

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

**Bolivia - week 53**

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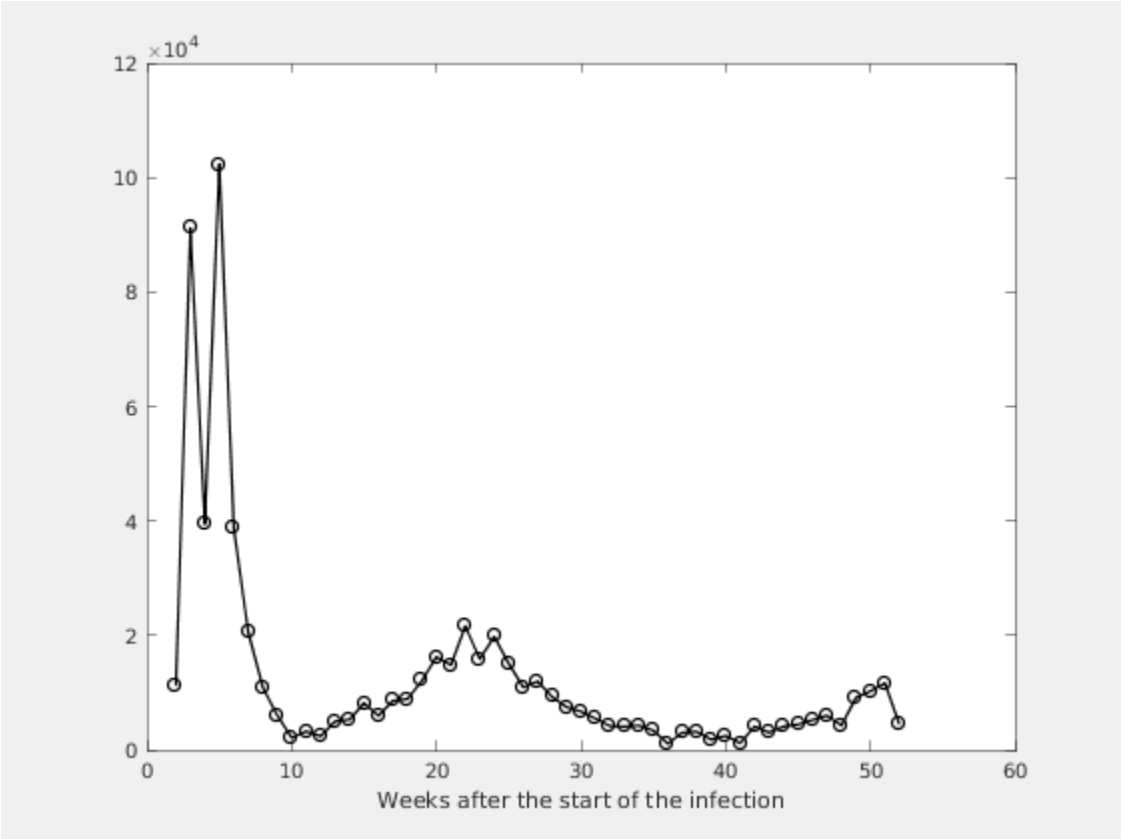
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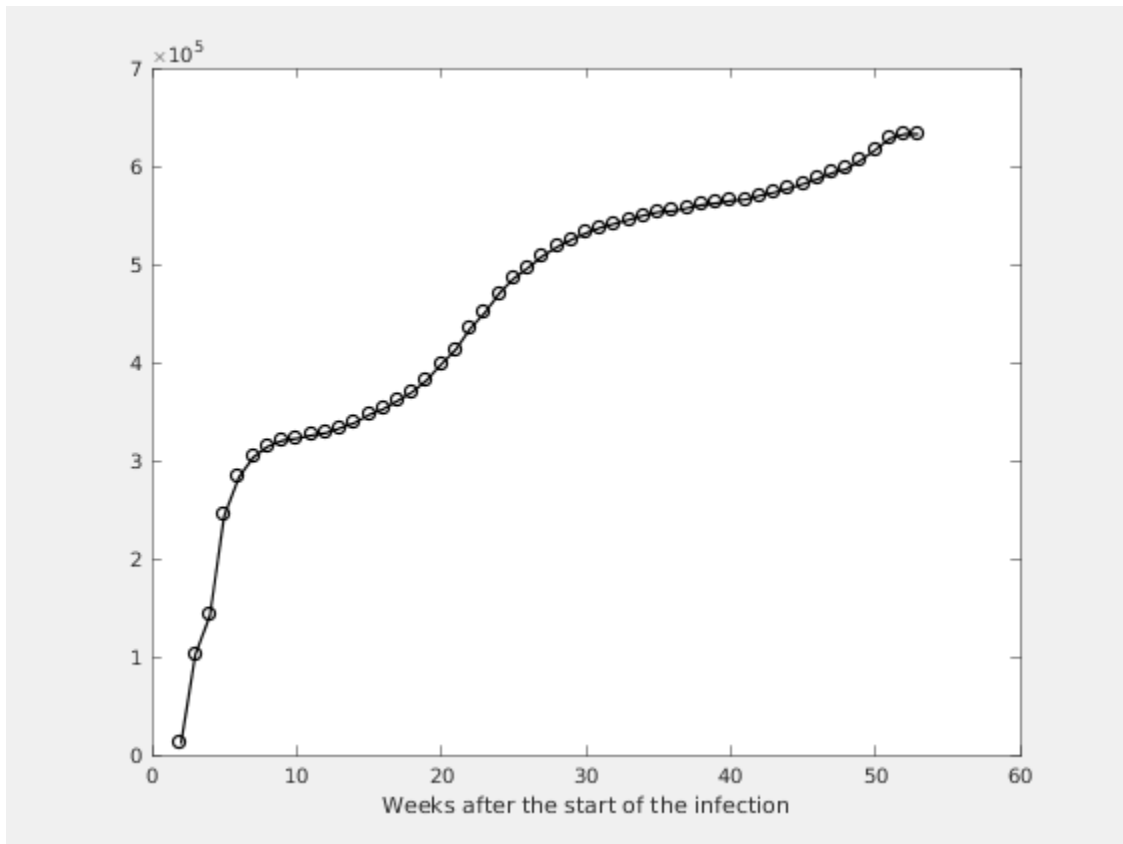
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# Chapter 1. Observed Infection data

