Forecasting of coronavirus COVID19 epidemic (SIR model)

It is assumed that the model is a reasonable description of the one-stage epidemic. In particular, the model assumes a constant population, uniform mixing of the people, and equally likely recovery of infected. The model is data-driven, so its forecast is as good as data are. The forecasting change with new or changed data.

DISCLAIMER: Software and data is for education and not for medical or commercial. The model may fail in some situations. In particular, the model may be unadequate, the model may fail in the initial phase and in when additional epidemic stages or outbreaks (not described by SIR model) are encountered. Use it at your own discretion.

Source of data

https://ourworldindata.org/coronavirus-source-data.

https://www.worldometers.info/coronavirus/coronavirus-cases/#case-tot-outchina

https://en.wikipedia.org/wiki/2019%E2%80%9320_coronavirus_pandemic_by_country_and_territory

An actual source of data is for each country reported in the corresponding getData function.

Report

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Date: 26-Mar-2020
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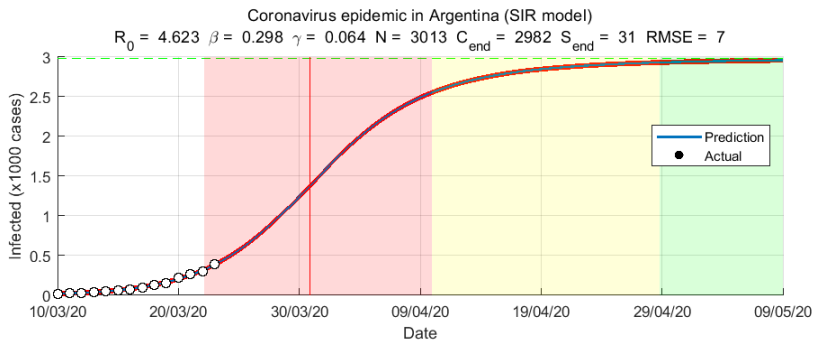

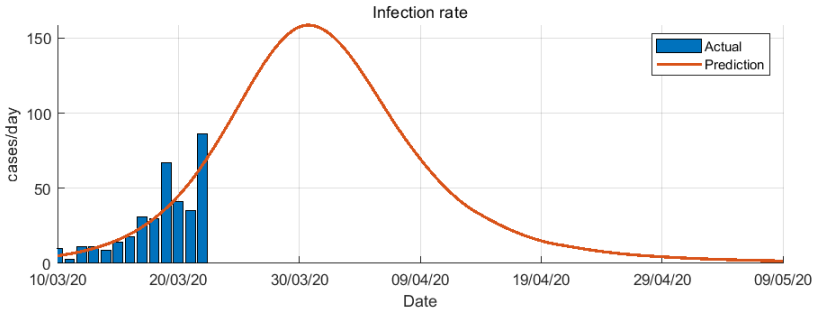

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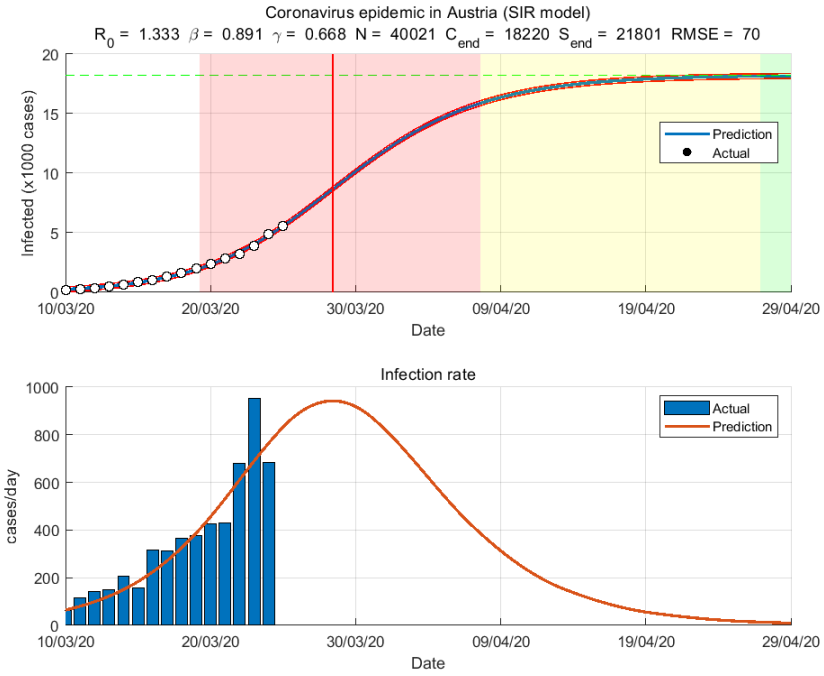

