

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

**Cuba - week 53**

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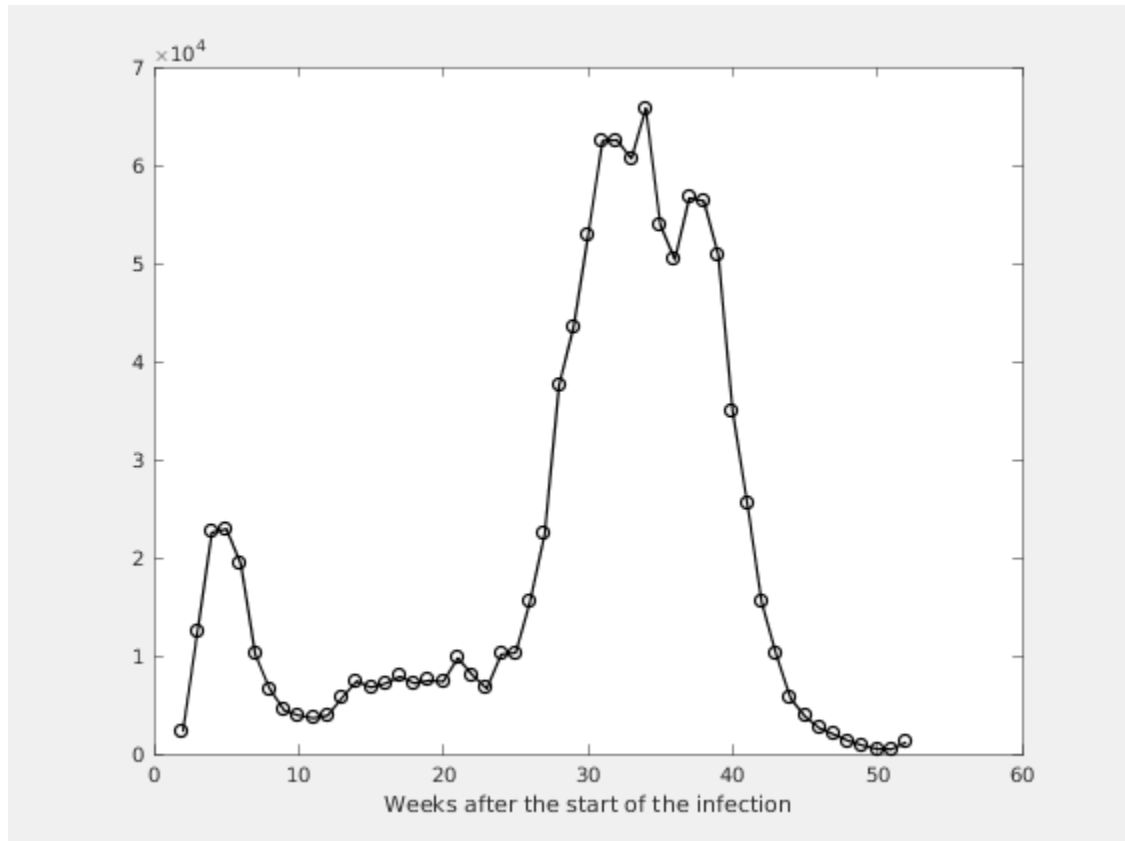
