

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

**Var166 - week 53**

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## **Branching stochastic processes as models of Covid-19 epidemic development : Var166 - 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 Var166. 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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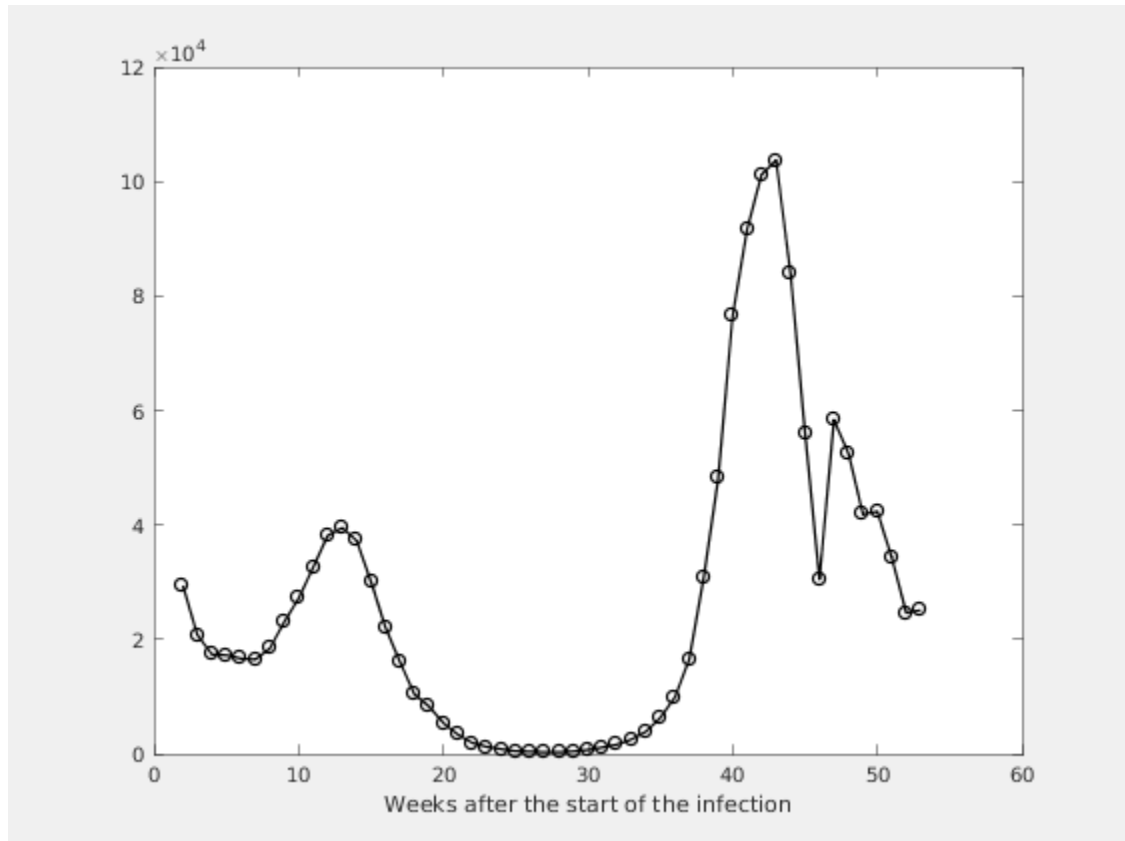
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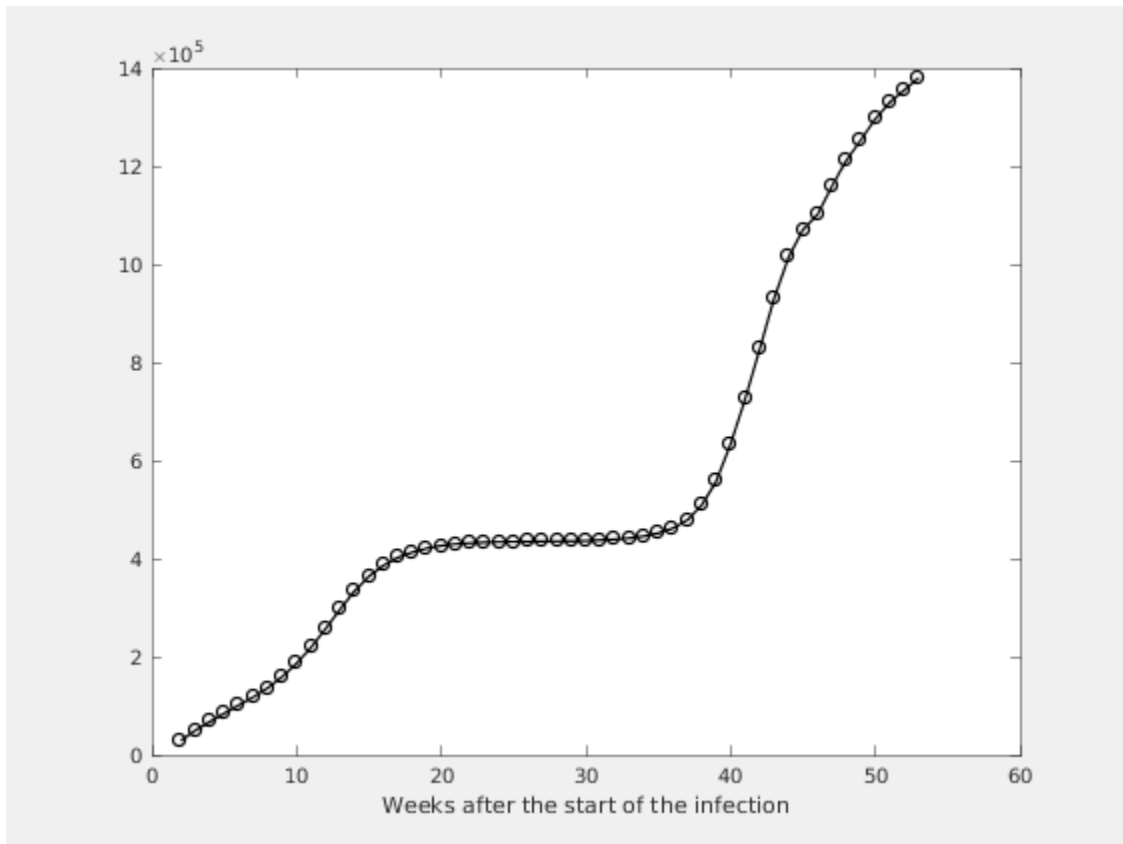
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# Chapter 1. Observed Infection data

