

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

**Grenada - 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 Grenada. 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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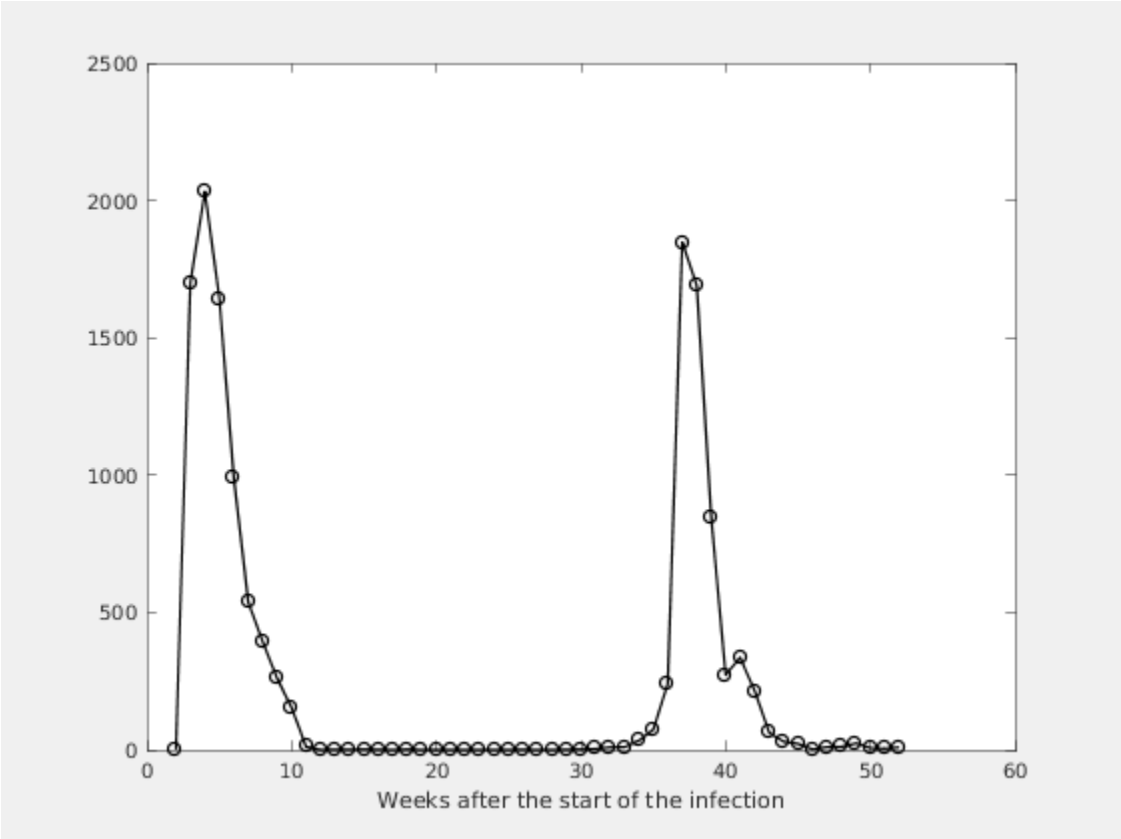
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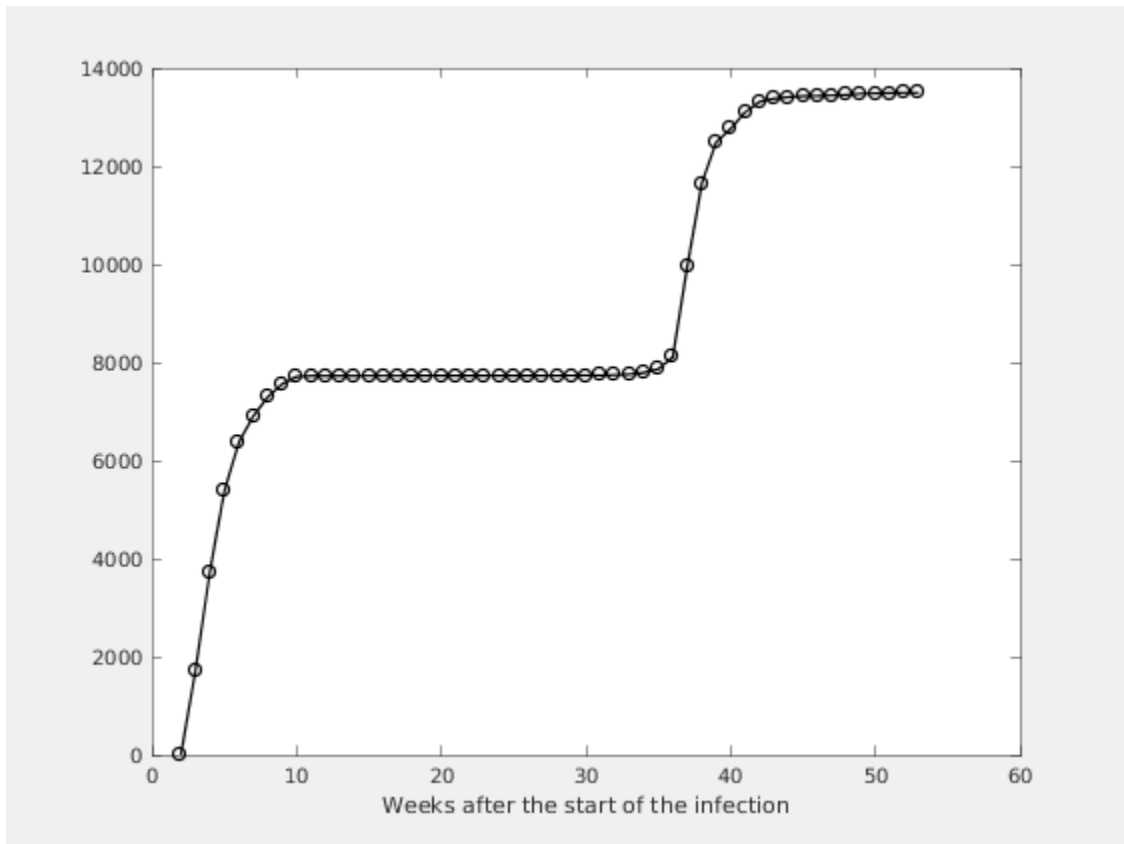
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# Chapter 1. Observed Infection data

