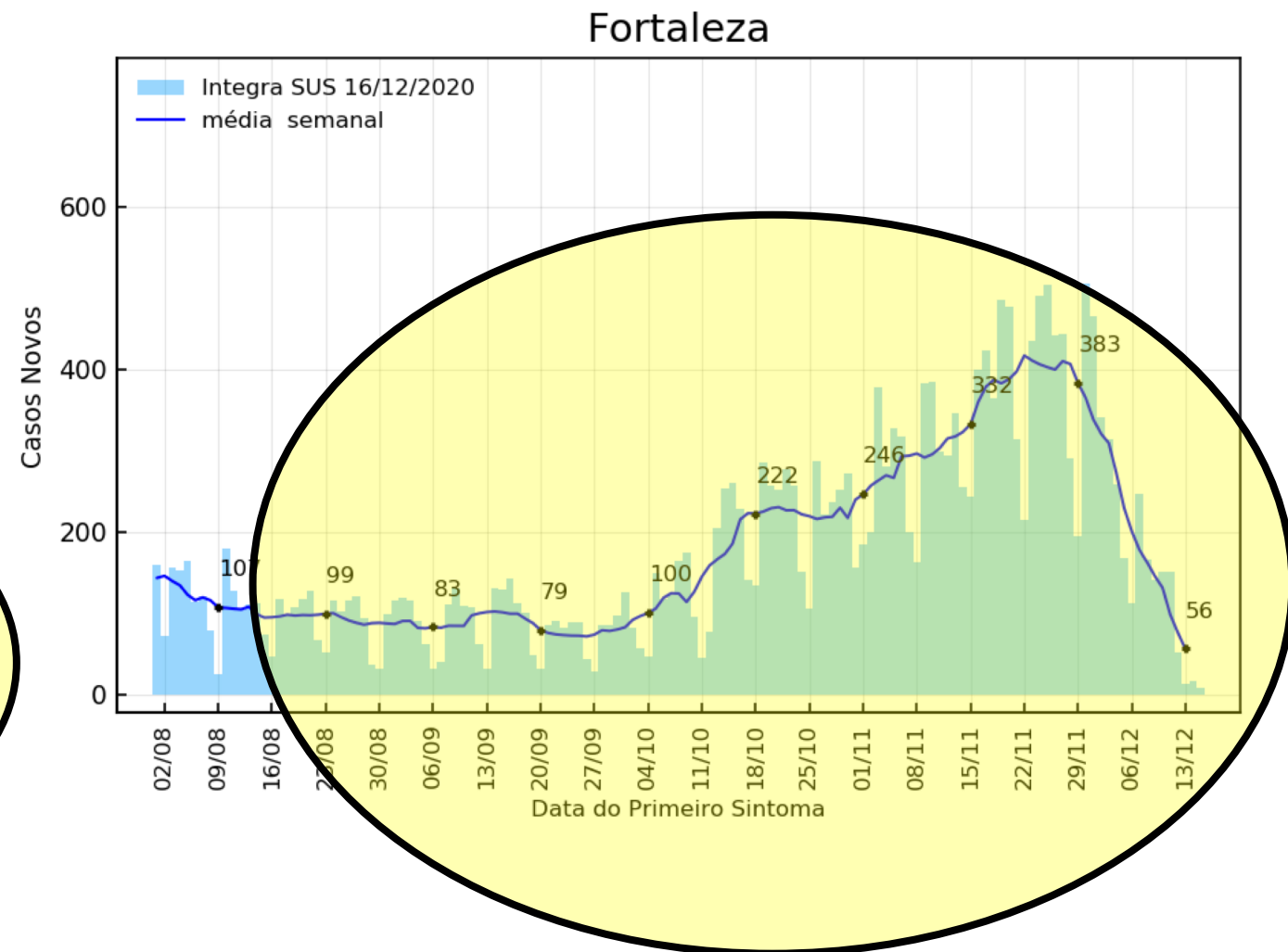
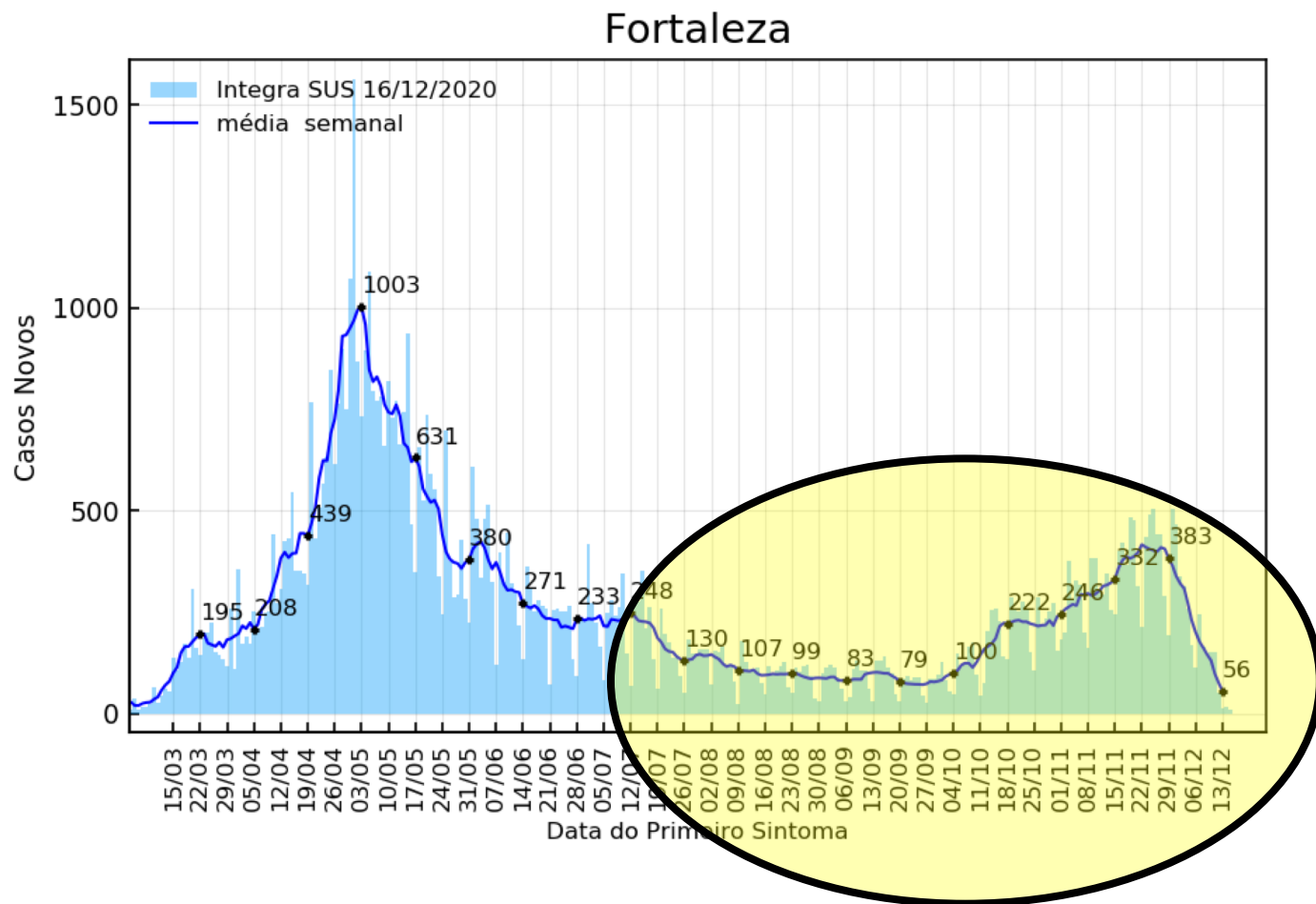
Rilder Pires (CAPP-IPECE-SEPLAG)

Saulo Reis (UFC-Física)



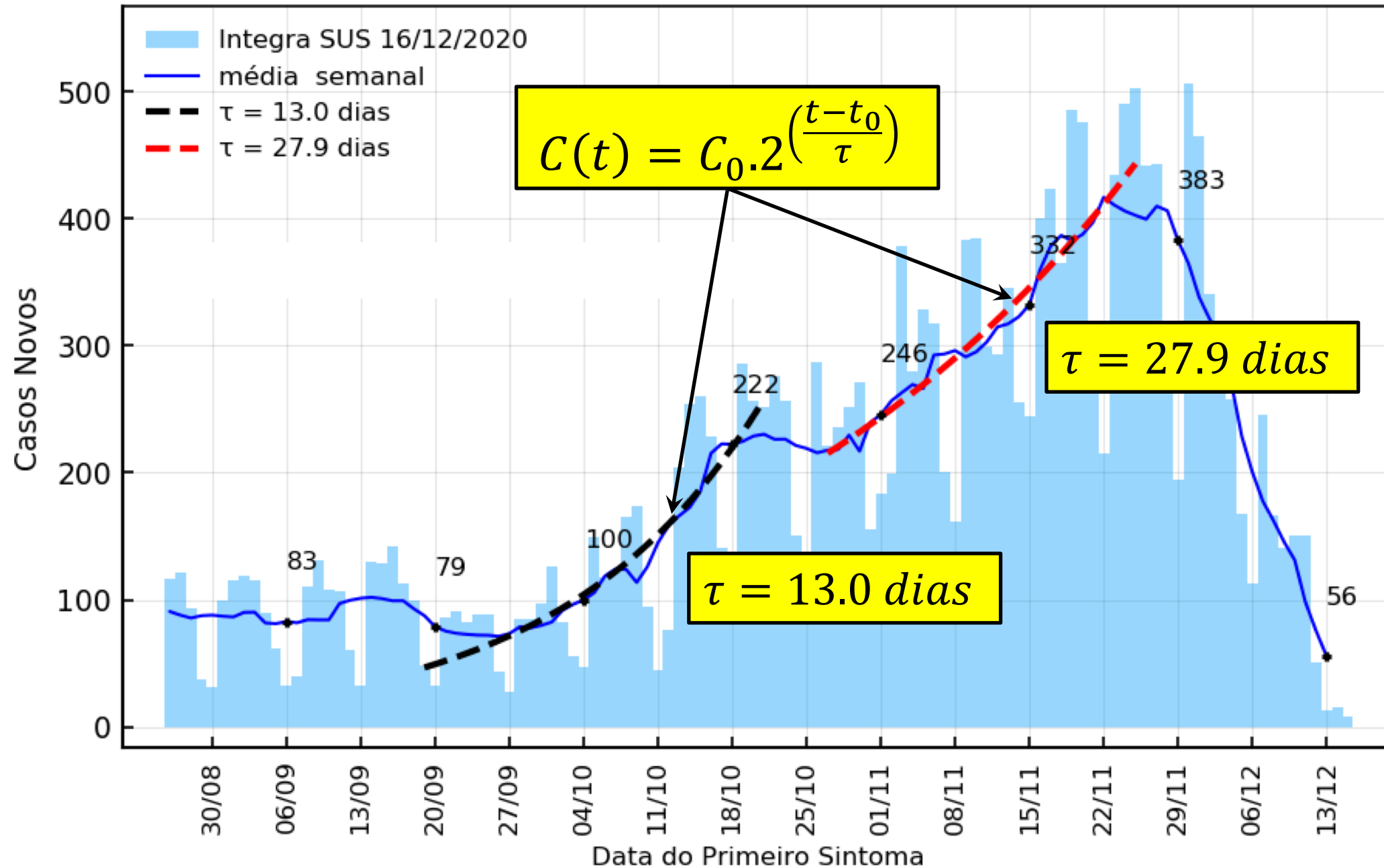
Fortaleza (capital)

Dados atualizados em 16/12/2020

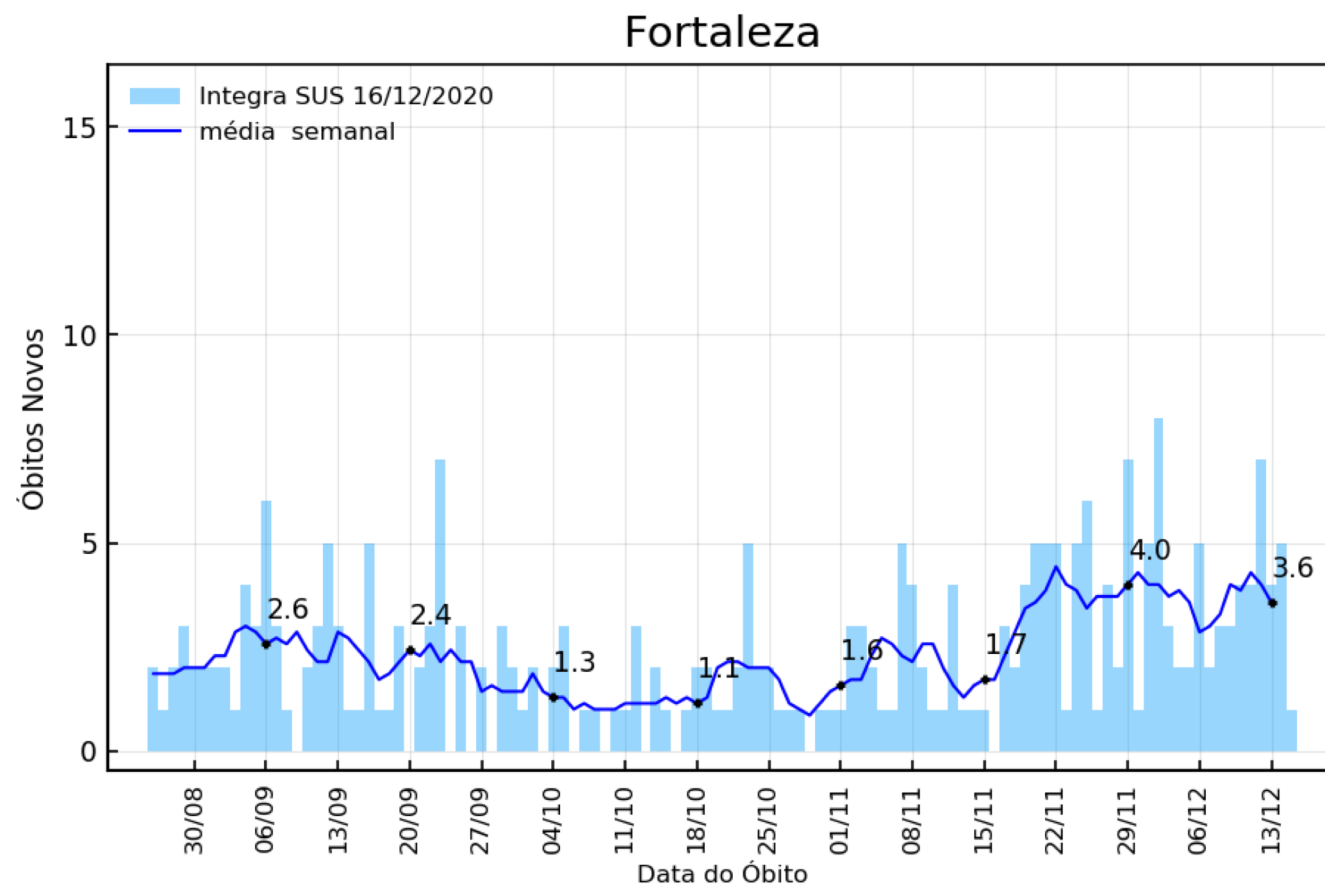
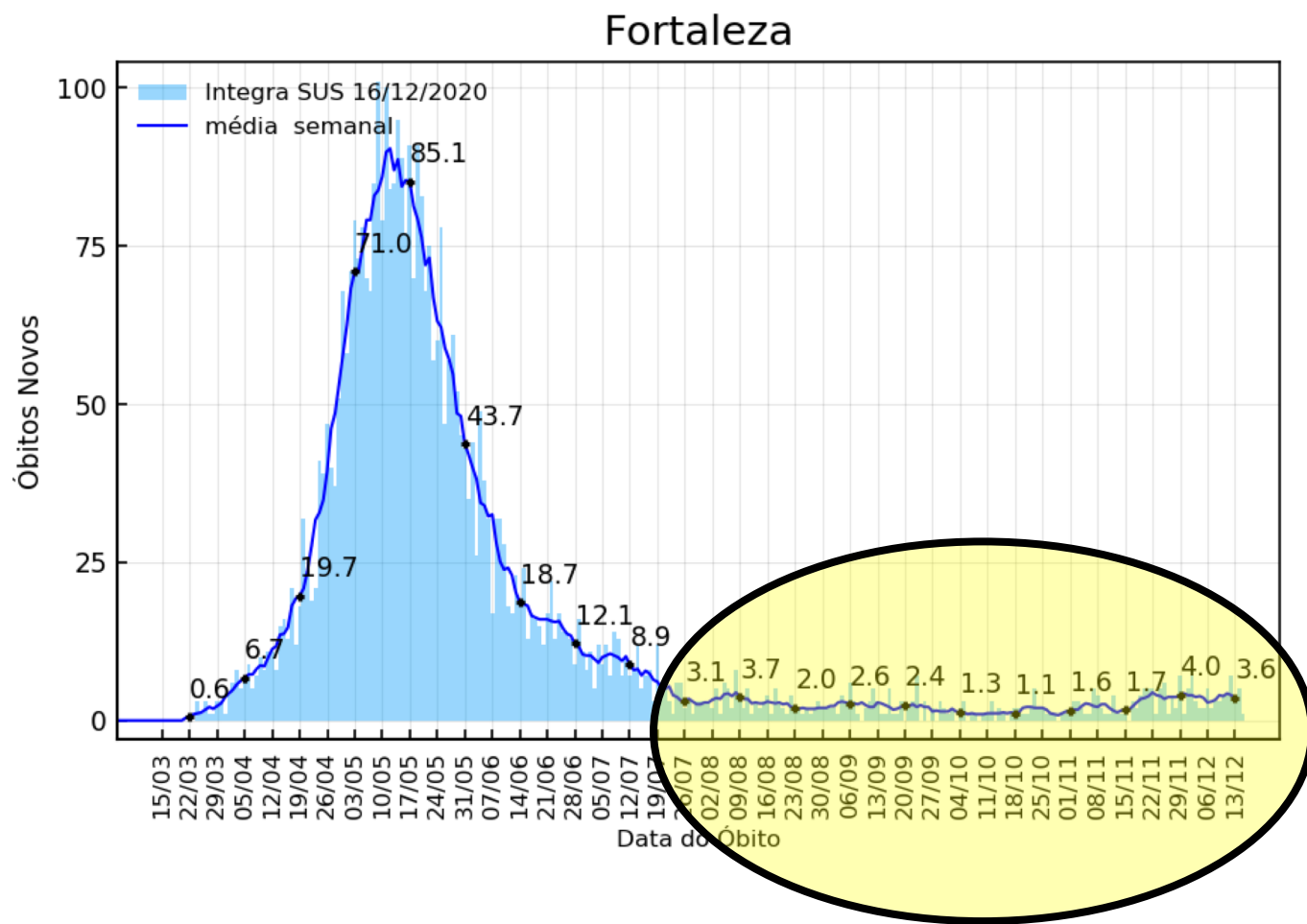


