

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

**Var77 - week 53**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Var77 - 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 Var77. 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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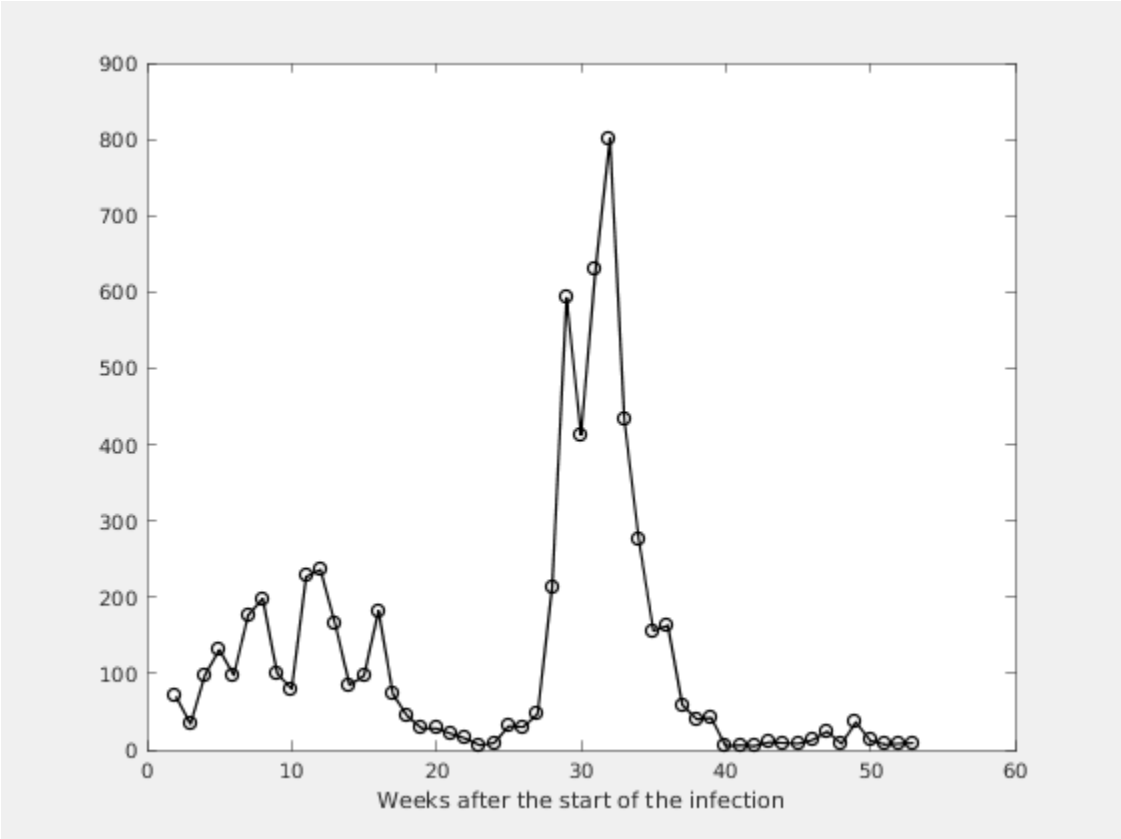
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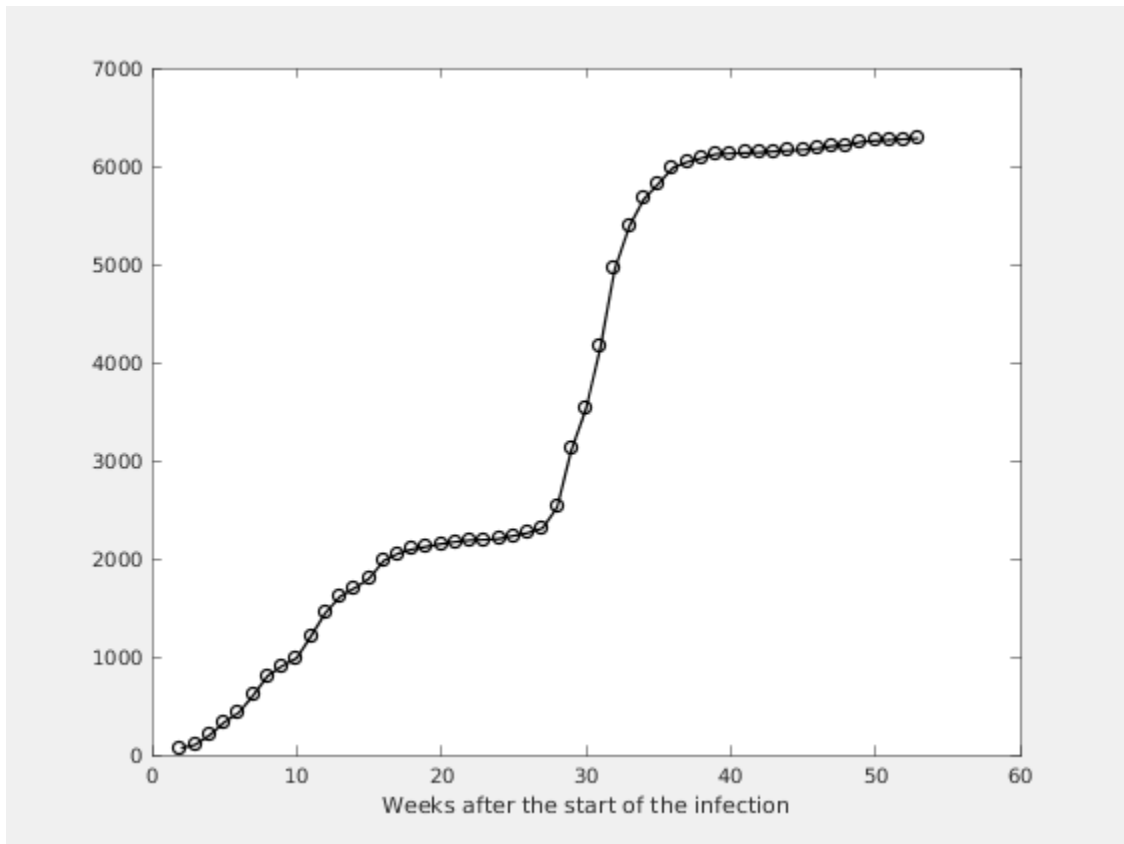
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# Chapter 1. Observed Infection data