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

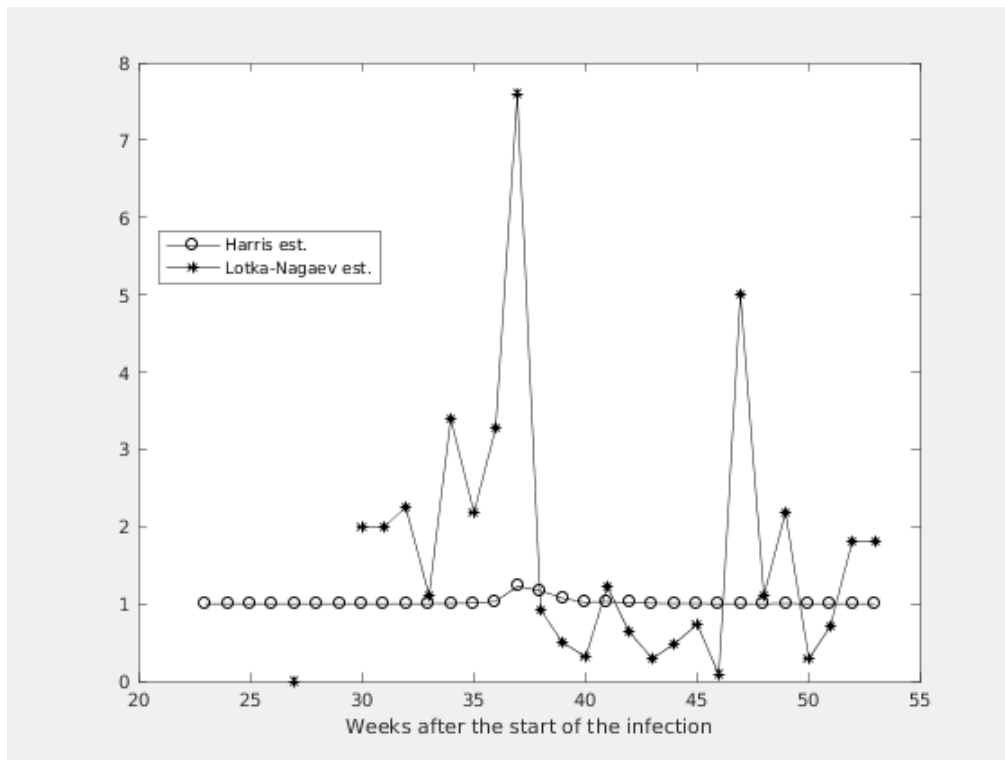
