

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

**SaintKittsAndNevis - week 53**

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## **Branching stochastic processes as models of Covid-19 epidemic development : SaintKittsAndNevis - week 53**

### **Abstract**

The results presented here are obtained using the methodology proposed in the paper <https://arxiv.org/abs/2004.14838> for the country SaintKittsAndNevis. 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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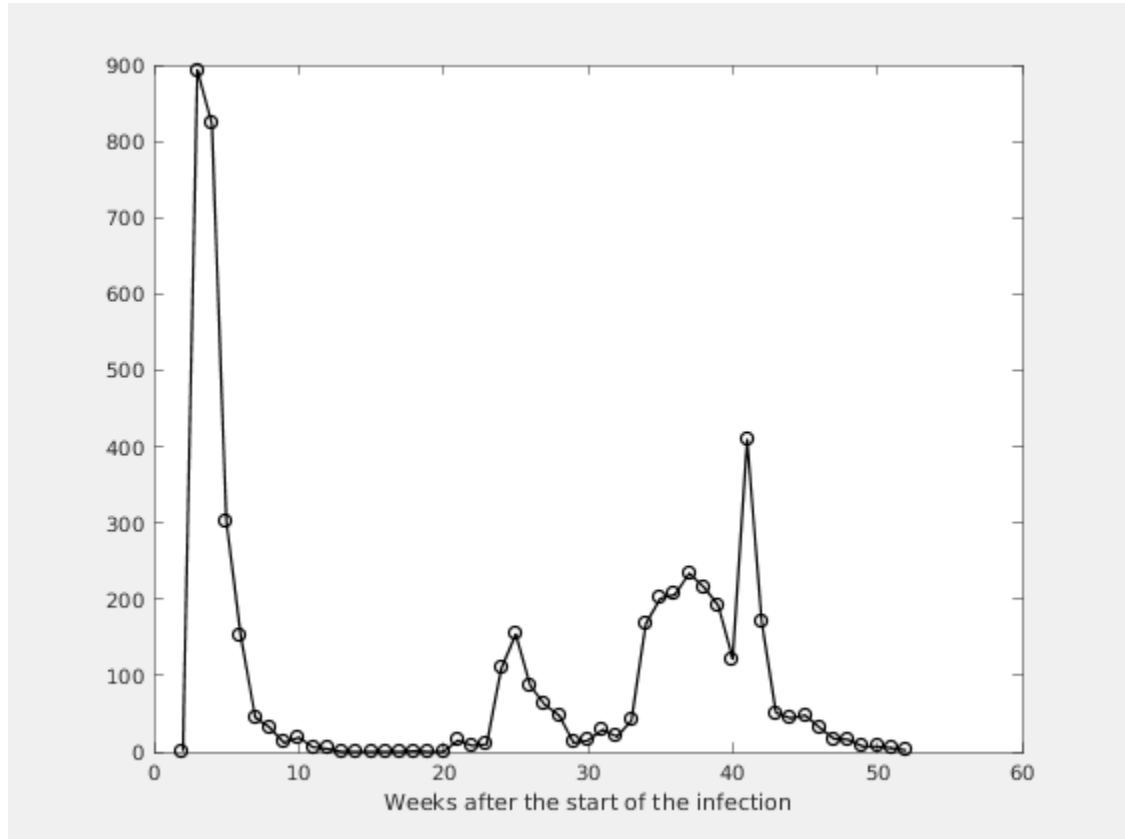
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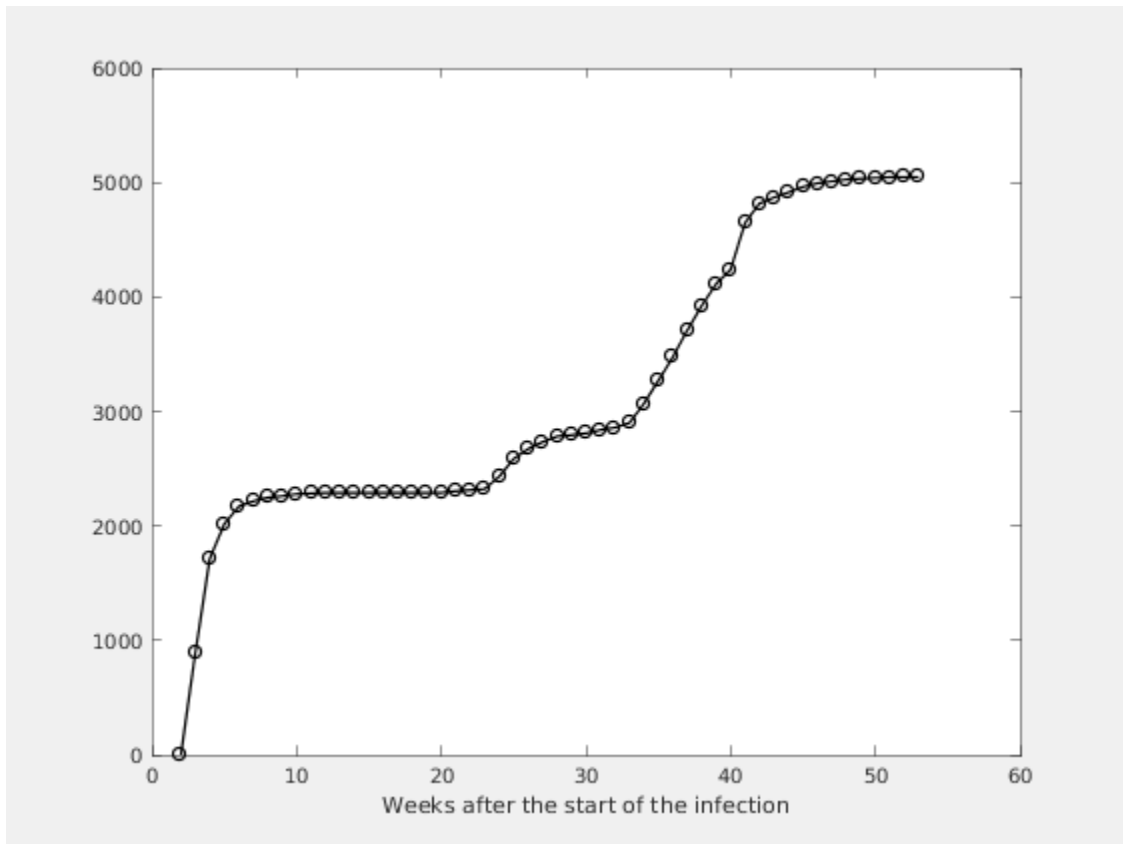
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# Chapter 1. Observed Infection data

