

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

**Var28 - week 53**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Var28 - 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 Var28. 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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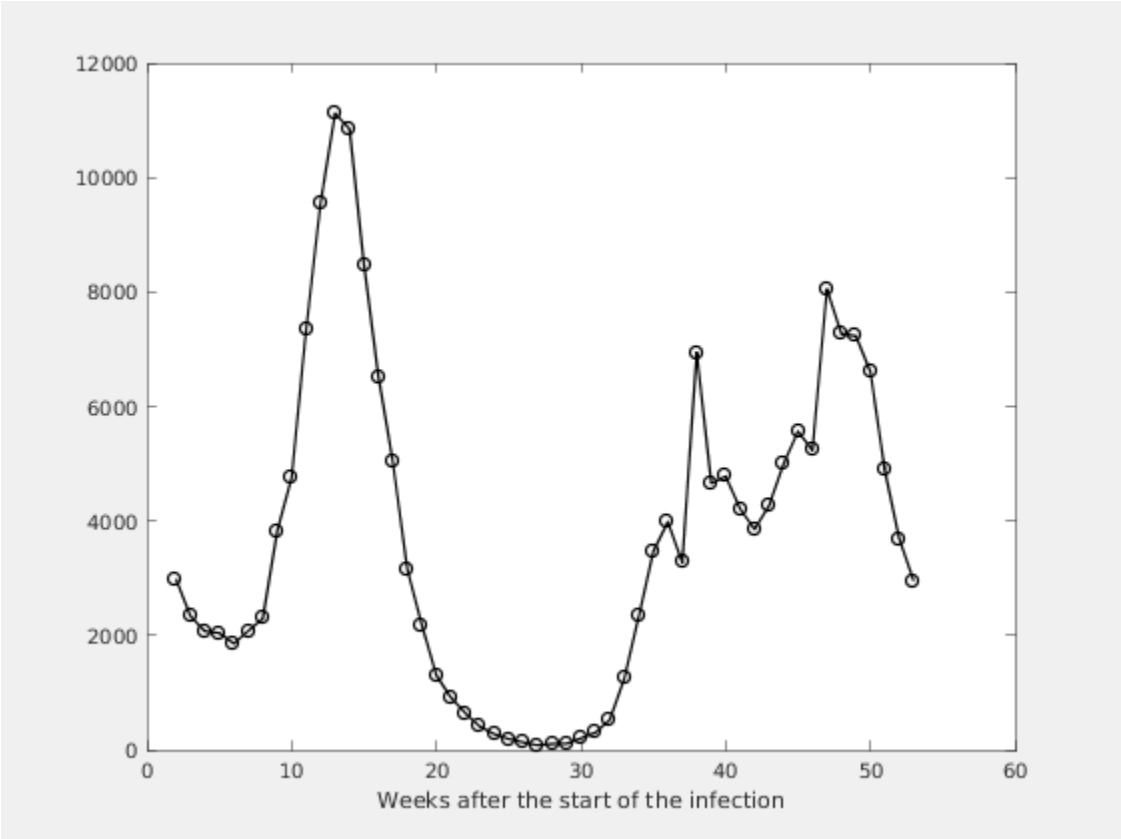
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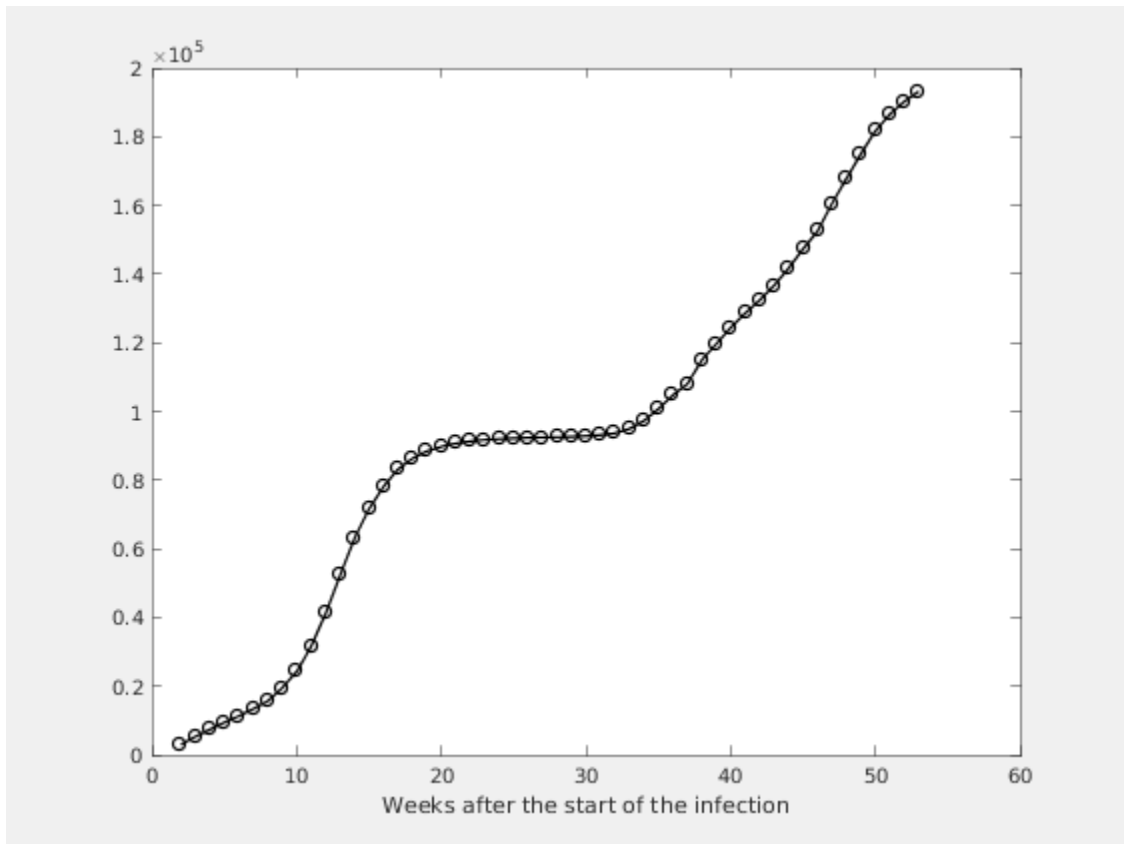
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# Chapter 1. Observed Infection data

