

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

**Var78 - week 53**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Var78 - 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 Var78. 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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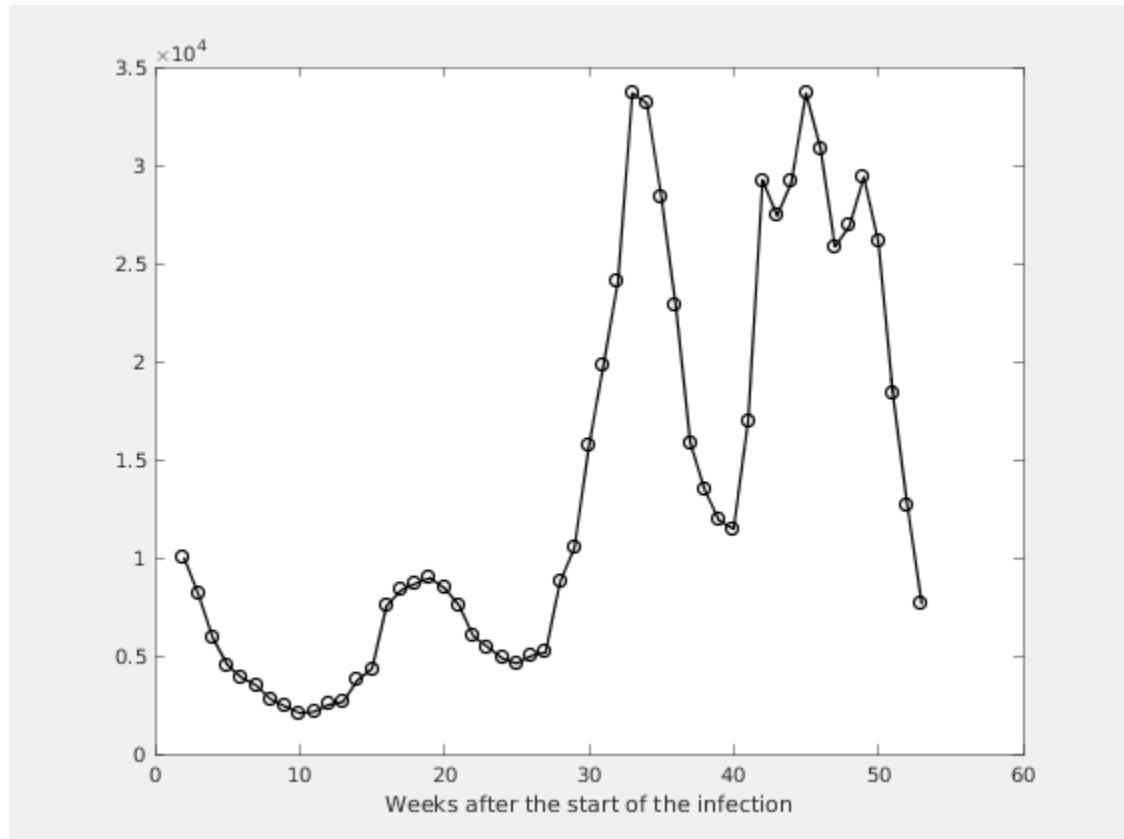
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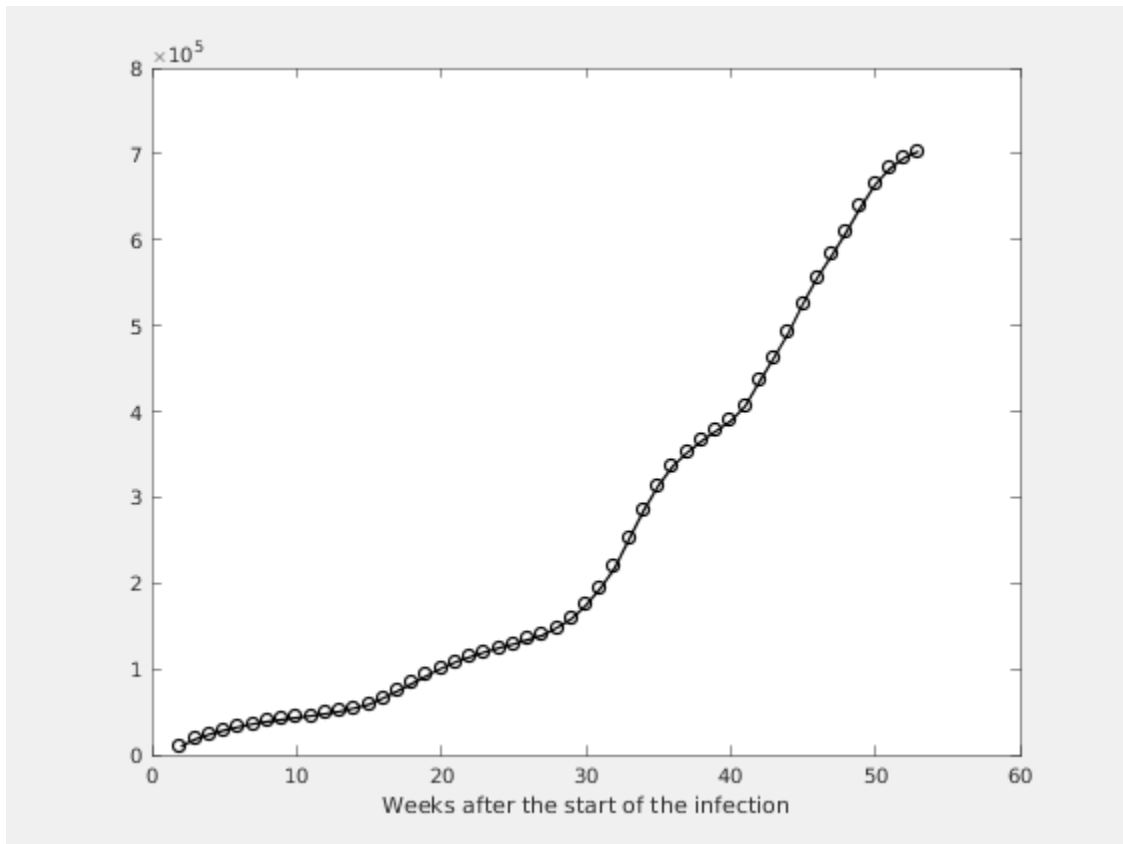
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# Chapter 1. Observed Infection data

