

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

**Var175 - week 53**

**N. Yanev, V. Stoimenova, D. Atanasov**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Var175 - 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 Var175. 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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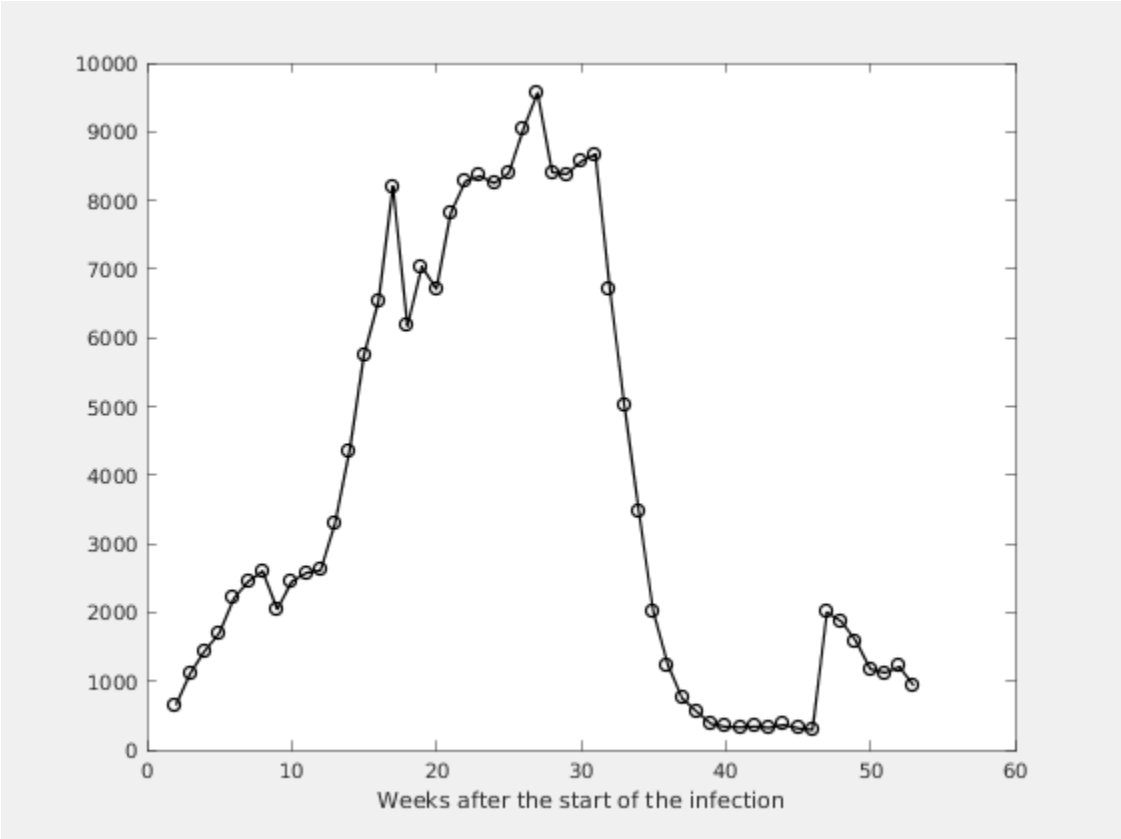
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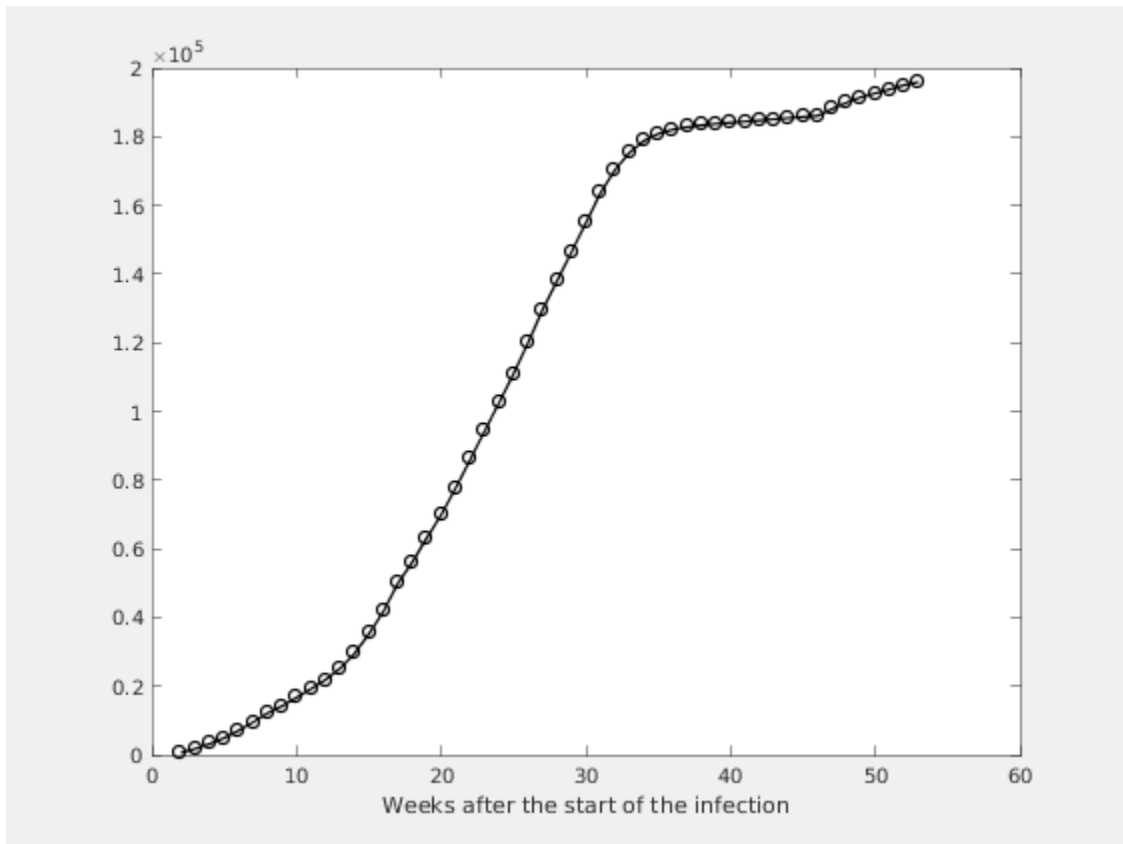
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# Chapter 1. Observed Infection data