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

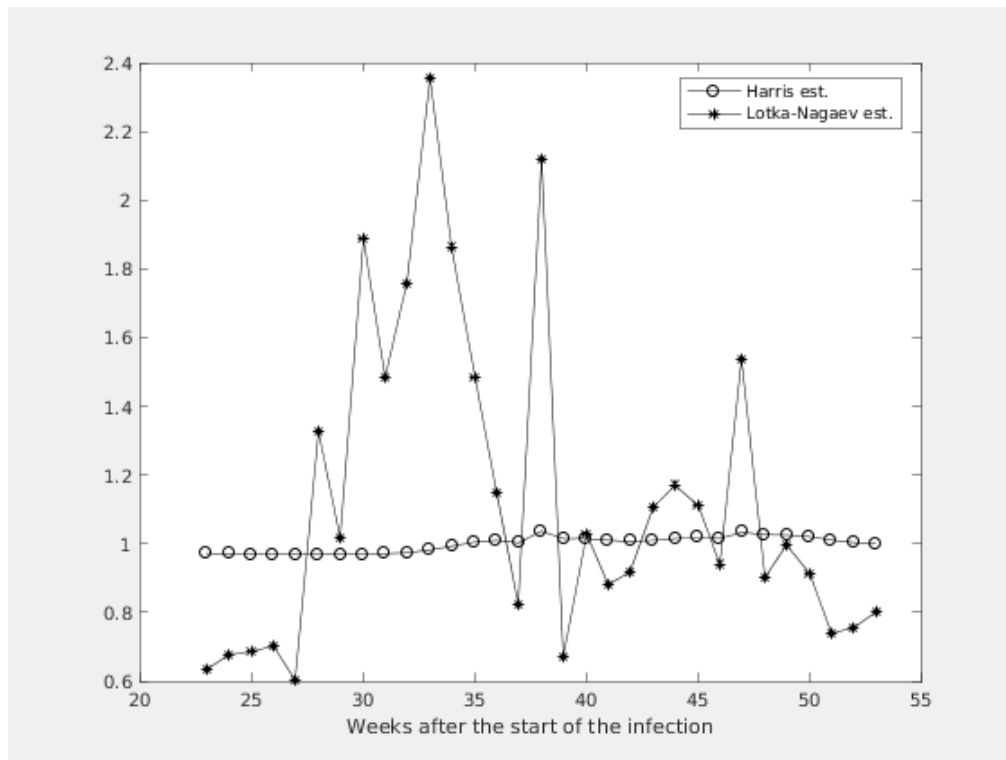
