

# **Branching stochastic processes as models of Covid-19 epidemic development**

**Sint\_Maarten - 20201214**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Sint\_Maarten - 20201214**

### **Abstract**

The results presented here are obtained using the methodology proposed in the paper <https://arxiv.org/abs/2004.14838> for the country Sint\_Maarten. The data comes from European Centre for Disease Prevention and Control available at <https://opendata.ecdc.europa.eu/covid19/casedistribution/csv>.

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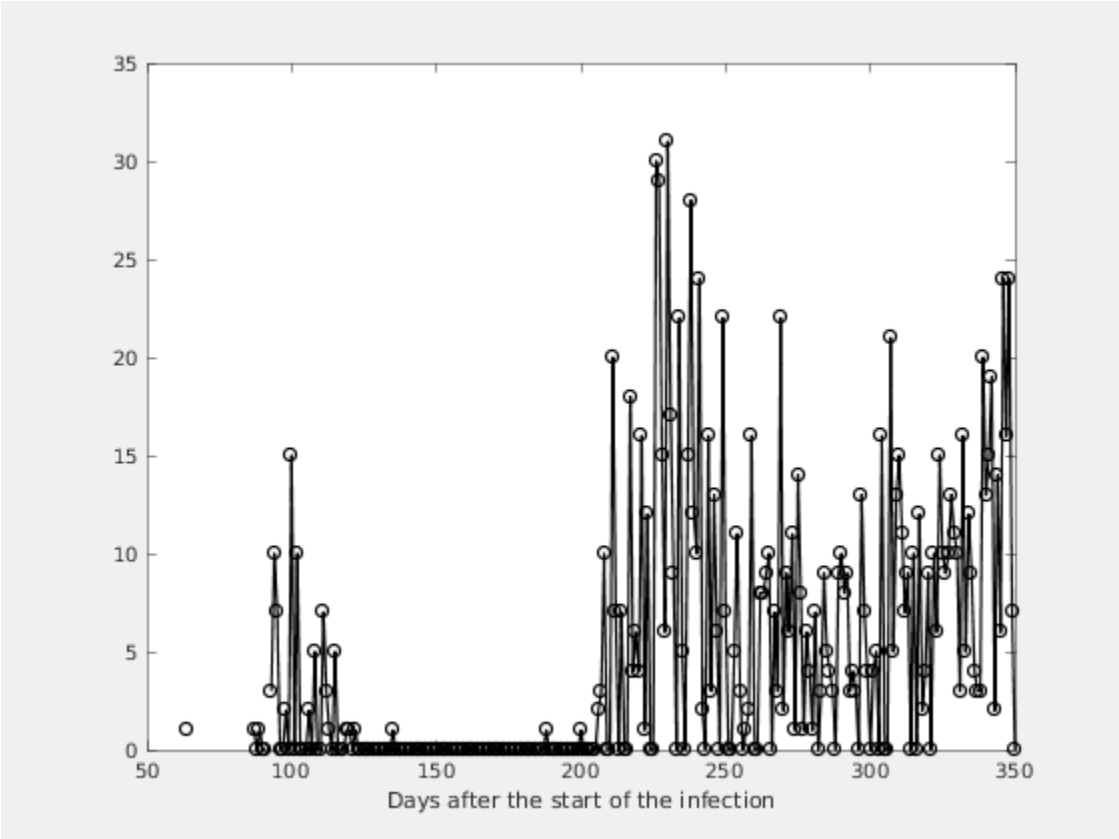
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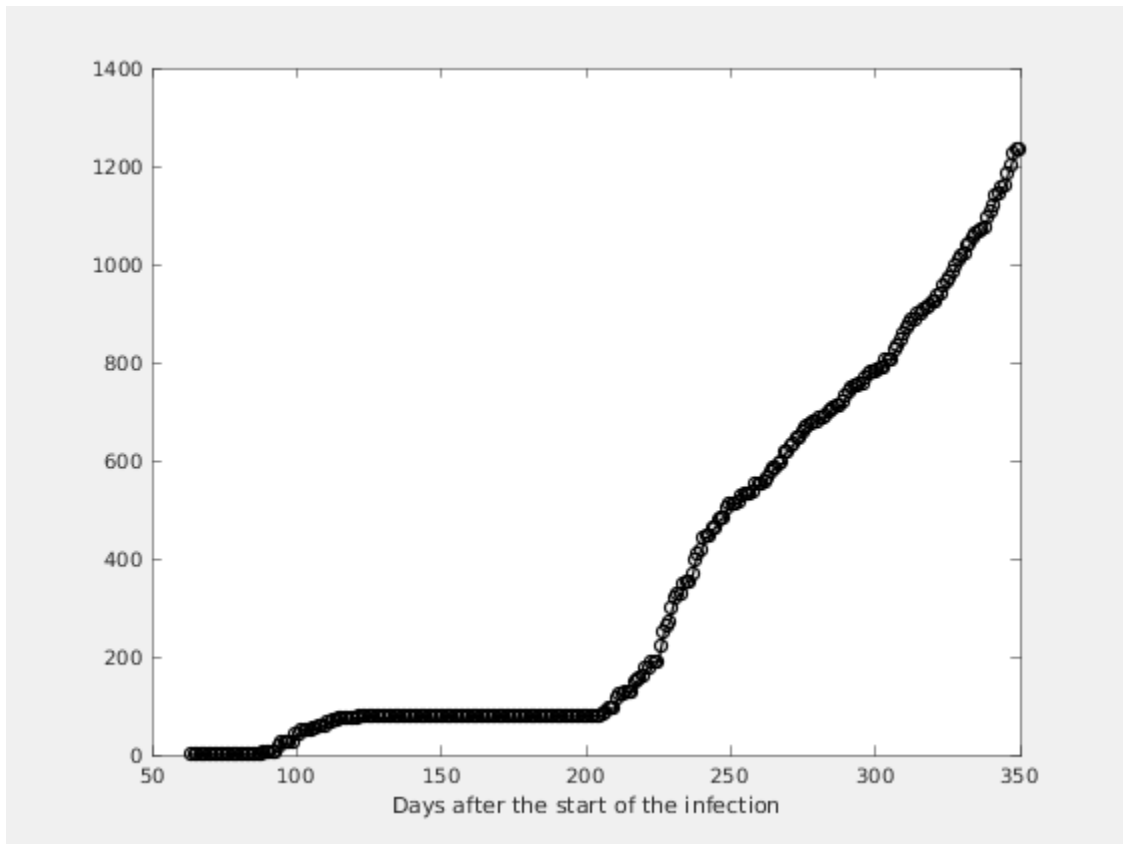
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# Chapter 1. Observed Infection data

