

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

**Togo - week 53**

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### **Abstract**

The results presented here are obtained using the methodology proposed in the paper <https://arxiv.org/abs/2004.14838> for the country Togo. 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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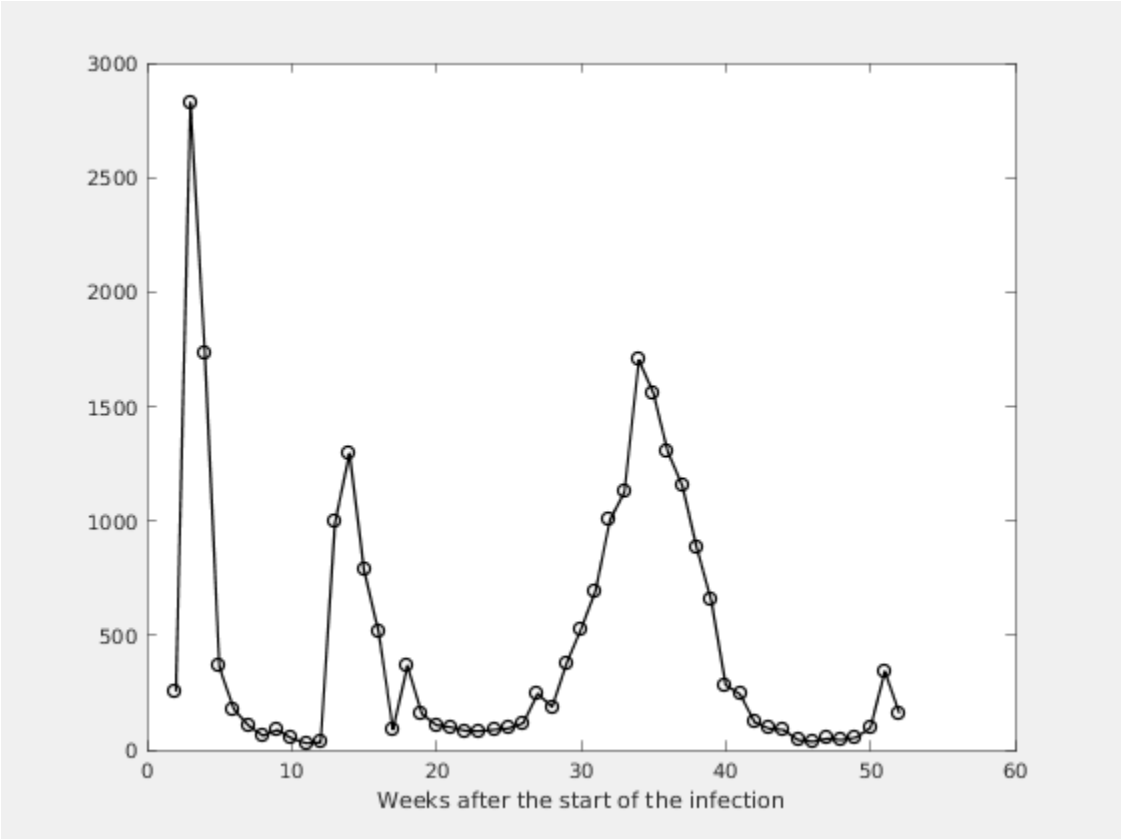
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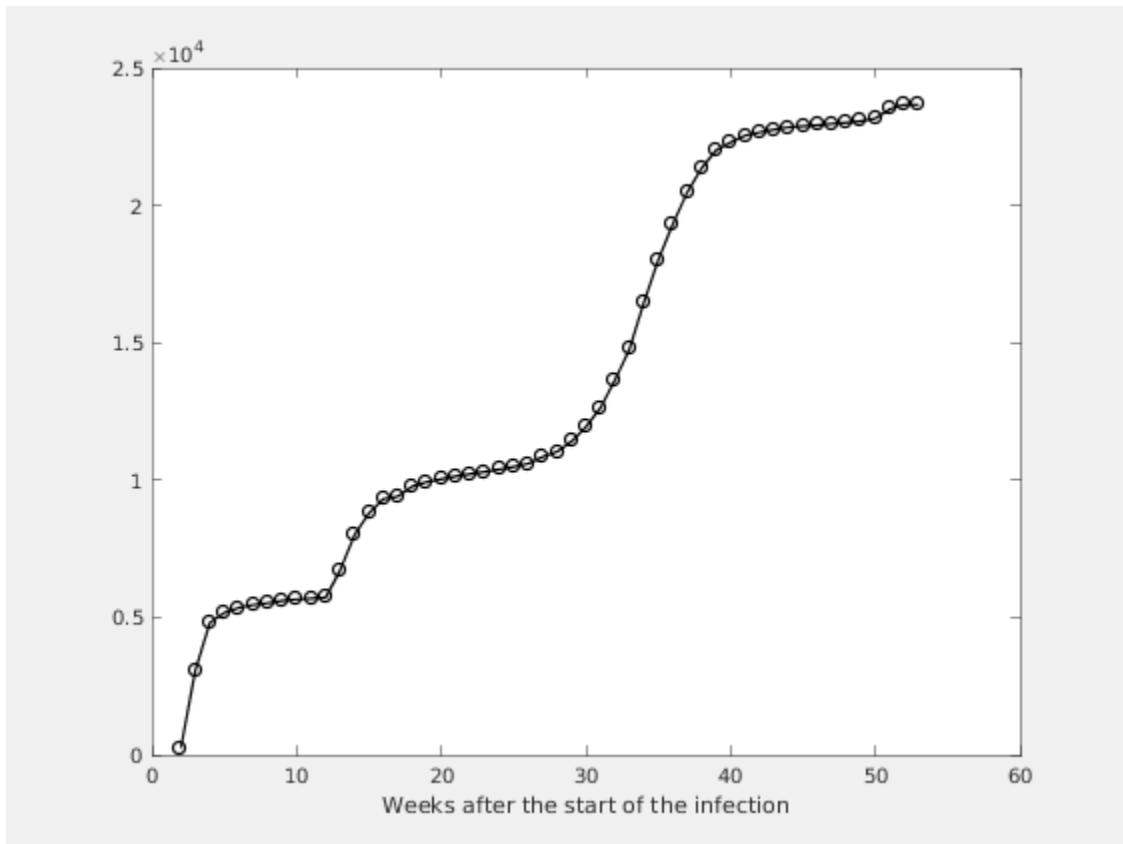
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# Chapter 1. Observed Infection data

