

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

**Serbia - week 53**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Serbia - 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 Serbia. 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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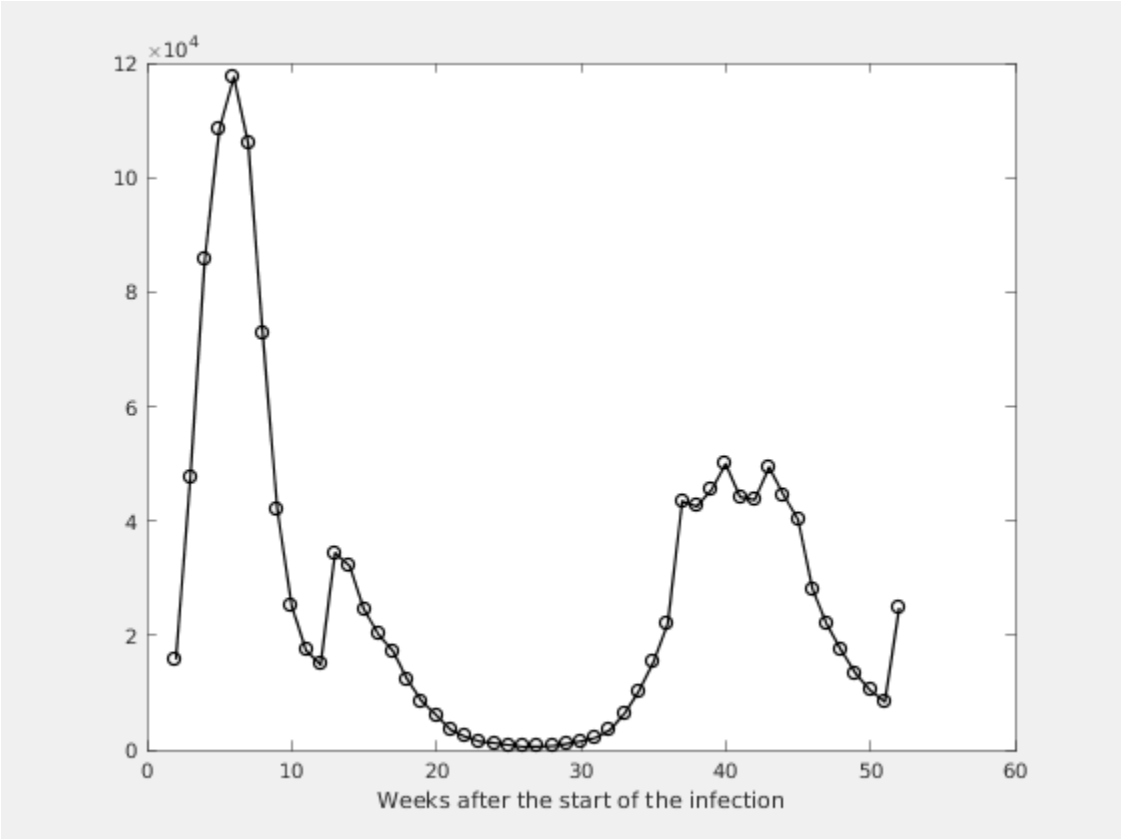
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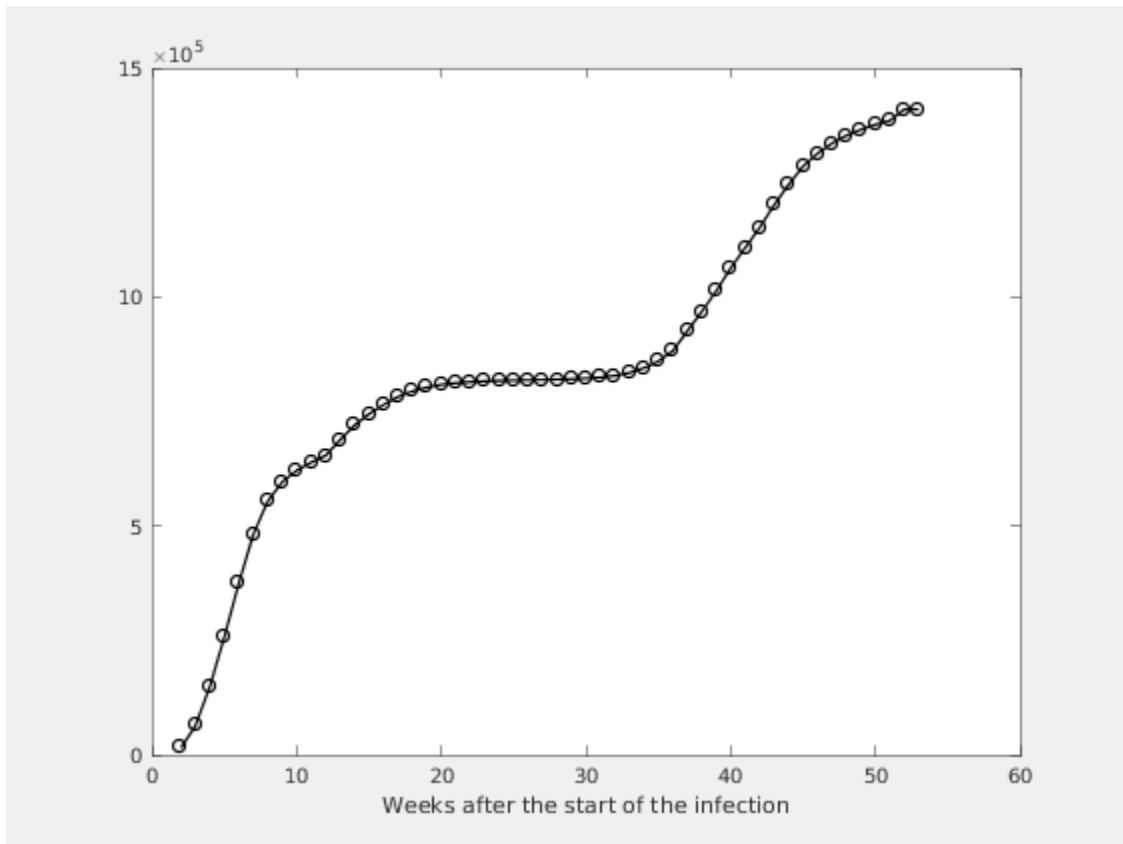
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# Chapter 1. Observed Infection data