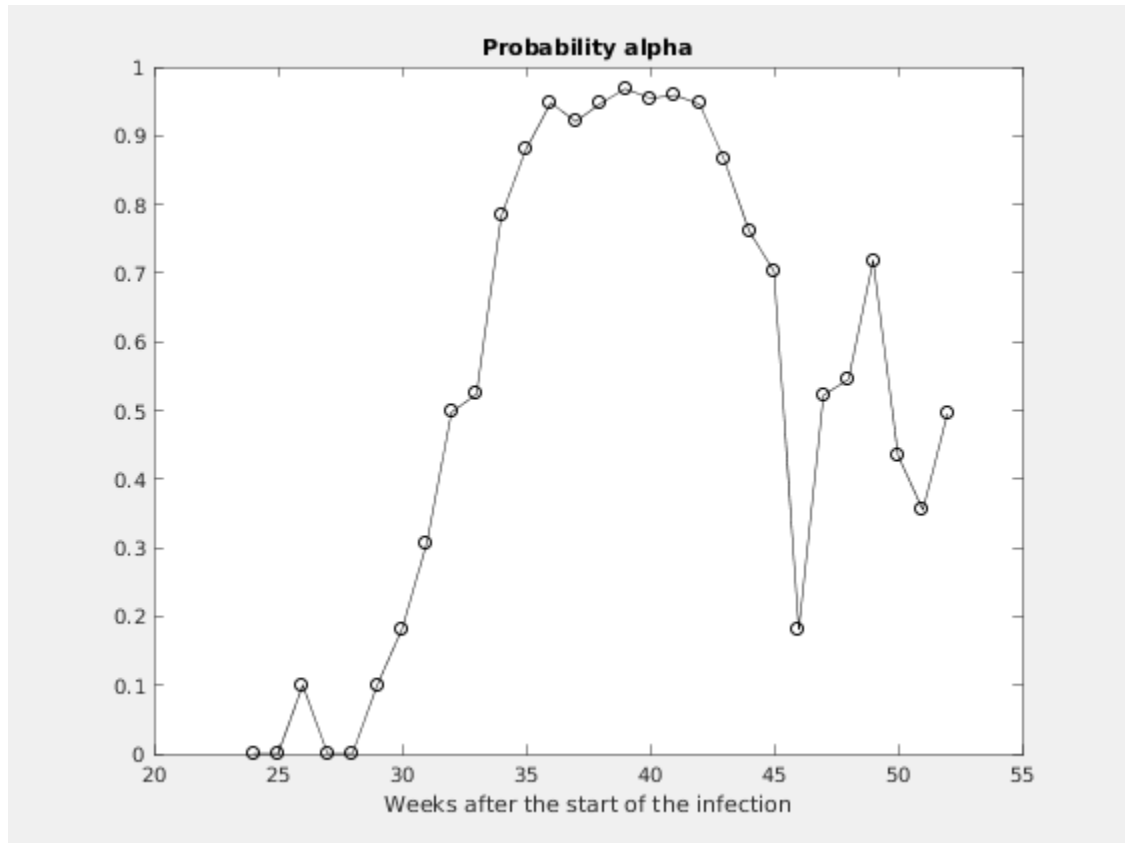
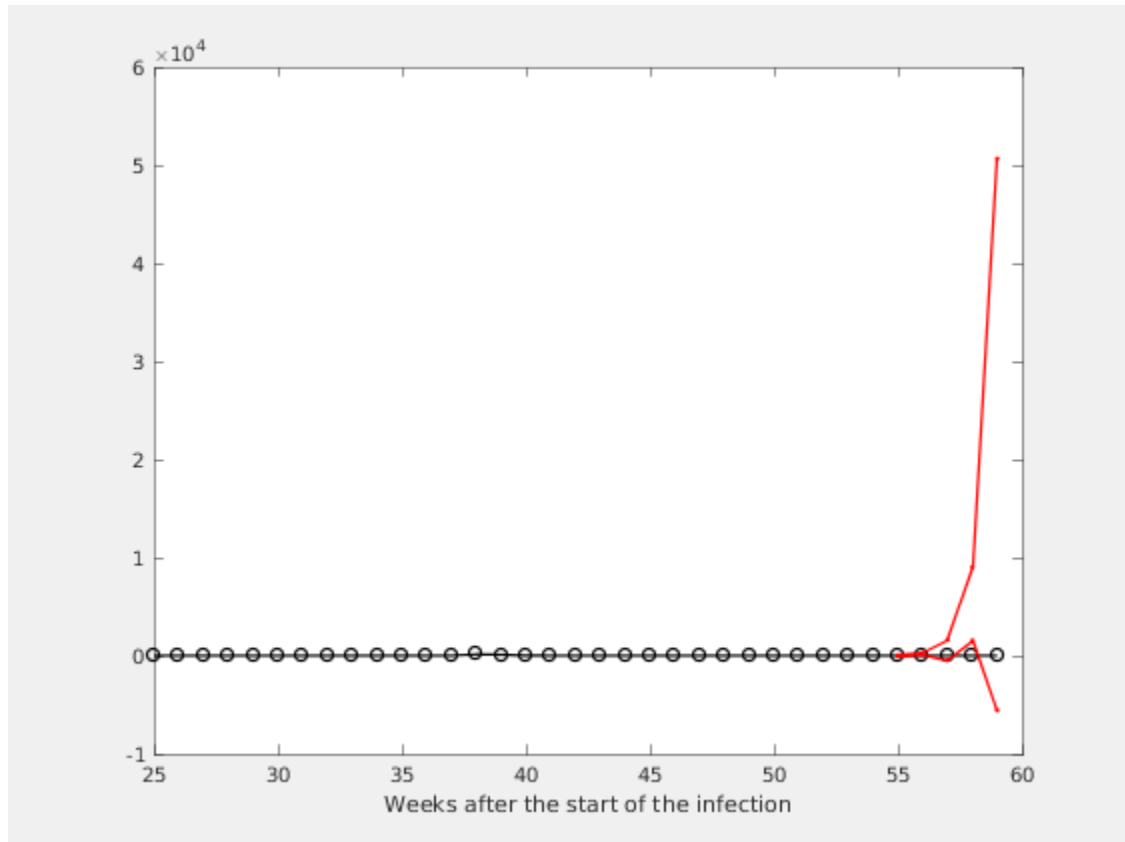