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

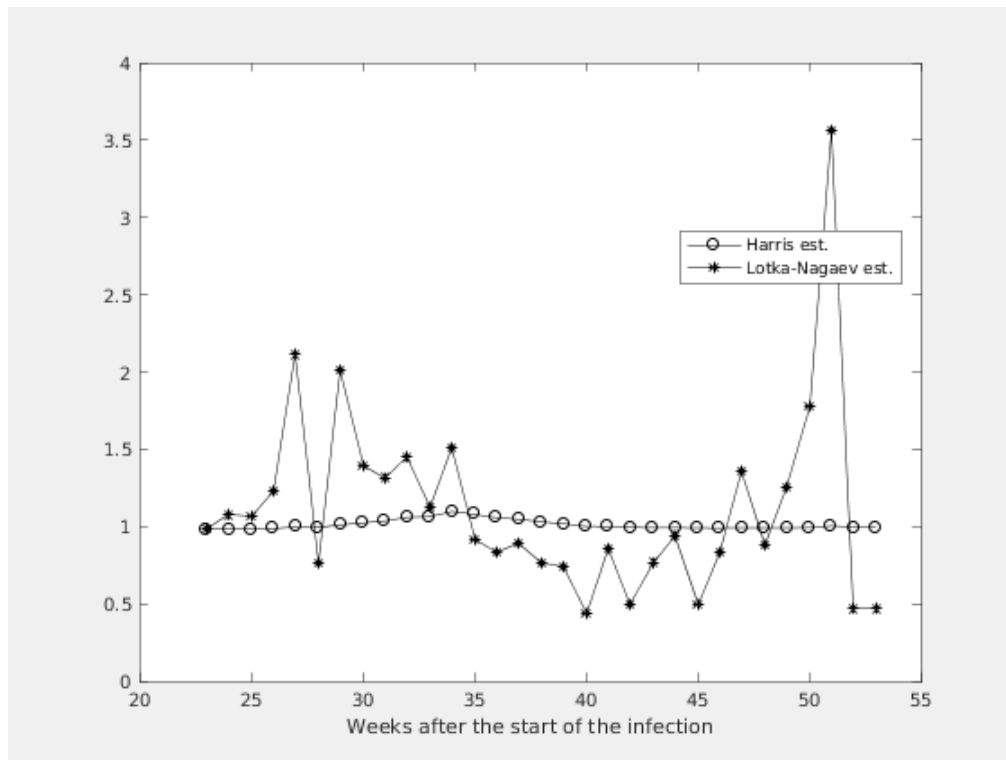