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

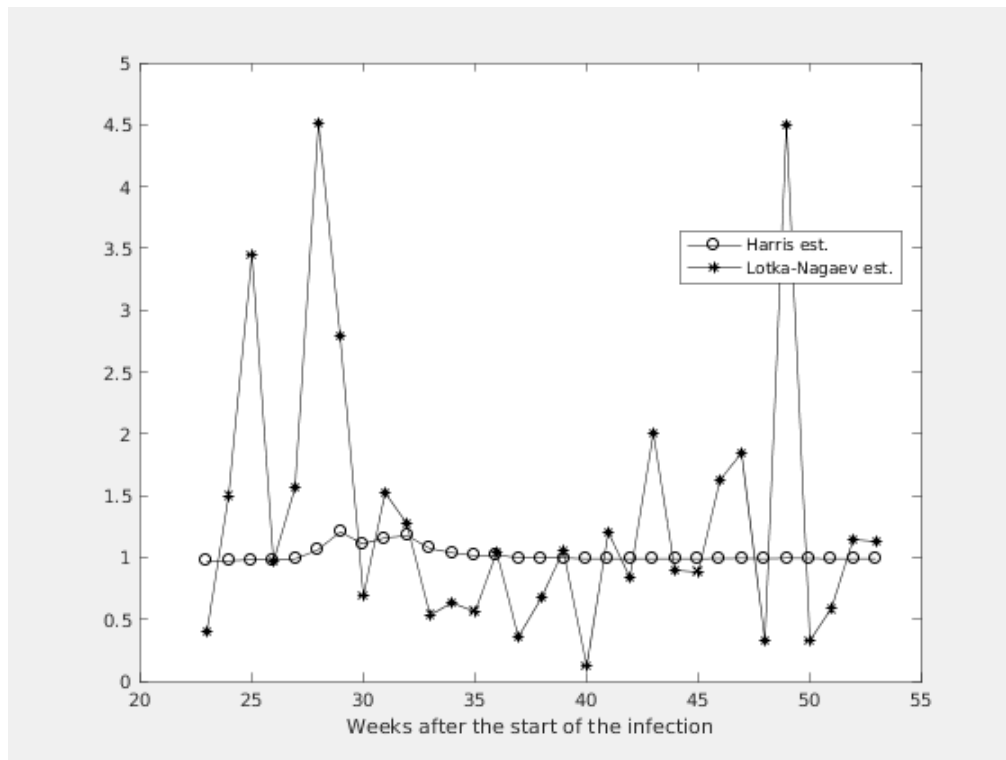