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

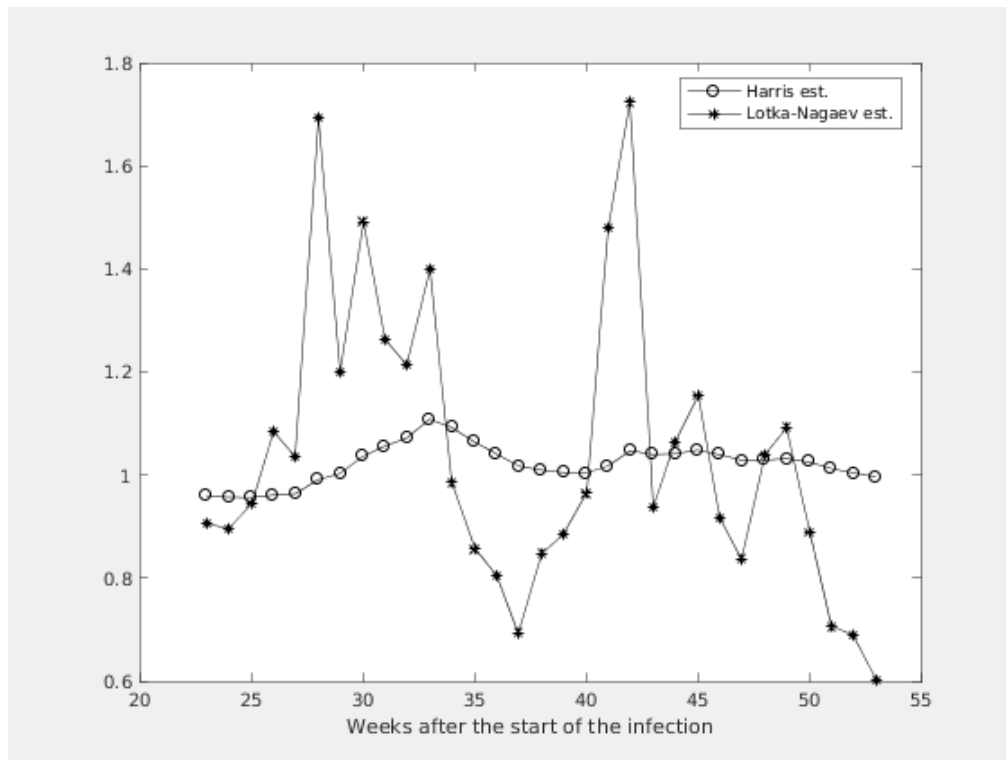