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

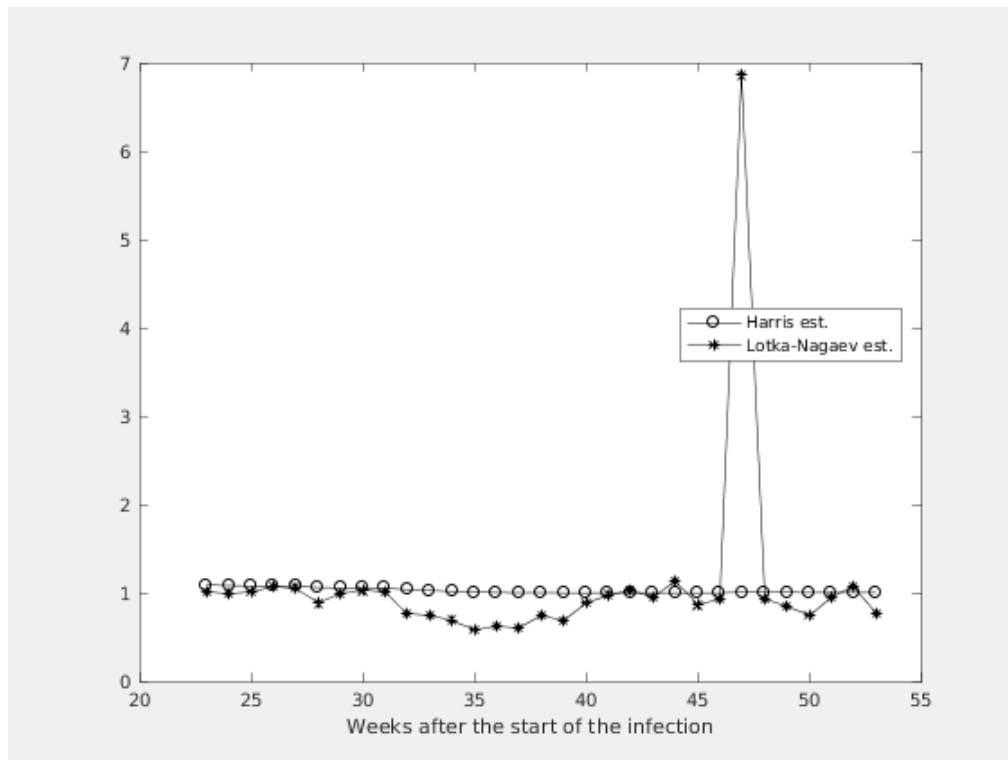