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

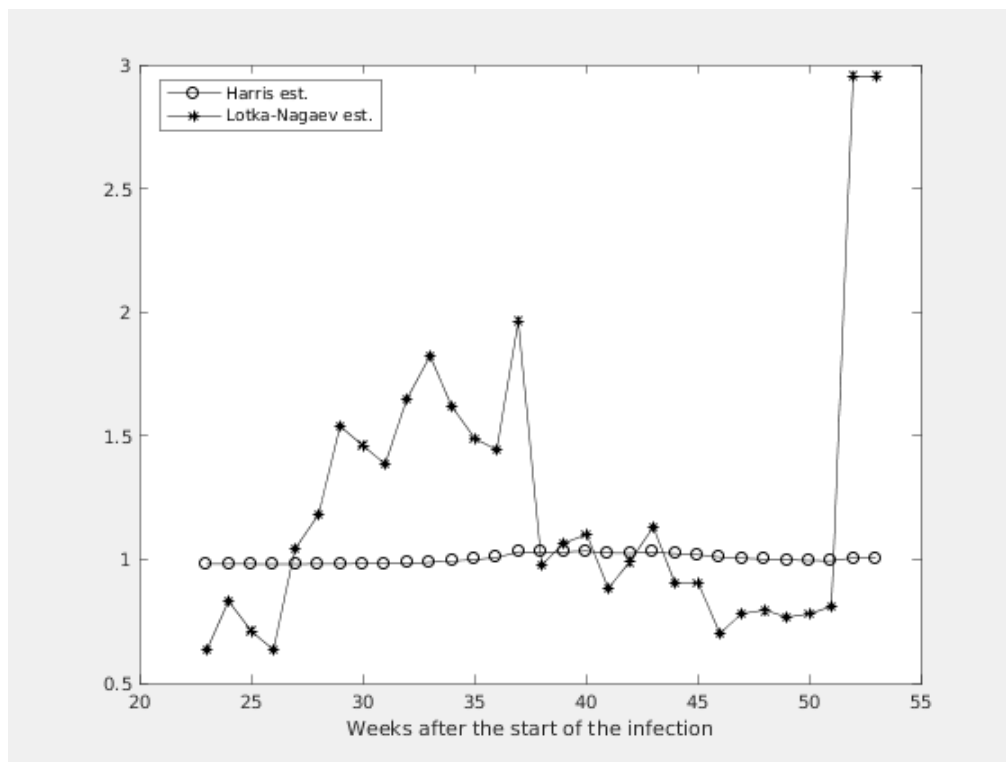
