

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

**UnitedStatesVirginIslands - week 53**

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### **Abstract**

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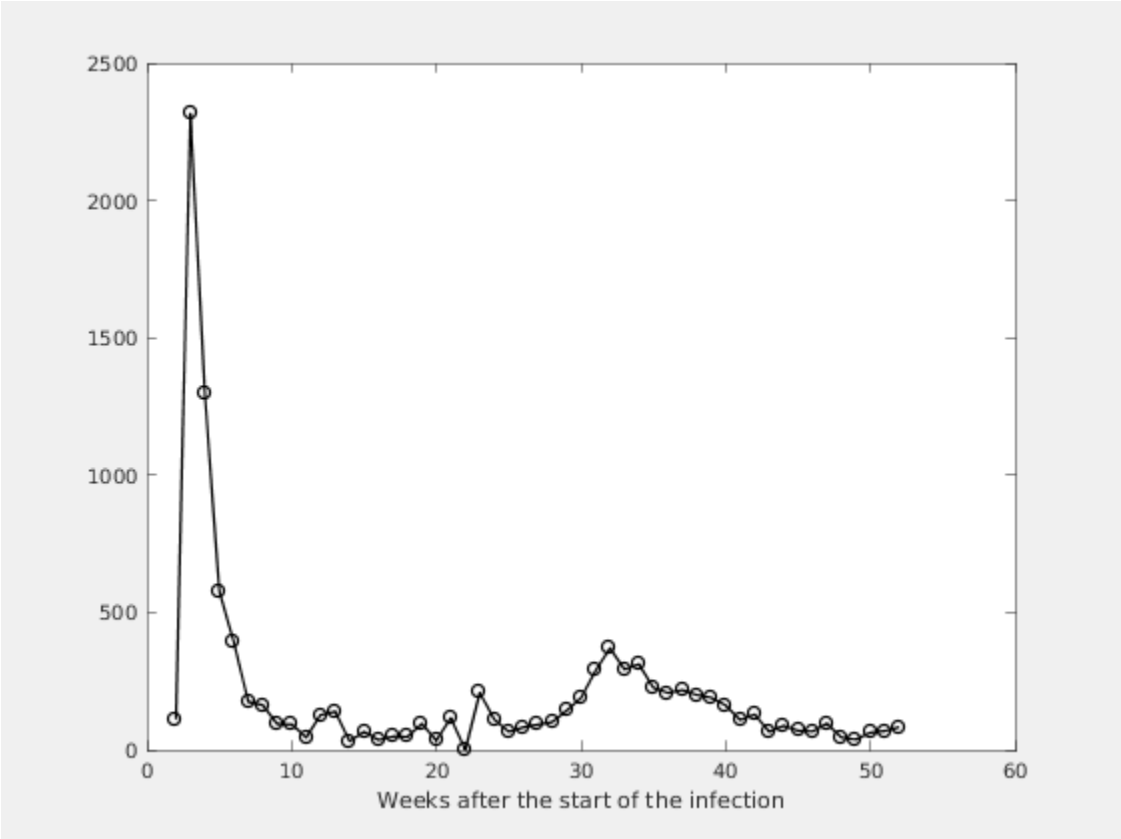
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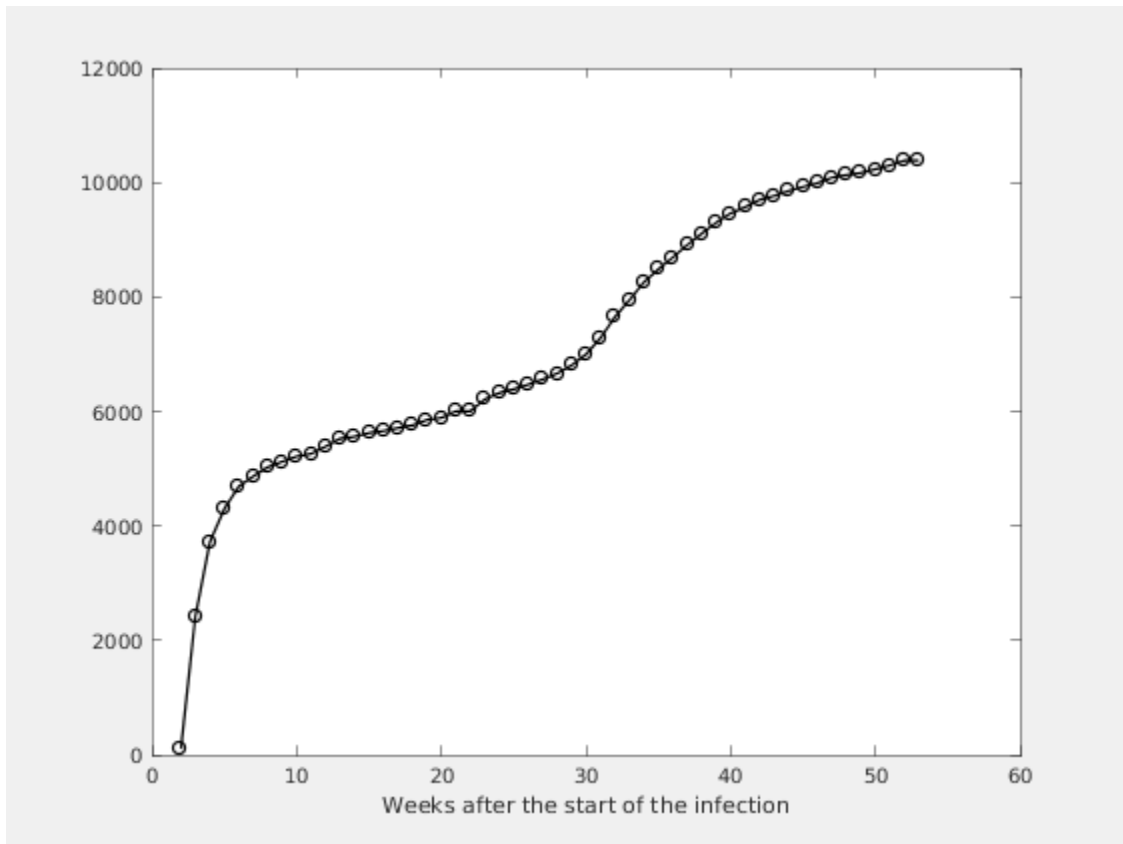
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# Chapter 1. Observed Infection data