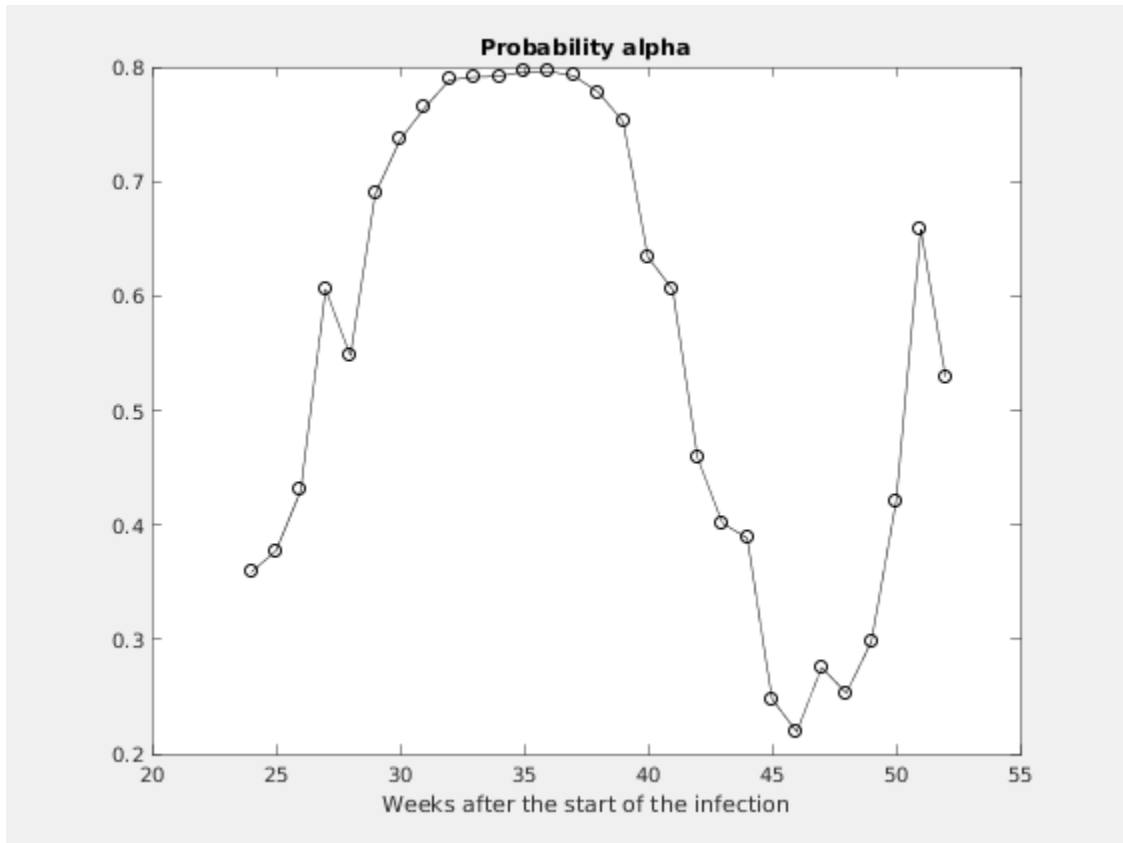
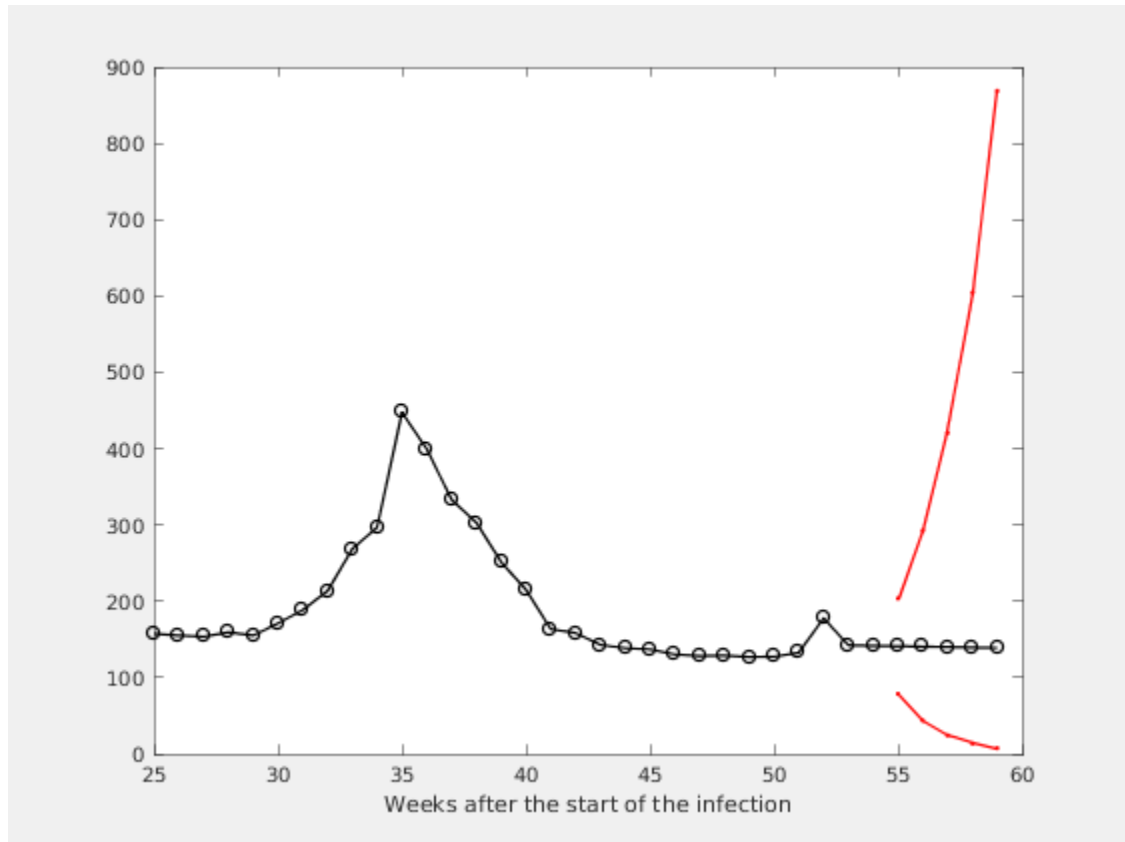