Tempo Característico de Duplicação de Casos (τ)

Fortaleza

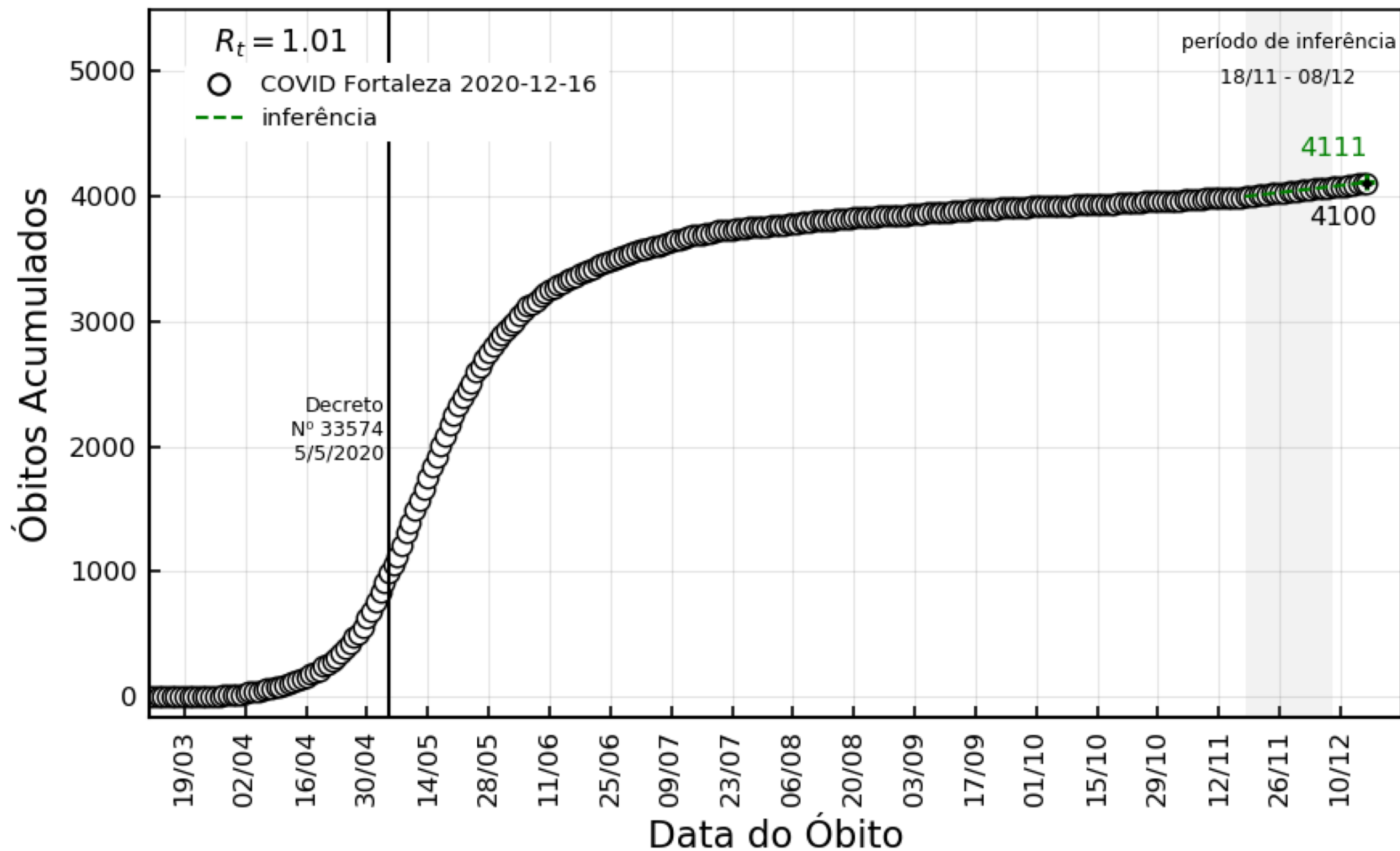


Dados atualizados em 16/12/2020



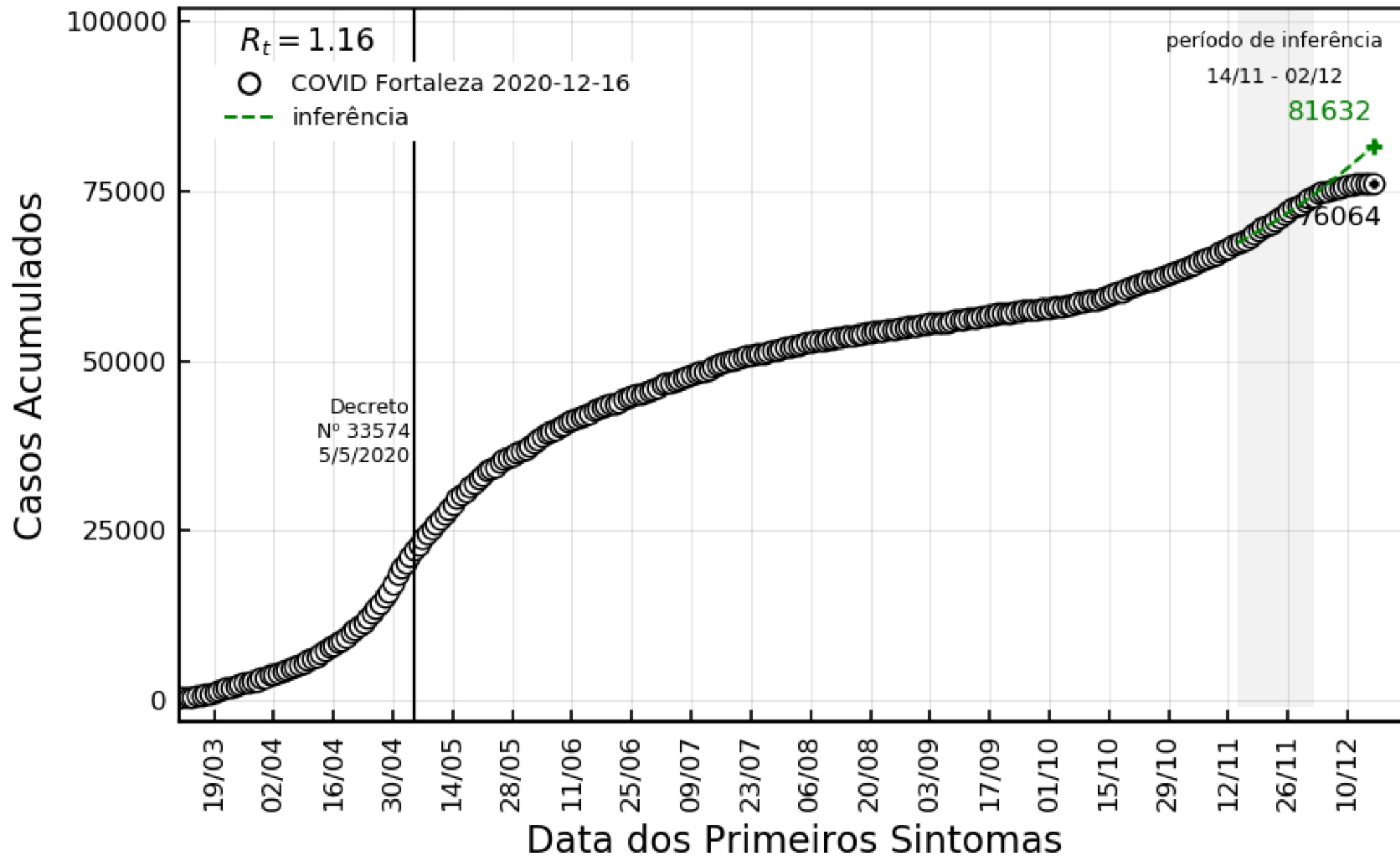
Inferência com Óbitos 16/12/2020

Fortaleza



Inferência com Casos Acumulados 16/12/2020

Fortaleza



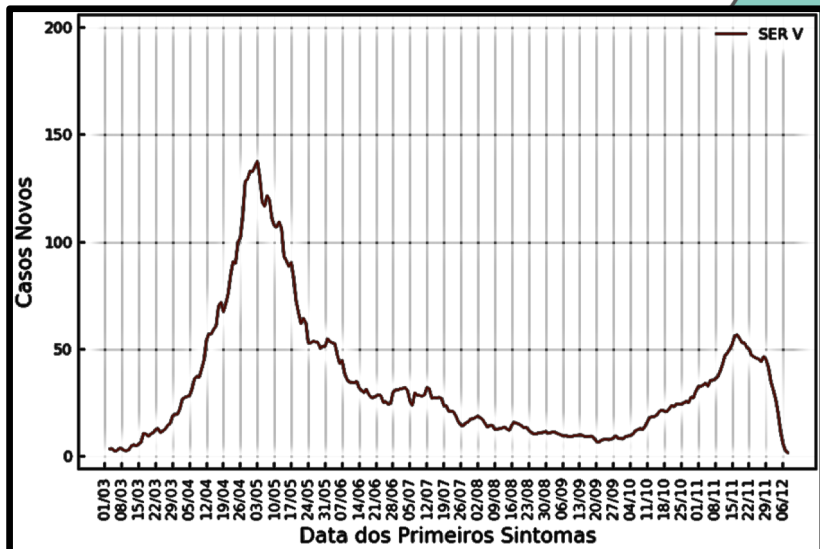
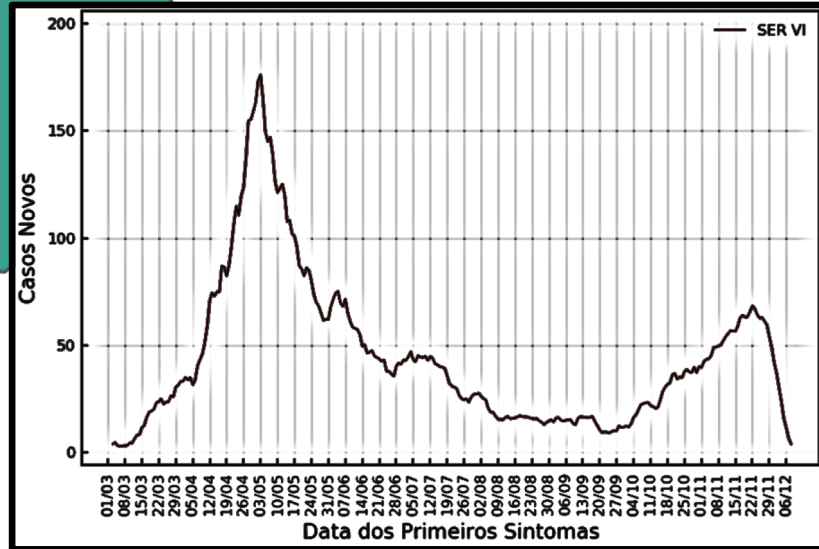
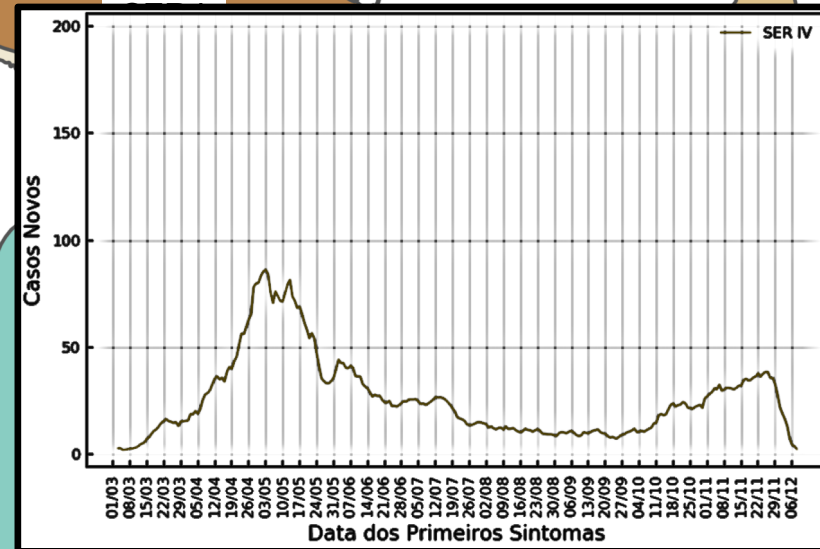
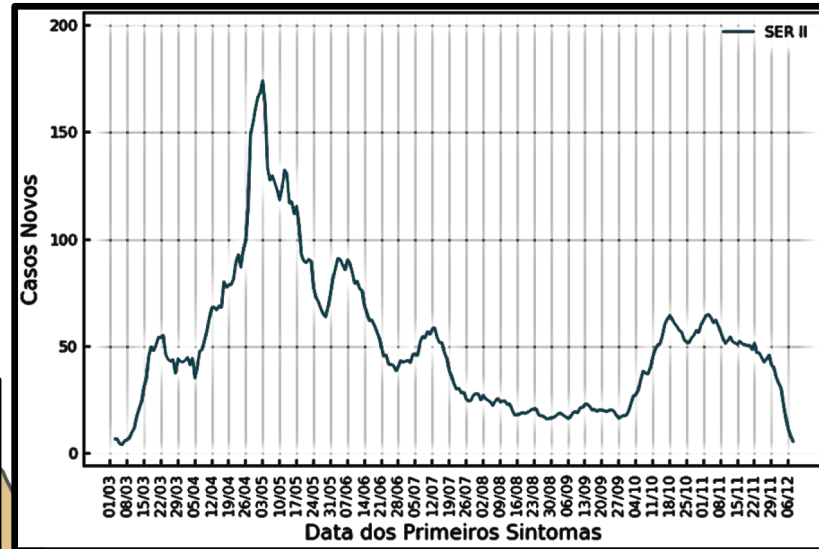
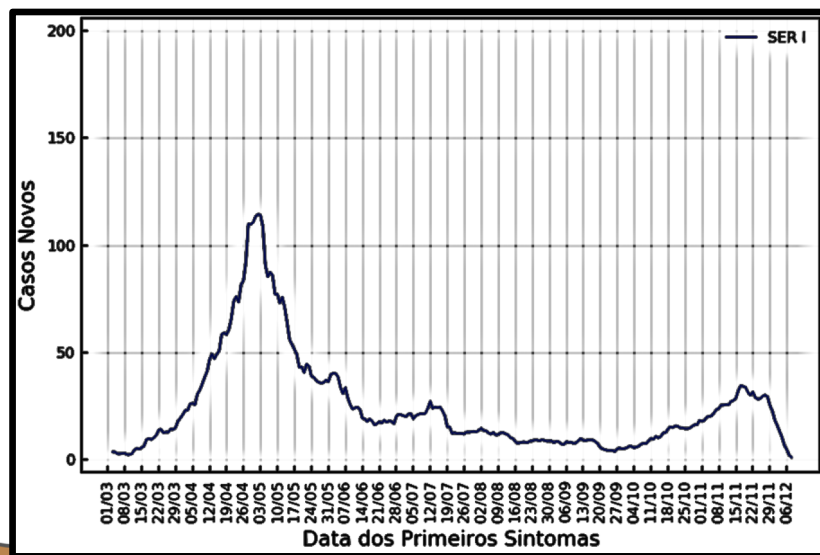
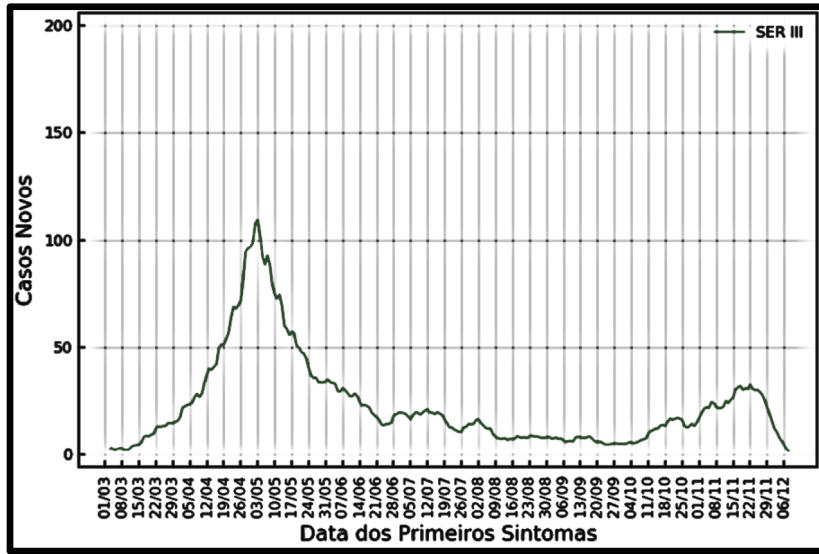
Fortaleza & Regiões

| REGIONAL | POPULAÇÃO |
|----------|-----------|
| SER I | 396135 |
| SER II | 395593 |
| SER III | 379246 |
| SER IV | 310568 |
| SER V | 553642 |
| SER VI | 573205 |