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

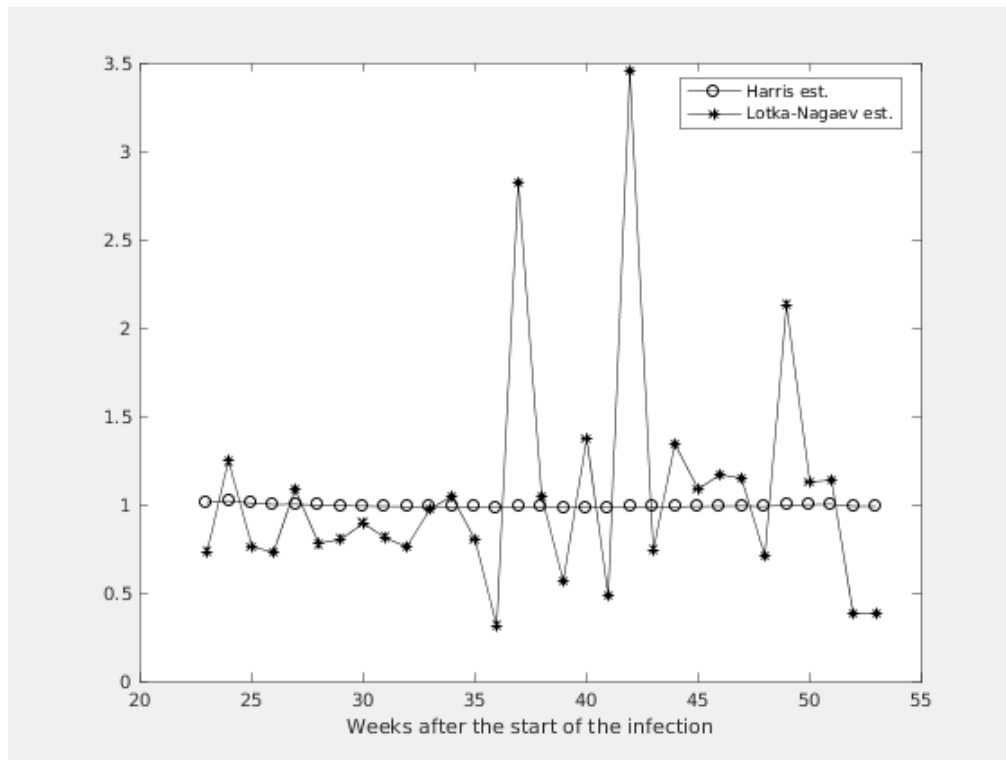
