

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

**Var128 - week 53**

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

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## **Branching stochastic processes as models of Covid-19 epidemic development : Var128 - 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 Var128. 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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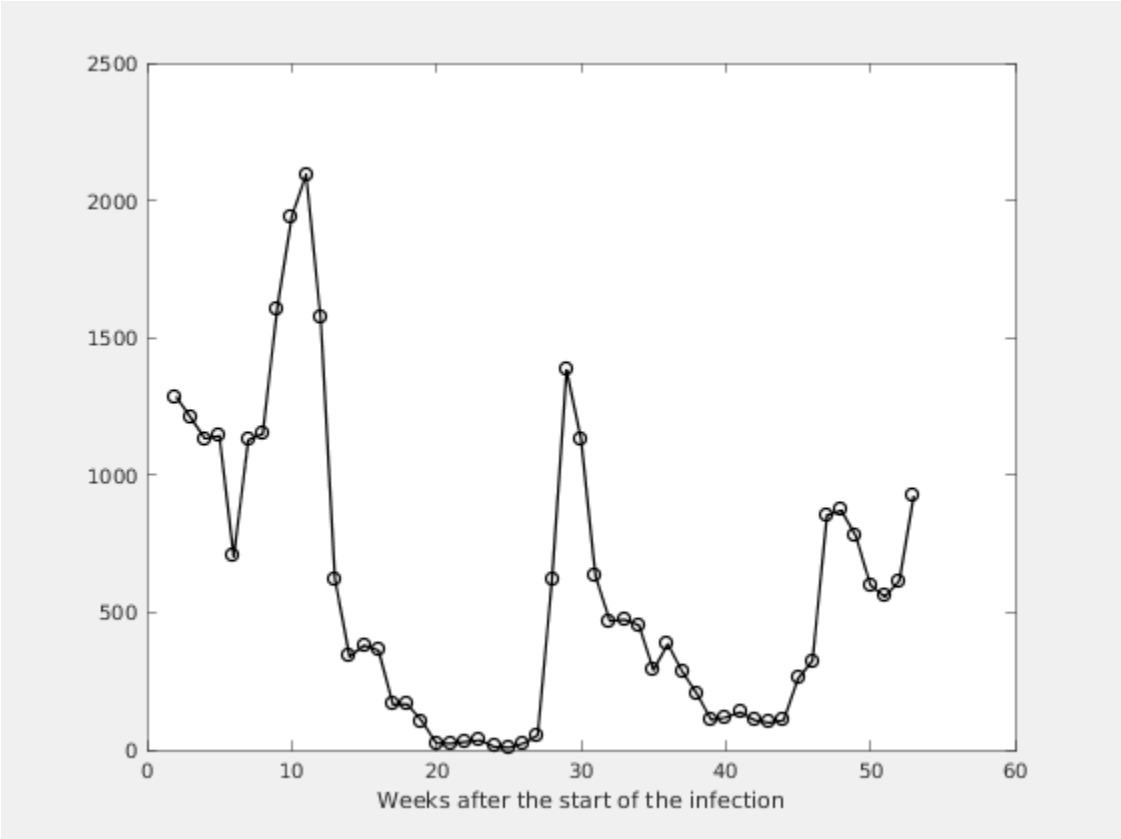
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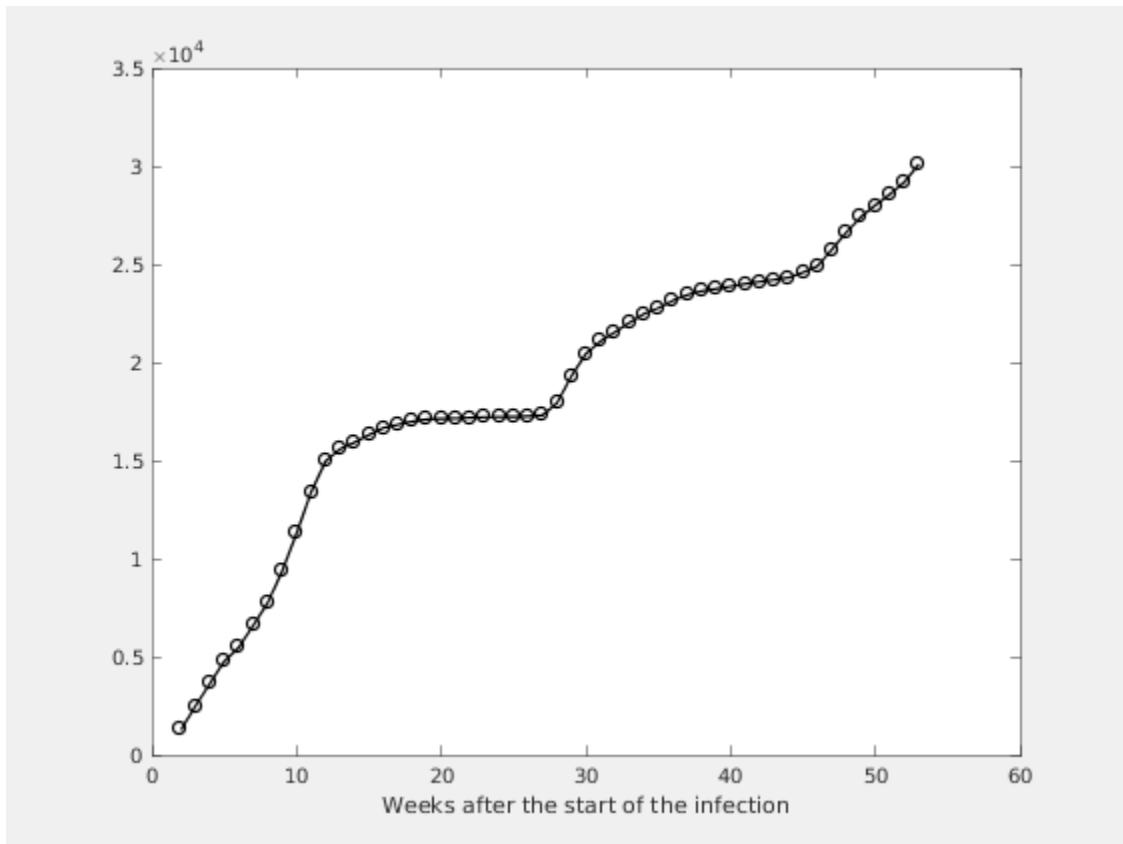
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# Chapter 1. Observed Infection data

