

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

**Mali - week 53**

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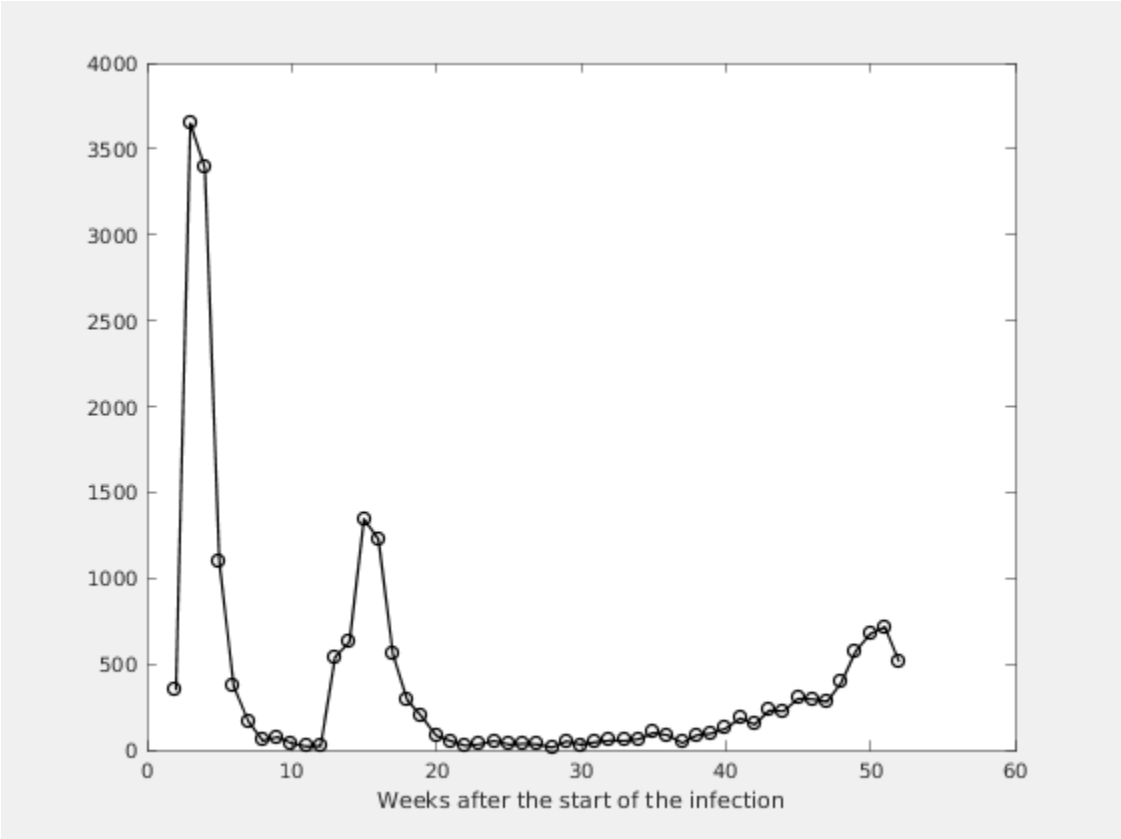
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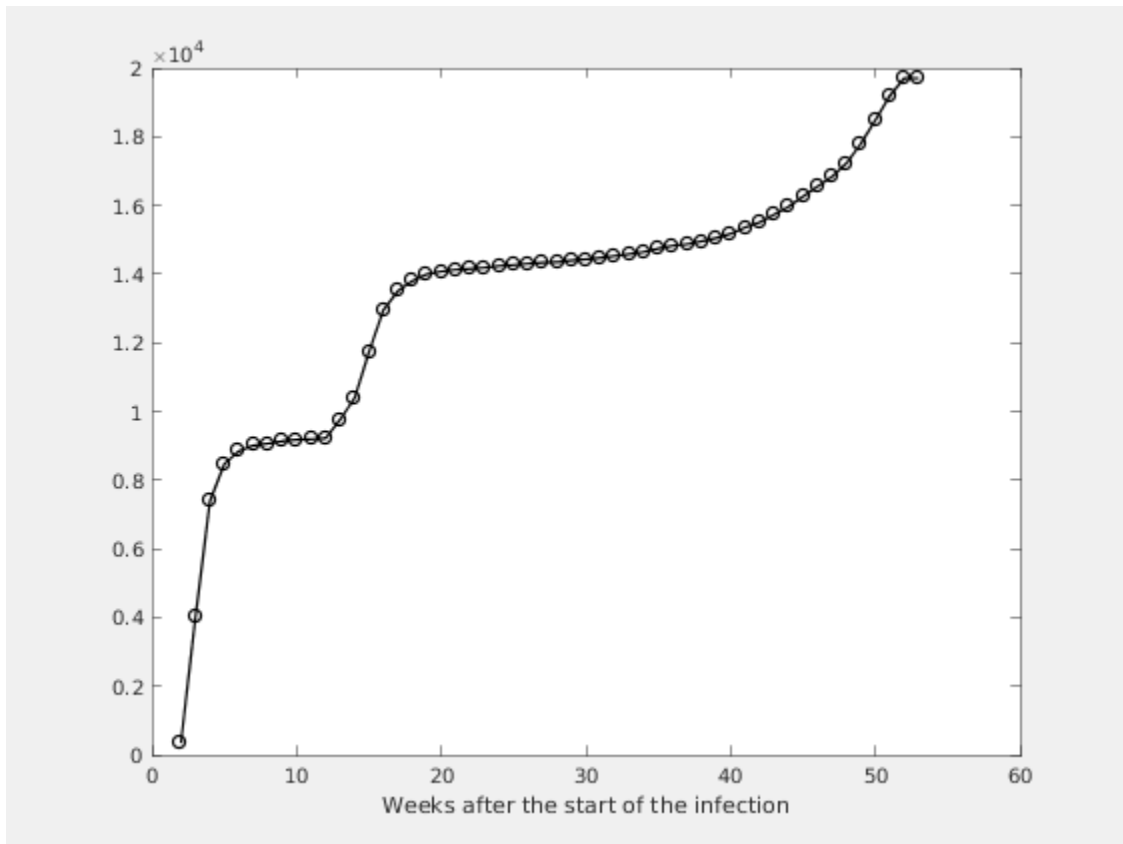
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# Chapter 1. Observed Infection data