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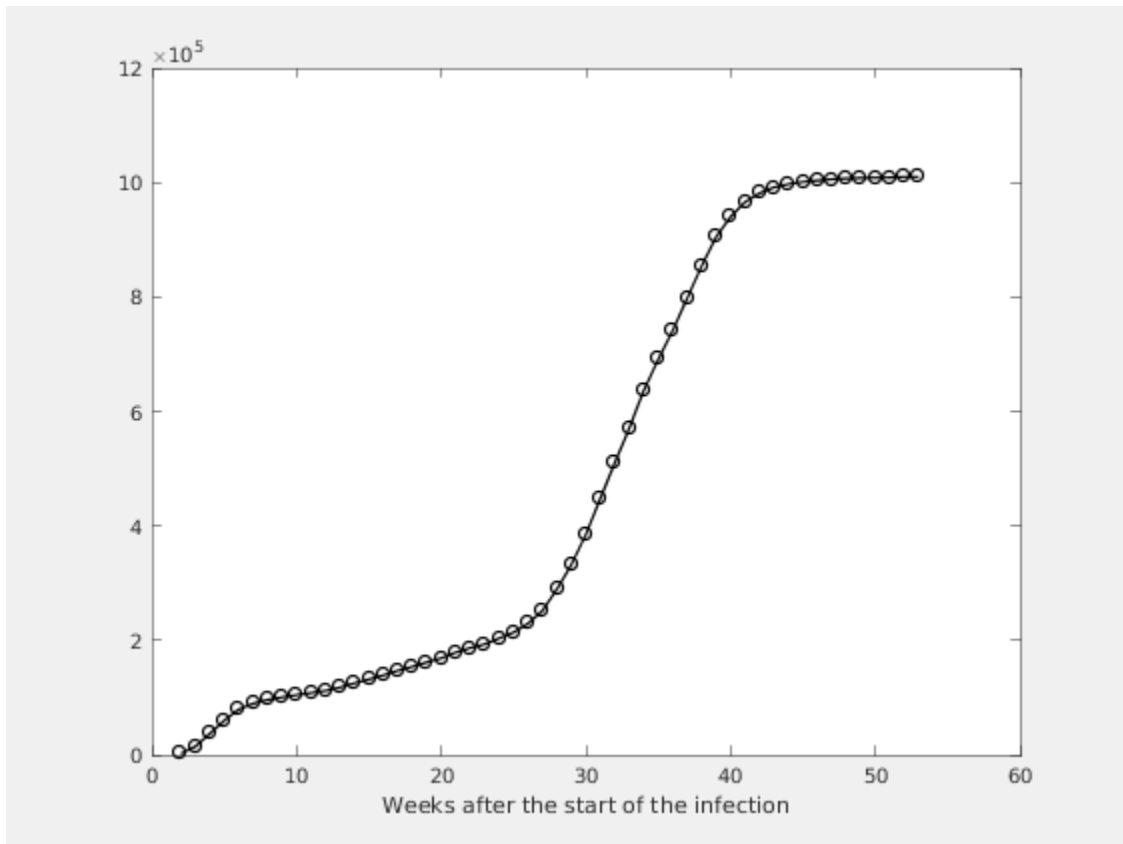
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# Chapter 1. Observed Infection data