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

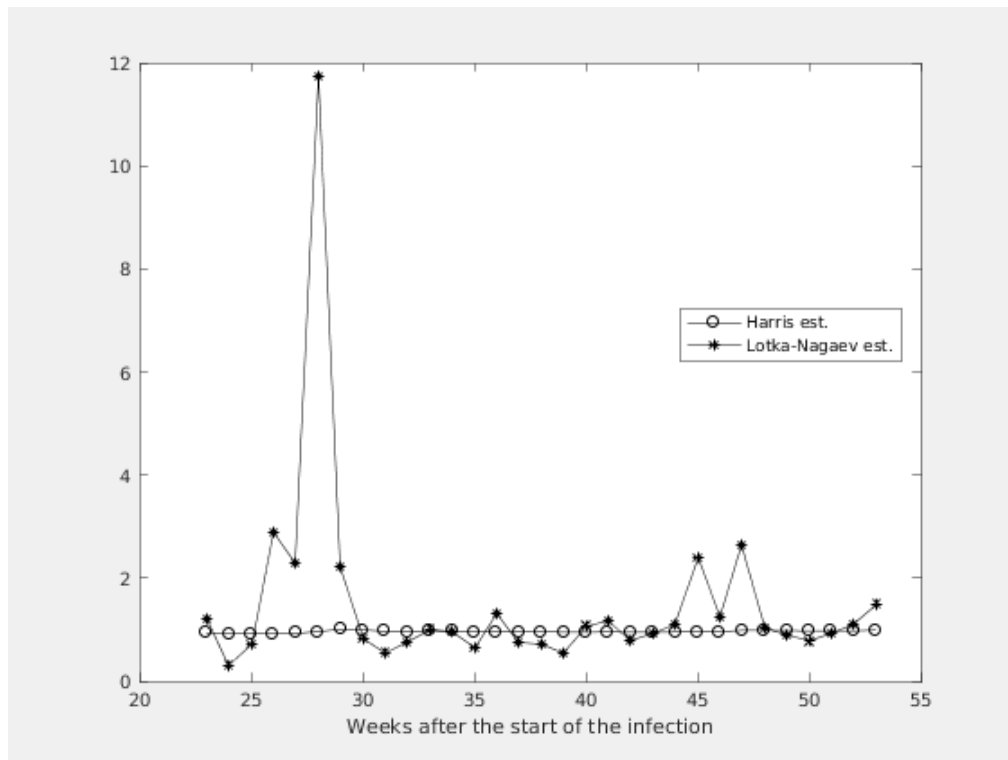