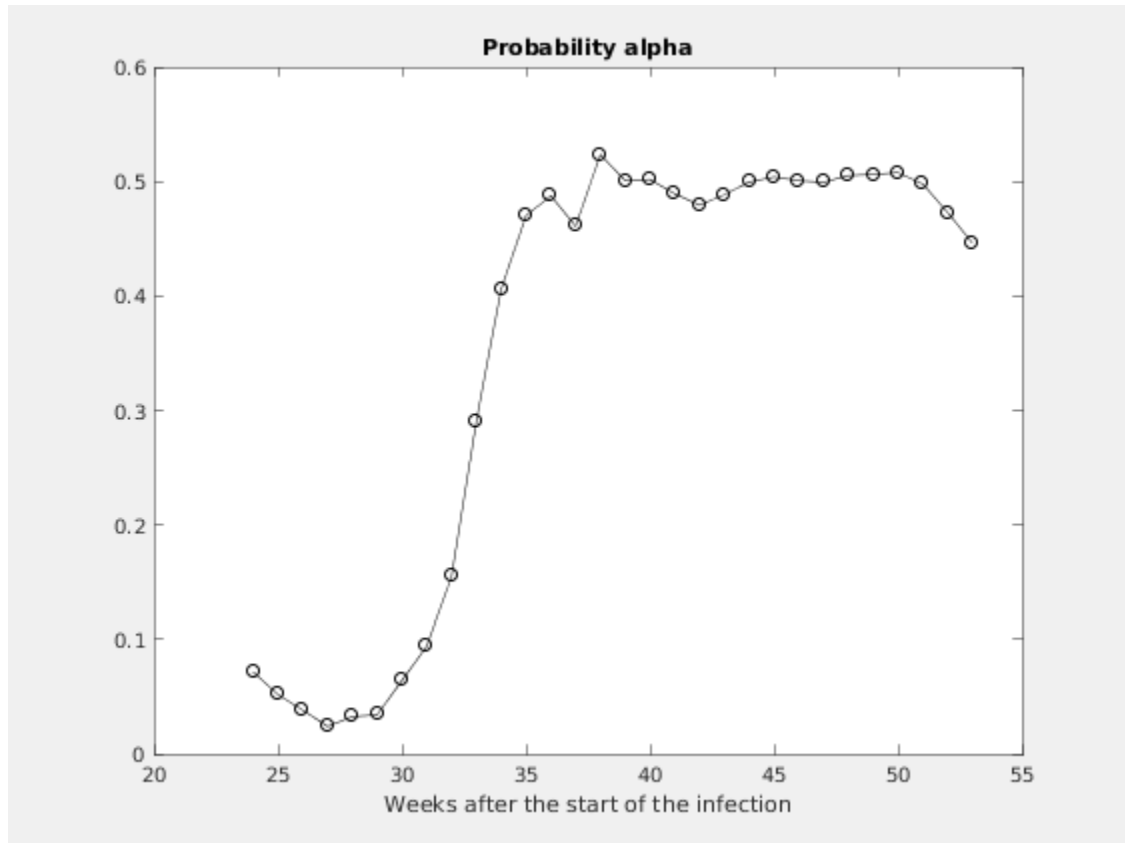
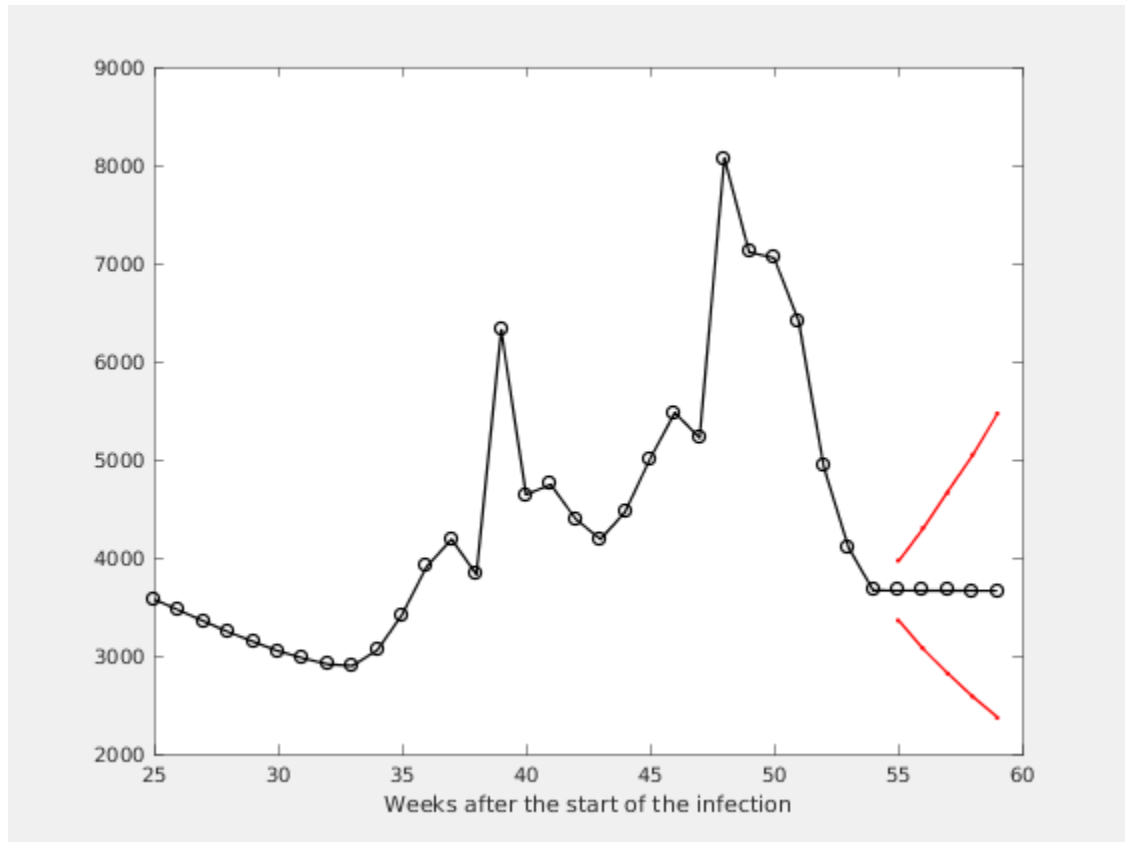


