

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

**Croatia - 20201214**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Croatia - 20201214**

### **Abstract**

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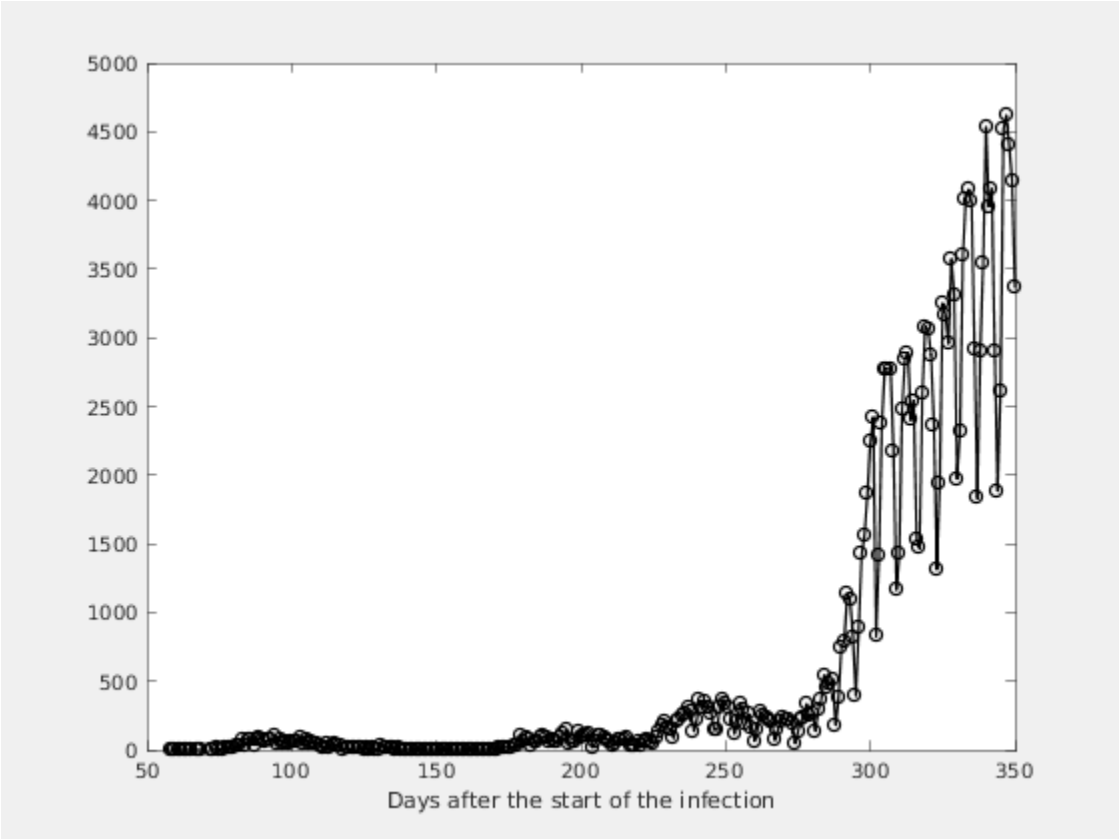
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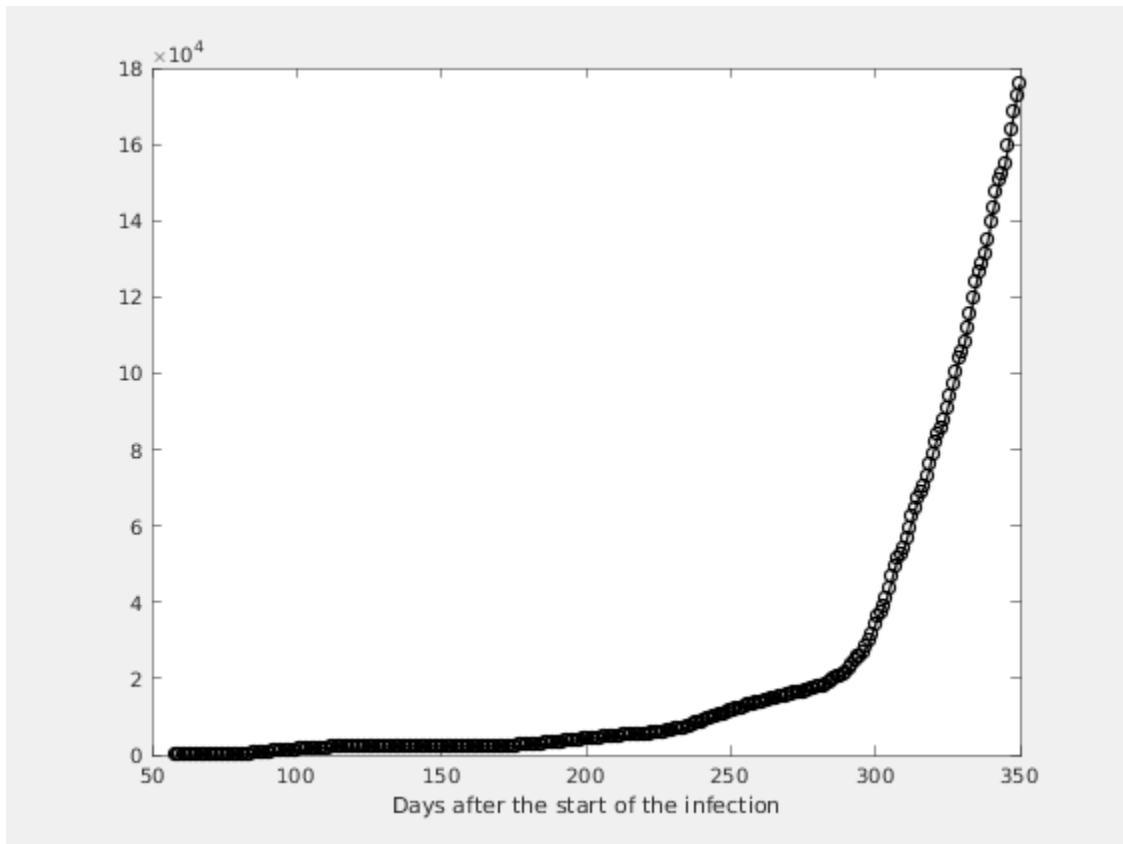
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# Chapter 1. Observed Infection data