População de Fortaleza = 2.608.389 habitantes

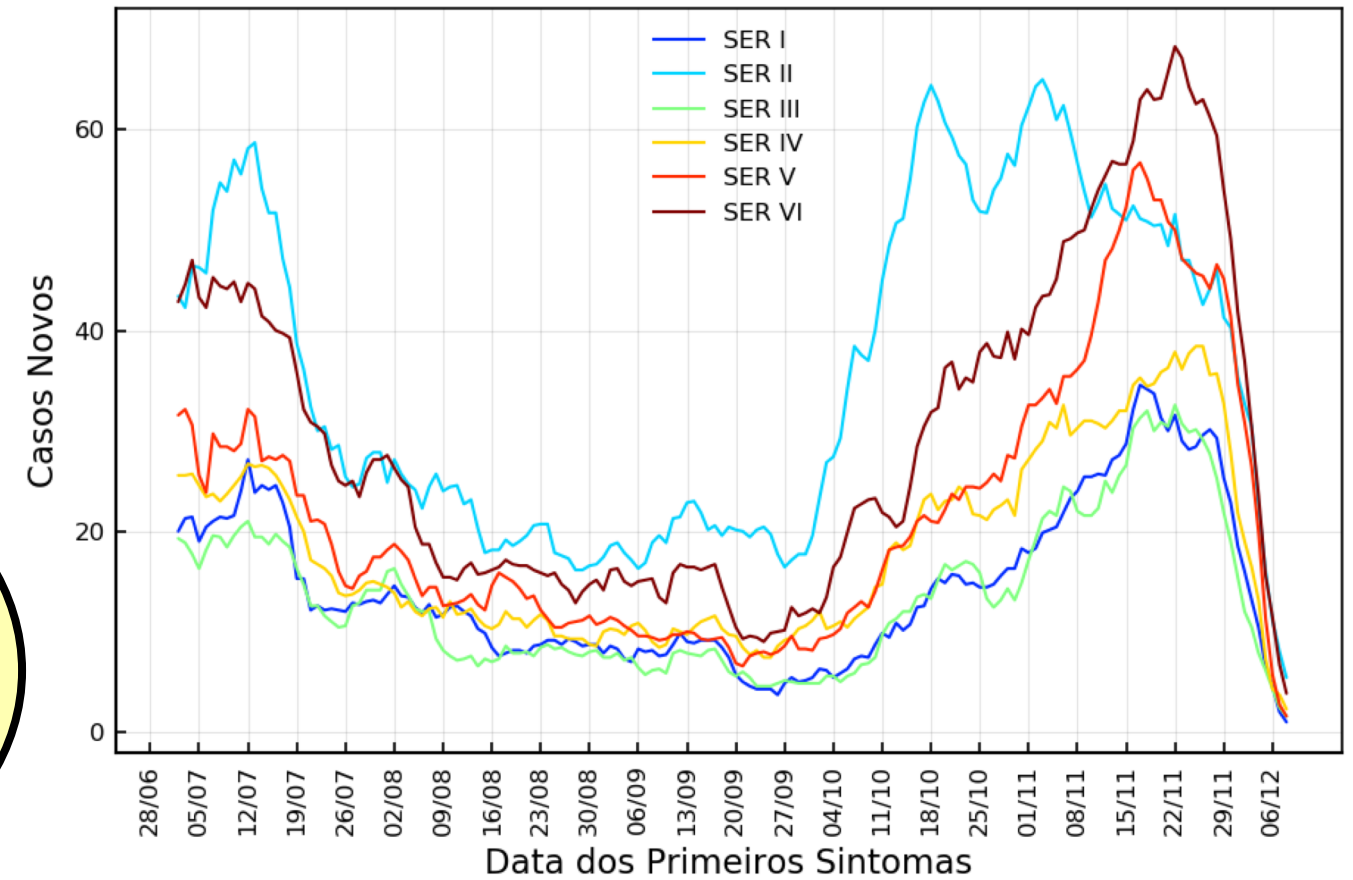
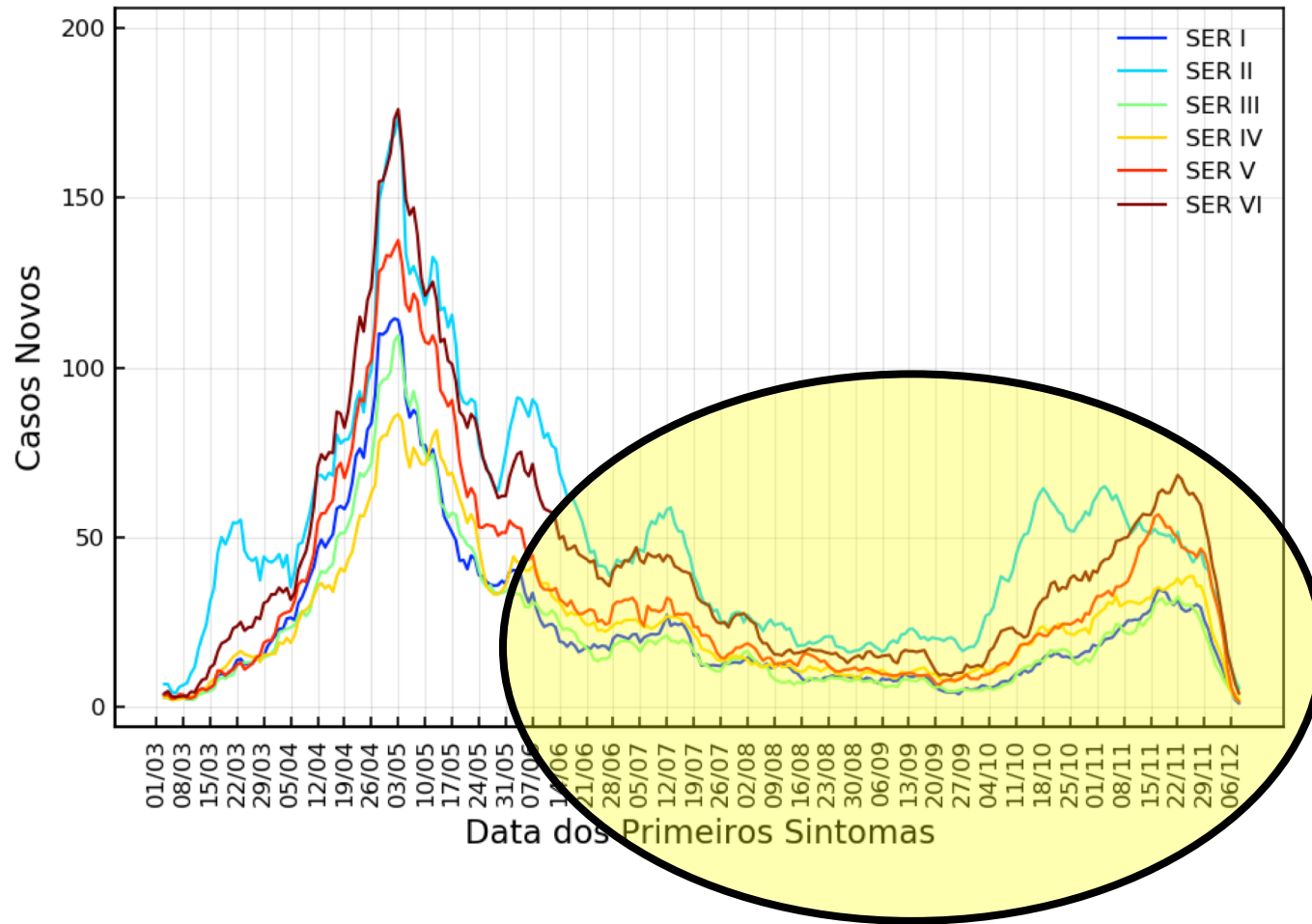
Evolução da Epidemia em Fortaleza por Regionais

Casos & Data Primeiros Sintomas



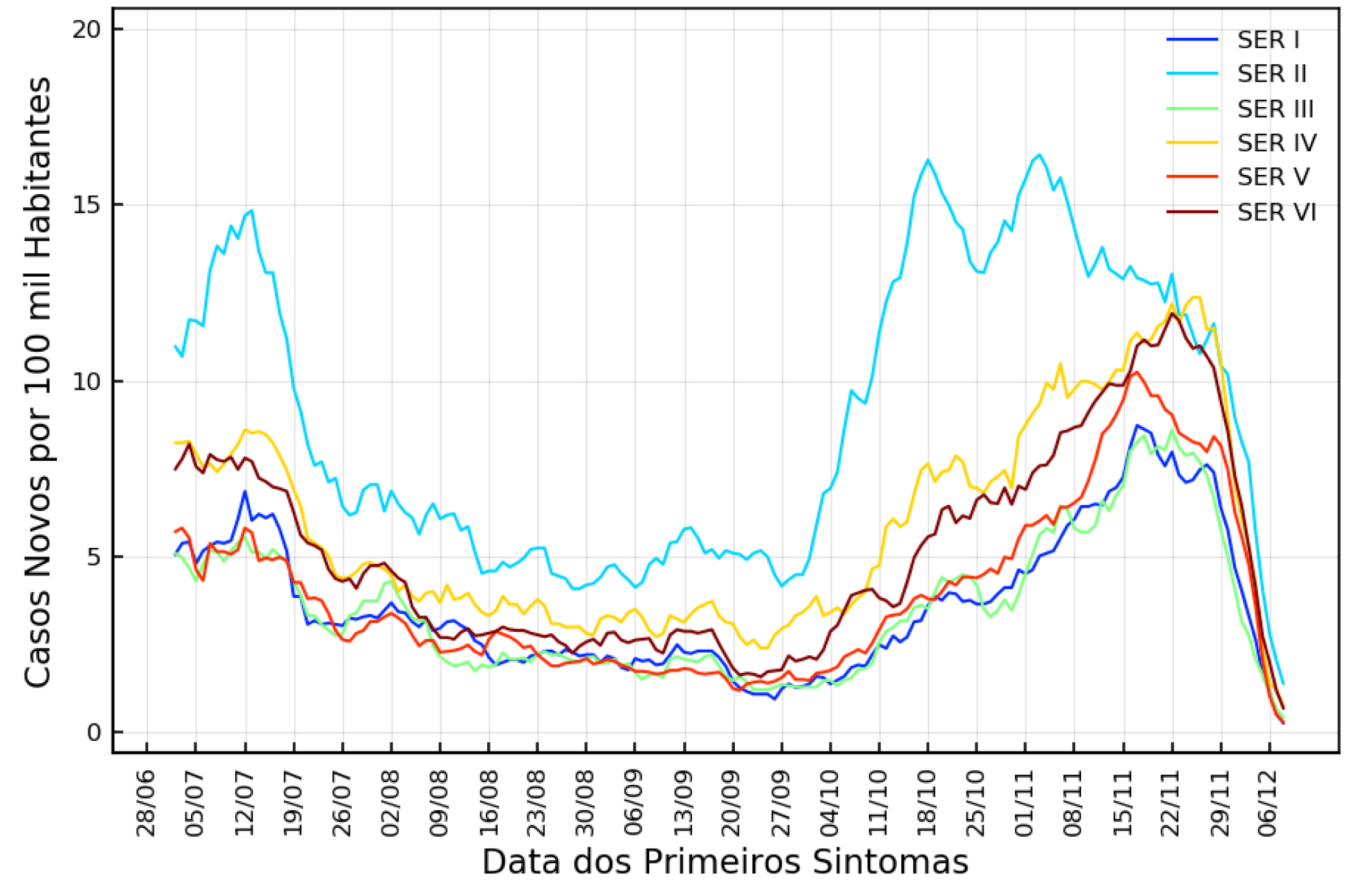
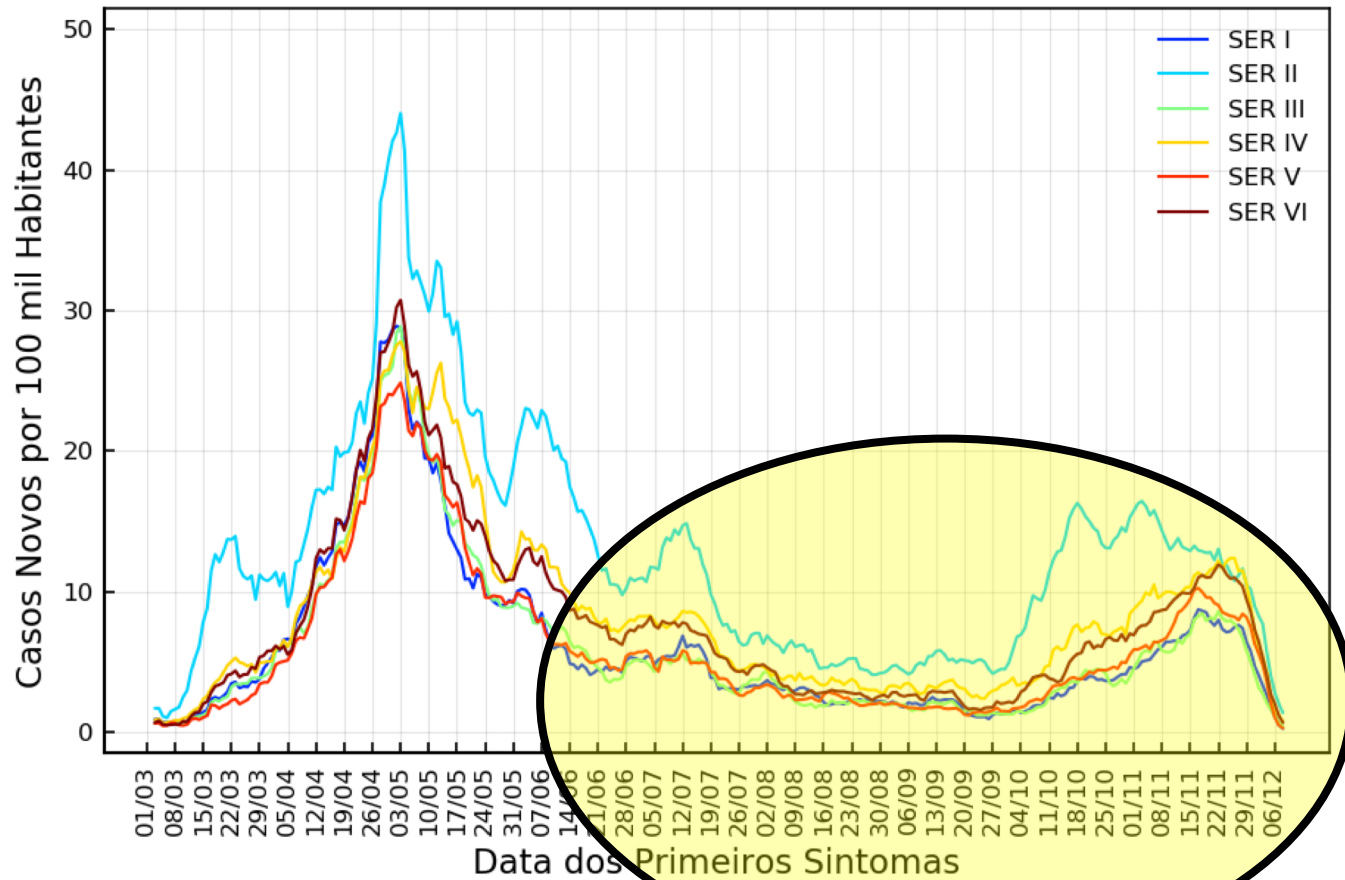
Evolução da Epidemia em Fortaleza por Regionais