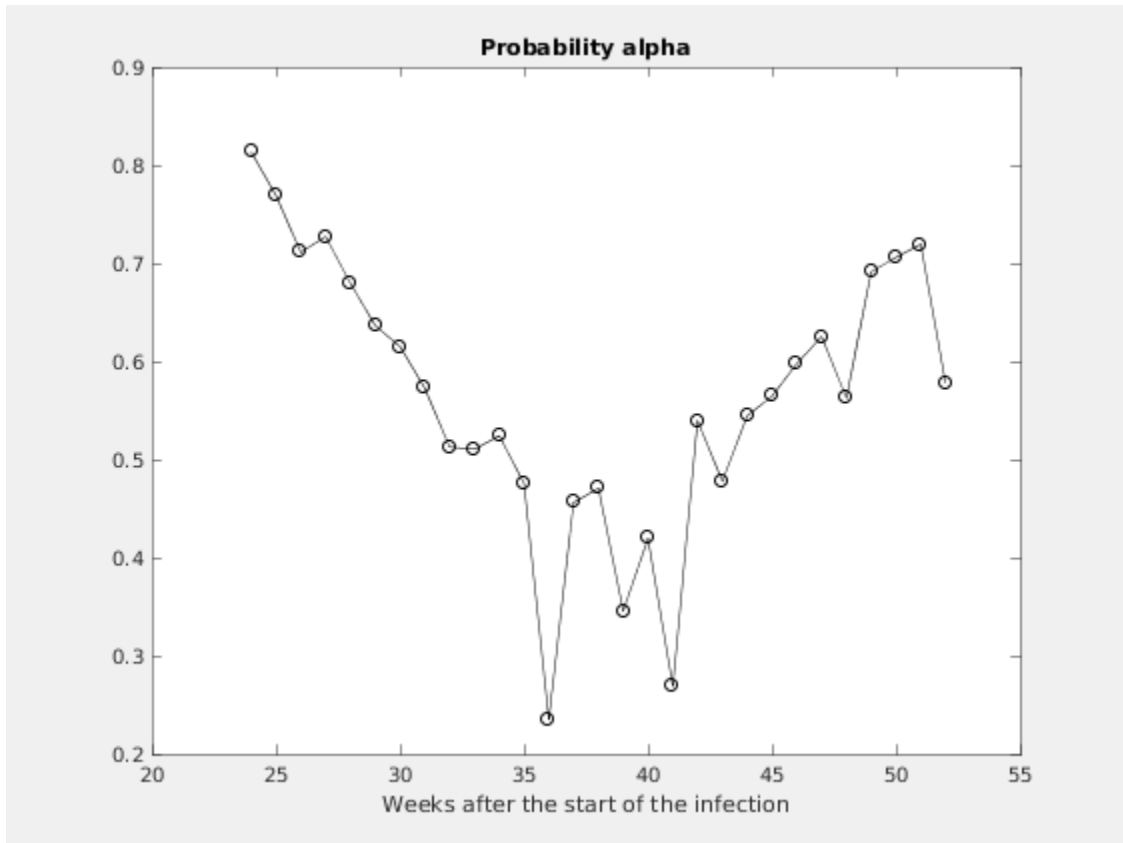
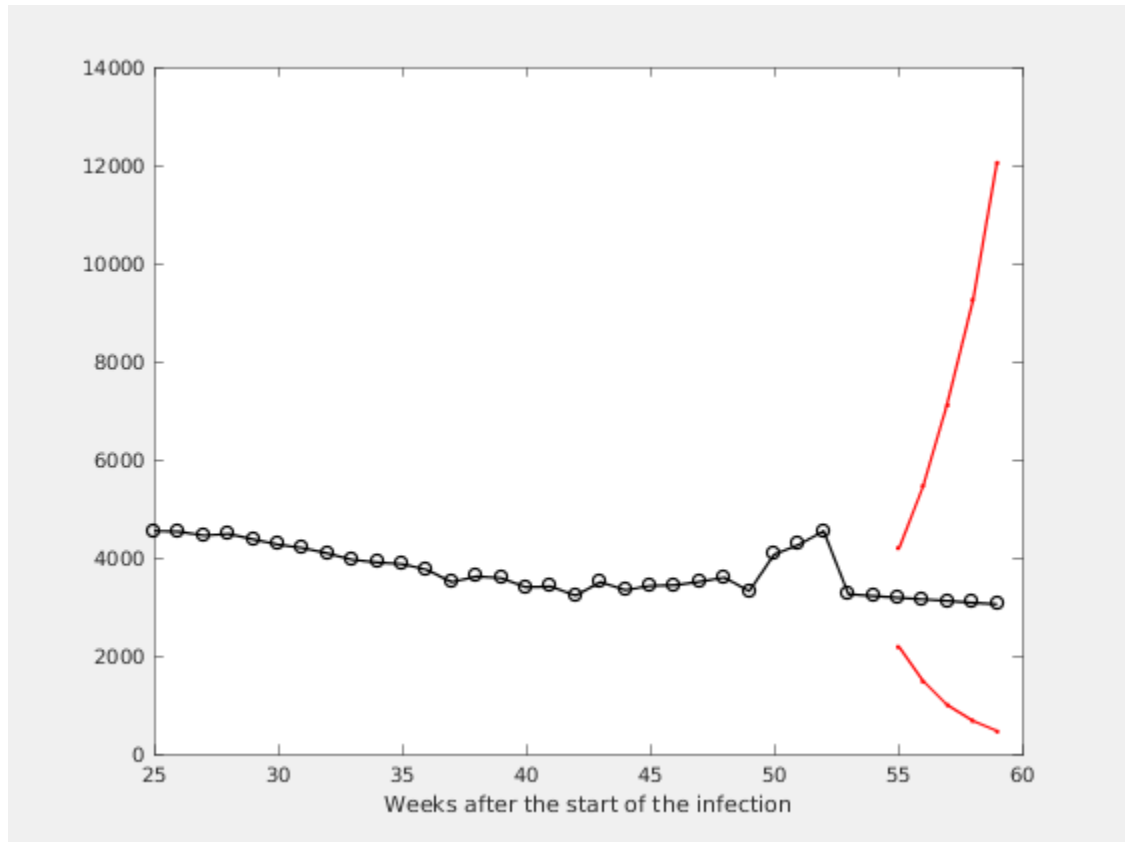


