

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

**Germany - week 53**

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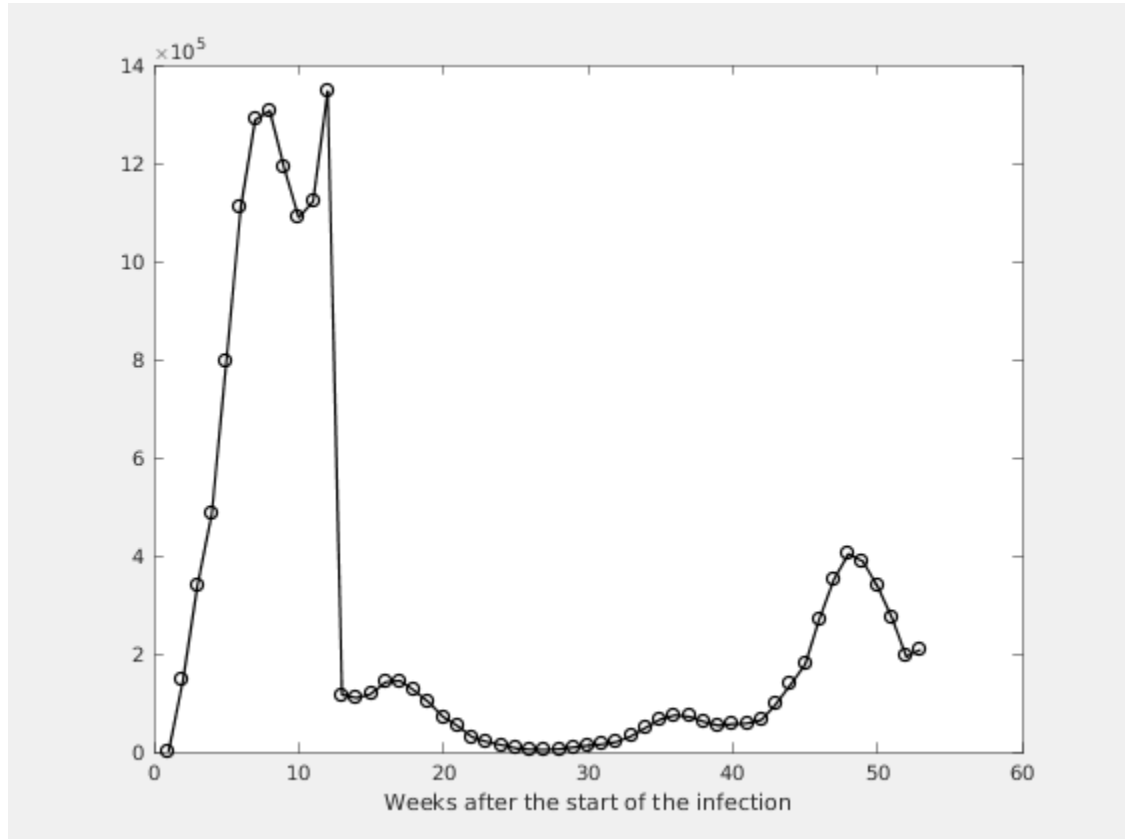
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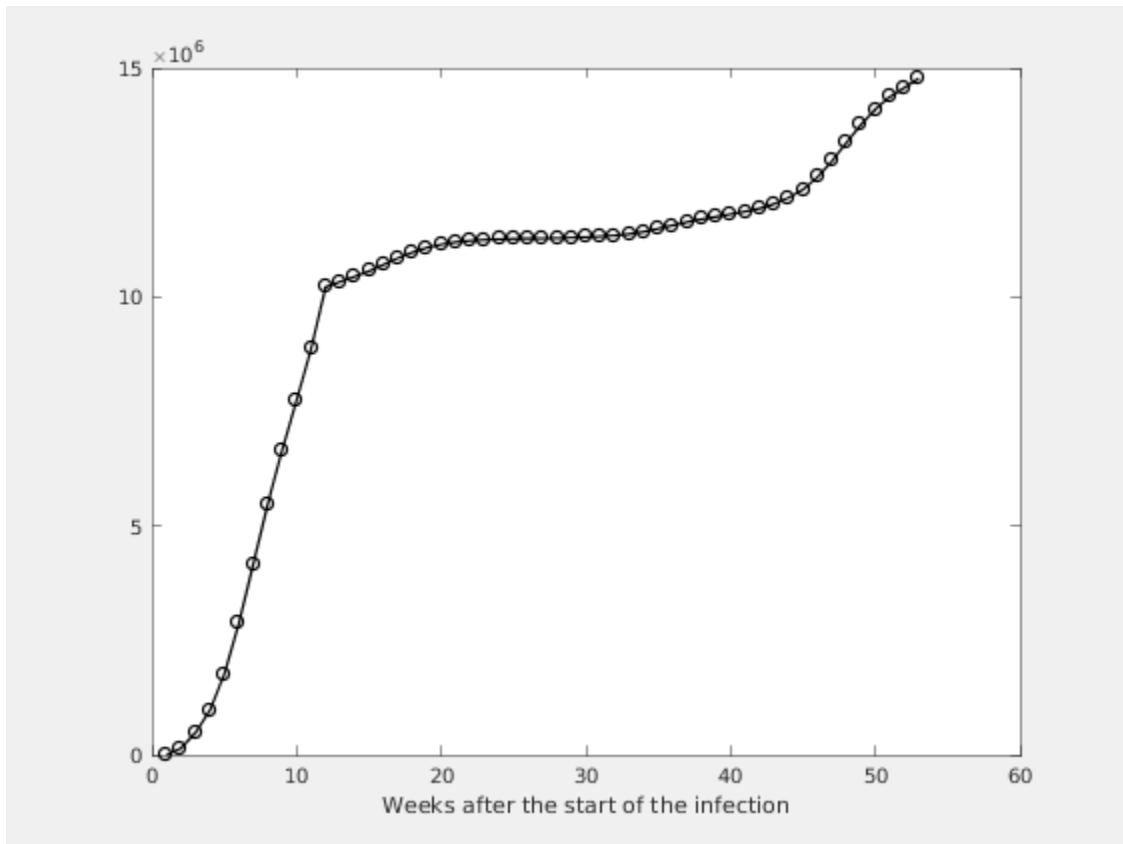
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# Chapter 1. Observed Infection data