Casos Novos & Data dos Primeiros Sintomas



Evolução da Epidemia em Fortaleza por Regionais

Casos Novos por 100 mil habitantes & Data dos Primeiros Sintomas



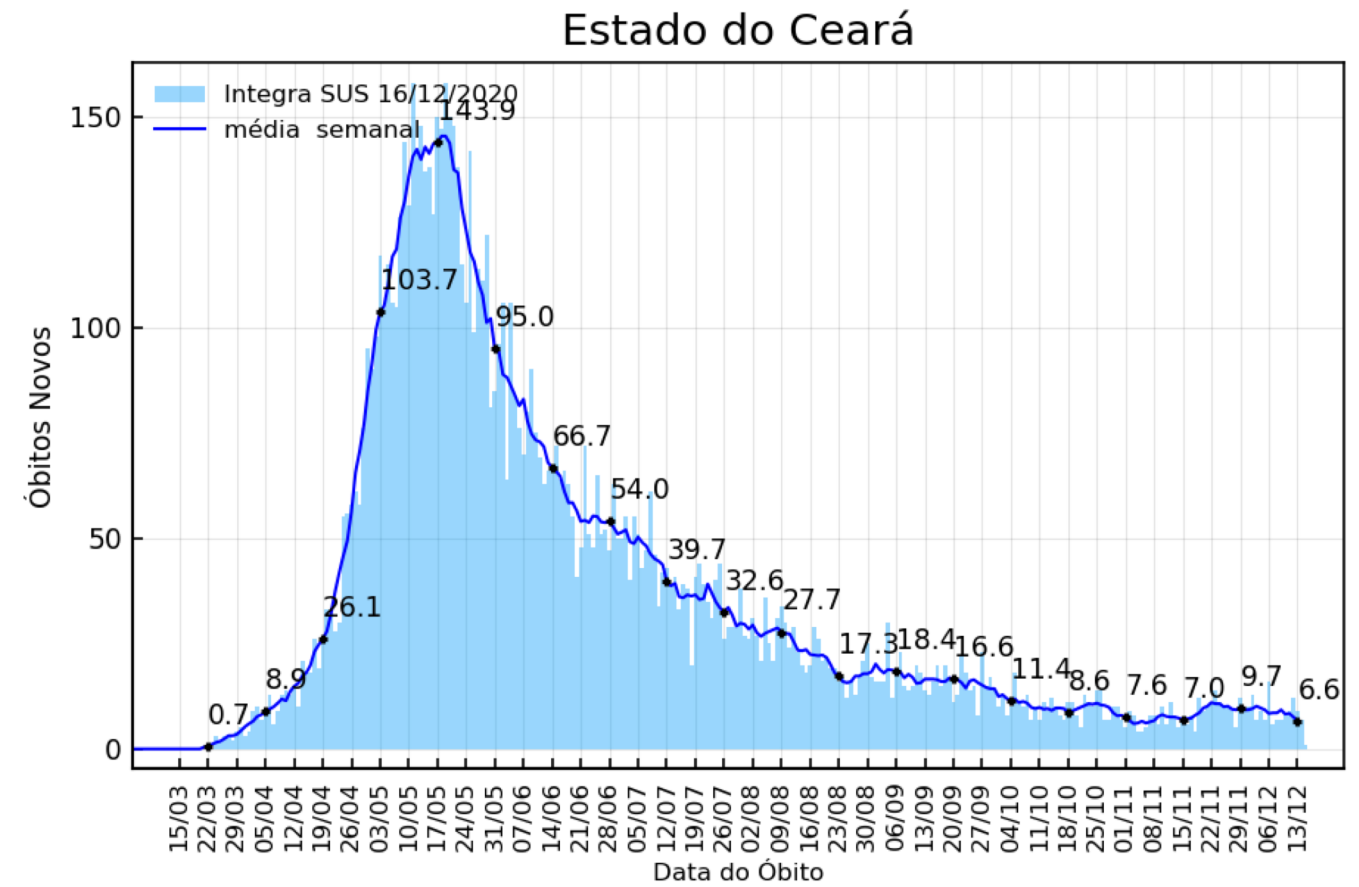
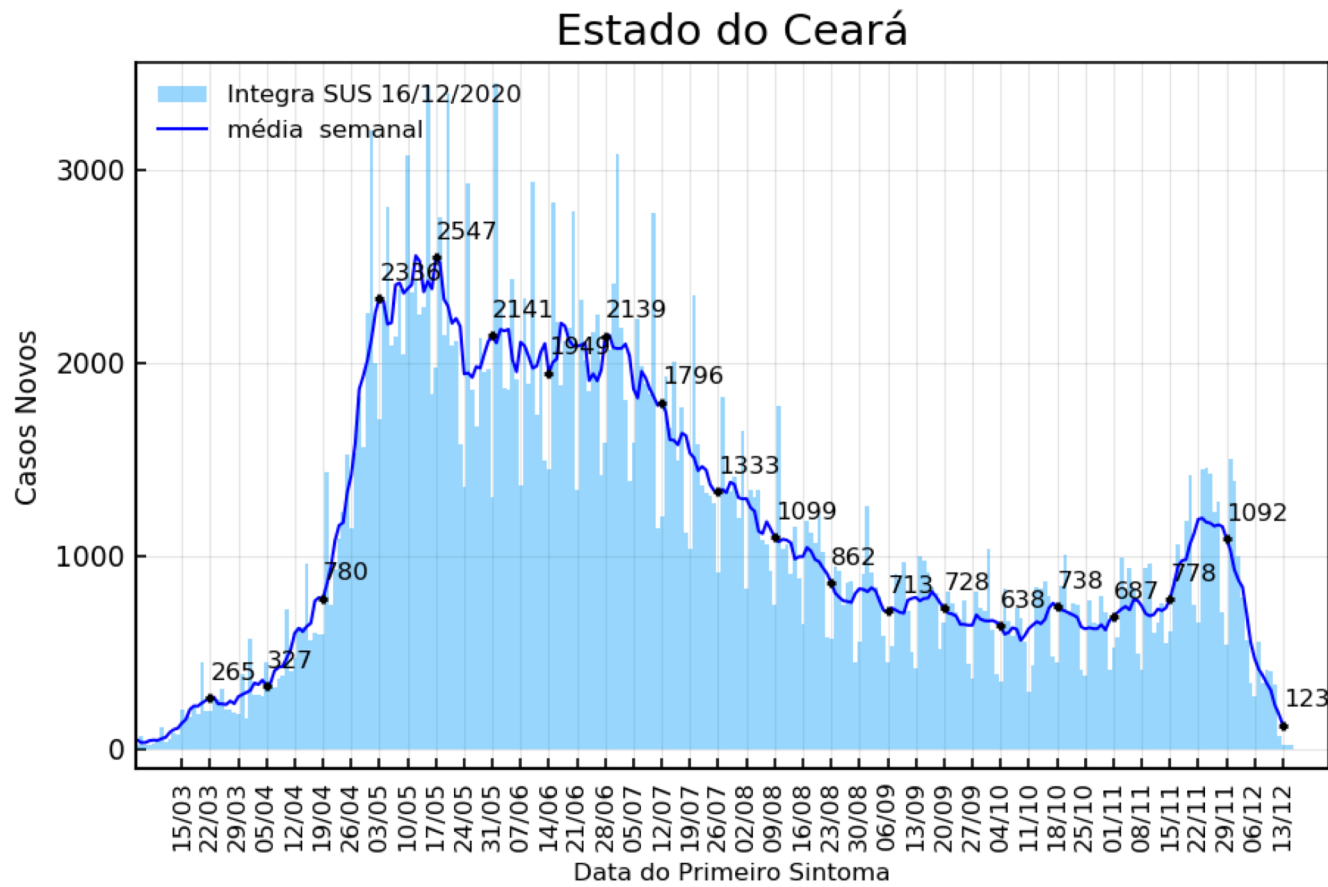
Ceará & Regiões

| REGIÃO | POPULAÇÃO (IBGE 2020) |
|-------------------------|-----------------------|
| Fortaleza | 4.817.822 |
| Sobral | 1.643.656 |
| Cariri | 1.523.245 |
| Sertão Central | 652.591 |
| Litoral Leste/Jaguaribe | 549.789 |