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

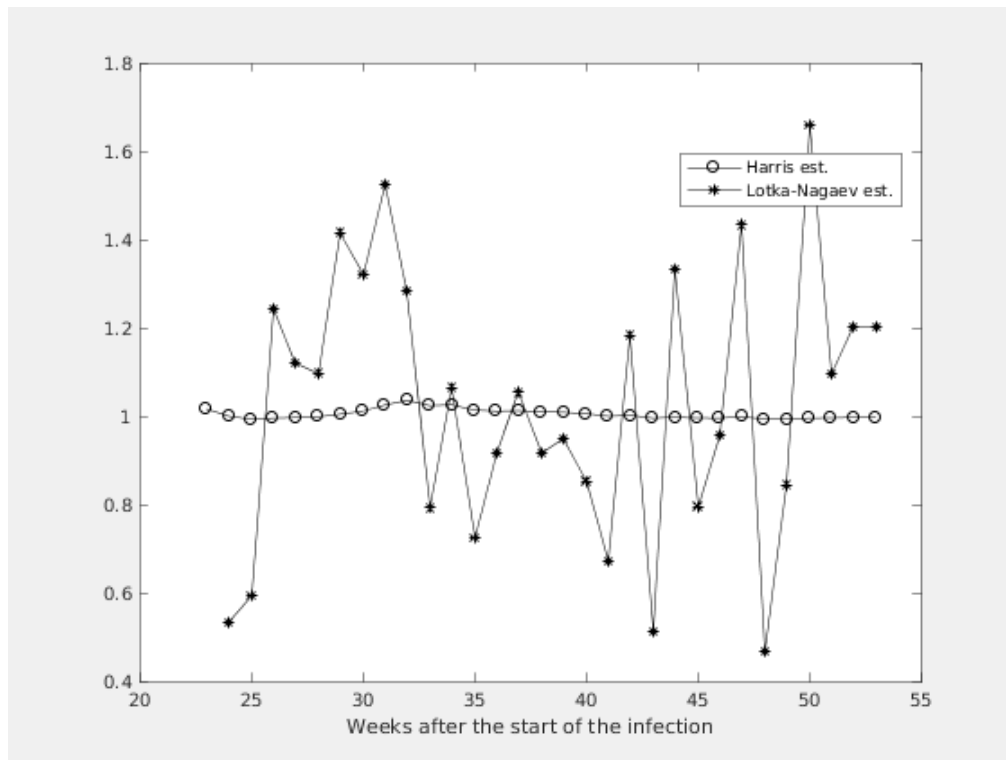