Figure 2.2. Figure

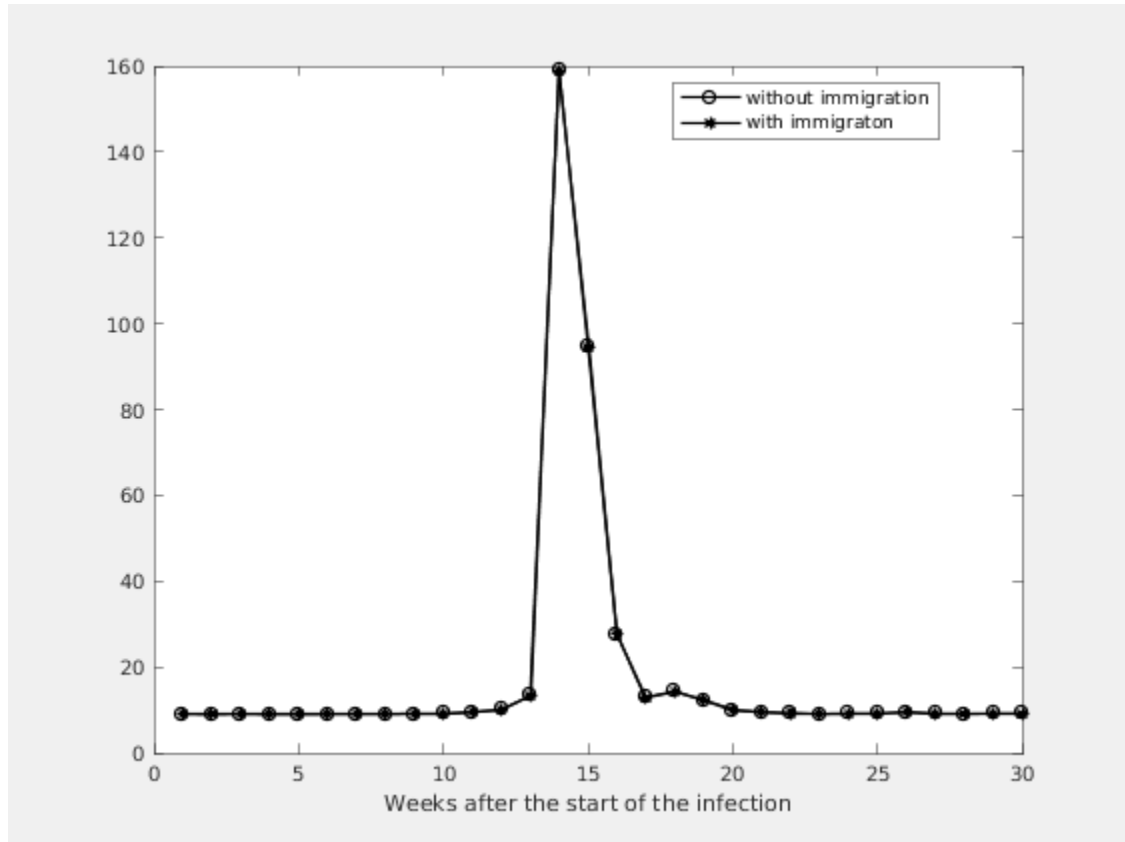




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	1.0017	-3.9398 - 5.9433	0.5223	9	9
3	1.0004	-3.8682 - 5.8691	0.5454	9	9
2	1.0003	-3.7983 - 5.7989	0.7184	9	9
1	1.0006	-3.7285 - 5.7297	0.4345	9	9
0	1.0006	-3.6647 - 5.6658	0.3552	9	9