Figure 1.1. Number of the daily reported laboratory-confirmed cases



**Figure 1.2. Number of the total registered cases**



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# Chapter 2. Estimating of the main parameter and some predictions

Figure 2.1. The Lotka-Nagaev and the Harris type estimator of the growth rate

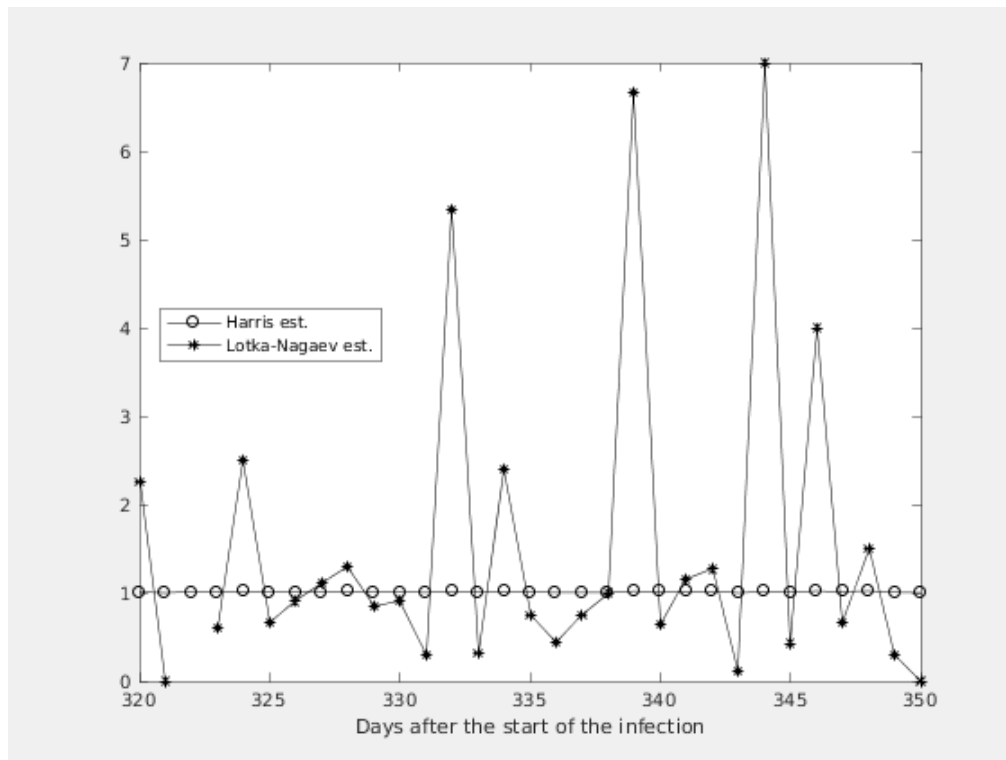
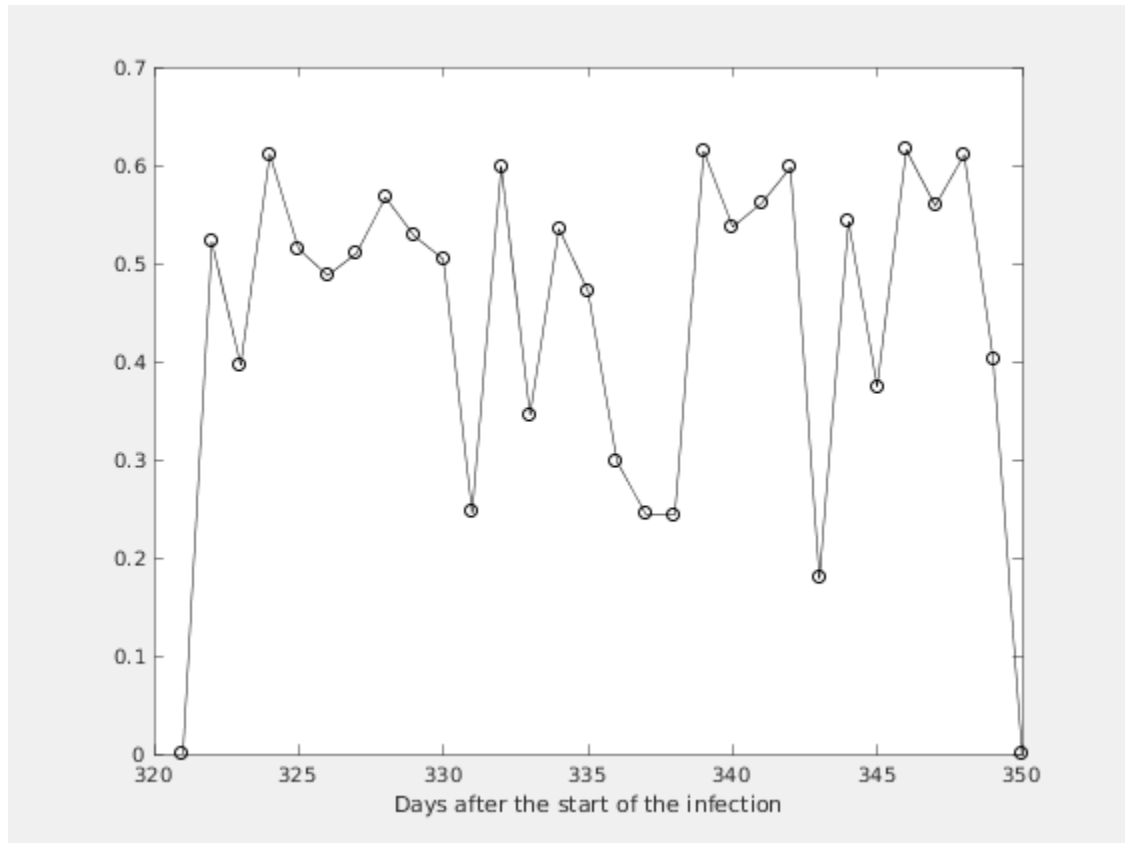
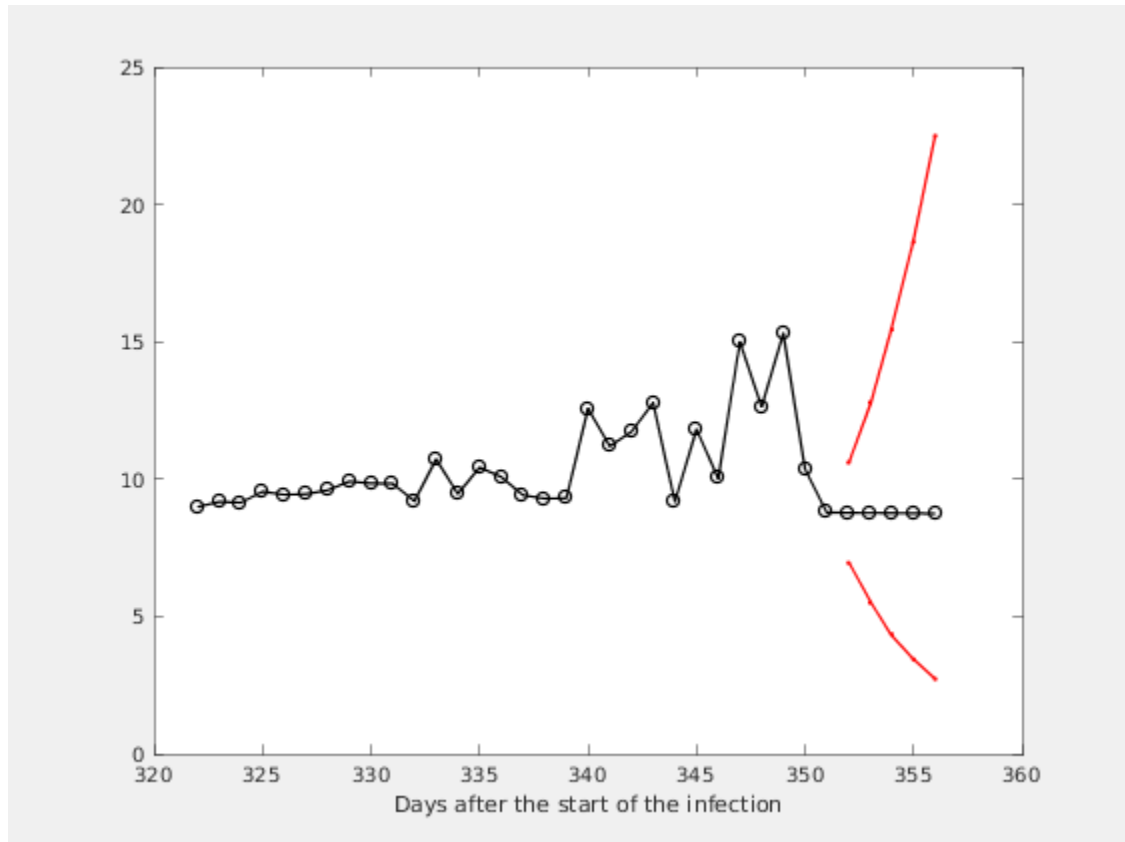