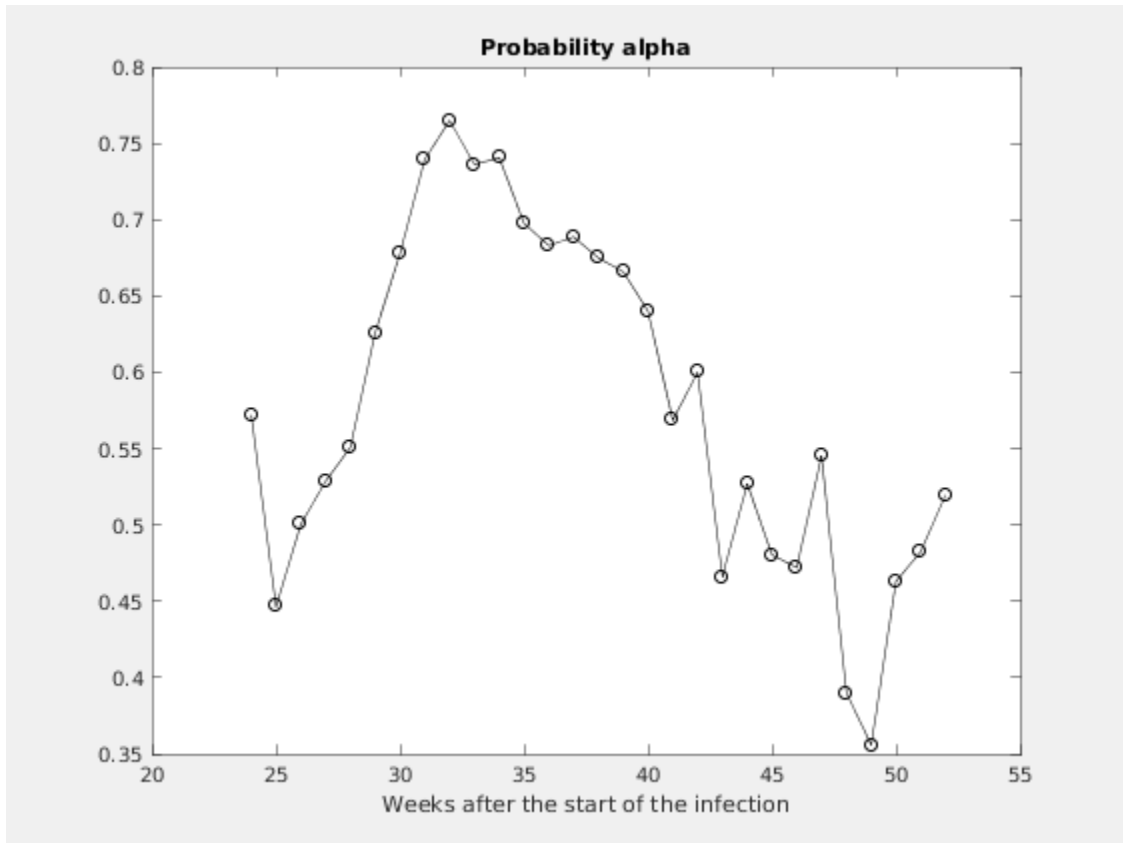
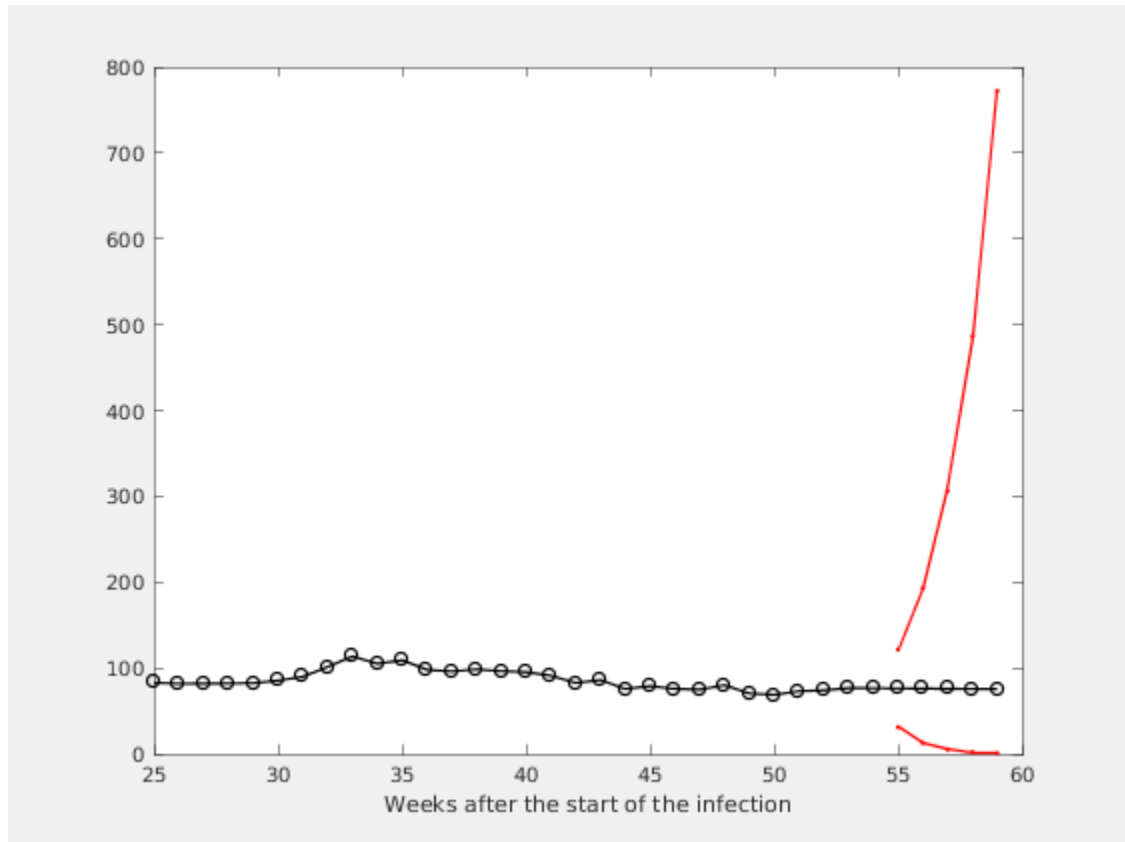