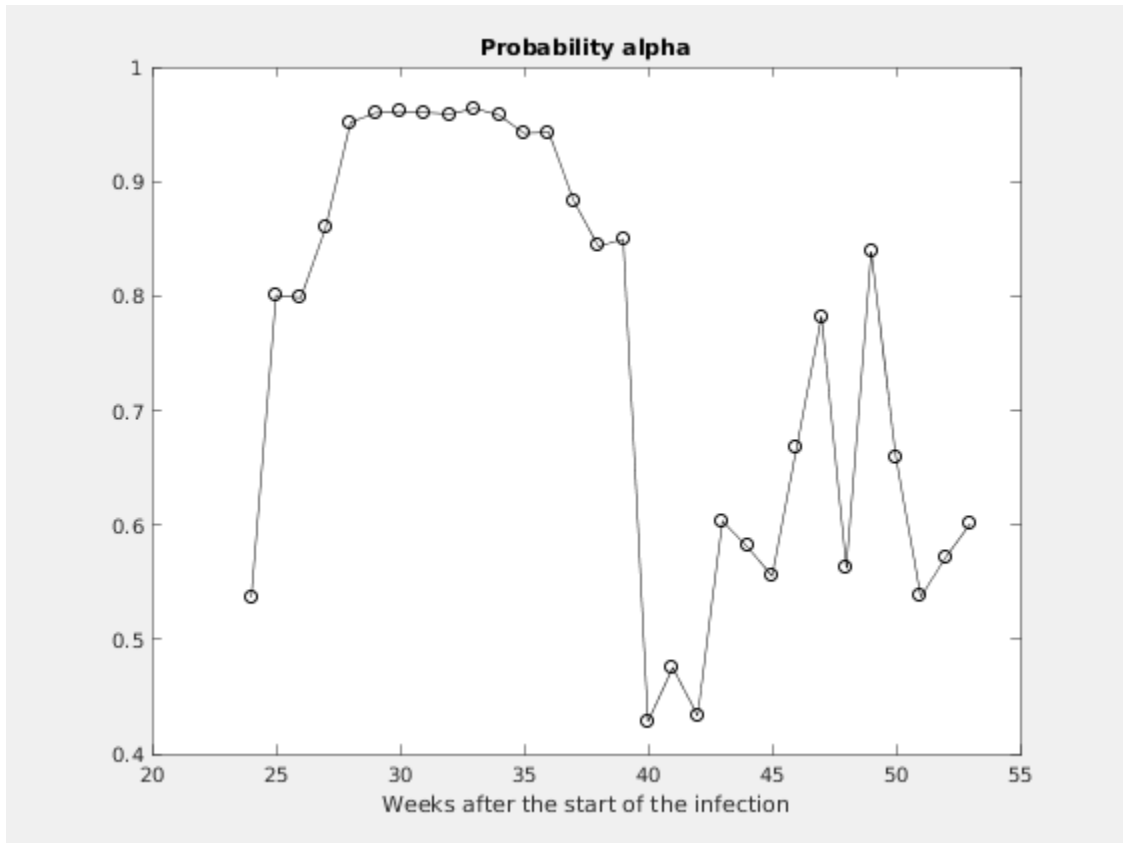
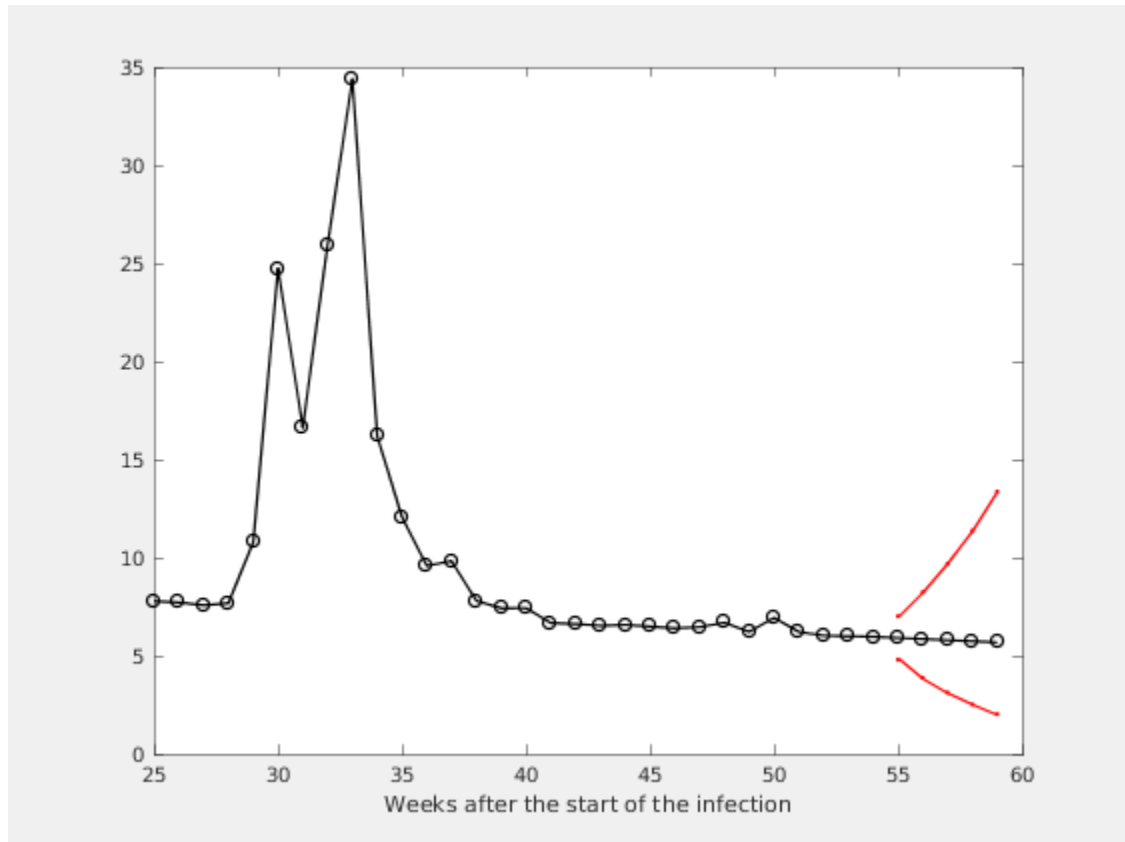