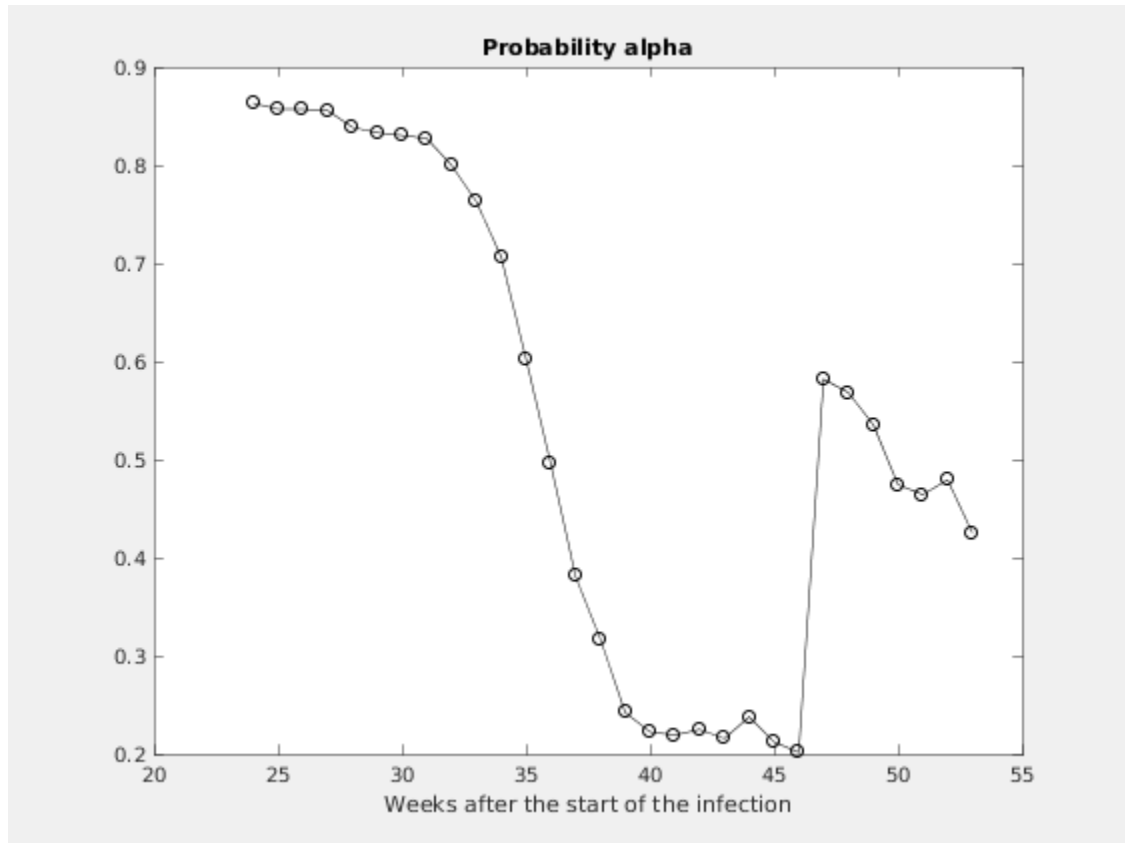
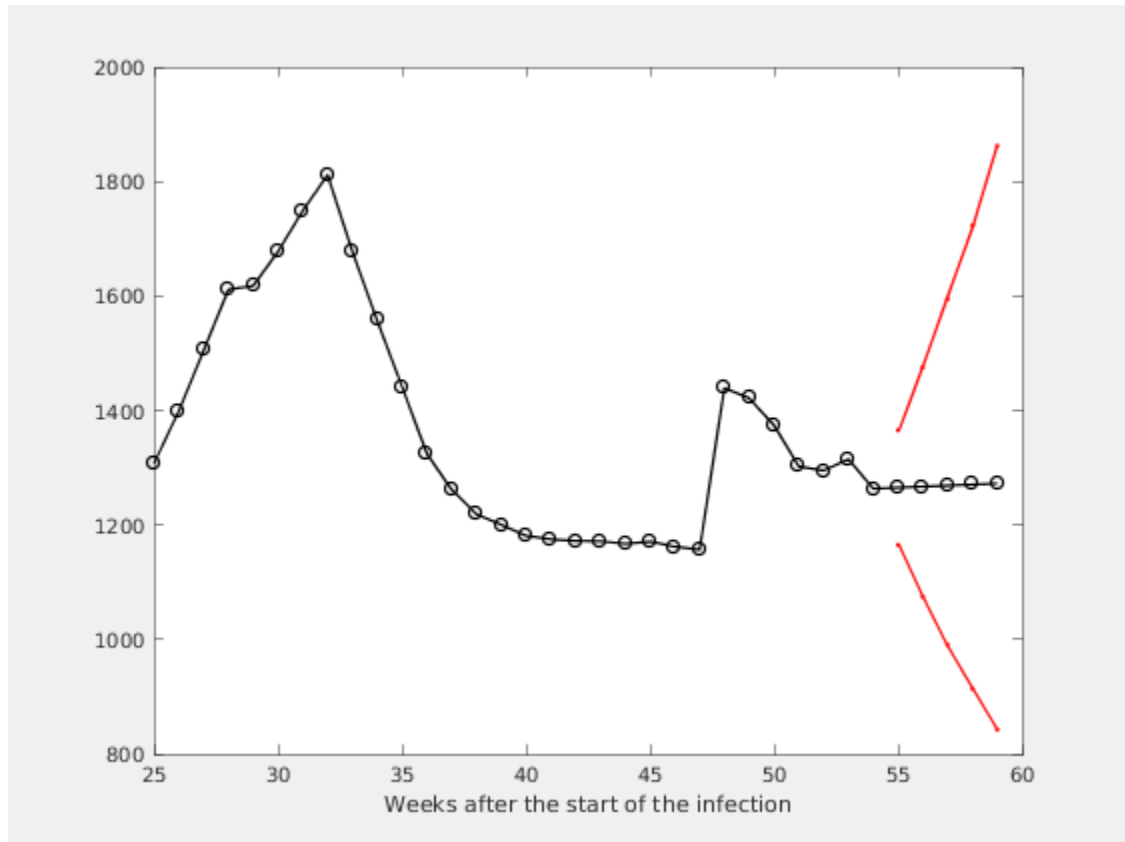