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

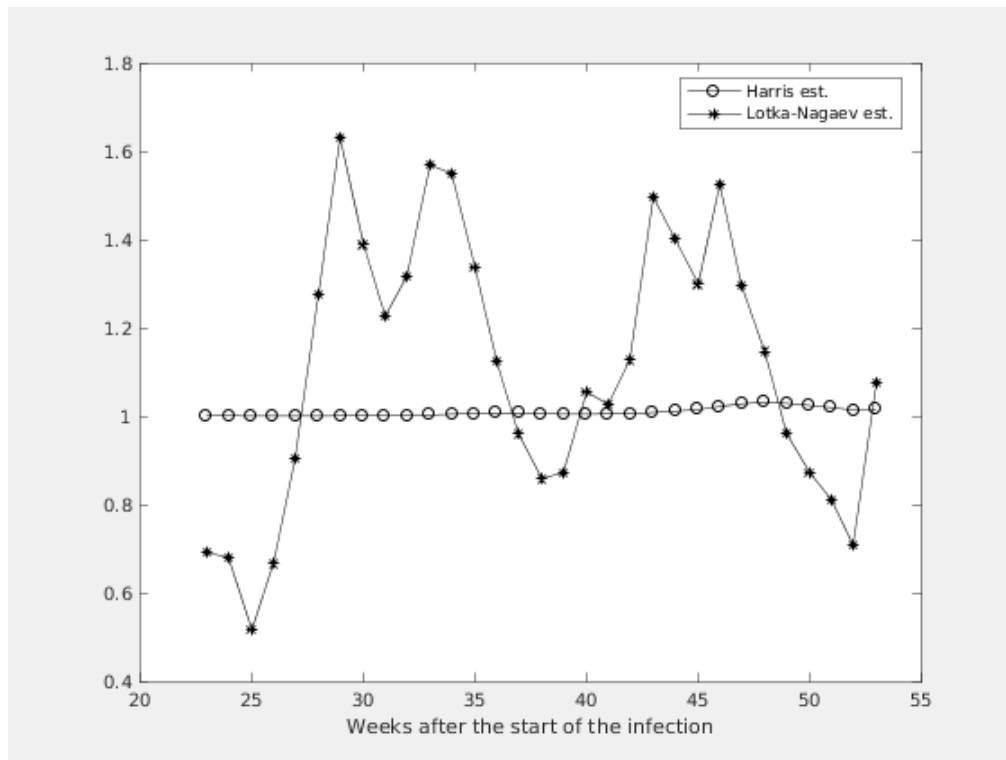