Figure 2.2. Figure

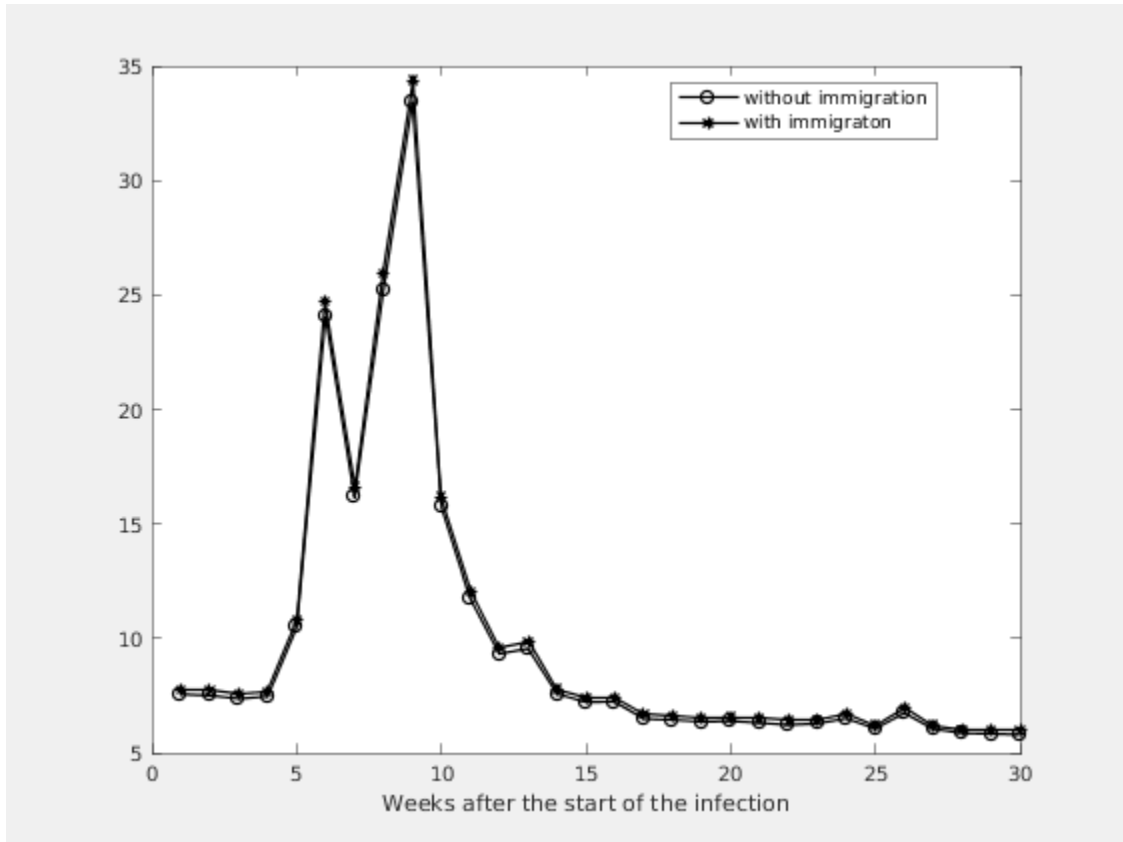




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	0.9945	0.8008 - 1.1882	0.7821	7	7
3	0.9907	0.7991 - 1.1823	0.5624	6	6
2	0.9899	0.7971 - 1.1827	0.8385	7	7
1	0.9901	0.7993 - 1.1809	0.6586	6	6
0	0.9903	0.8016 - 1.1790	0.5374	6	6