Figure 2.2. Figure

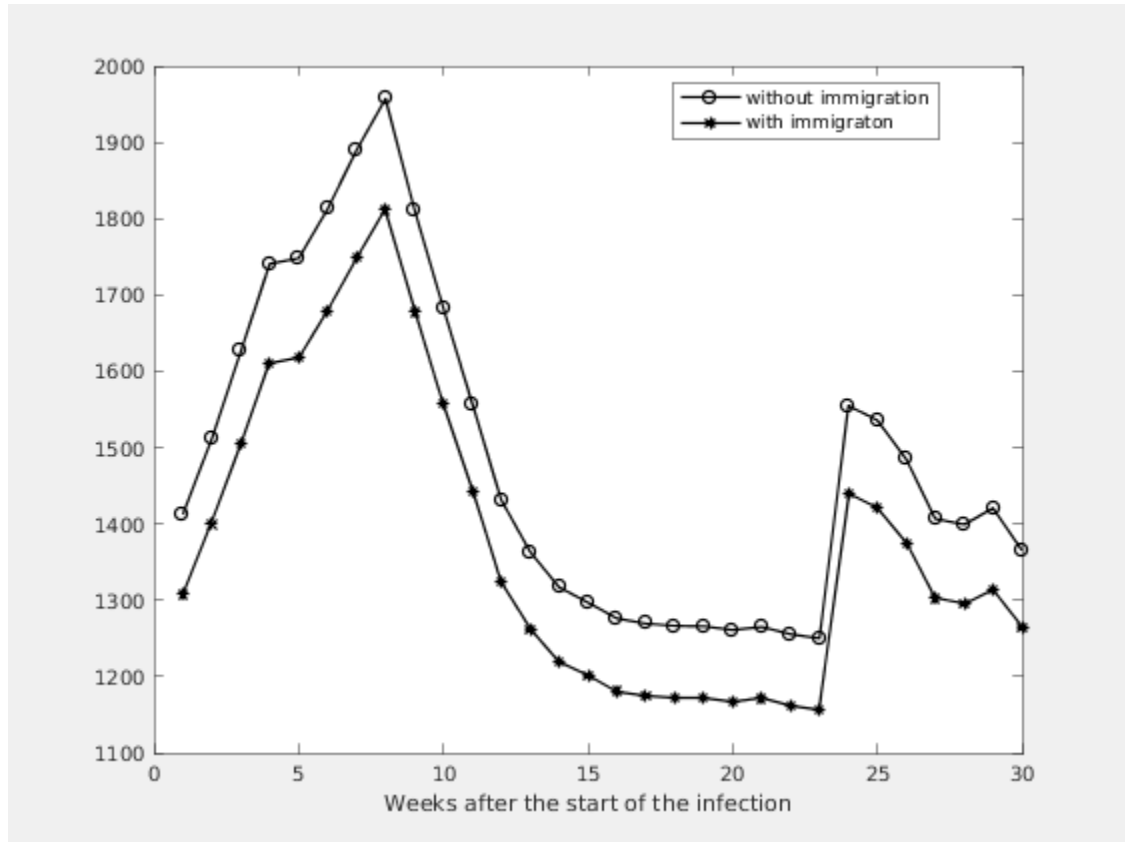




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	1.0049	0.9191 - 1.0907	0.5819	1439	1555
3	1.0027	0.9183 - 1.0871	0.5681	1422	1536
2	1.0024	0.9192 - 1.0856	0.5356	1374	1485
1	1.0029	0.9206 - 1.0851	0.4743	1302	1407
0	1.0014	0.9203 - 1.0826	0.4642	1295	1399