Figure 1.1. Number of the daily 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

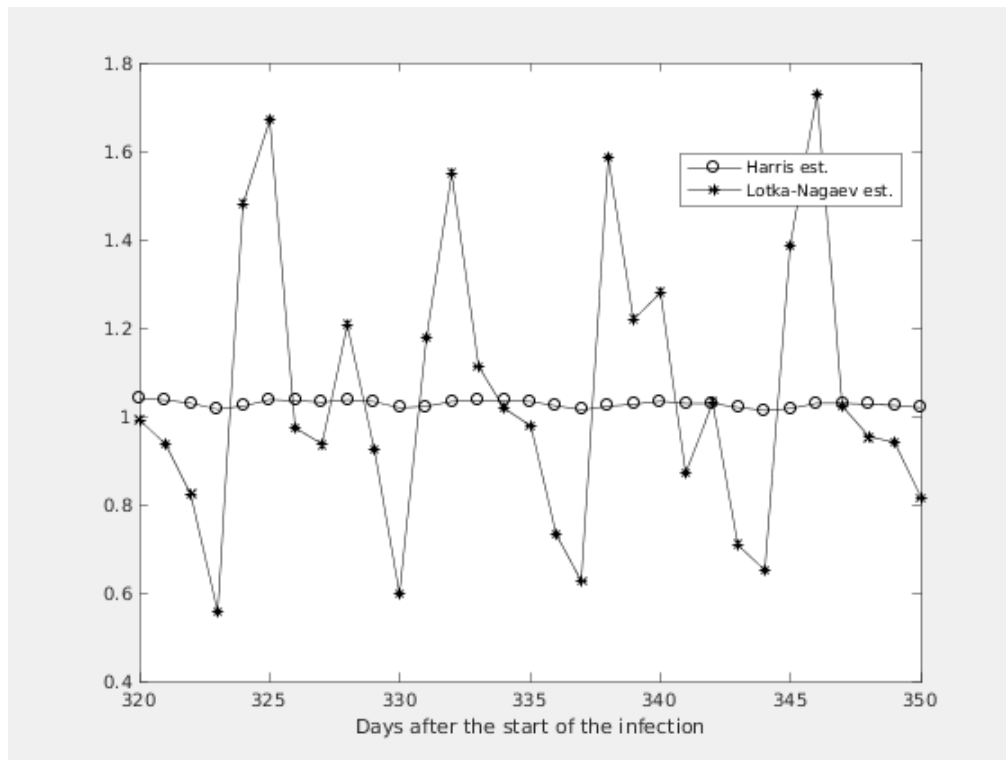
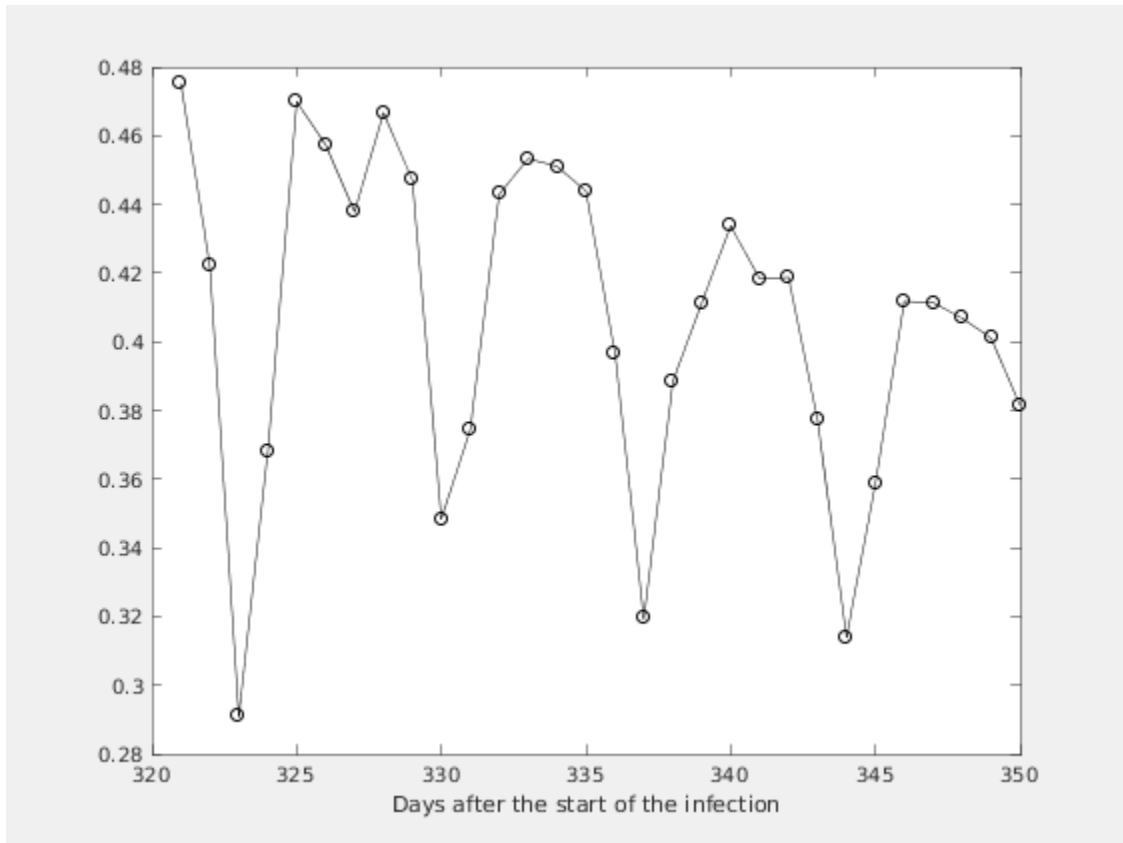
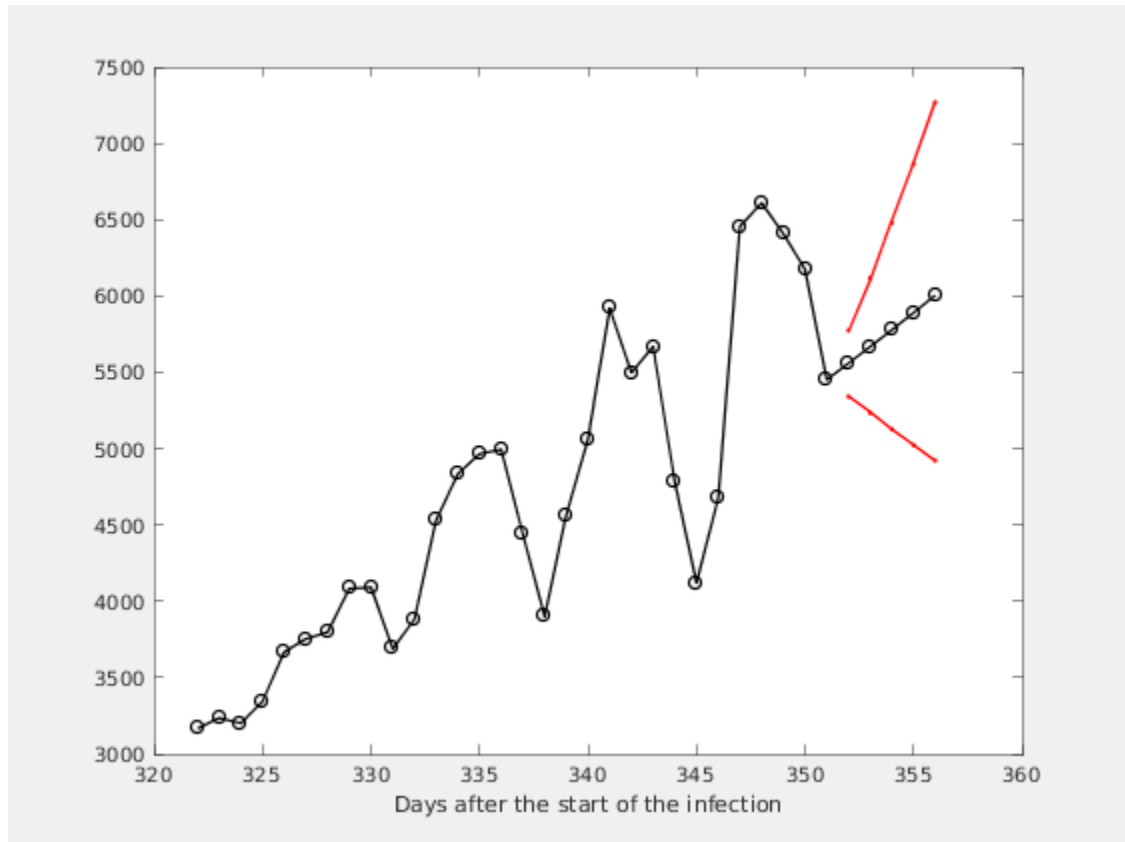