População do Ceará = 9.187.103 habitantes

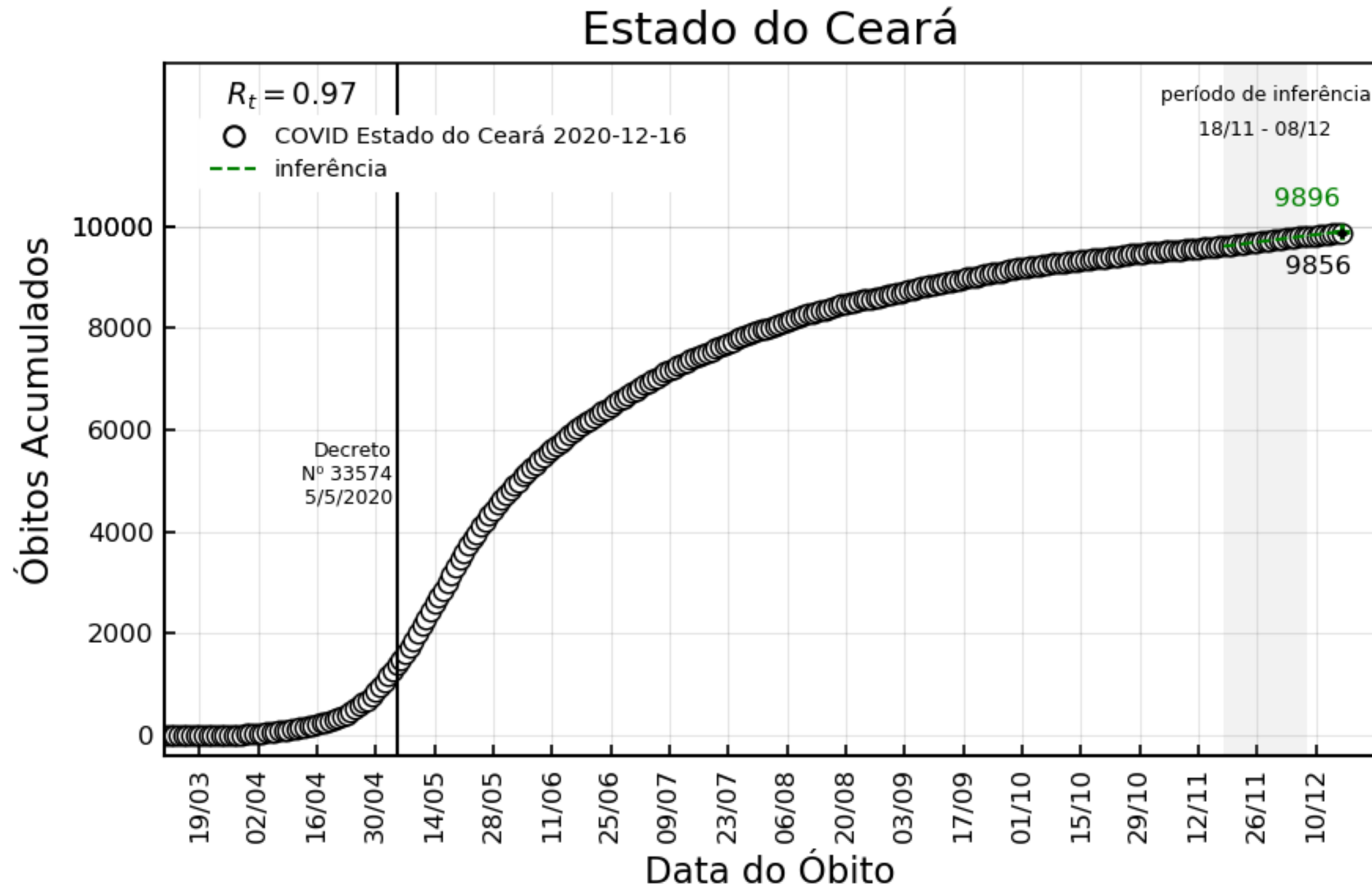
Estado do Ceará

Dados atualizados em 16/12/2020



Dados atualizados em 16/12/2020

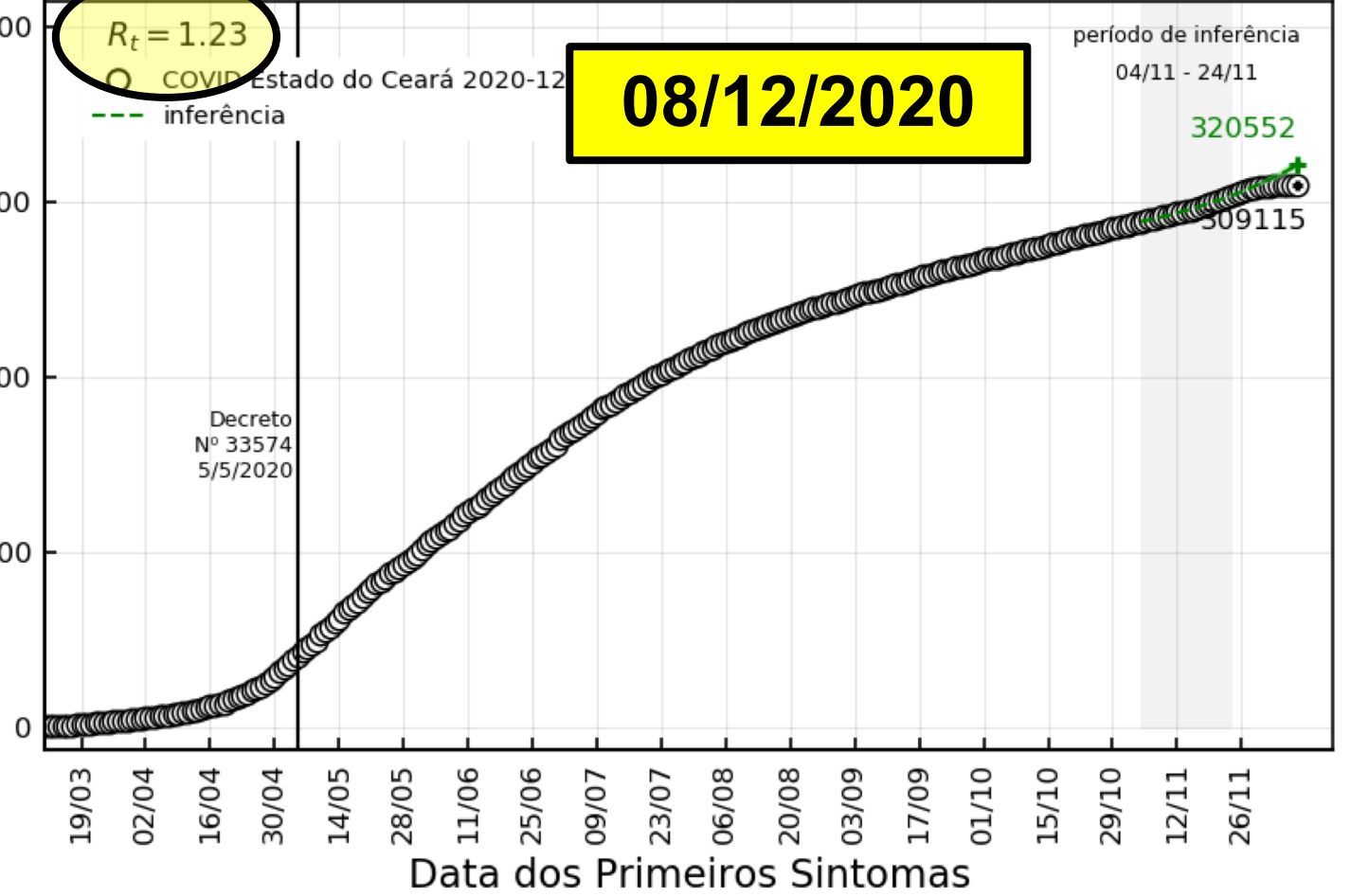
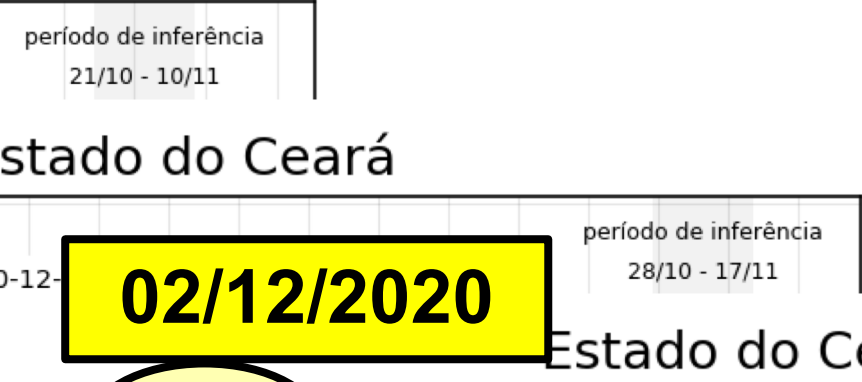
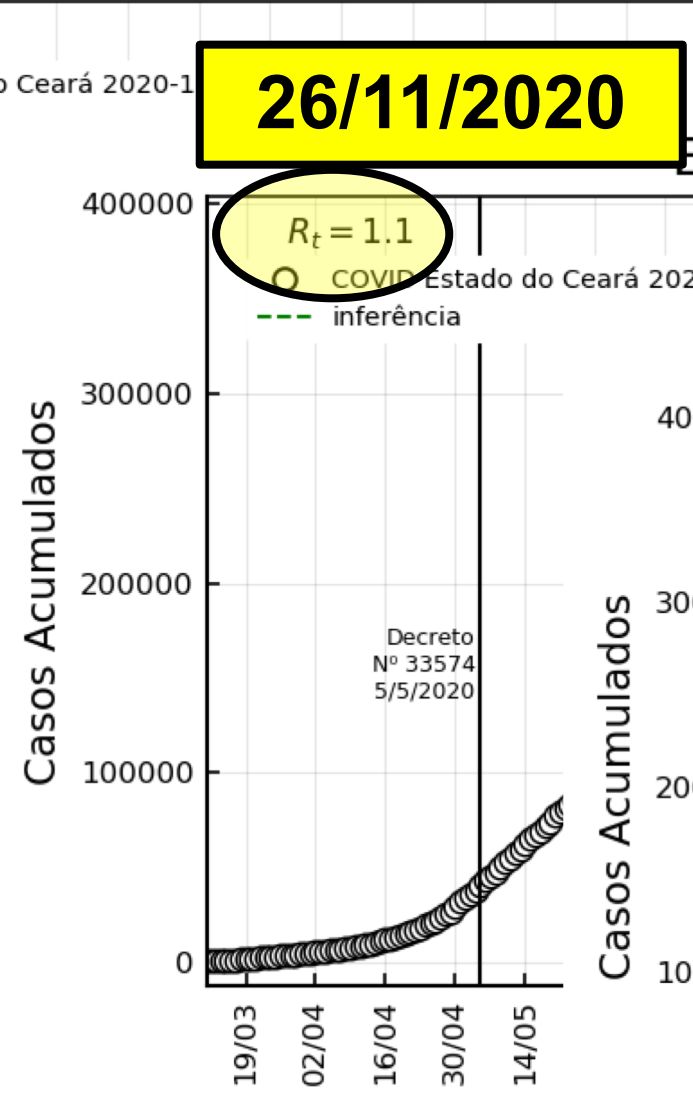
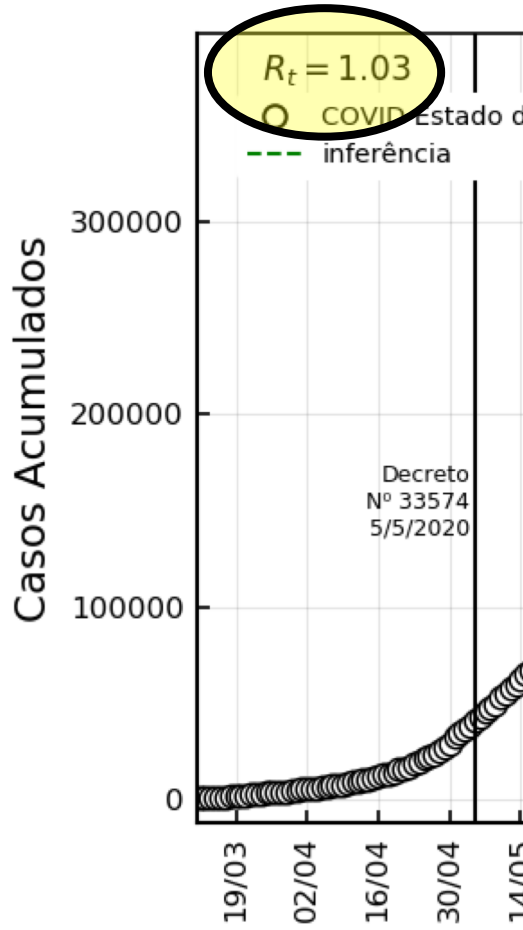
Inferência com Óbitos



| Janela de Inferência | R_t |
|----------------------|-------|
| 16/09 – 08/10 | 0.63 |
| 23/09 – 15/10 | 0.67 |
| 30/09 – 22/10 | 0.69 |
| 07/10 – 29/10 | 0.68 |
| 14/10 – 03/11 | 0.67 |
| 21/10 – 10/11 | 0.62 |
| 28/10 – 17/11 | 0.62 |
| 04/11 – 24/11 | 0.71 |
| 11/11 – 01/12 | 0.86 |
| 18/11 – 08/12 | 0.97 |