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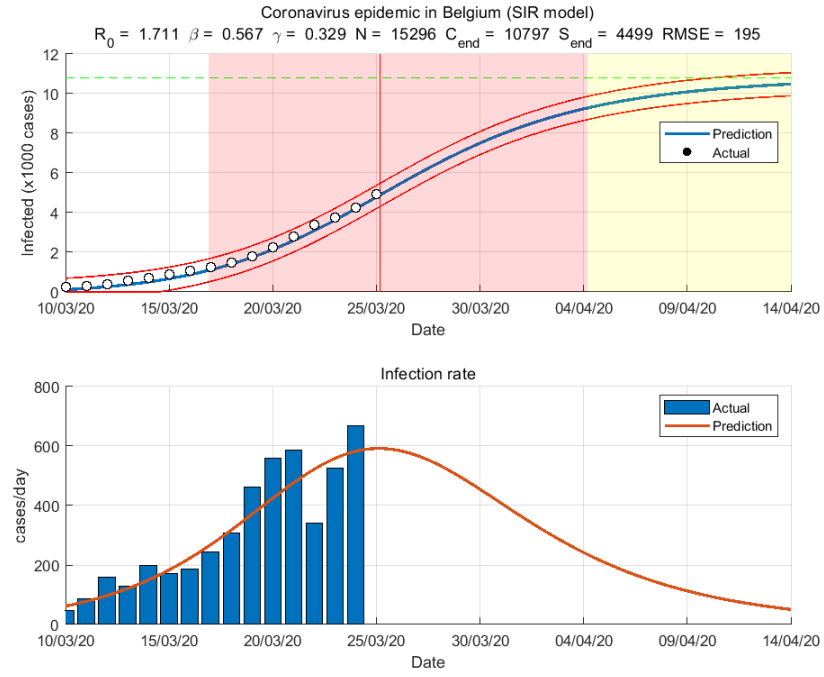

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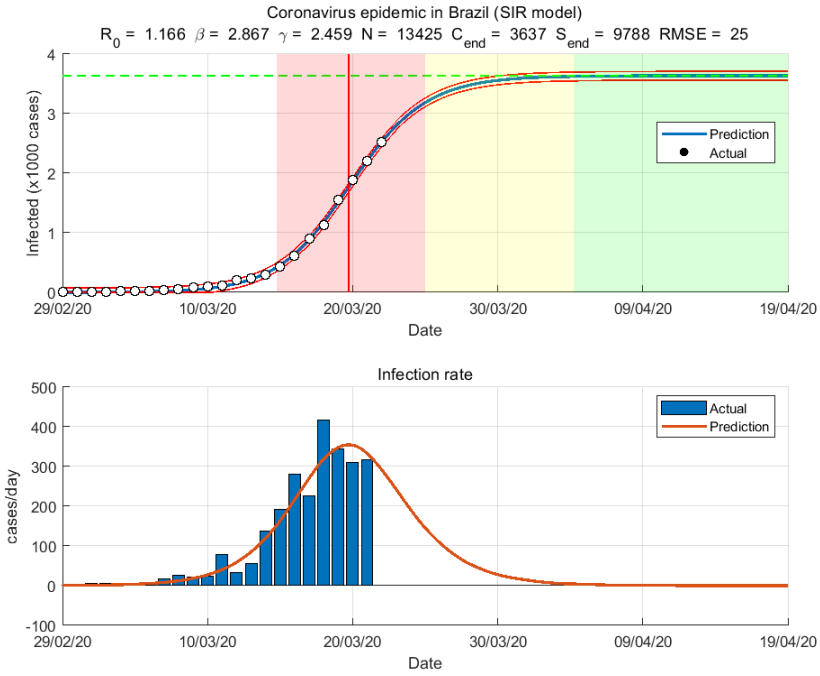