Figure 1.1. Number of the weekly 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

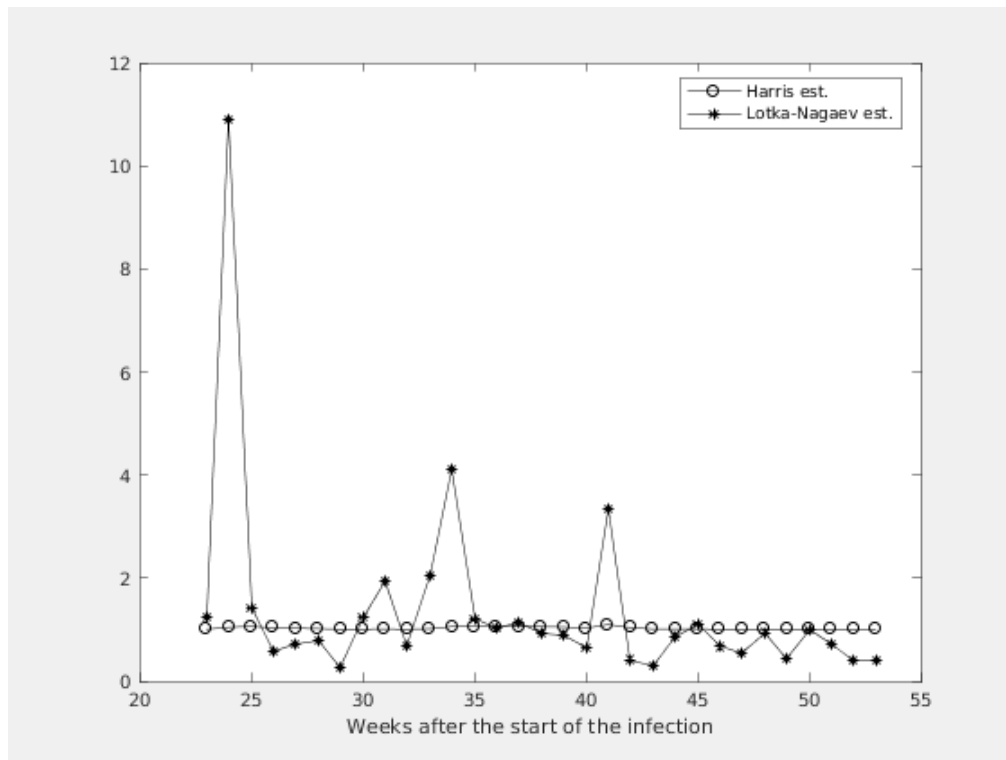
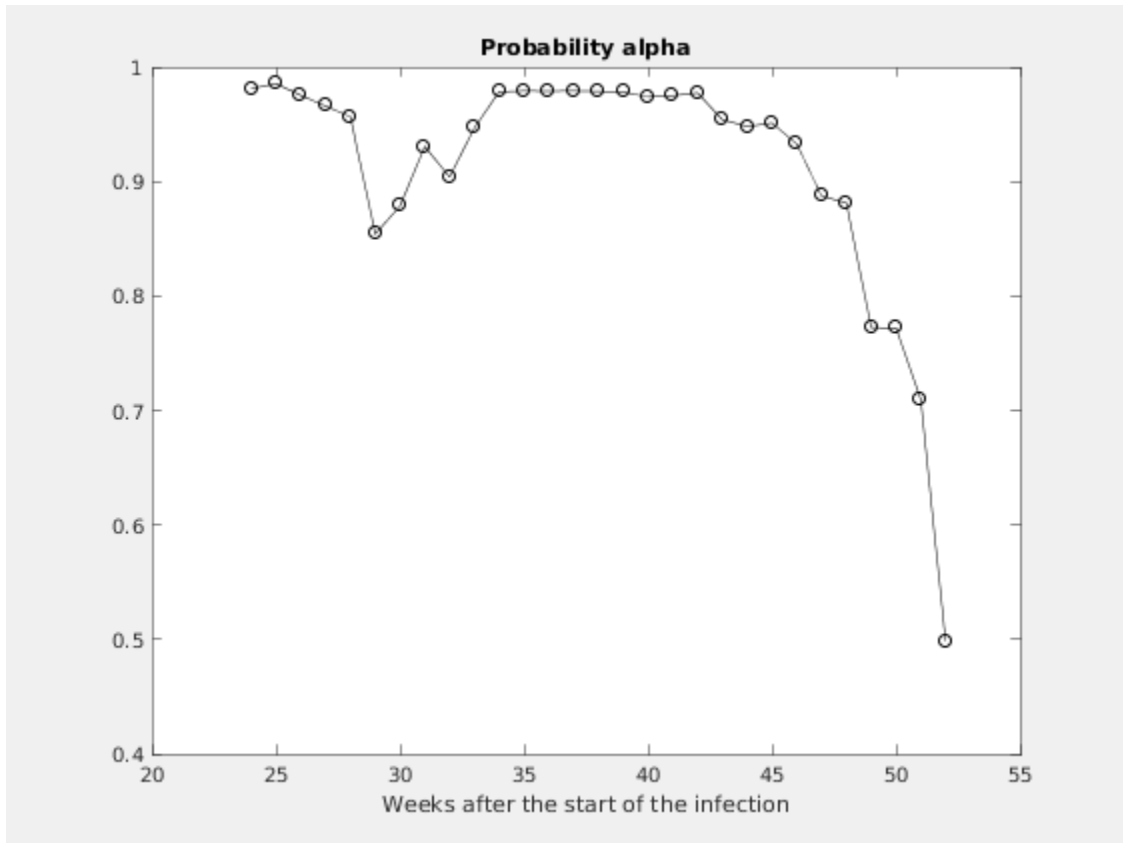
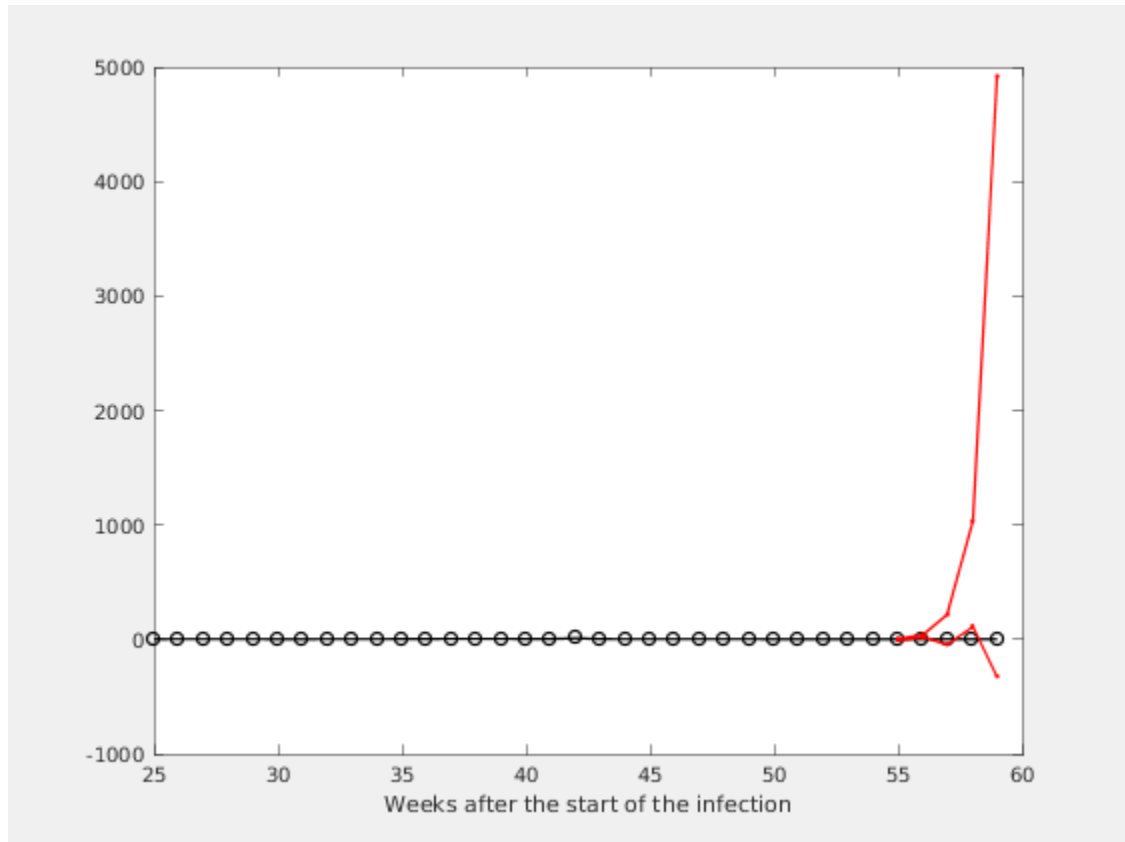