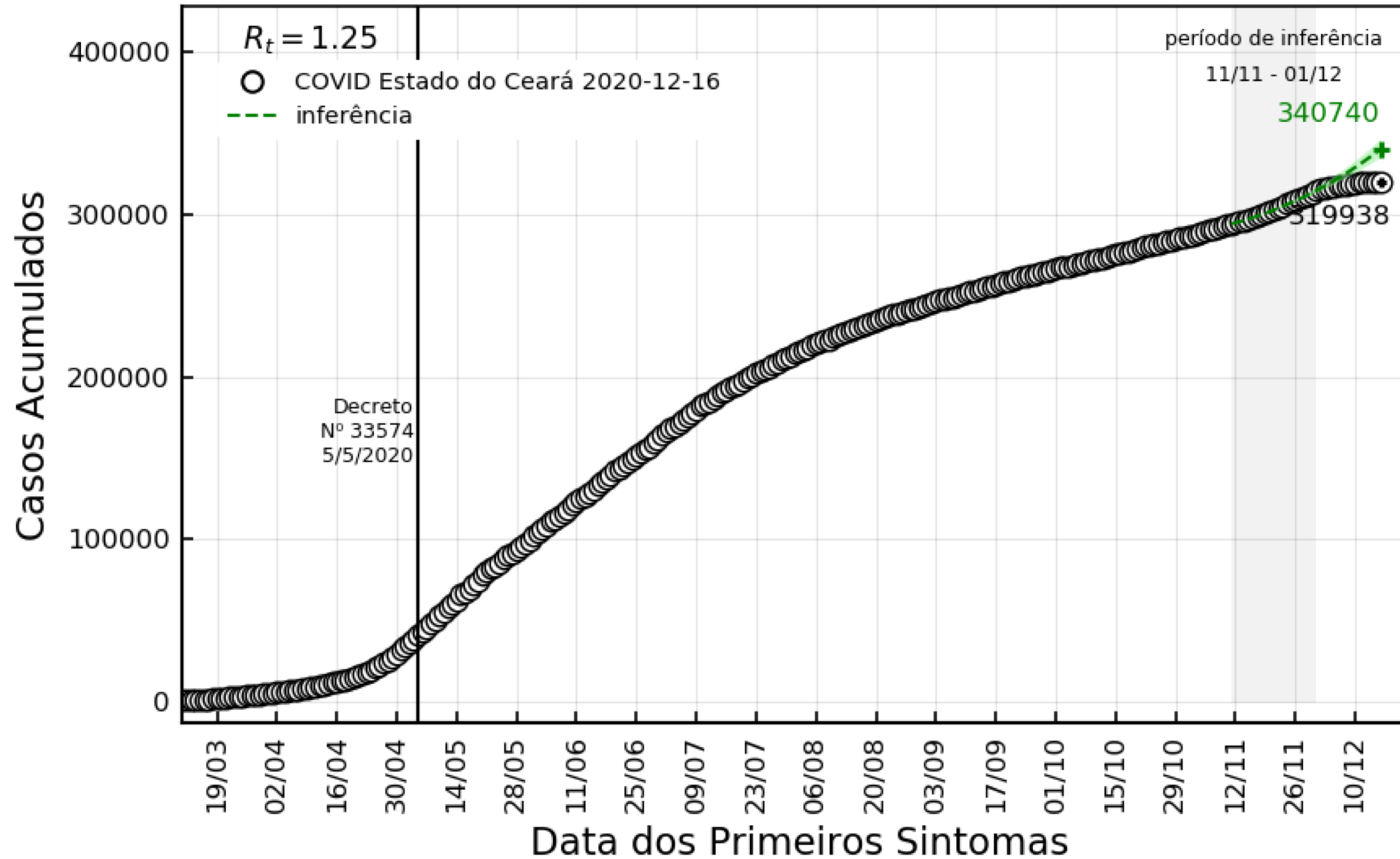
Inferência com Casos Acumulados

Estado do Ceará



Inferência com Casos Acumulados 16/12/2020

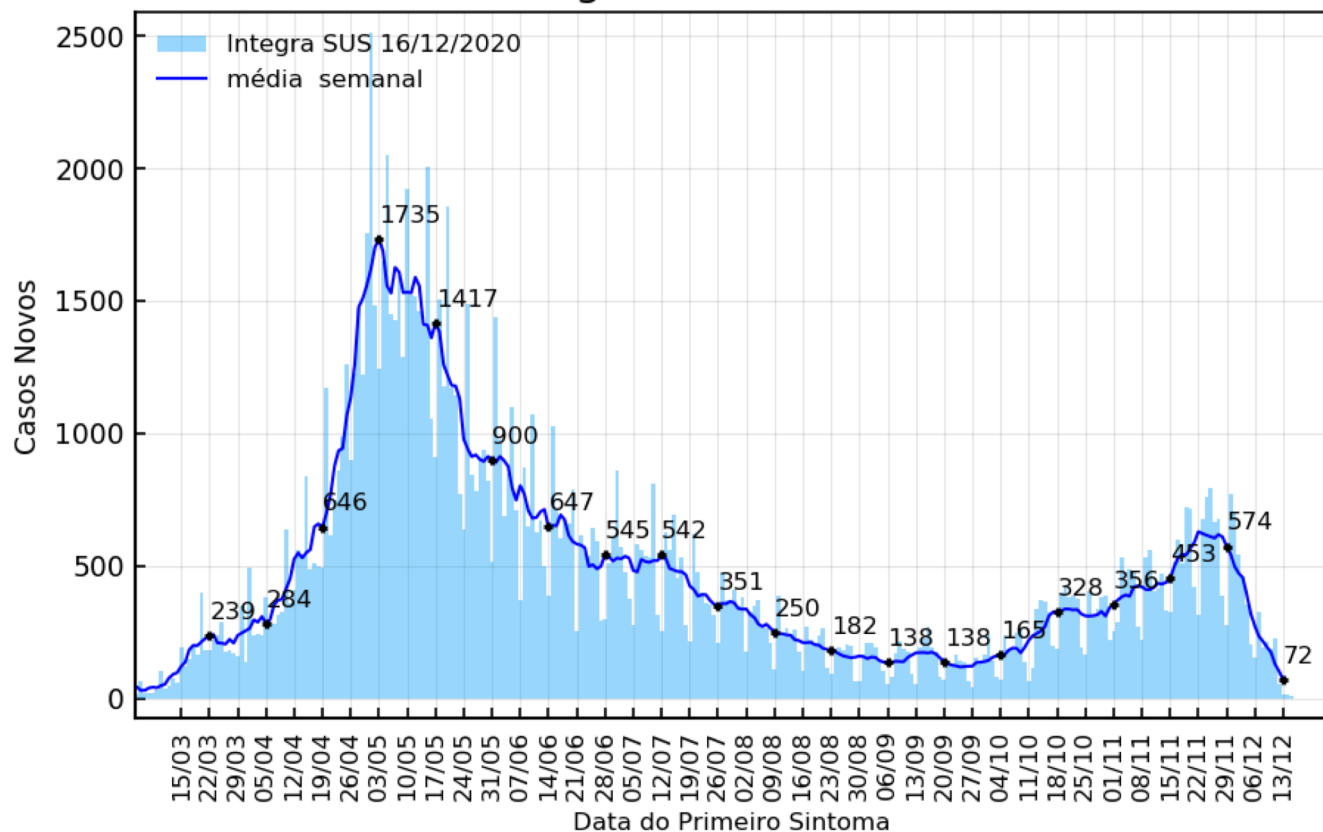
Estado do Ceará



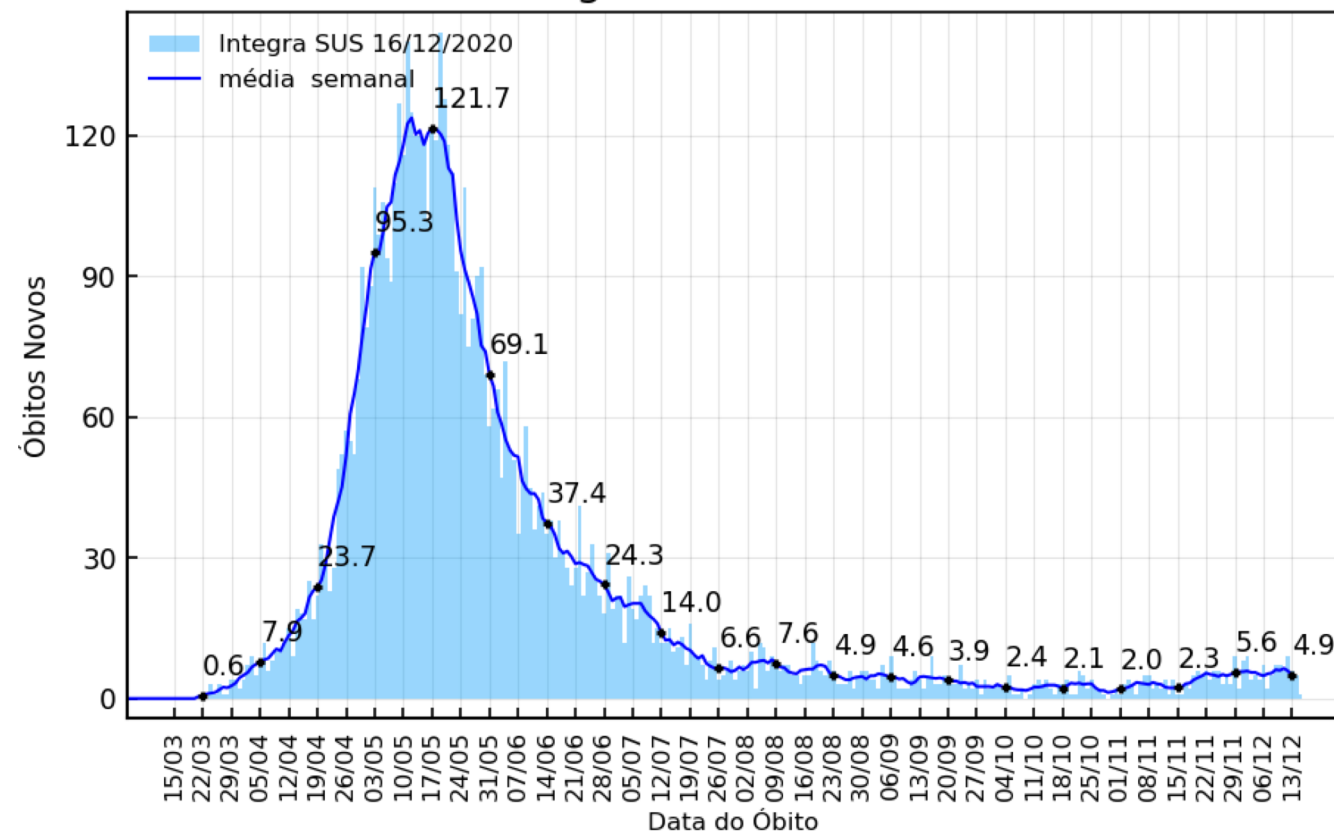
Região Fortaleza

Dados atualizados em 16/12/2020

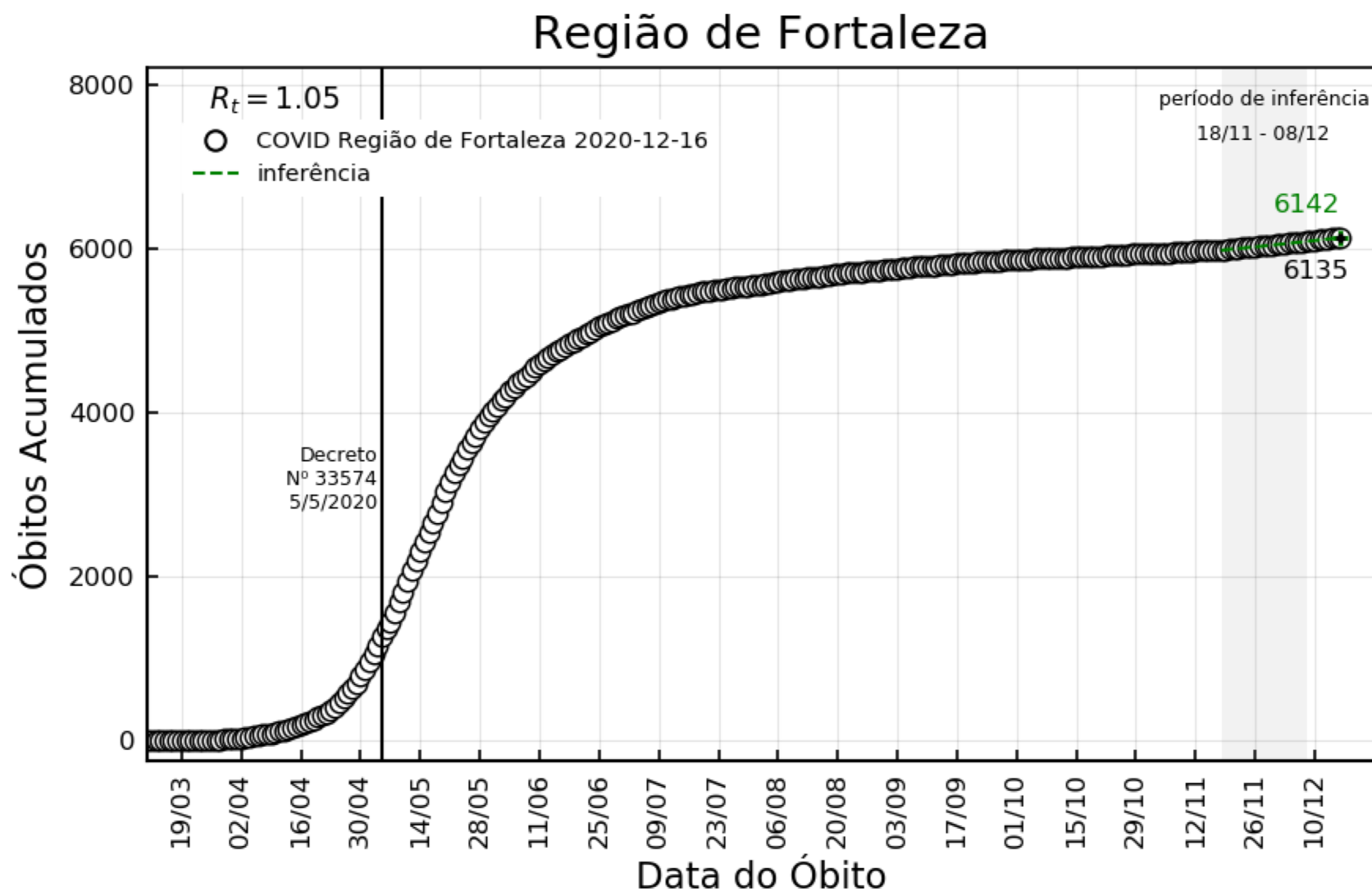
Região de Fortaleza



Região de Fortaleza



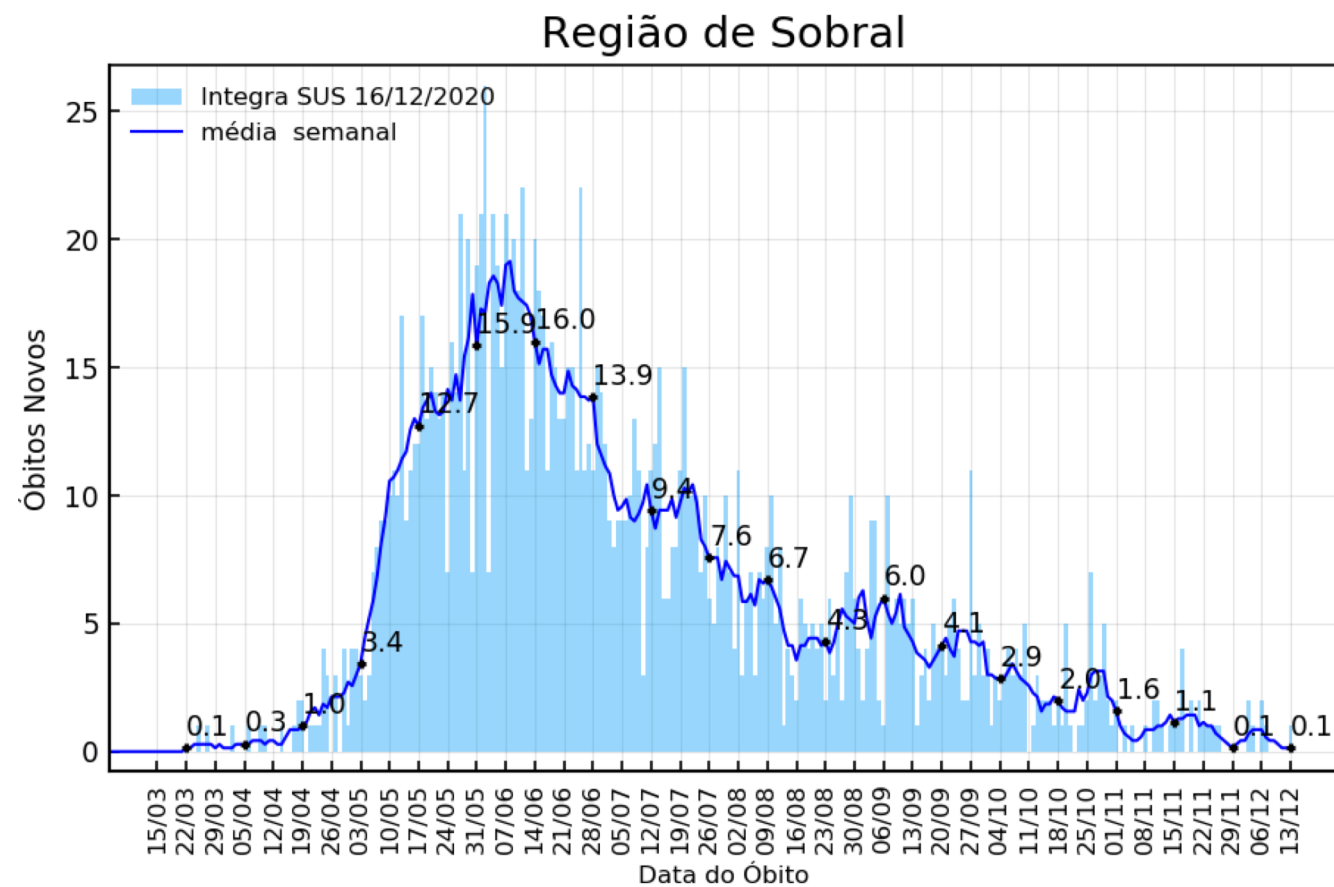
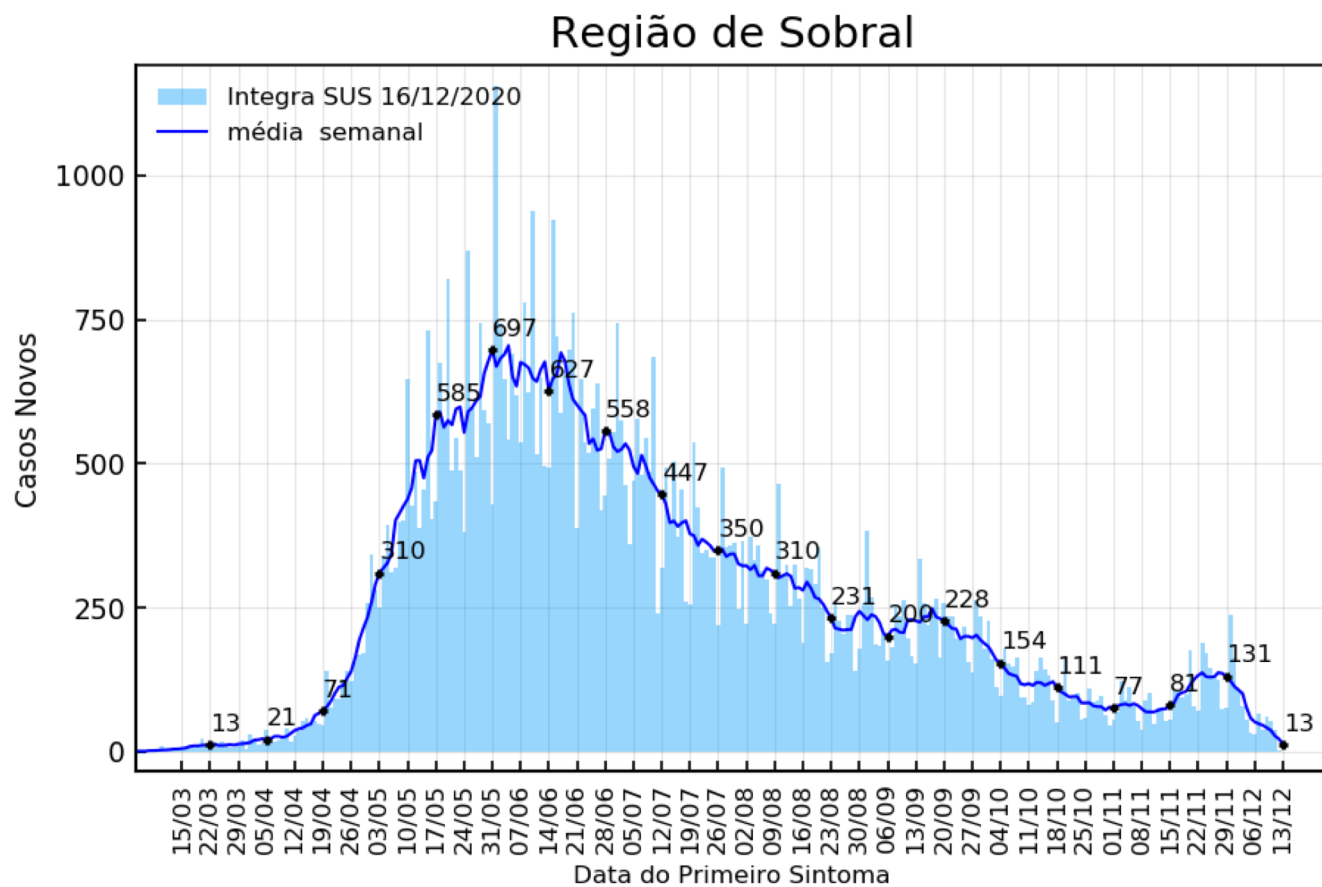
Dados atualizados em 16/12/2020



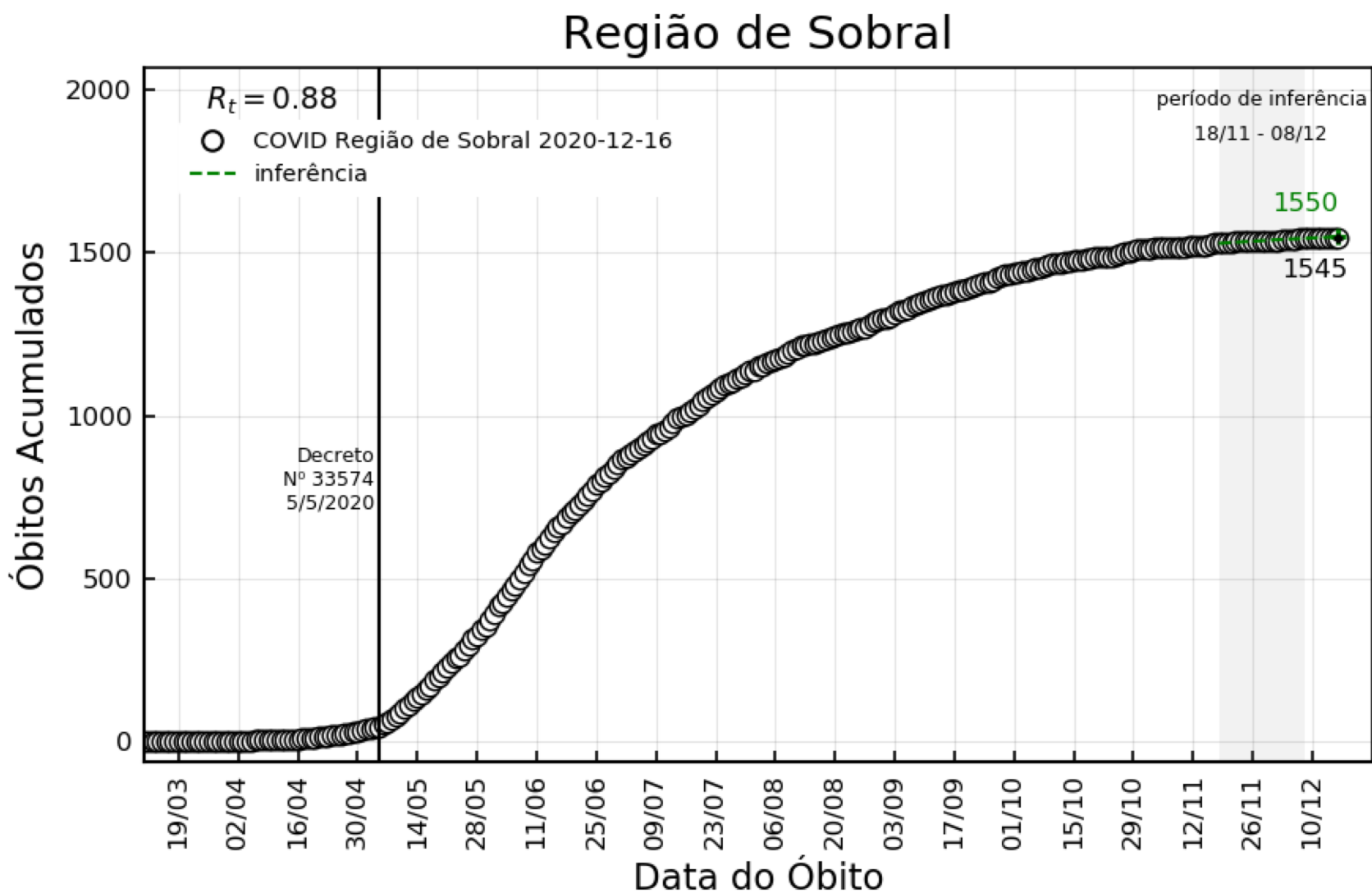
| Janela de Inferência | R_t |
|----------------------|-------|
| 09/09 – 01/10 | 0.75 |
| 16/09 – 08/10 | 0.75 |
| 23/09 – 15/10 | 0.76 |
| 30/09 – 22/10 | 0.77 |
| 07/10 – 29/10 | 0.72 |
| 14/10 – 03/11 | 0.72 |
| 21/10 -10/11 | 0.76 |
| 28/10 – 17/11 | 0.91 |
| 04/11 – 24/11 | 0.97 |
| 11/11 – 01/12 | 1.17 |
| 18/11 – 08/12 | 1.05 |