Figure 1.1. Number of the weekly reported laboratory-confirmed cases



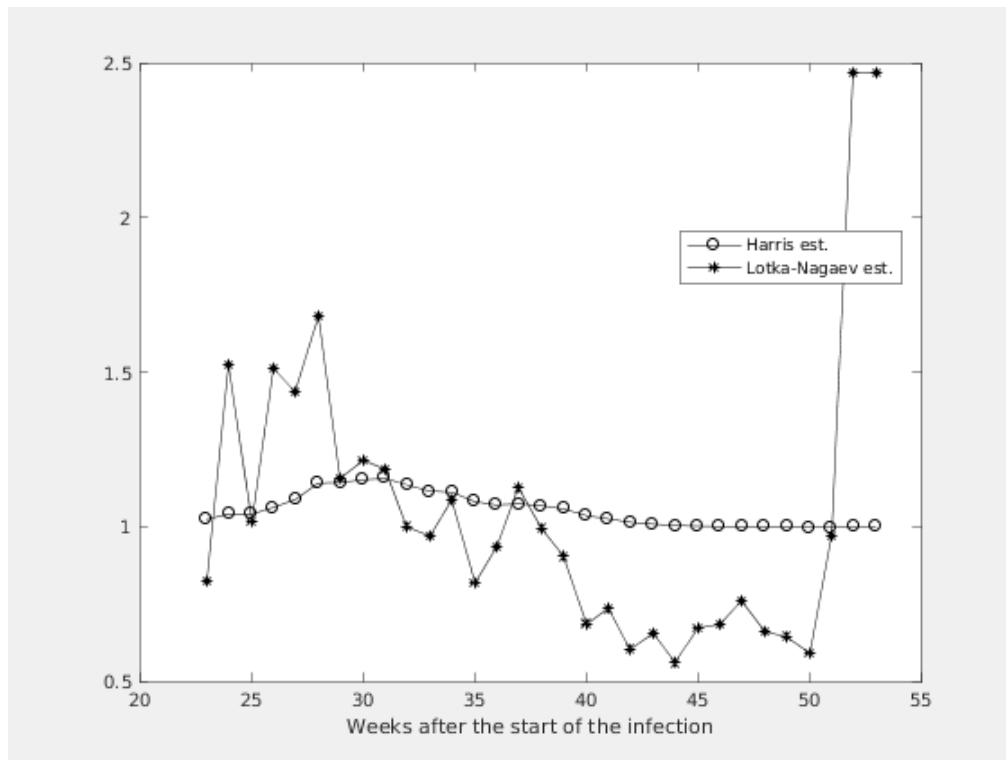
**Figure 1.2. Number of the total registered cases**



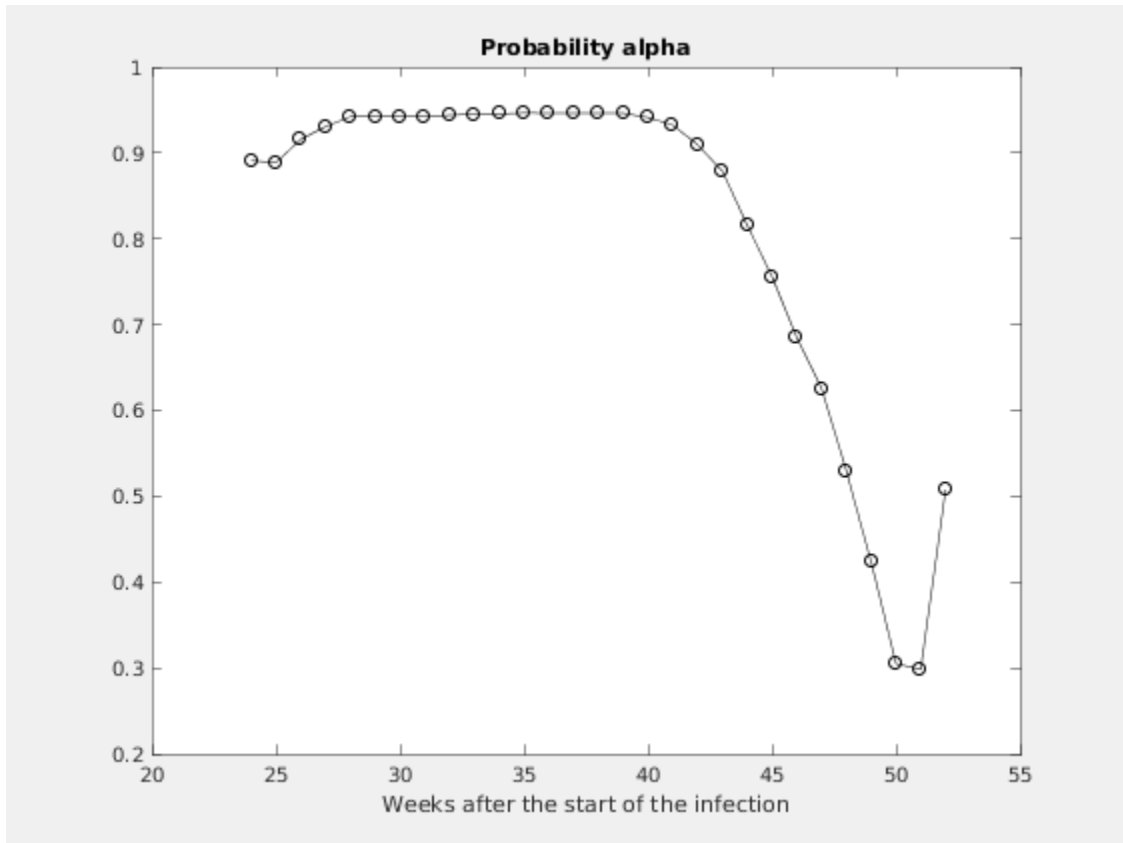
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# Chapter 2. Estimating of the main parameter and some predictions