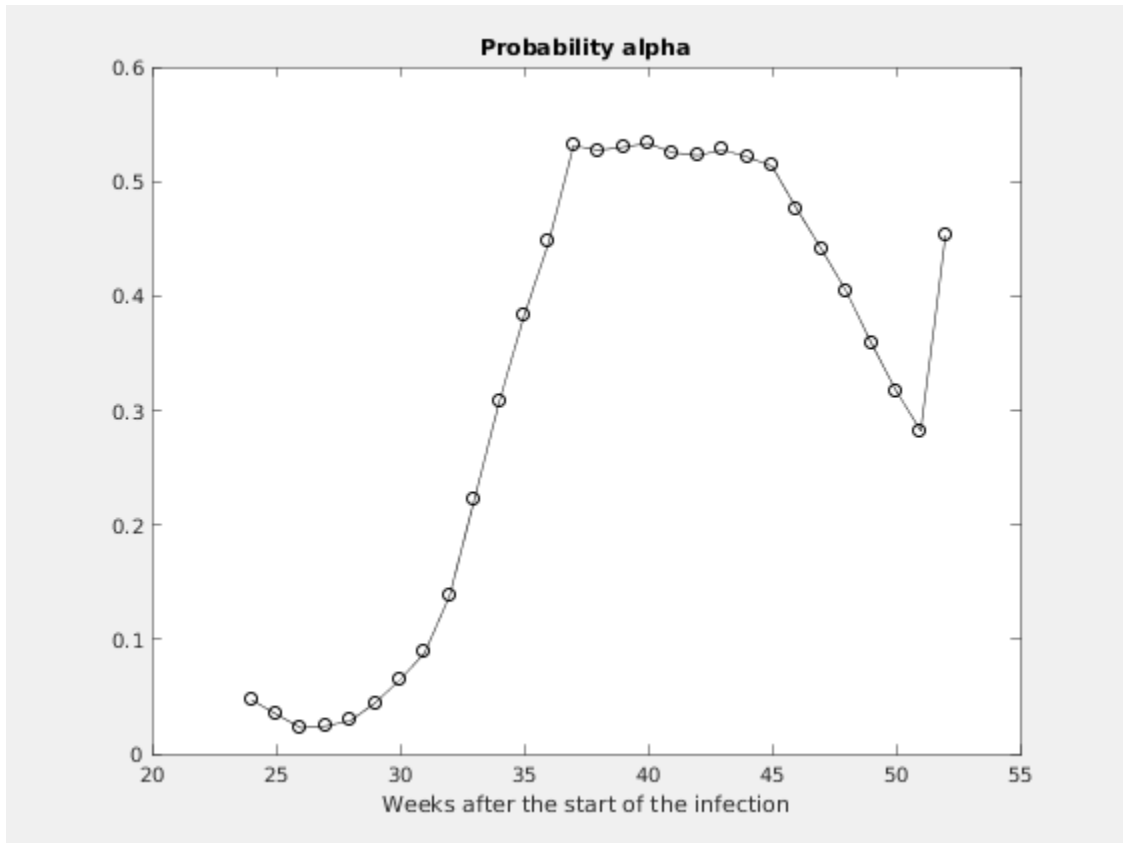
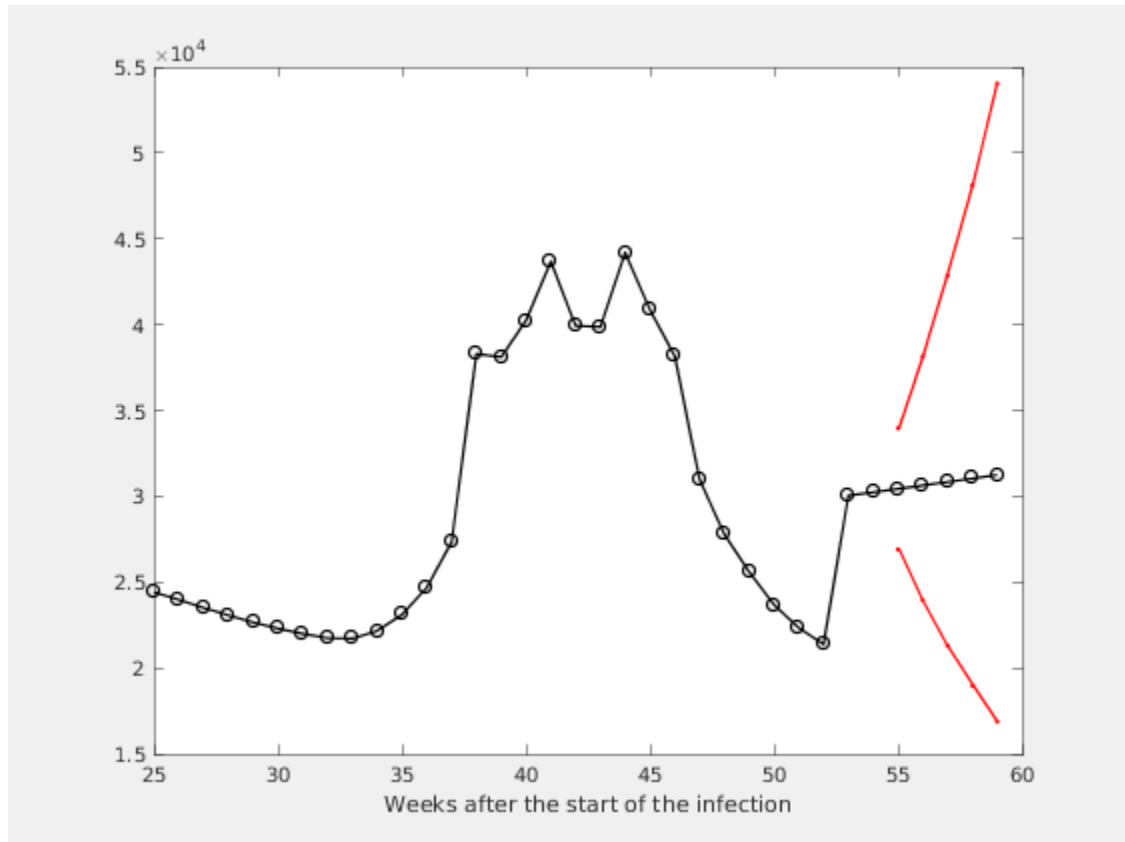