Região Sobral

Dados atualizados em 16/12/2020



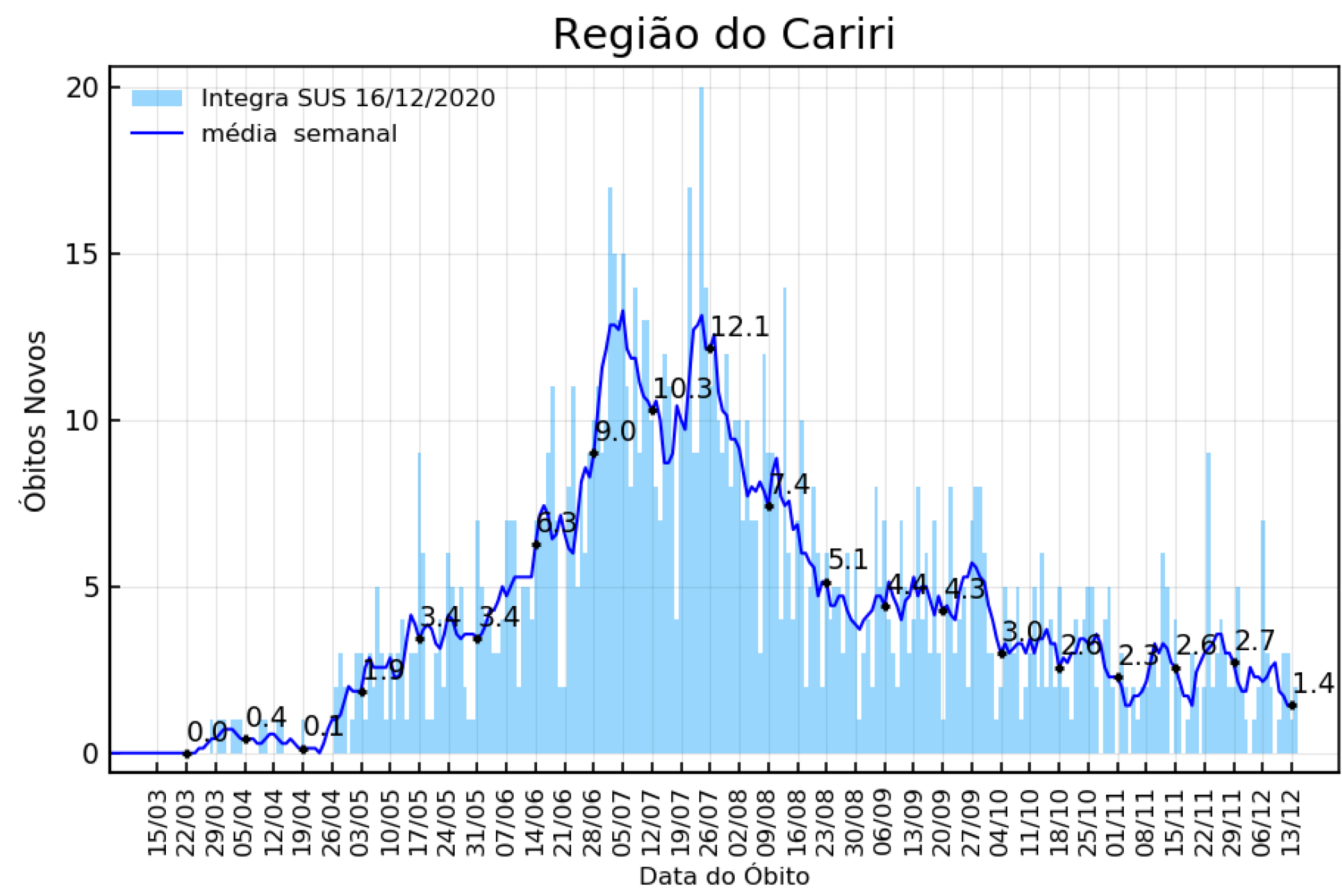
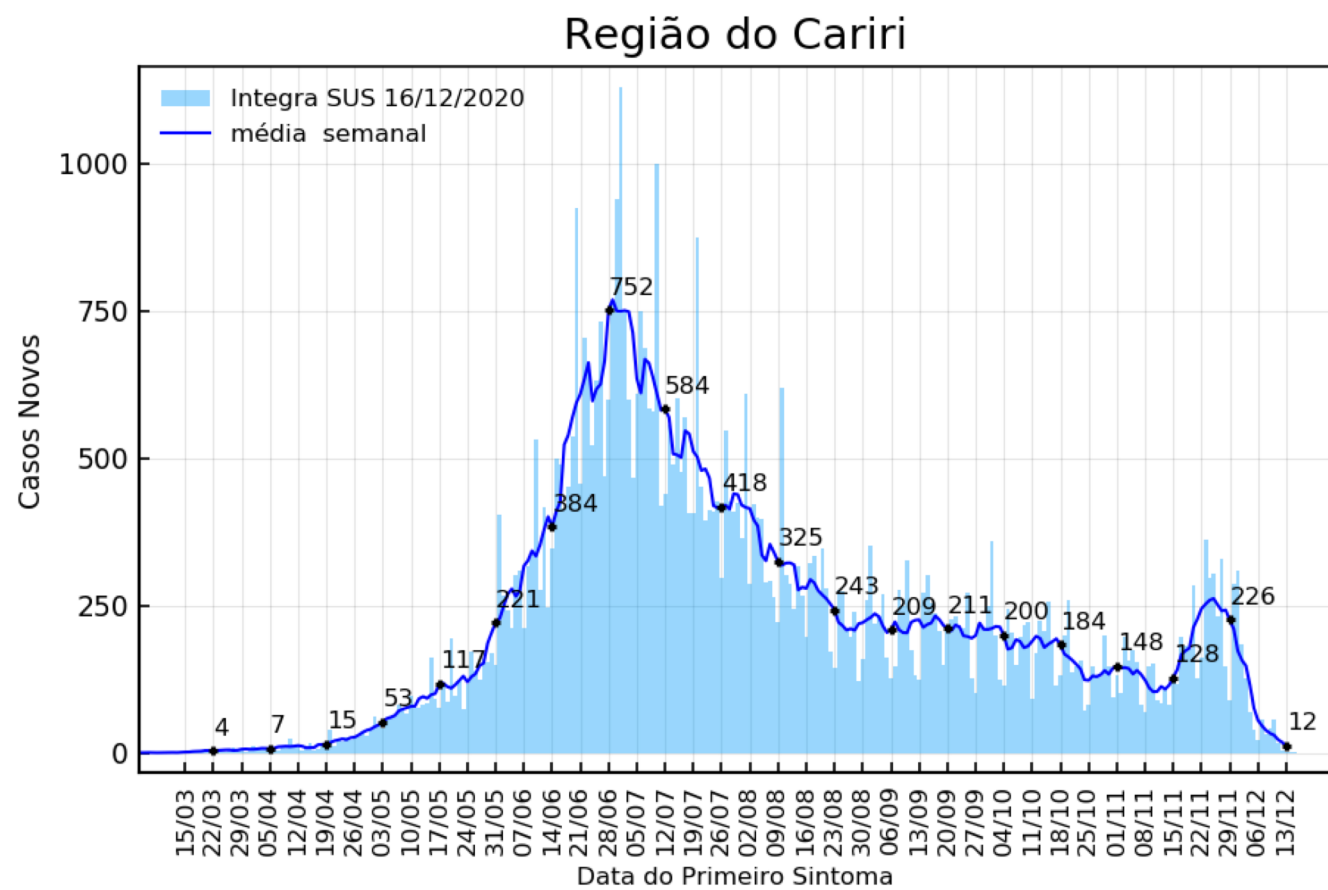
Dados atualizados em 16/12/2020



| Janela de Inferência | R_t |
|----------------------|-------|
| 09/09 – 01/10 | 0.97 |
| 16/09 – 08/10 | 0.84 |
| 23/09 – 15/10 | 0.84 |
| 30/09 – 22/10 | 0.71 |
| 07/10 – 29/10 | 0.84 |
| 14/10 – 03/11 | 0.90 |
| 21/10 – 10/11 | 0.88 |
| 28/10 – 17/11 | 0.83 |
| 04/11 – 24/11 | 0.85 |
| 11/11 – 01/12 | 0.89 |
| 18/11 – 08/12 | 0.88 |

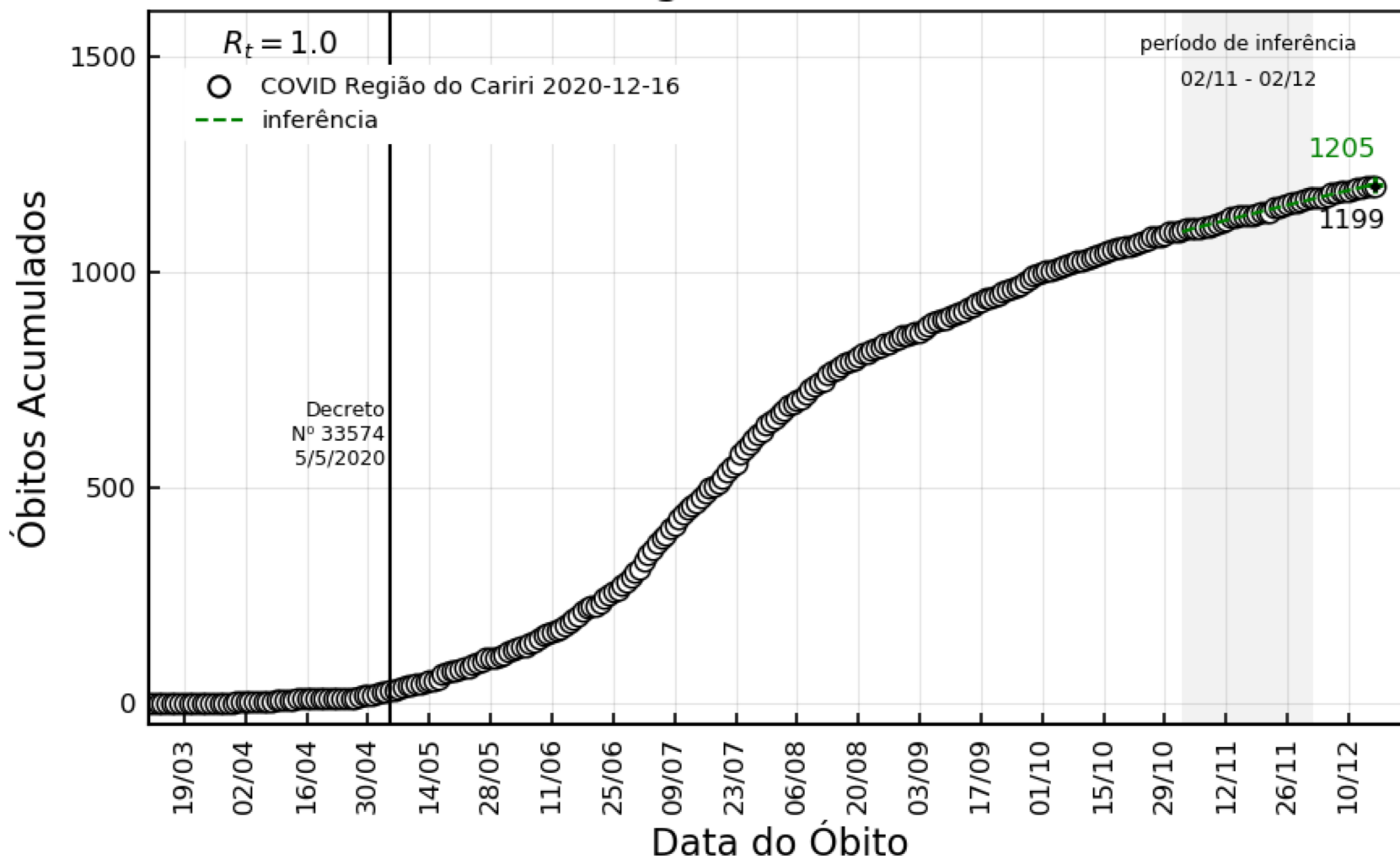
Região Cariri

Dados atualizados em 16/12/2020



Dados atualizados em 16/12/2020

Região do Cariri

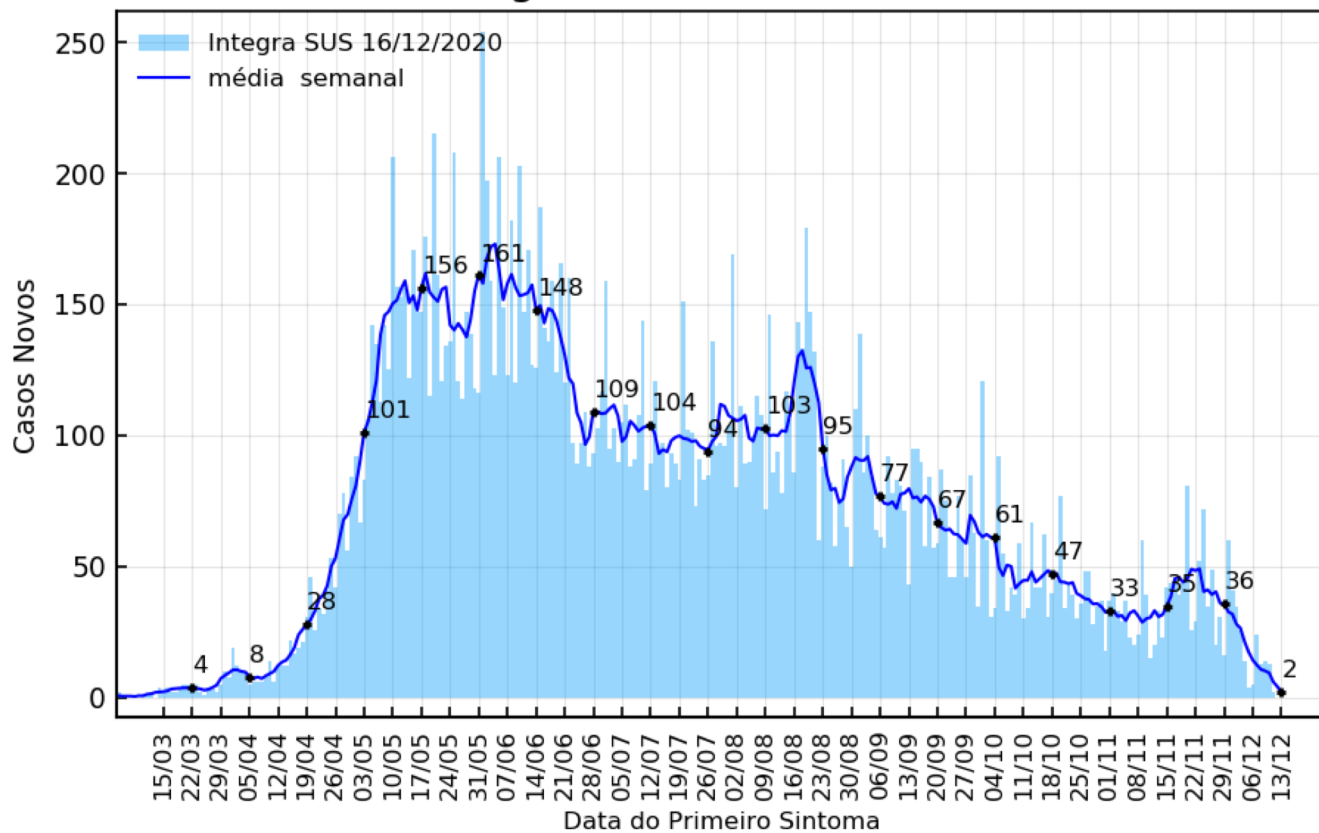


| Janela de Inferência | R_t |
|----------------------|-------|
| 07/09 – 07/10 | 1.07 |
| 14/09 – 14/10 | 0.86 |
| 21/09 – 21/10 | 0.86 |
| 28/09 – 28/10 | 0.80 |
| 05/10 – 04/11 | 0.81 |
| 12/10 – 11/11 | 0.78 |
| 19/10 – 18/11 | 0.81 |
| 26/10 – 25/11 | 0.86 |
| 02/11 – 02/12 | 1.00 |