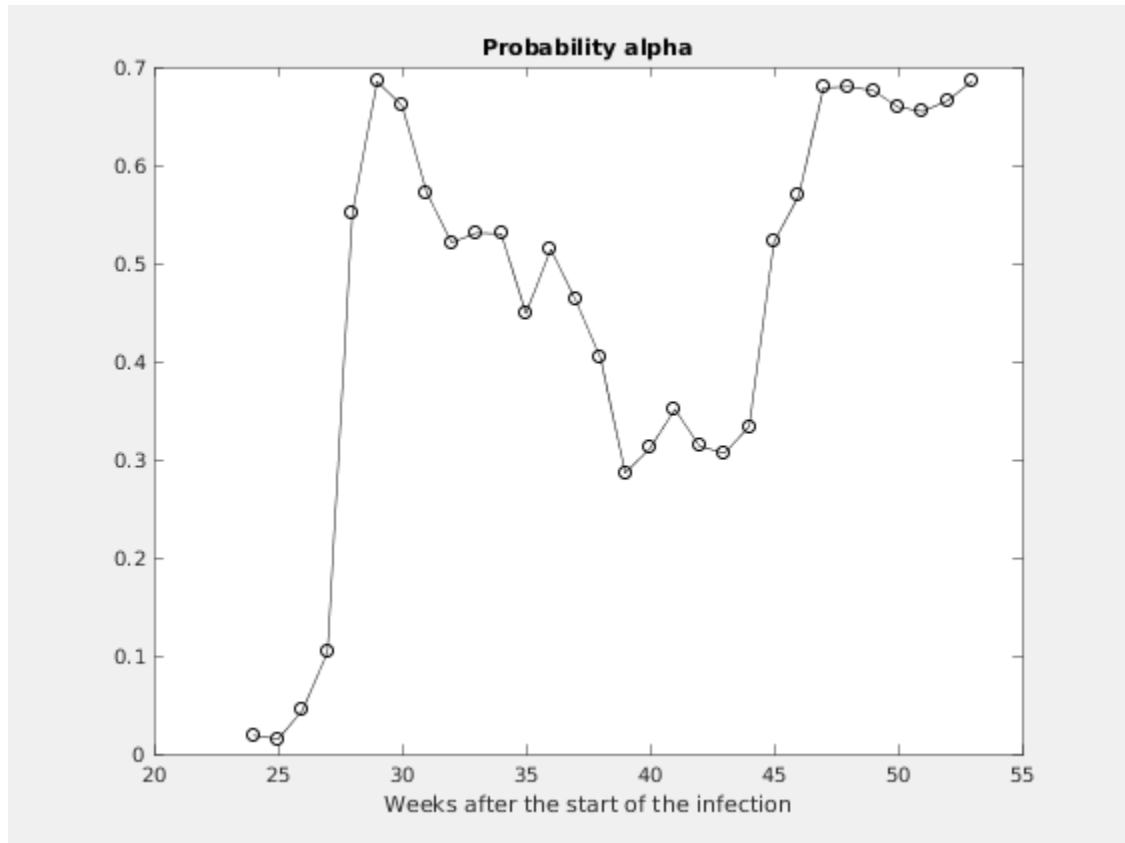
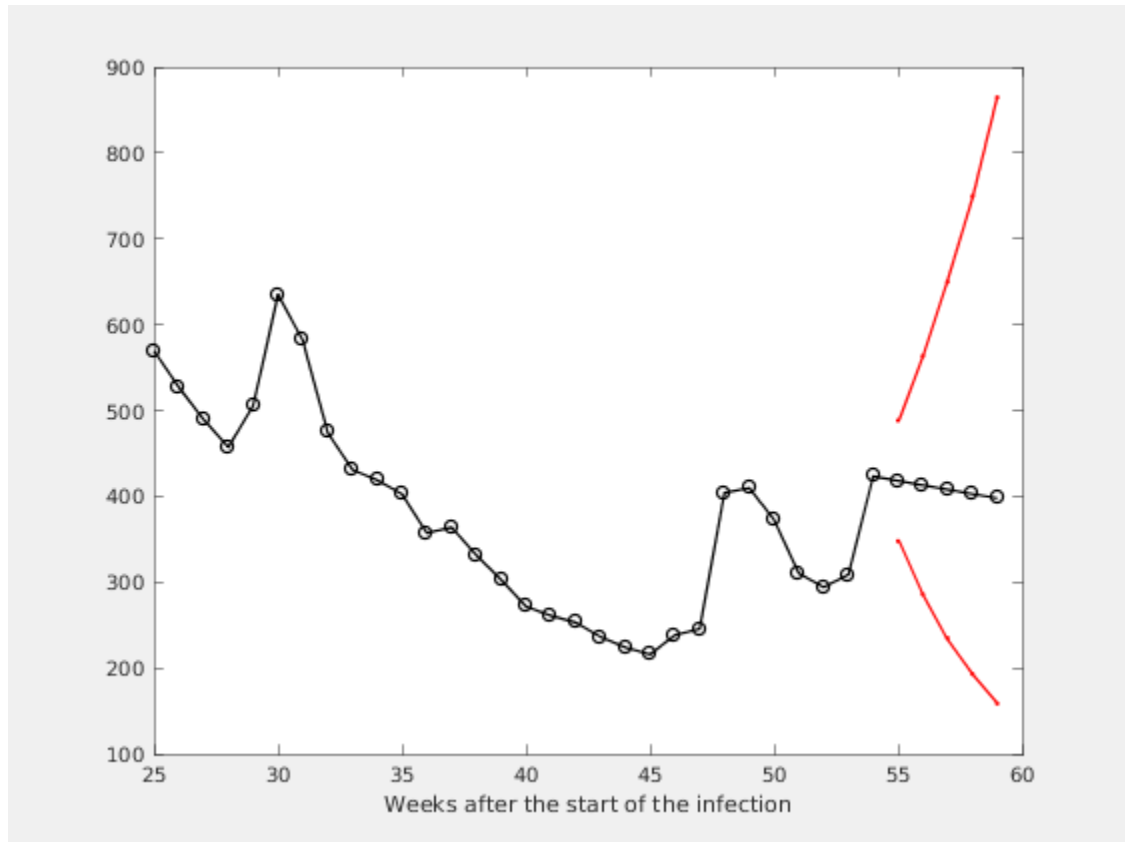