Figure 2.2. Figure

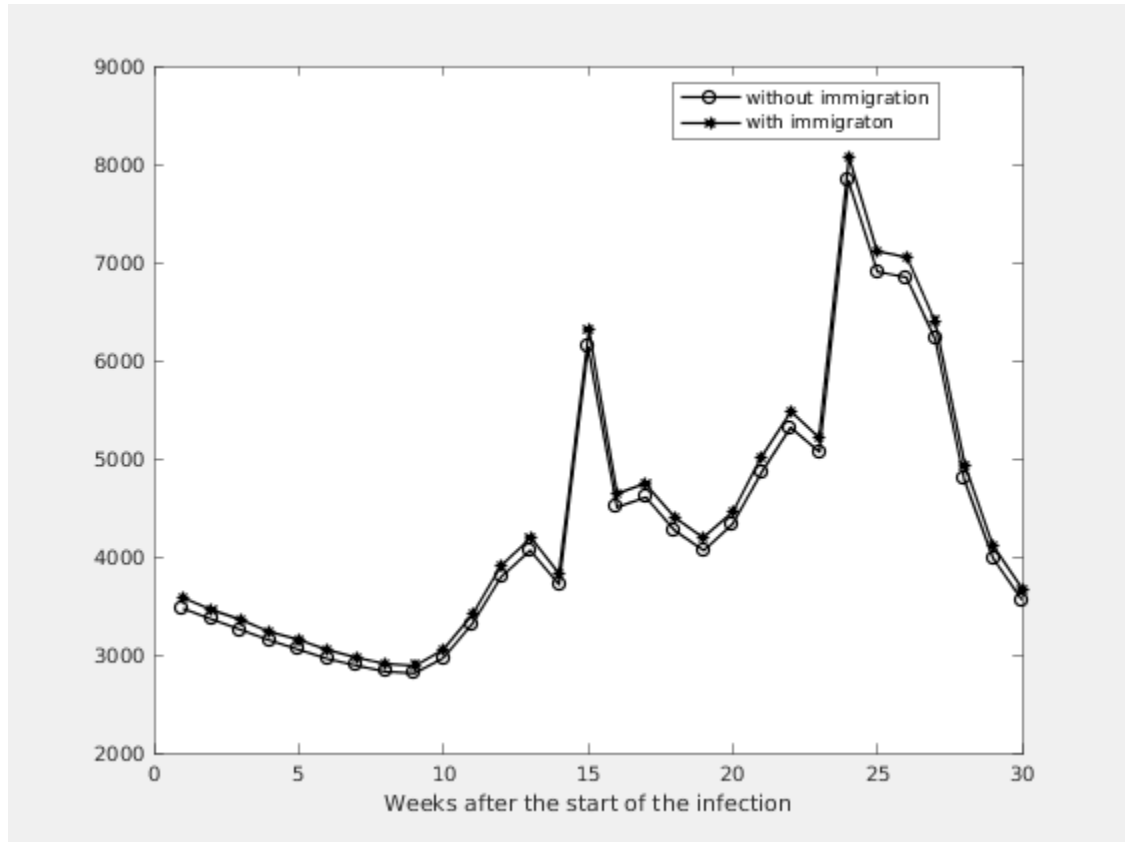




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	1.0253	0.9294 - 1.1212	0.4994	8068	7830
3	1.0207	0.9279 - 1.1135	0.5054	7113	6903
2	1.0105	0.9206 - 1.1004	0.5062	7055	6847
1	1.0037	0.9164 - 1.0911	0.5078	6406	6217
0	0.9998	0.9138 - 1.0859	0.4978	4932	4786