Figure 2.2. Figure

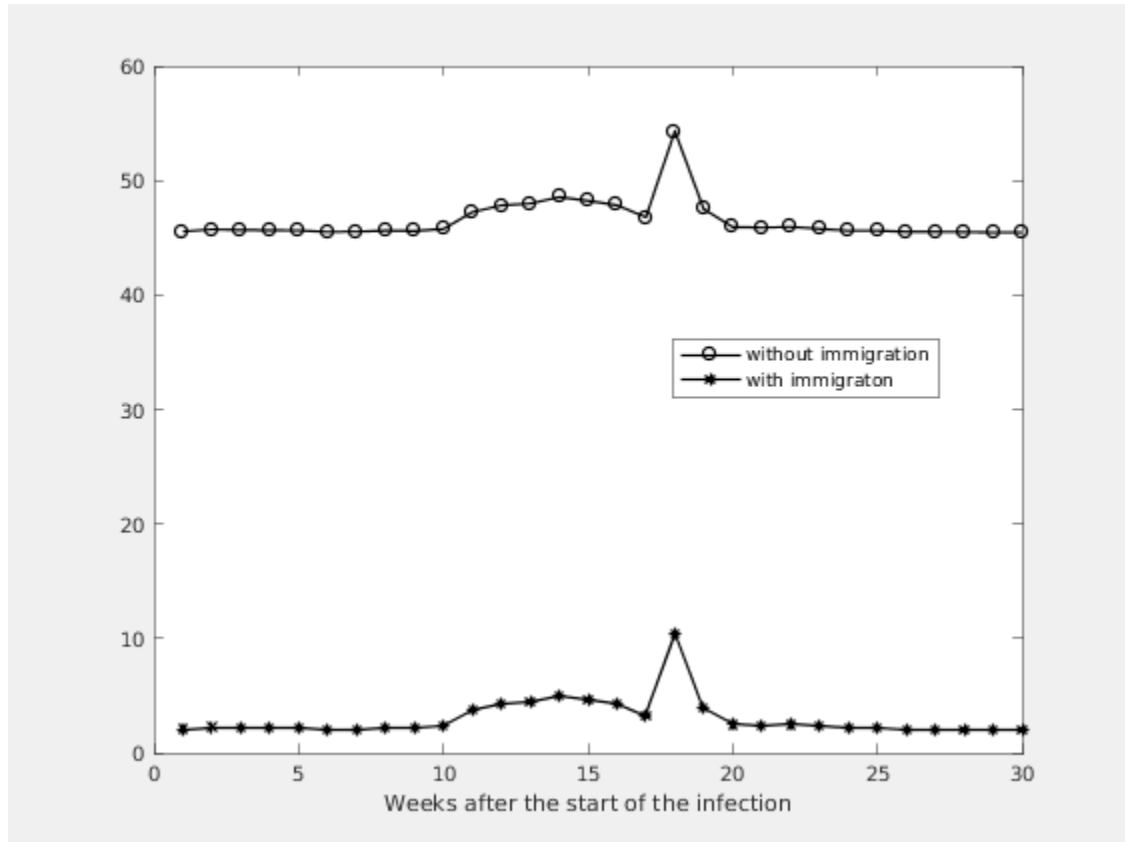




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	1.0012	-3.0200 - 5.0224	0.8873	2	46
3	1.0012	-2.9614 - 4.9638	0.8813	2	46
2	1.0008	-2.9057 - 4.9073	0.7724	2	46
1	1.0002	-2.8557 - 4.8561	0.7722	2	46
0	1.0002	-2.8069 - 4.8073	0.7097	2	46