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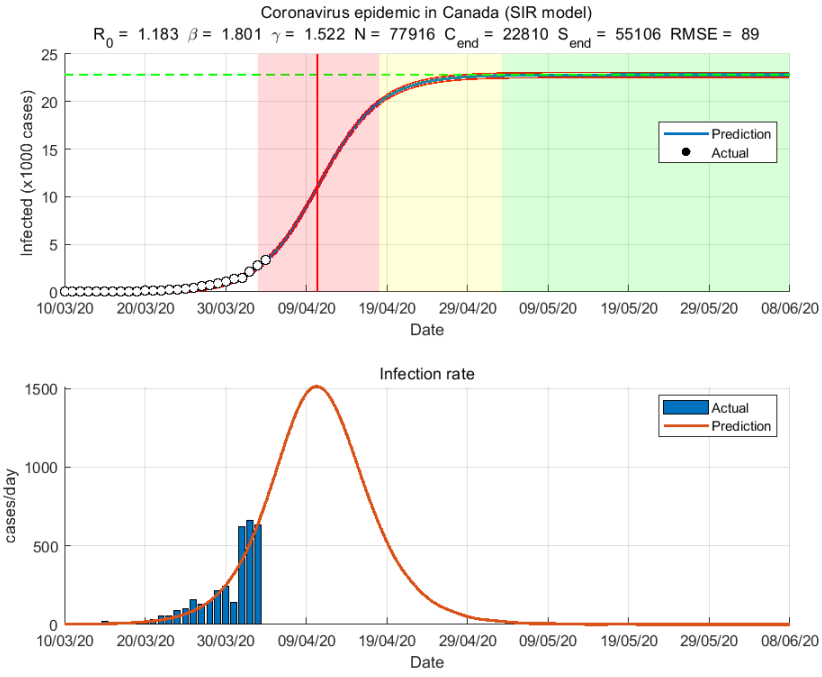

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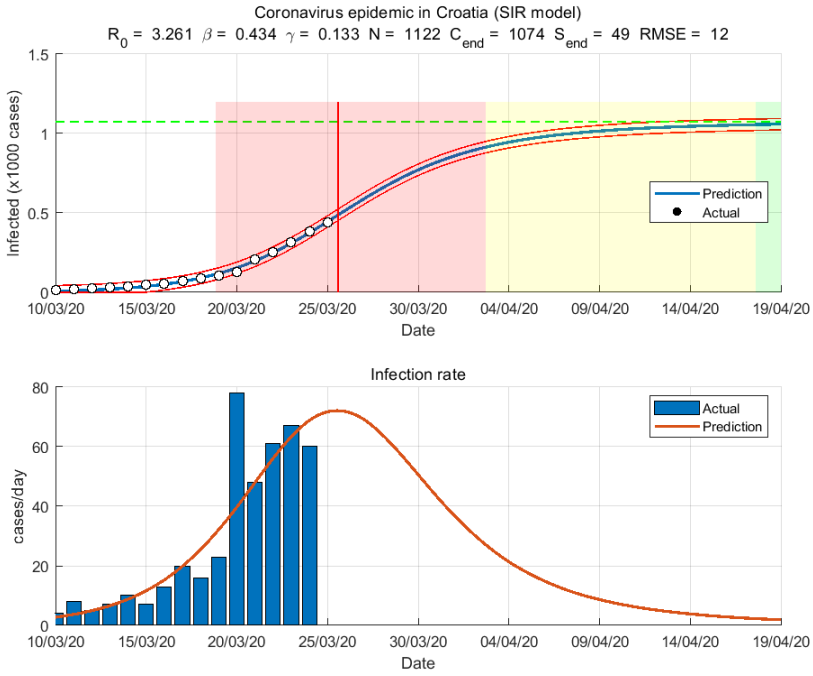