Figure 2.2. Figure

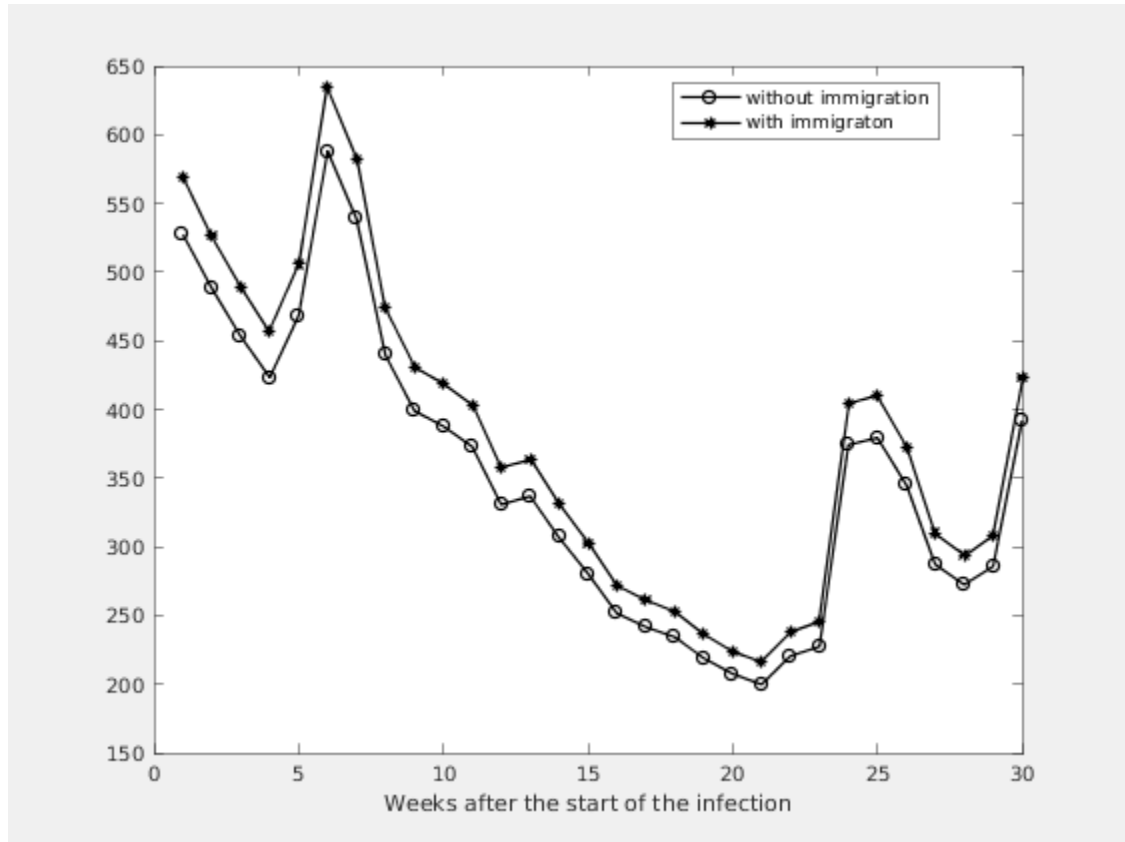




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	0.9809	0.7917 - 1.1701	0.6788	404	374
3	0.9750	0.7909 - 1.1590	0.6801	410	379
2	0.9740	0.7949 - 1.1531	0.6761	373	345
1	0.9765	0.8015 - 1.1515	0.6592	310	287
0	0.9876	0.8163 - 1.1590	0.6548	294	272