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

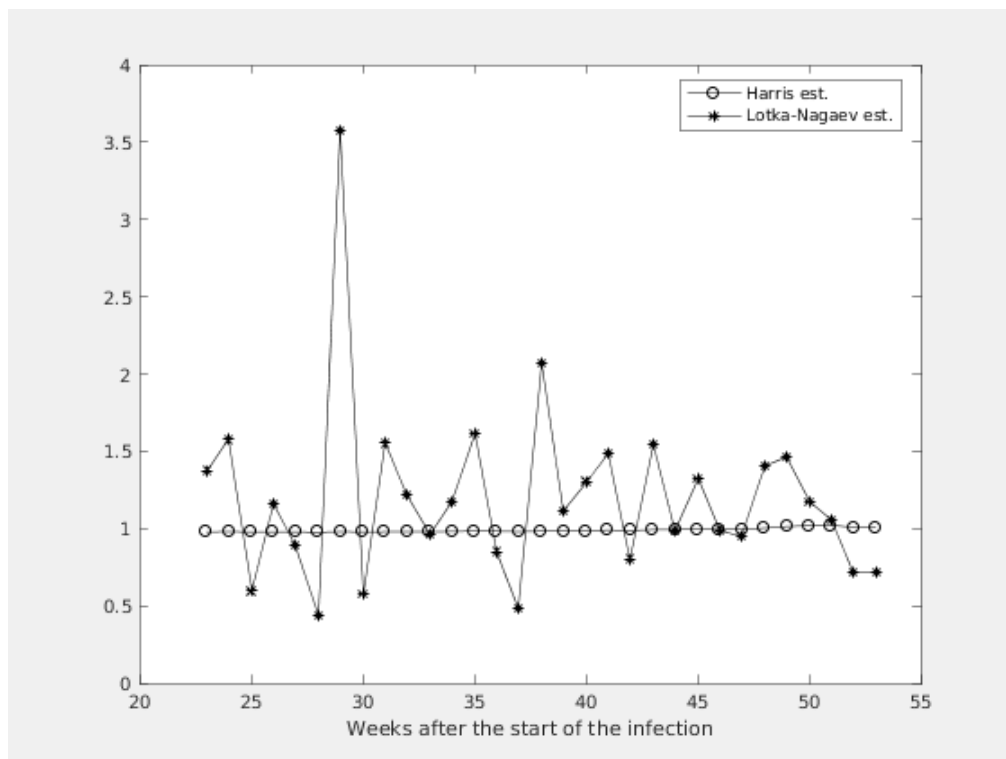