Figure 2.2. Figure

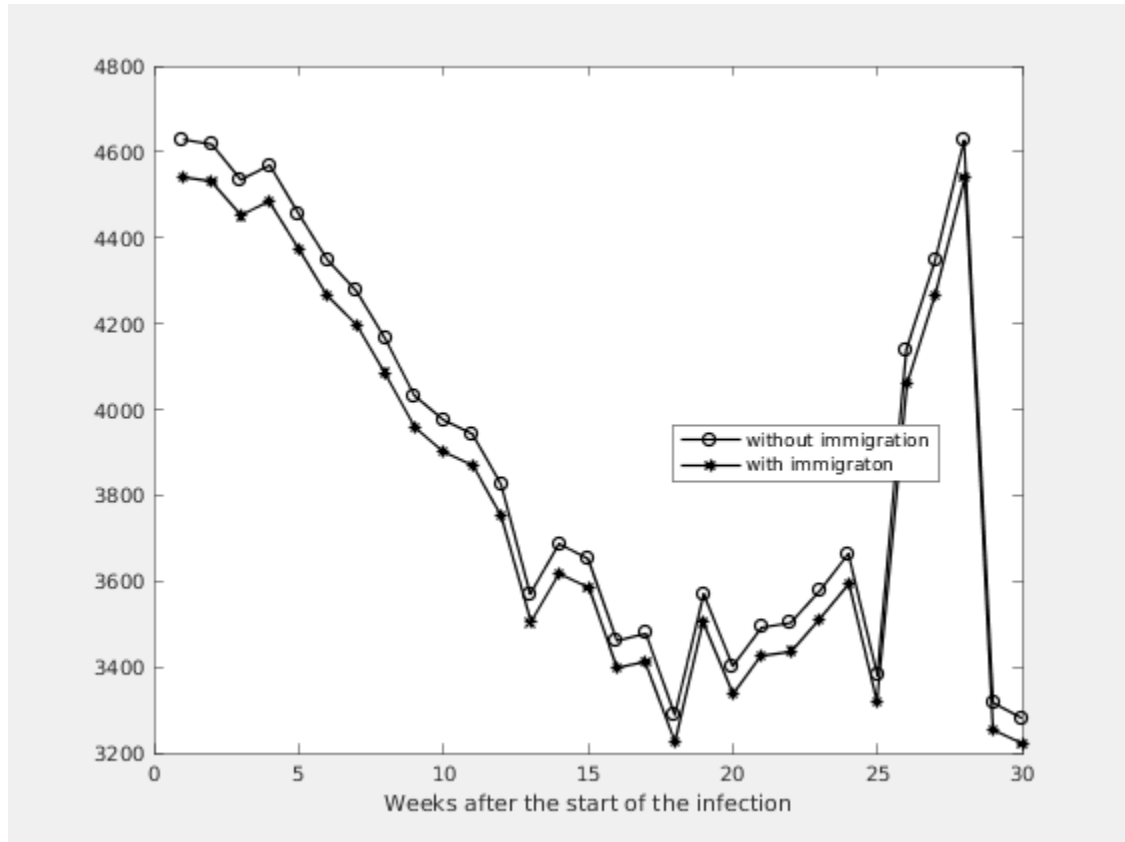




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	0.9964	0.6576 - 1.3352	0.6253	3596	3664
3	0.9984	0.6649 - 1.3319	0.5628	3318	3381
2	1.0007	0.6708 - 1.3305	0.6914	4062	4139
1	0.9892	0.6652 - 1.3132	0.7061	4266	4347
0	0.9892	0.6712 - 1.3073	0.7194	4541	4627