Figure 2.2. Figure

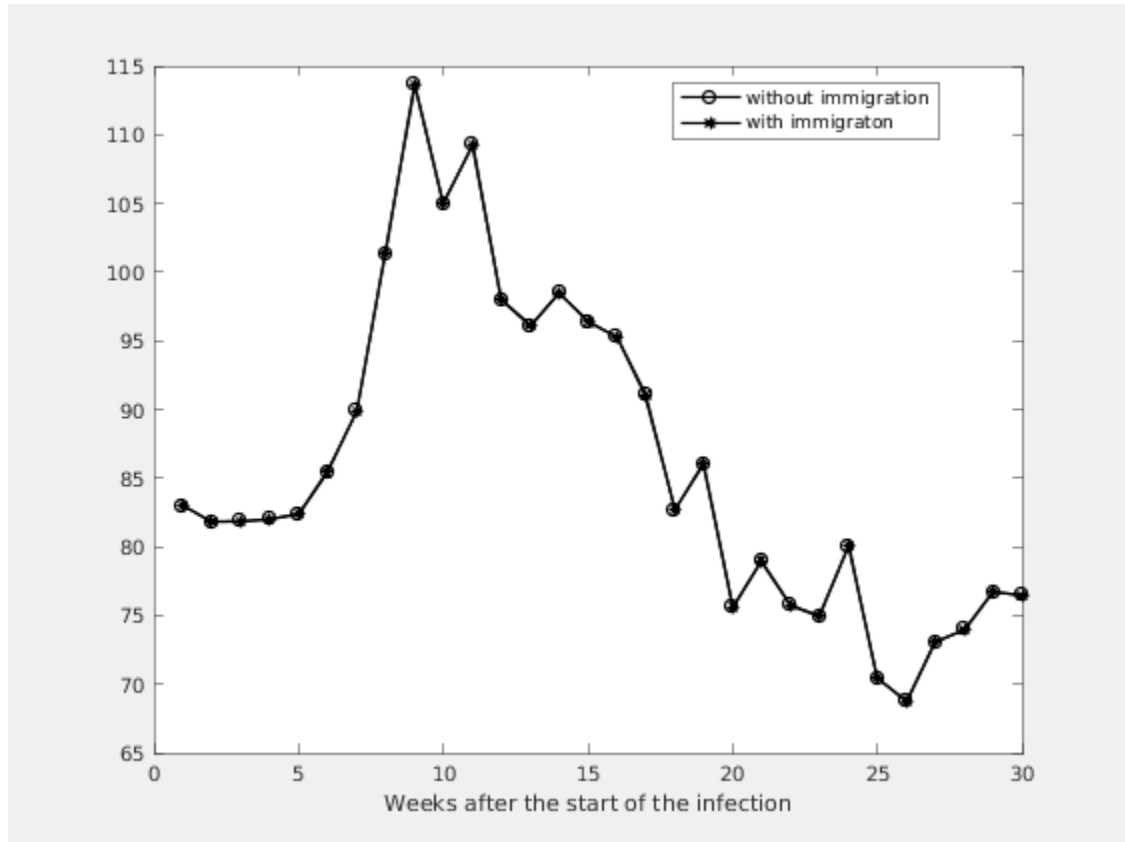




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	0.9928	0.3602 - 1.6254	0.5453	80	80
3	0.9953	0.3726 - 1.6180	0.3898	70	70
2	0.9959	0.3814 - 1.6104	0.3559	69	69
1	0.9973	0.3904 - 1.6042	0.4631	73	73
0	0.9973	0.3986 - 1.5960	0.4826	74	74