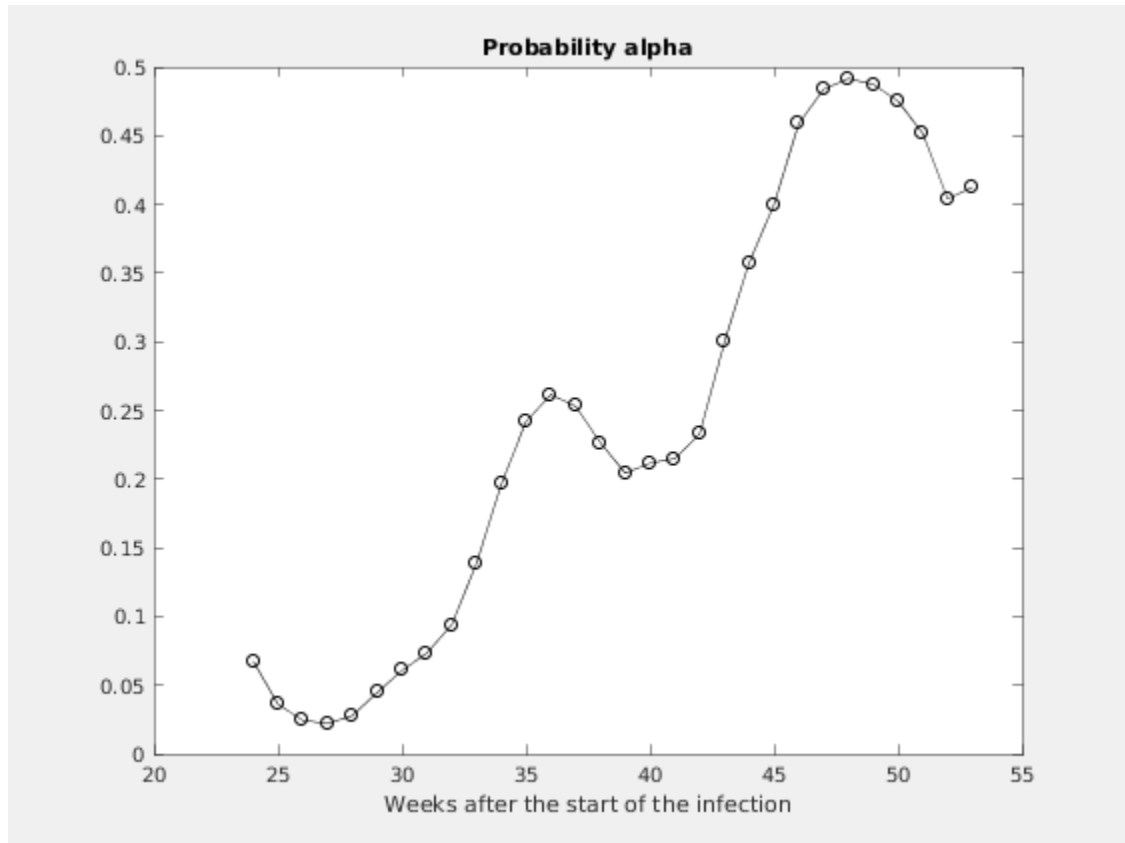
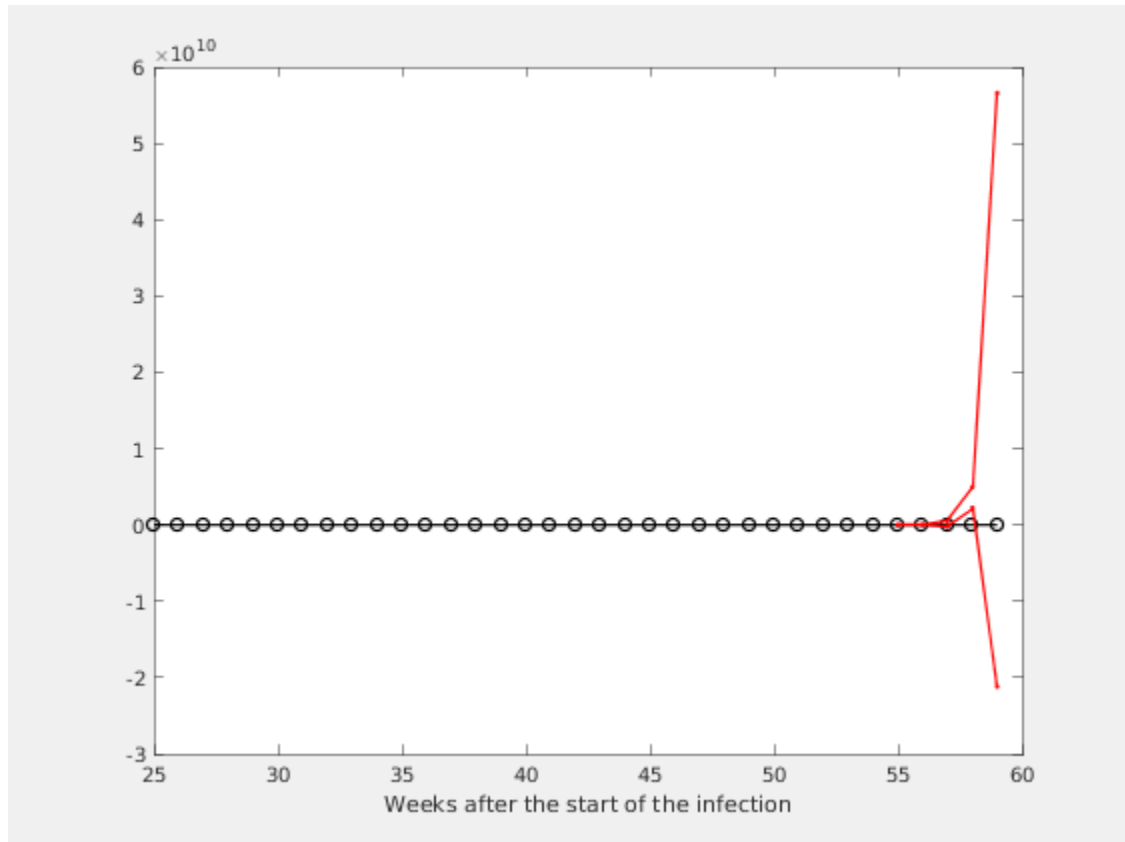