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



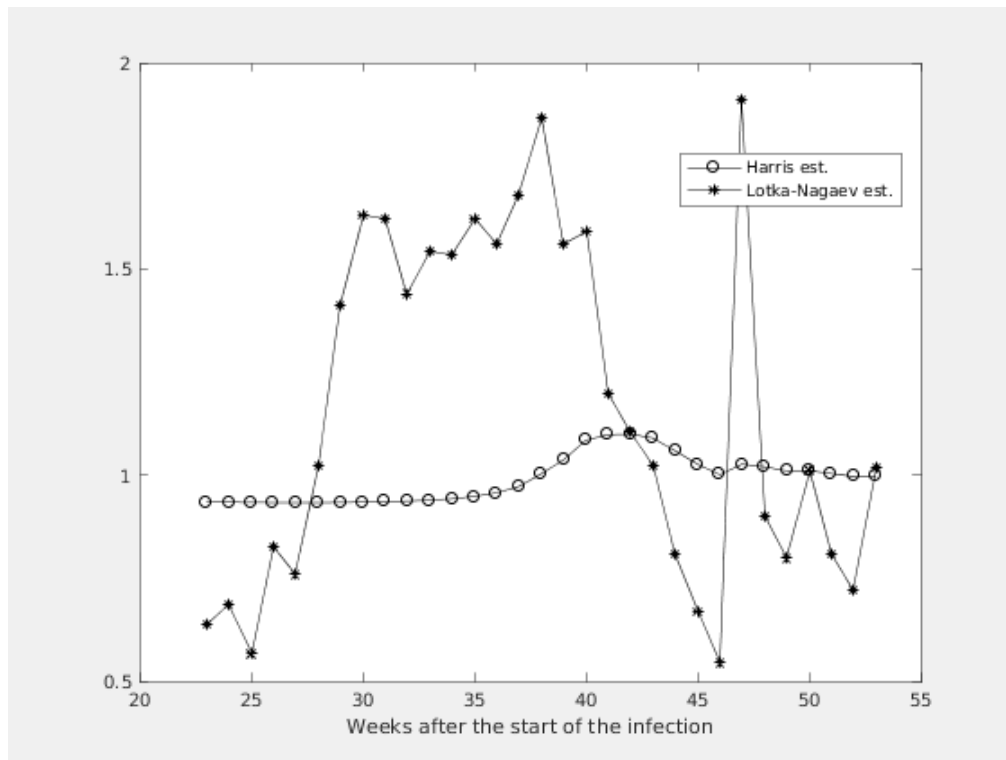
**Figure 1.2. Number of the total registered cases**



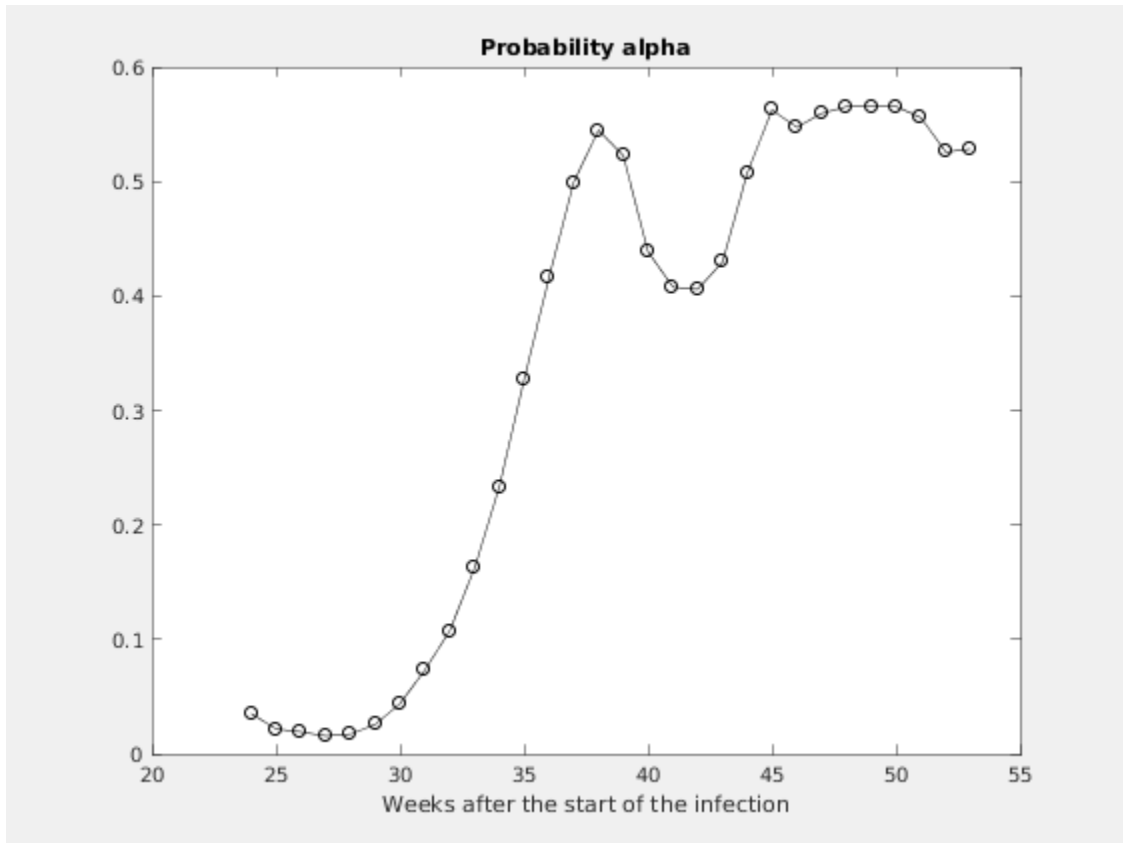
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# Chapter 2. Estimating of the main parameter and some predictions