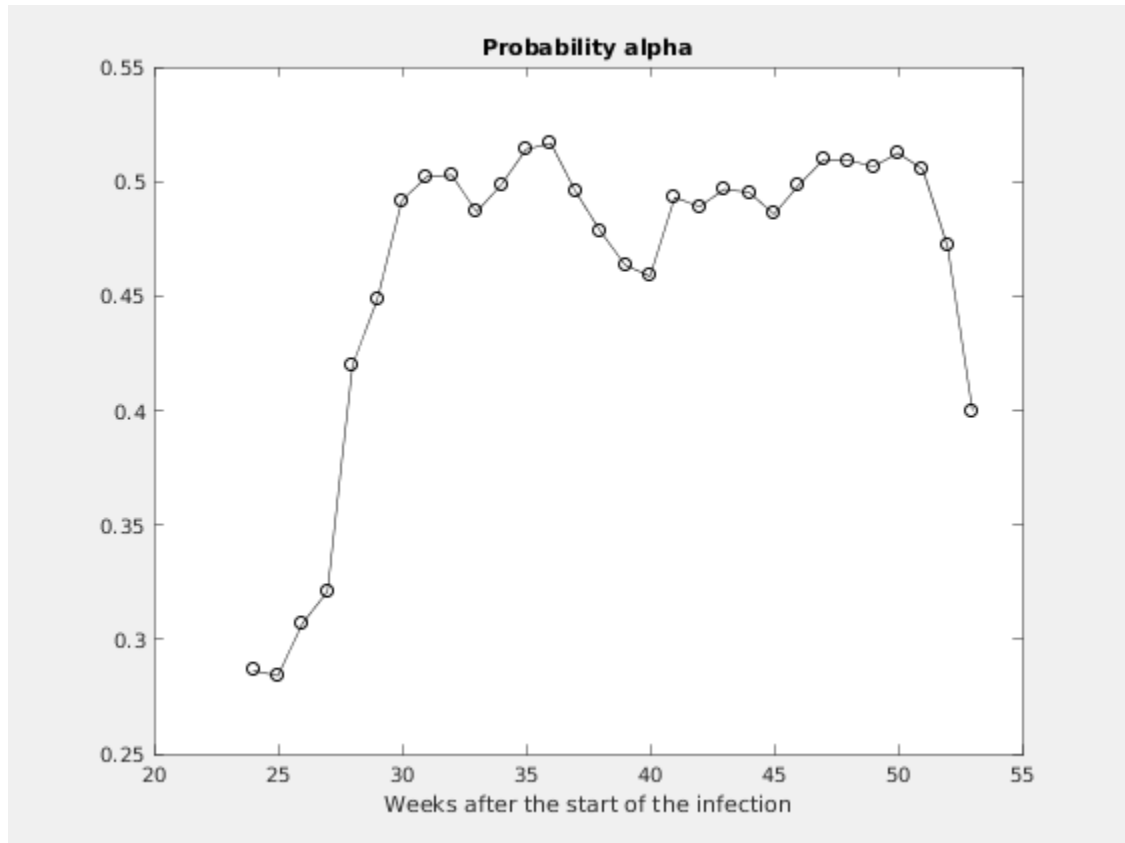
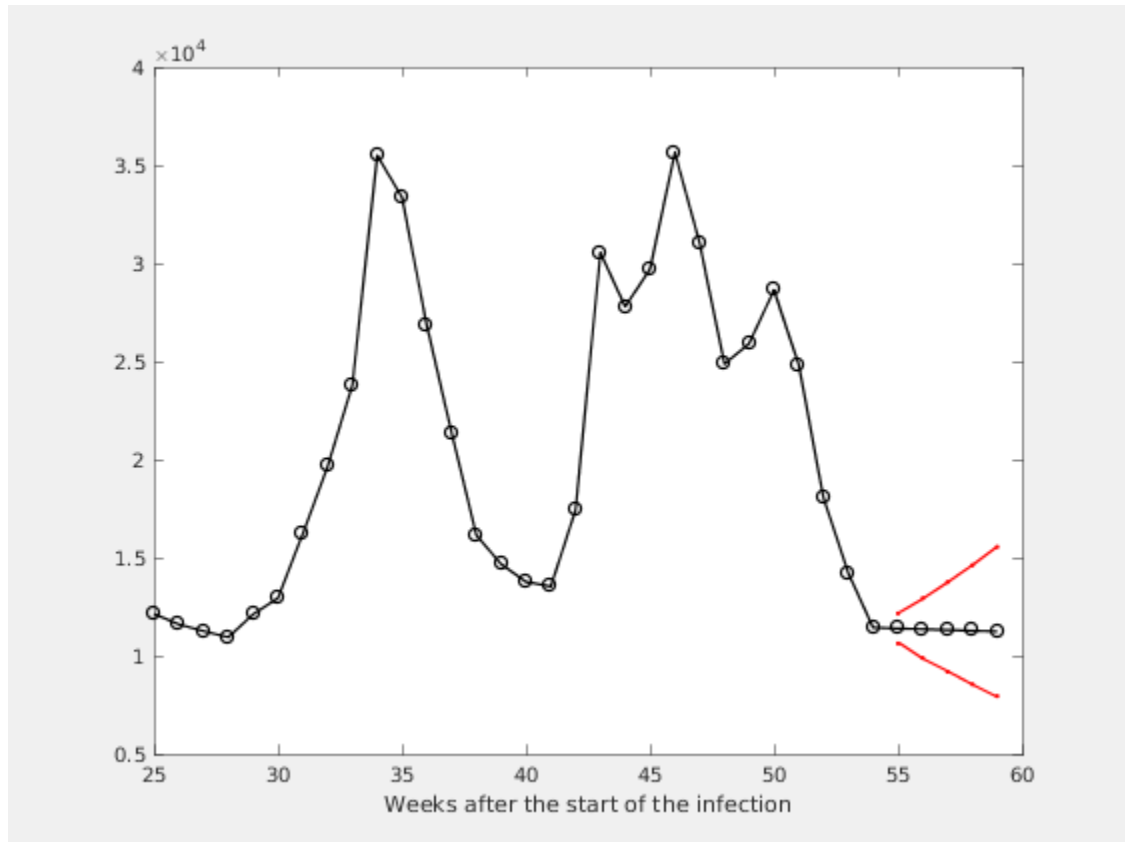