Figure 2.2. Figure

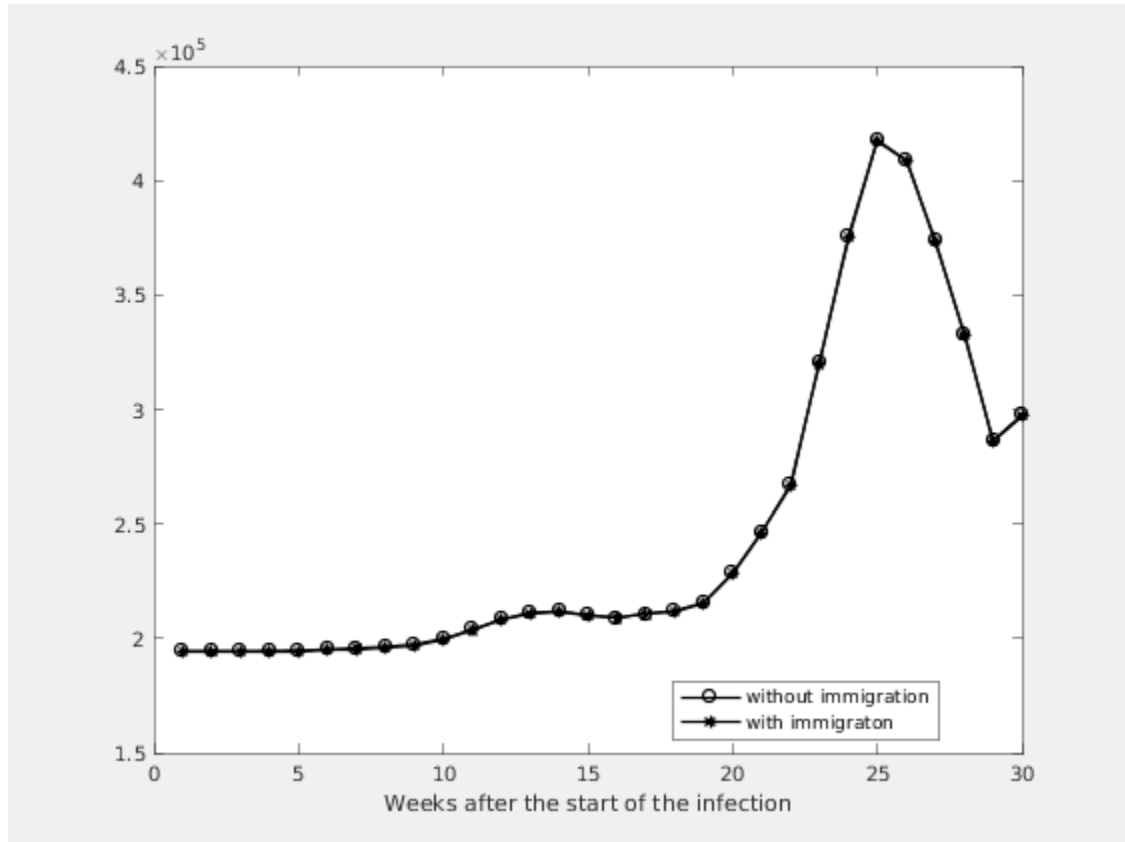




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	1.0290	-10.8075 - 12.8655	0.4839	375190	375748
3	1.0246	-10.5255 - 12.5746	0.4916	417057	417667
2	1.0194	-10.2360 - 12.2748	0.4875	408195	408794
1	1.0135	-9.9682 - 11.9952	0.4752	373575	374131
0	1.0143	-9.7258 - 11.7545	0.4516	332200	332704