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

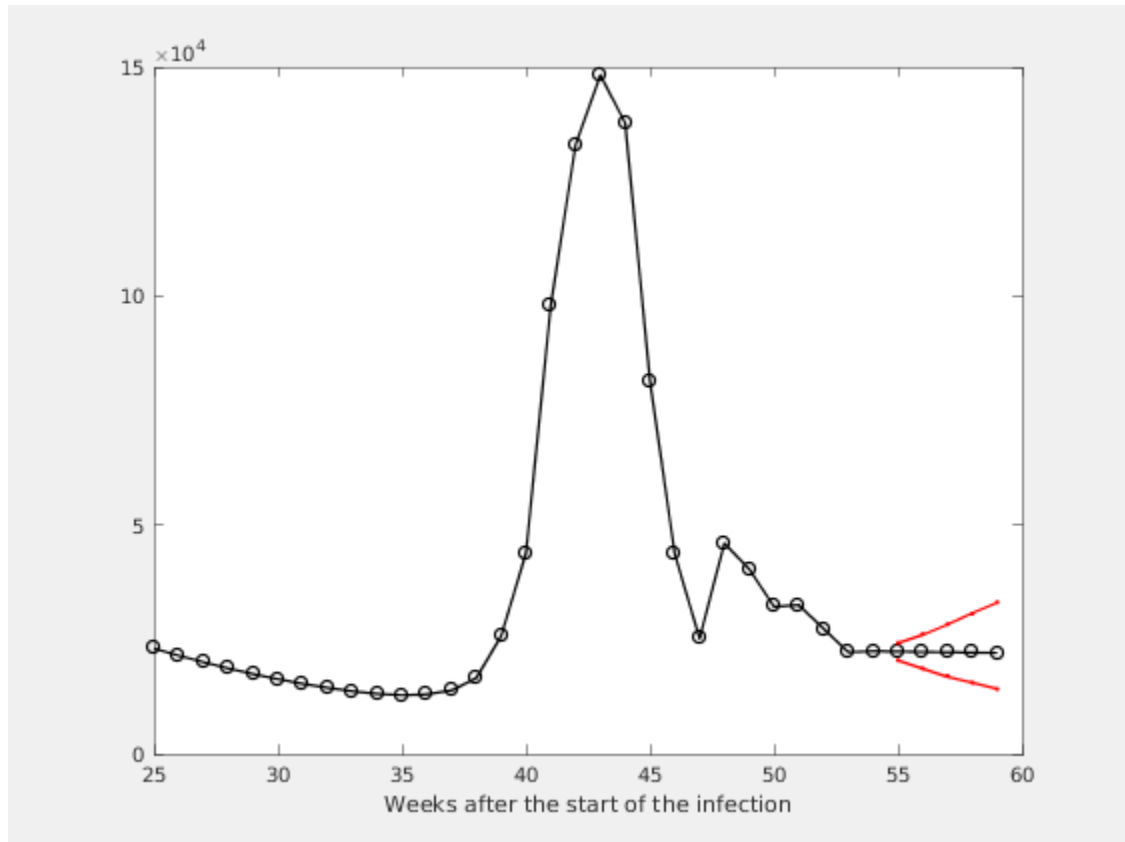


**Figure 2.2. Figure**

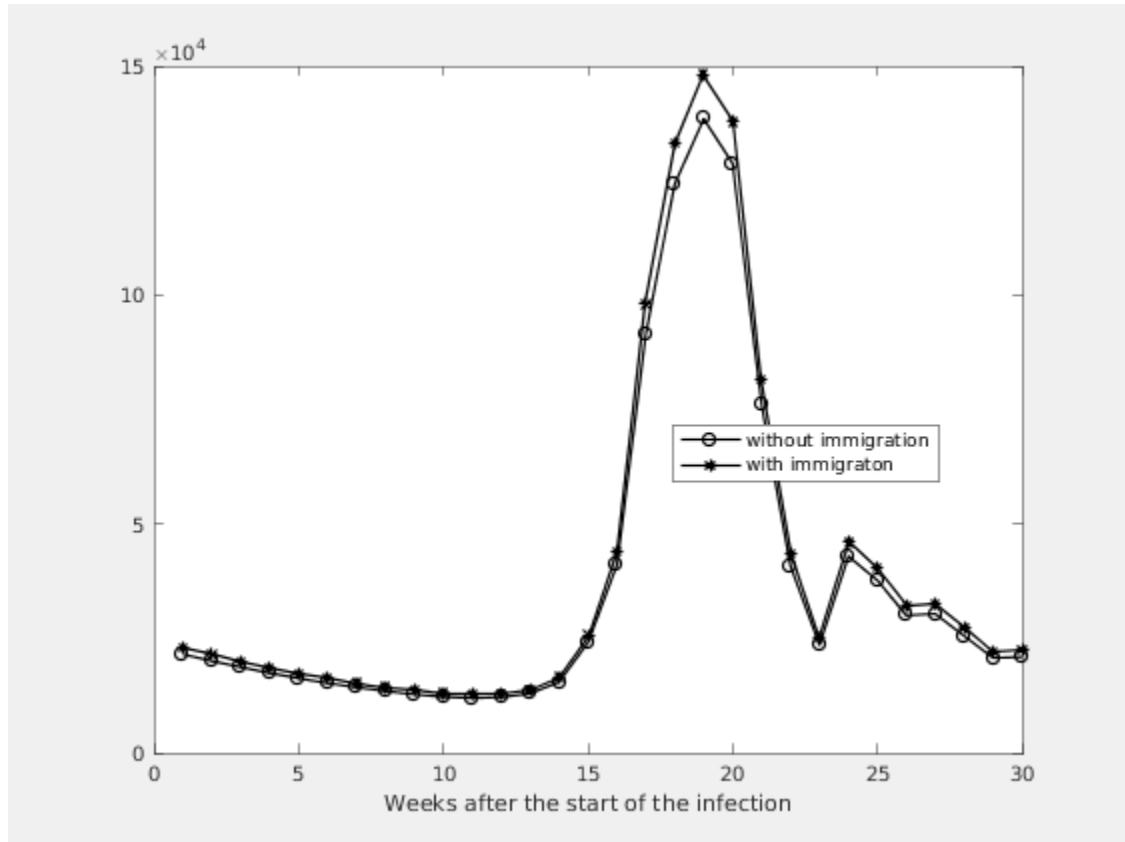




**Figure 2.3. Expected number of the nonregistered infected individuals without immigration**



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



**Estimation of the model parameters.**

k	m	ci	alpha	A1	M1
4	1.0103	0.9137 - 1.1069	0.5595	45949	42918
3	1.0103	0.9169 - 1.1037	0.5654	40358	37695
2	1.0037	0.9124 - 1.0950	0.5656	32157	30036
1	0.9964	0.9076 - 1.0853	0.5657	32520	30375
0	0.9968	0.9098 - 1.0839	0.5558	27326	25523