Figure 2.2. Figure

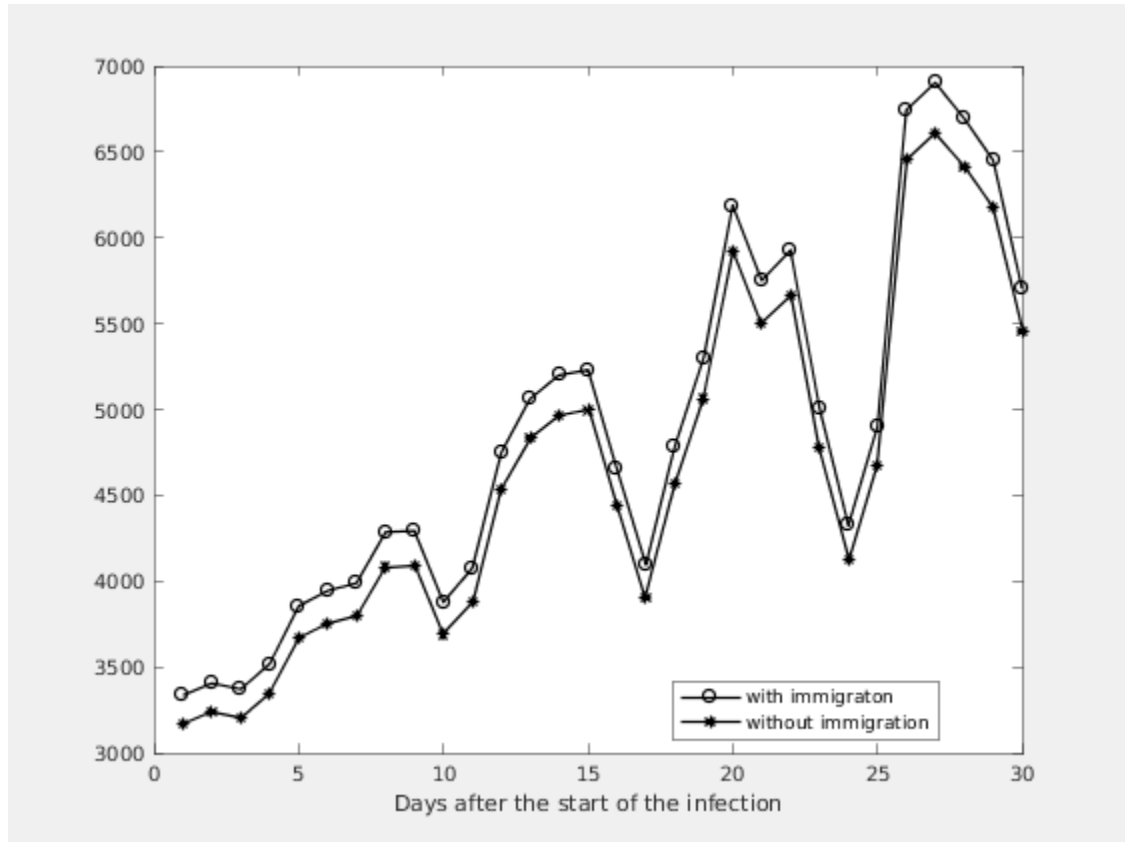




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	M1	A1
4	1.0292	0.9882 - 1.0702	0.3140	4121	4325
3	1.0290	0.9880 - 1.0699	0.3585	4676	4900
2	1.0268	0.9848 - 1.0688	0.4118	6456	6744
1	1.0246	0.9832 - 1.0659	0.4114	6610	6903
0	1.0195	0.9788 - 1.0602	0.4069	6409	6695