Figure 2.2. Figure

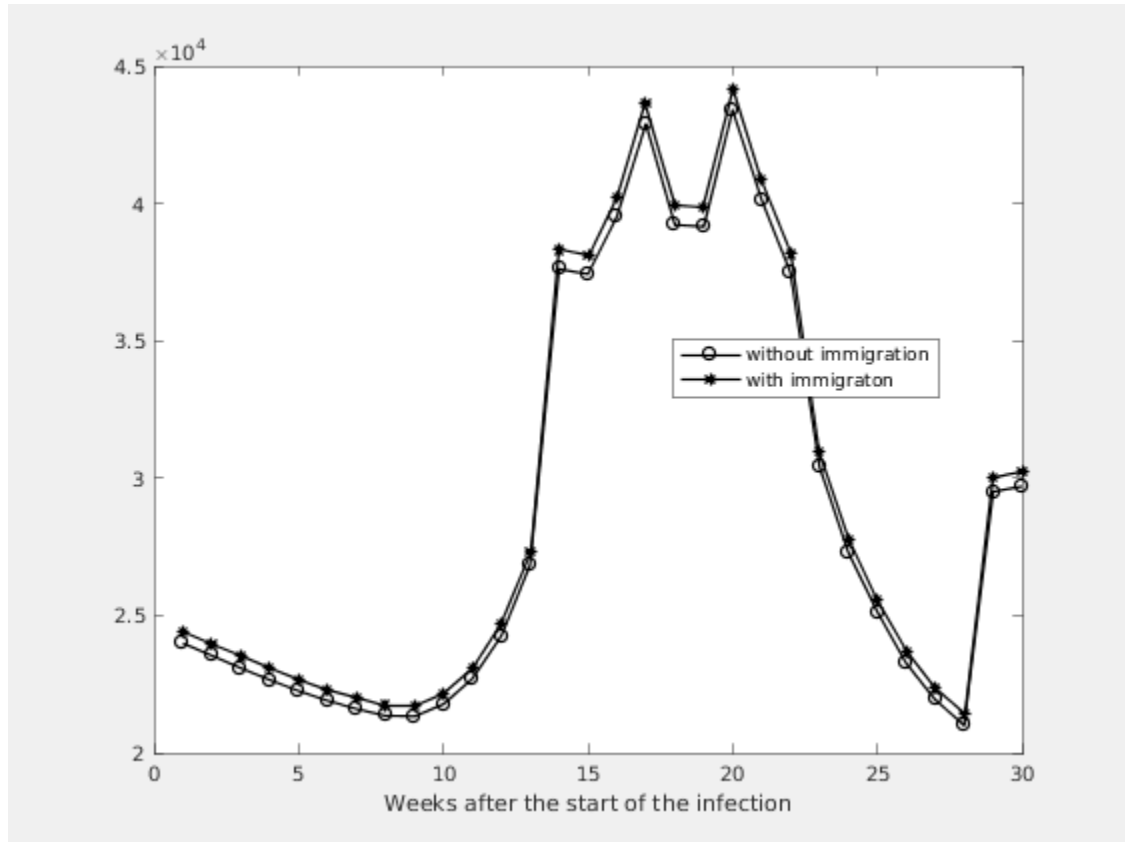




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	0.9981	0.8813 - 1.1149	0.4407	27785	27287
3	0.9960	0.8812 - 1.1109	0.4039	25588	25130
2	0.9946	0.8815 - 1.1078	0.3591	23682	23258
1	1.0065	0.8949 - 1.1182	0.3174	22334	21934
0	1.0065	0.8964 - 1.1167	0.2824	21385	21002