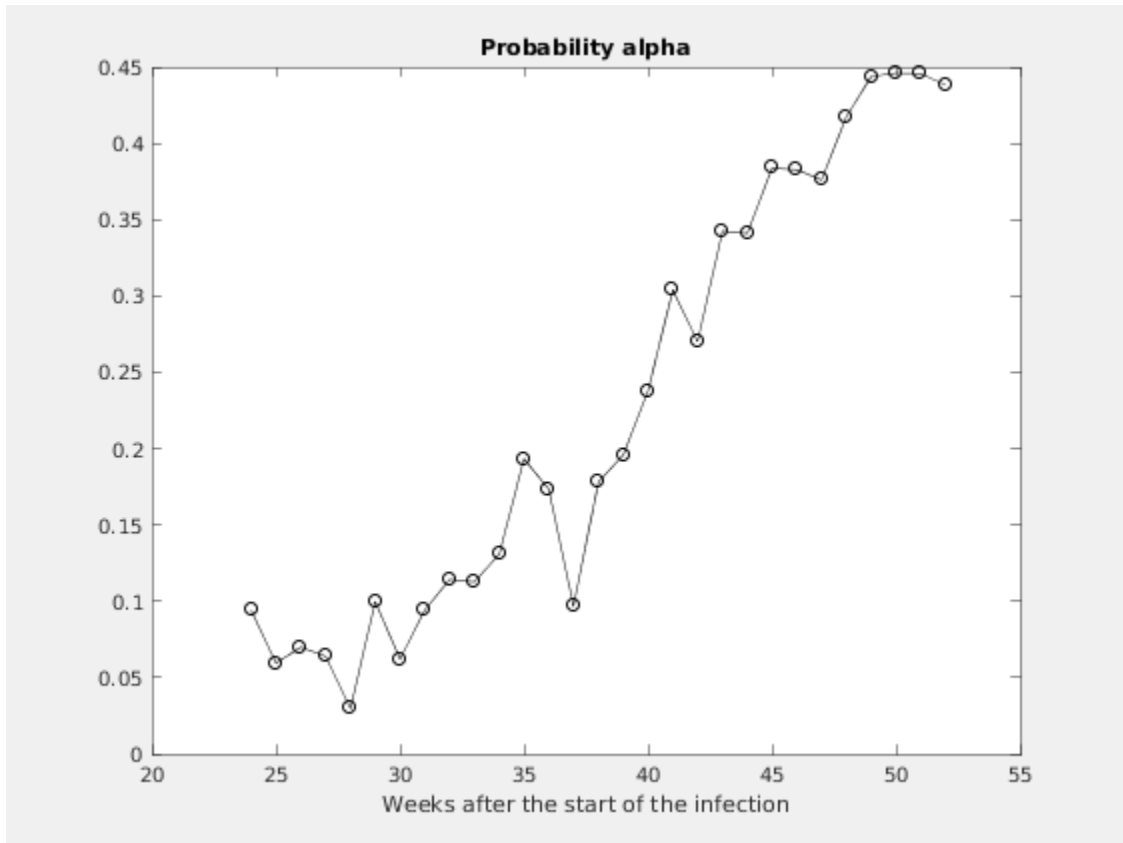
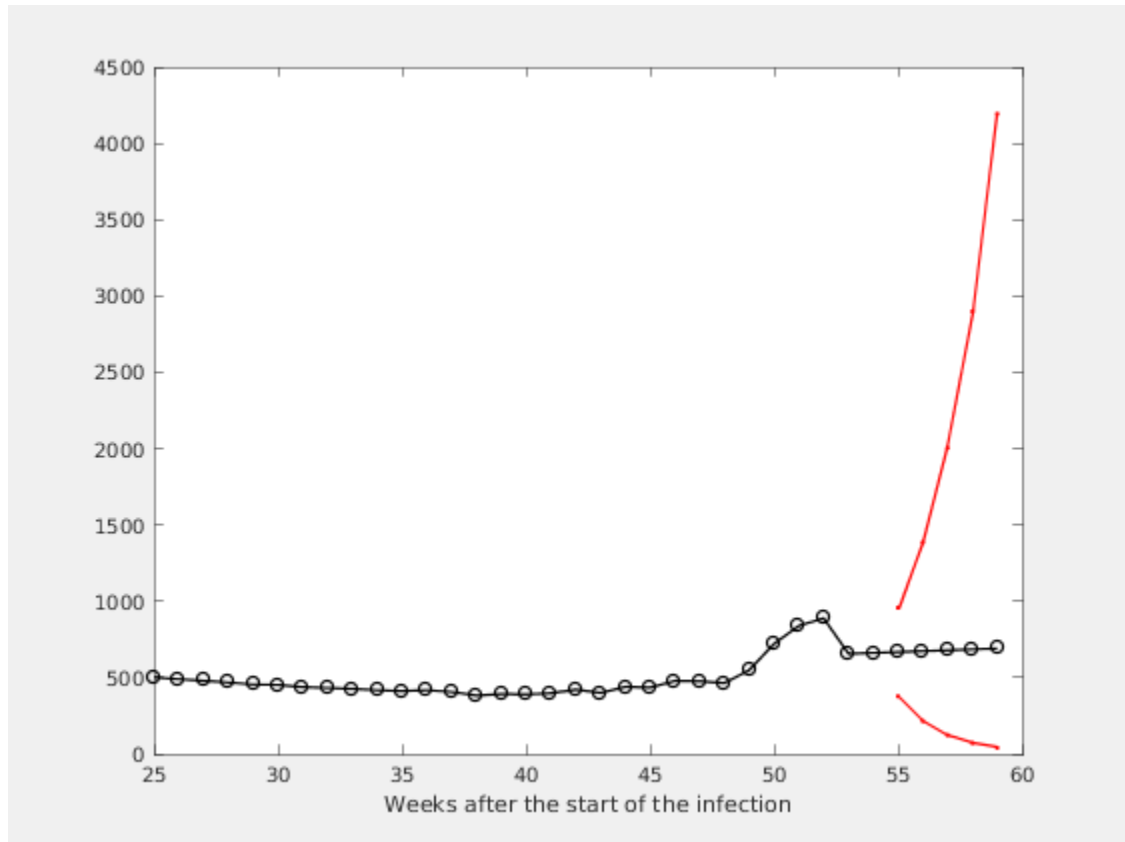