Figure 2.2. Figure

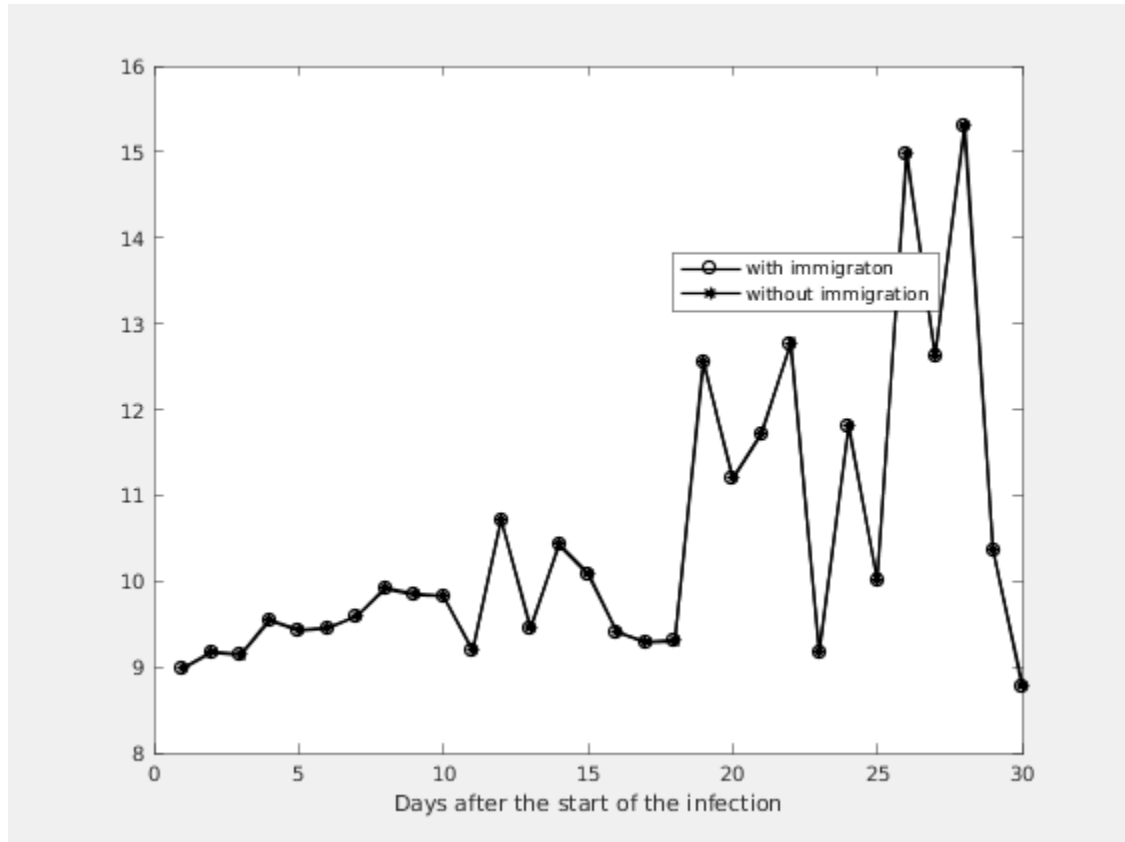




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



**Figure 2.4. Expected number of the nonregistered infected individuals with immigration**



**Estimation of the model parameters.**

k	m	ci	alpha	M1	A1
4	1.0198	0.8045 - 1.2351	0.5424	12	12
3	1.0127	0.7992 - 1.2262	0.3744	10	10
2	1.0192	0.8039 - 1.2344	0.6156	15	15
1	1.0049	0.7925 - 1.2173	0.5587	13	13
0	0.9992	0.7887 - 1.2097	0.6106	15	15