Figure 2.2. Figure

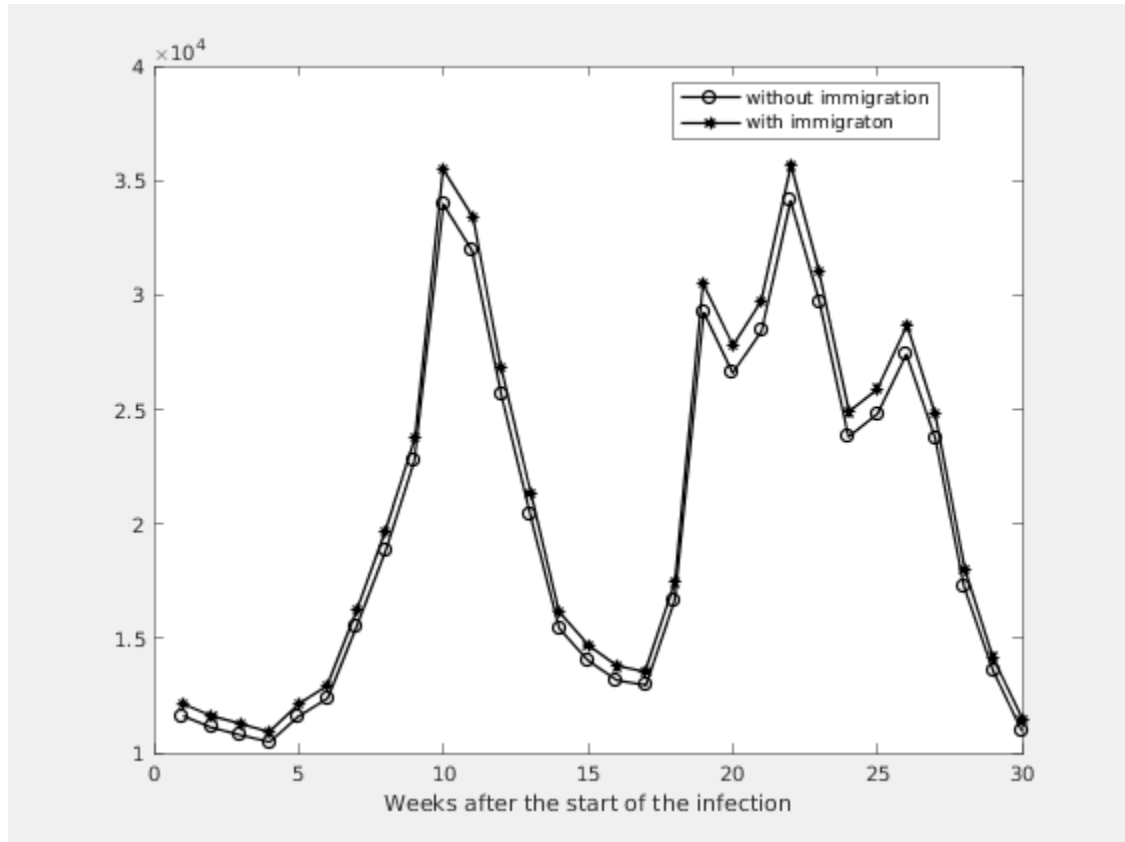




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	1.0318	0.9595 - 1.1041	0.5096	24879	23809
3	1.0252	0.9552 - 1.0951	0.5093	25913	24798
2	1.0126	0.9447 - 1.0806	0.5065	28632	27401
1	1.0039	0.9376 - 1.0702	0.5125	24815	23748
0	0.9966	0.9300 - 1.0631	0.5053	18014	17239