Figure 2.2. Figure

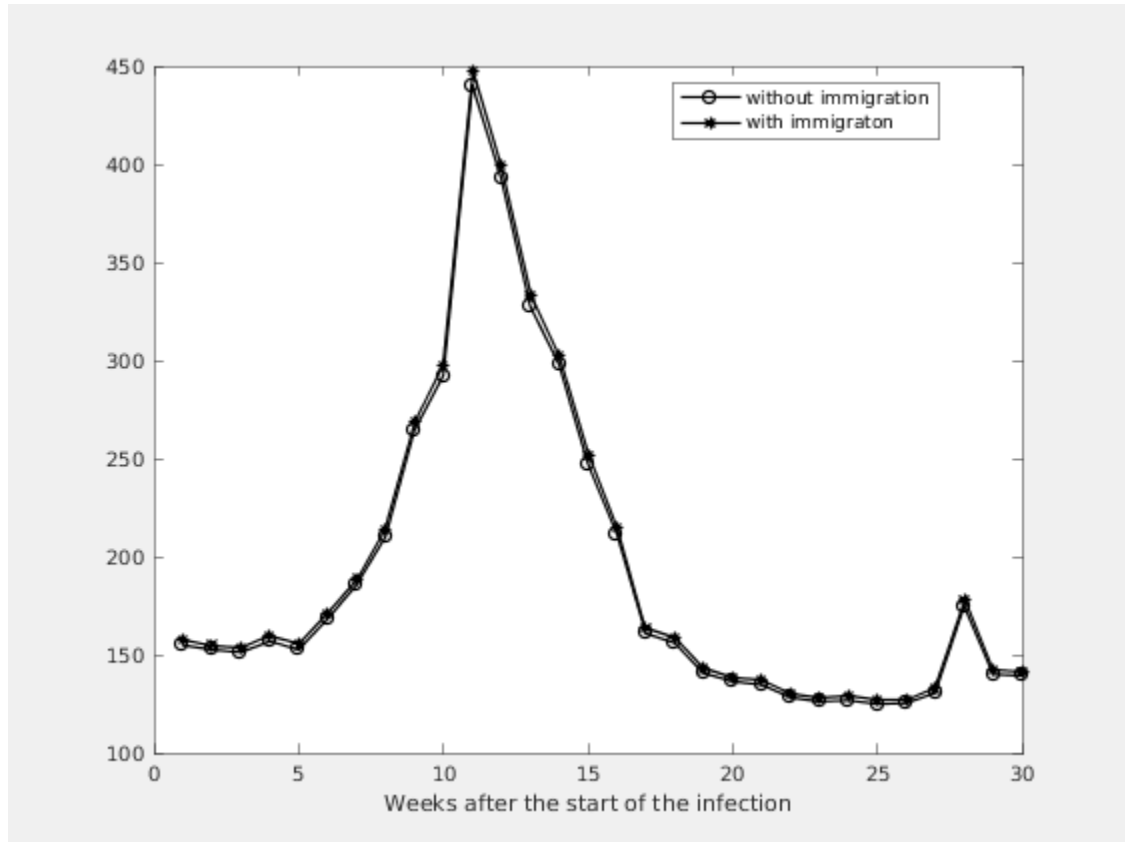




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	0.9913	0.5233 - 1.4592	0.2755	129	127
3	0.9931	0.5308 - 1.4554	0.2531	127	125
2	1.0038	0.5468 - 1.4607	0.2977	127	125
1	0.9960	0.5442 - 1.4477	0.4197	133	131
0	0.9960	0.5474 - 1.4446	0.6581	178	175