Figure 2.1. The Lotka-Nagaev and the Harris type estimator of the growth rate

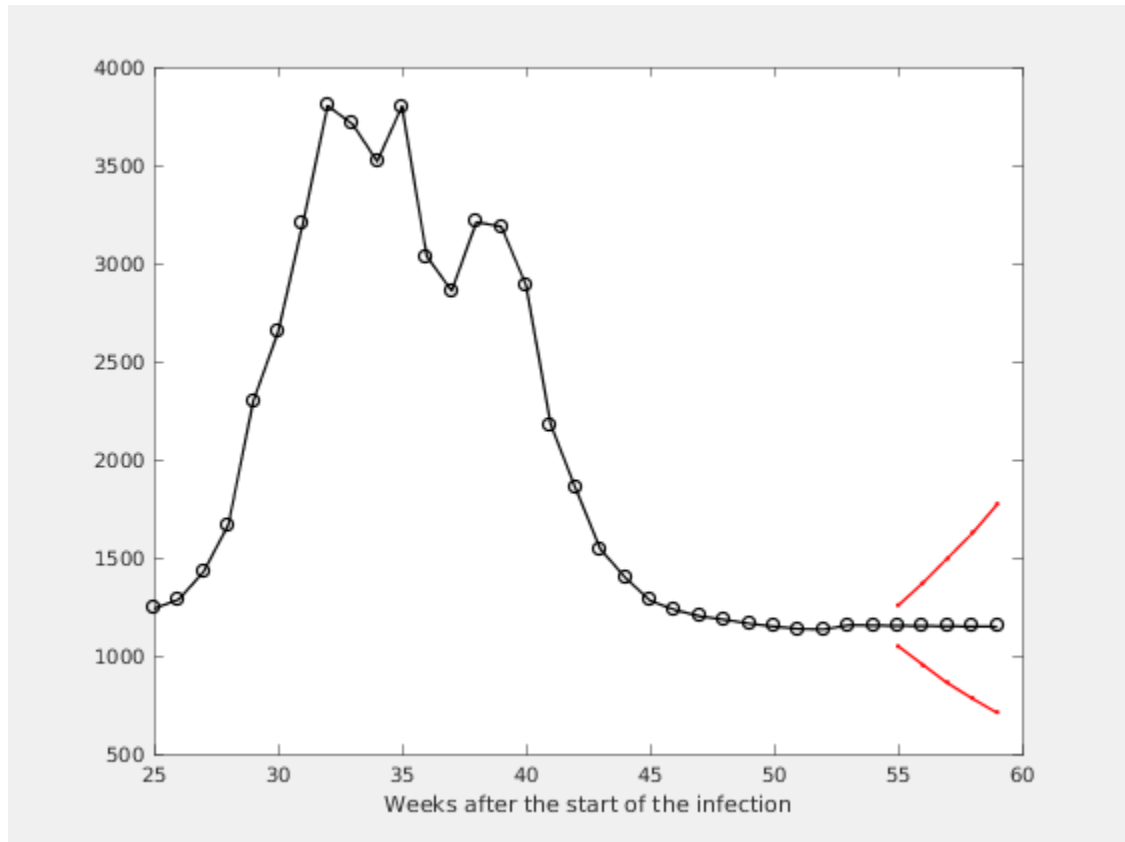


**Figure 2.2. Figure**

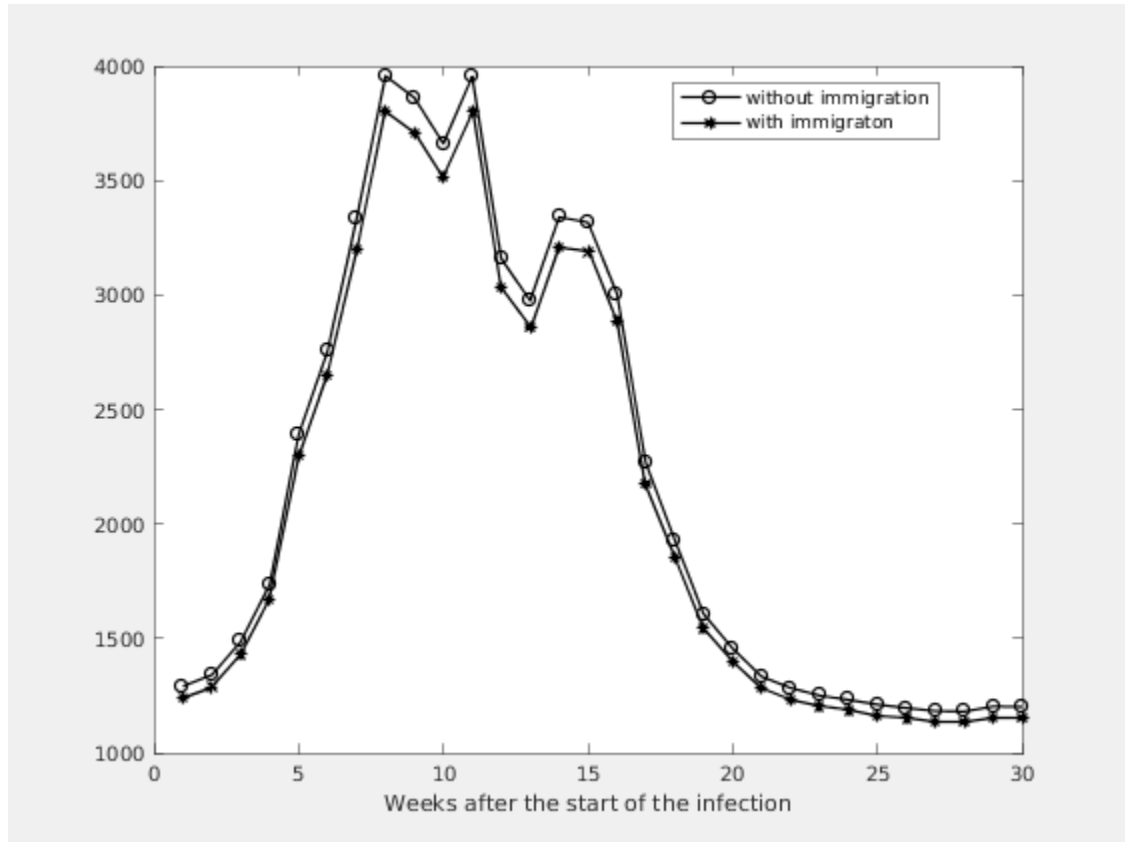




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	0.9986	0.9032 - 1.0939	0.6256	1184	1232
3	0.9982	0.9039 - 1.0926	0.5291	1164	1211
2	0.9982	0.9049 - 1.0915	0.4235	1149	1196
1	0.9989	0.9066 - 1.0913	0.3050	1137	1183
0	0.9989	0.9075 - 1.0903	0.2986	1134	1180