Figure 2.2. Figure

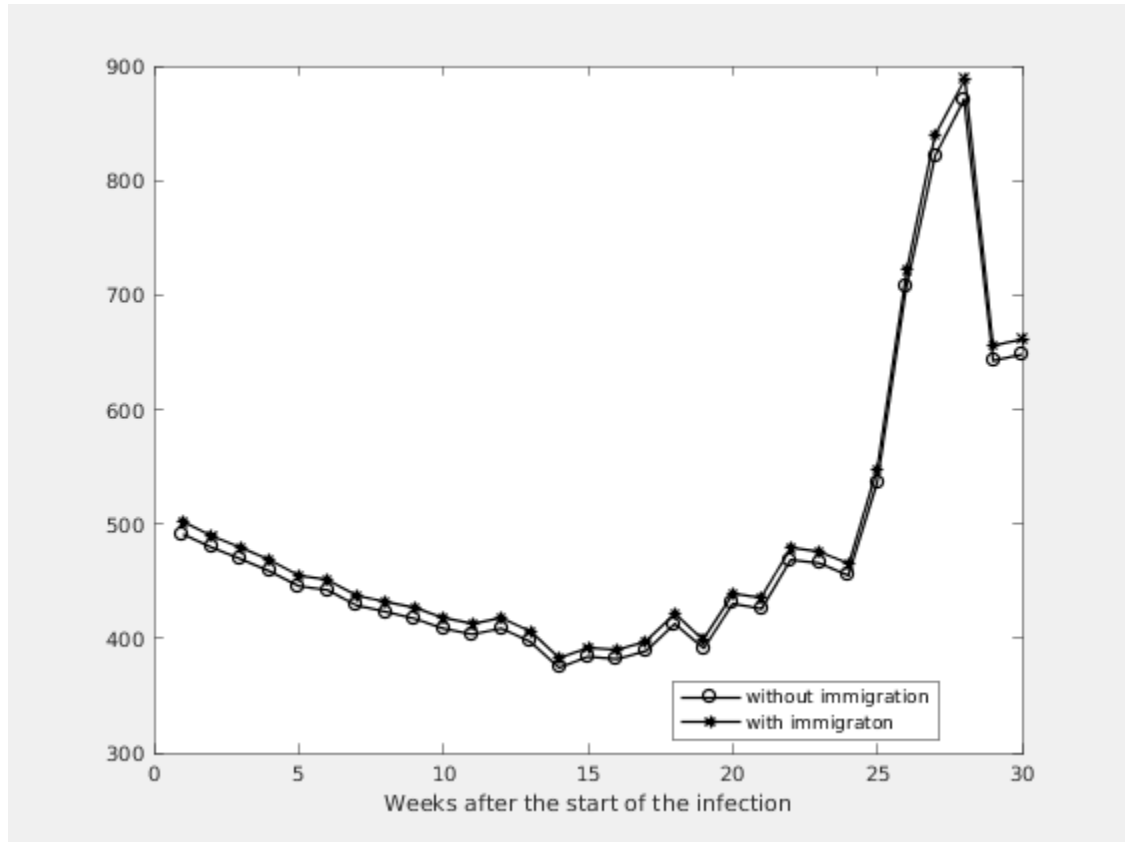




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	1.0133	0.5171 - 1.5094	0.3761	465	455
3	1.0185	0.5316 - 1.5053	0.4176	548	537
2	1.0199	0.5434 - 1.4964	0.4438	722	707
1	1.0086	0.5447 - 1.4725	0.4461	839	822
0	1.0086	0.5579 - 1.4593	0.4457	889	871