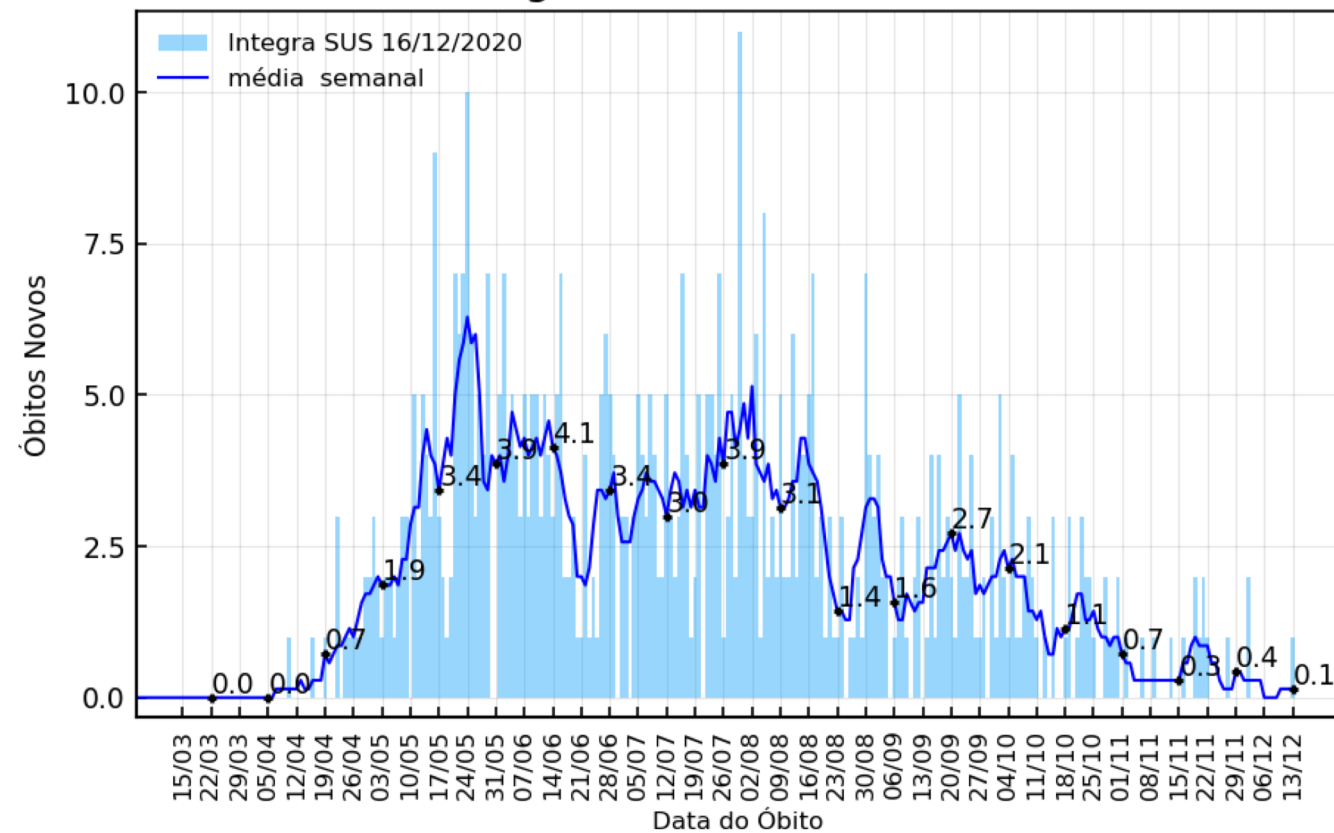
Região Sertão Central

Dados atualizados em 16/12/2020

Região do Sertão Central

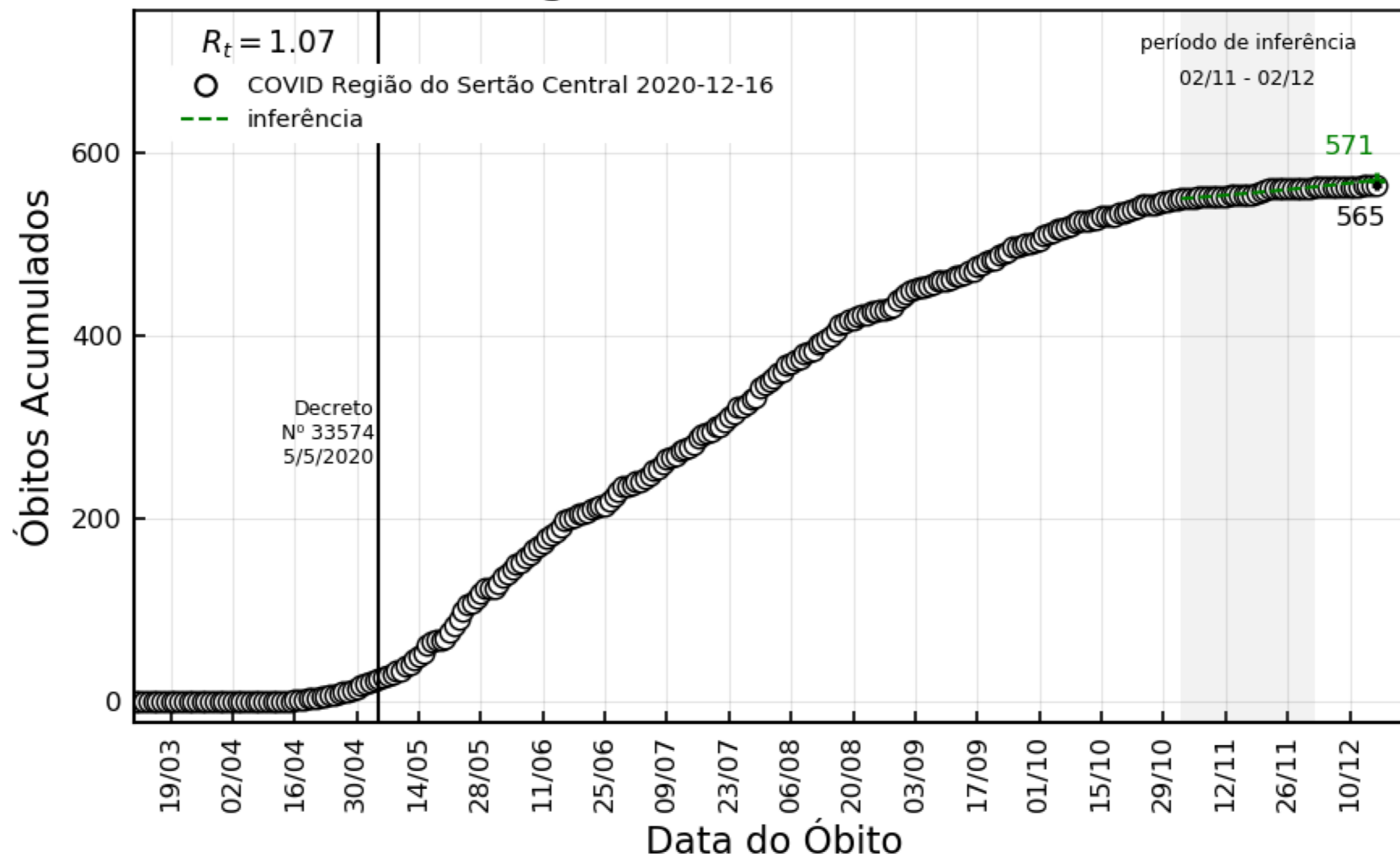


Região do Sertão Central



Dados atualizados em 16/12/2020

Região do Sertão Central



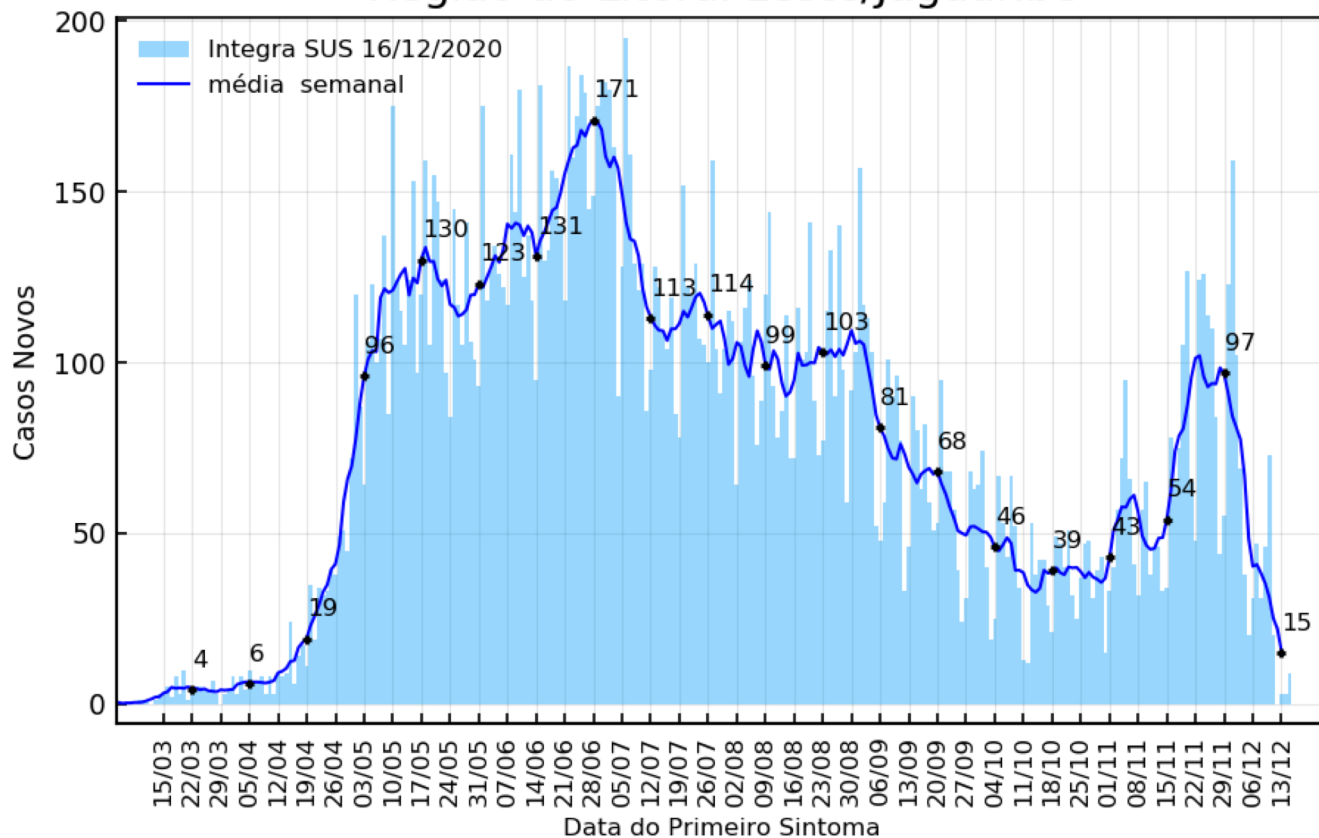
| Janela de Inferência | R_t |
|----------------------|-------|
| 30/08 – 29/09 | 0.84 |
| 07/09 – 07/10 | 0.91 |
| 14/09 – 14/10 | 0.78 |
| 21/09 – 21/10 | 0.75 |
| 28/09 – 28/10 | 0.87 |
| 05/10 – 04/11 | 0.83 |
| 12/10 – 11/11 | 0.78 |
| 19/10 – 18/11 | 0.75 |
| 26/10 – 25/11 | 0.69 |
| 02/11 – 02/12 | 1.07 |

Região

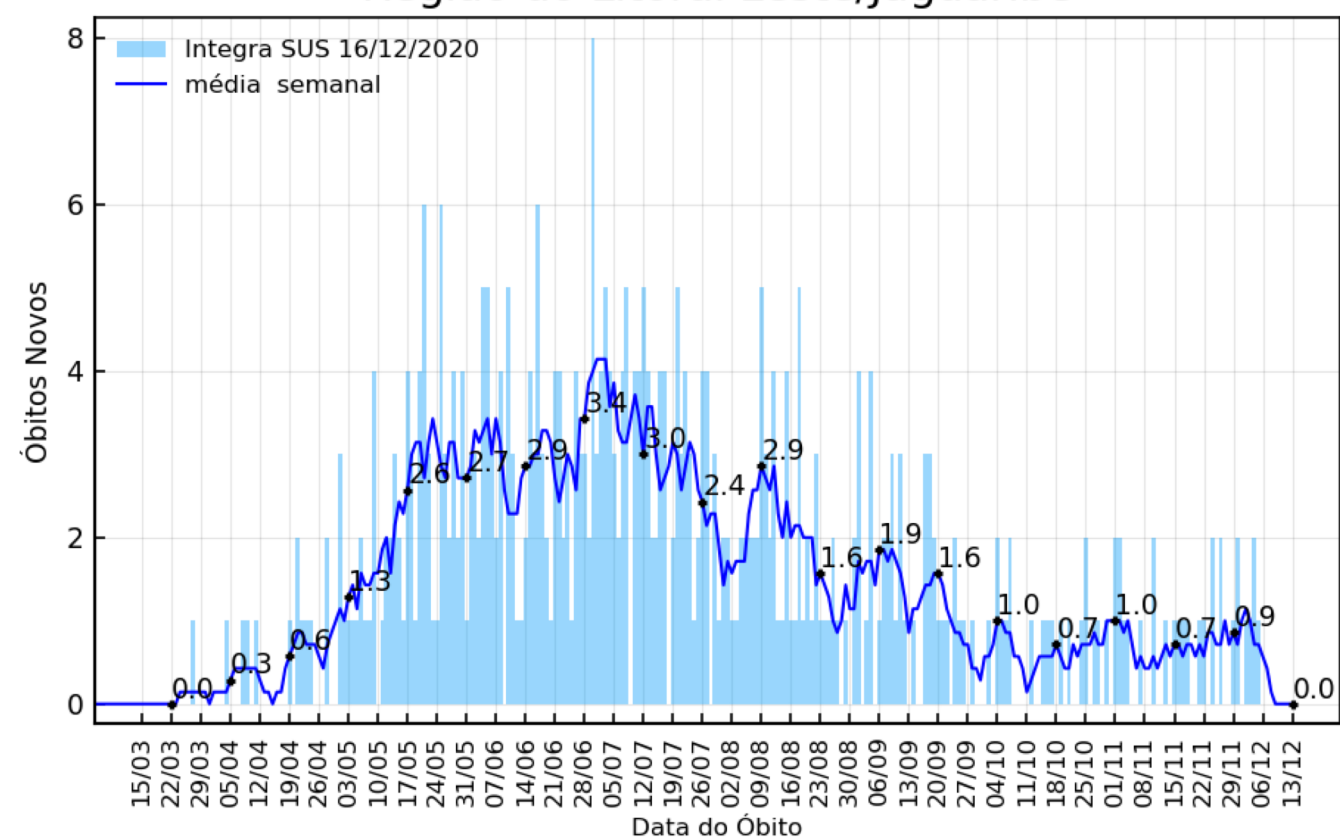
Litoral Leste/Jaguaribe

Dados atualizados em 16/12/2020

Região do Litoral Leste/Jaguaribe

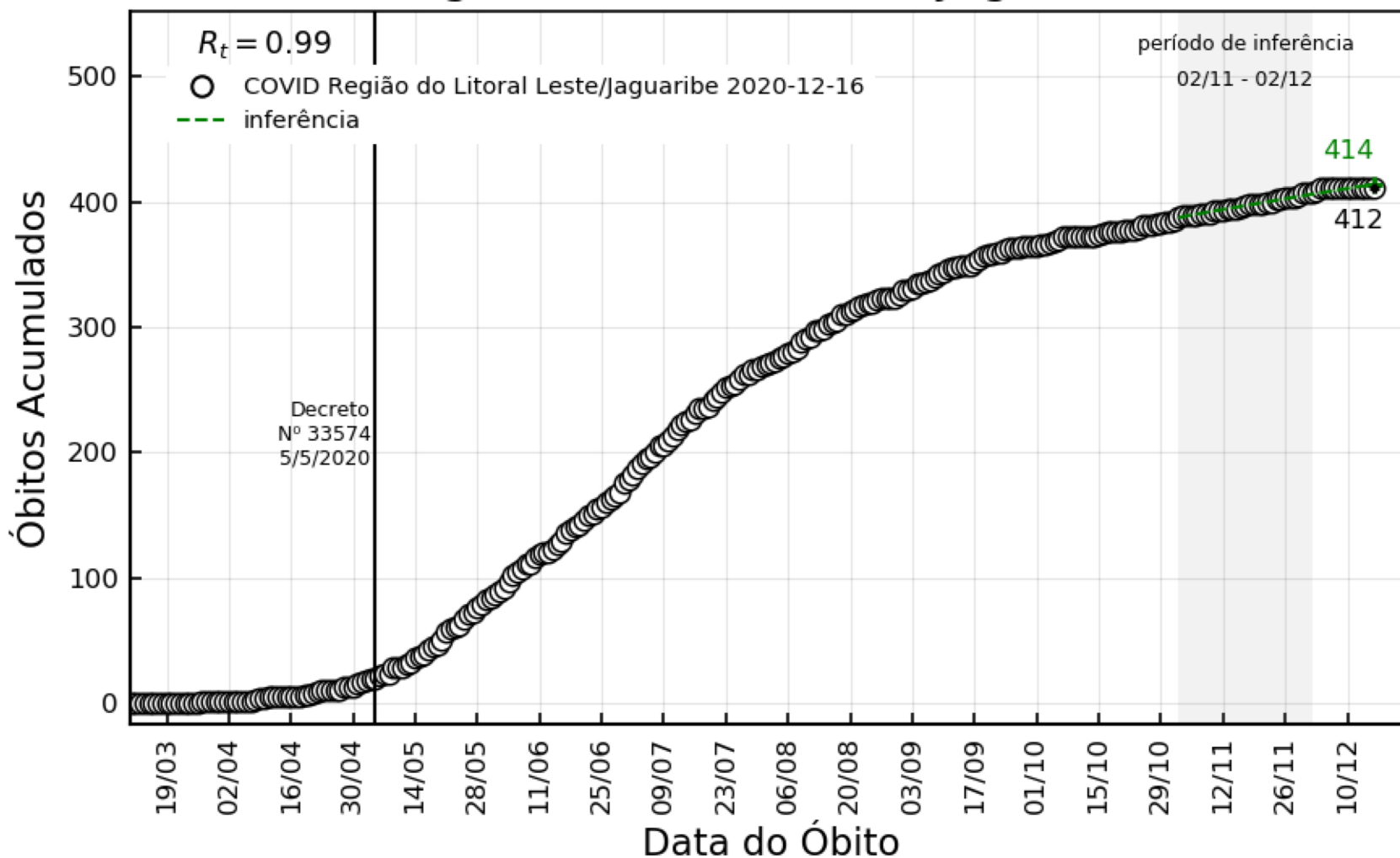


Região do Litoral Leste/Jaguaribe



Dados atualizados em 16/12/2020

Região do Litoral Leste/Jaguaribe



| Janela de Inferência | R_t |
|----------------------|-------|
| 07/09 – 07/10 | 0.82 |
| 14/09 – 14/10 | 0.86 |
| 21/09 – 21/10 | 0.92 |
| 28/09 – 28/10 | 0.81 |
| 05/10 – 04/11 | 0.87 |
| 12/10 – 11/11 | 0.88 |
| 19/10 – 18/11 | 0.90 |
| 26/10 – 25/11 | 0.86 |
| 02/11 – 02/12 | 0.99 |