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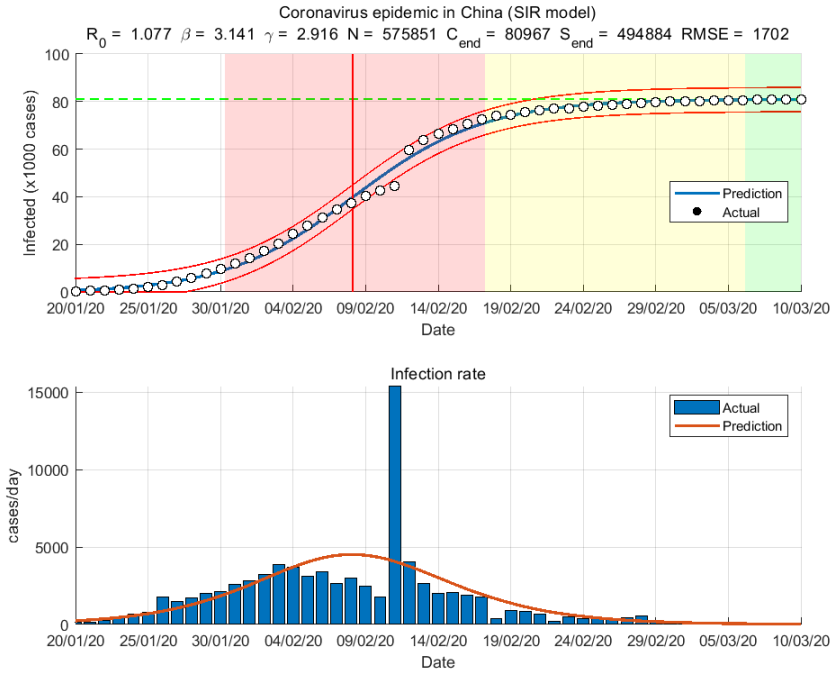

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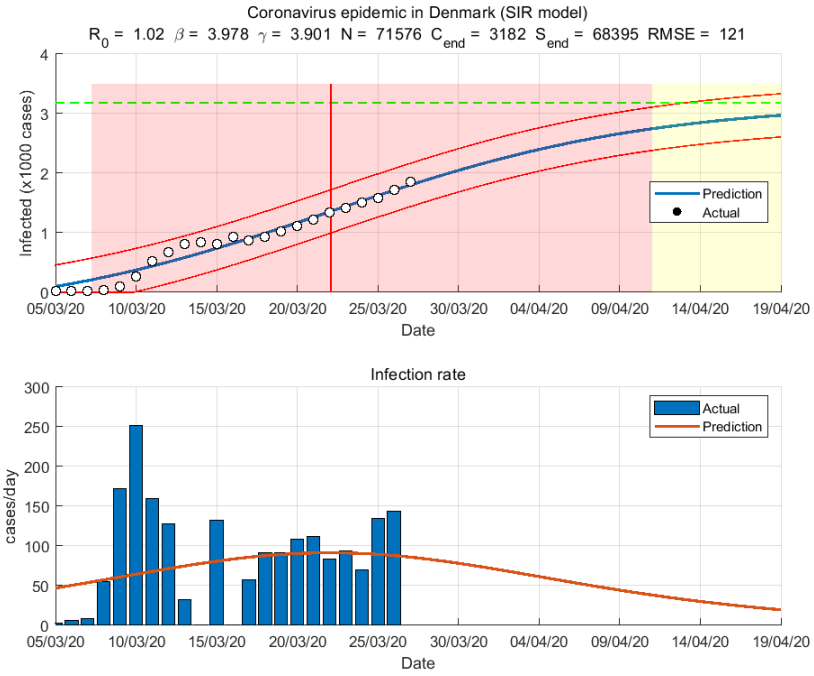

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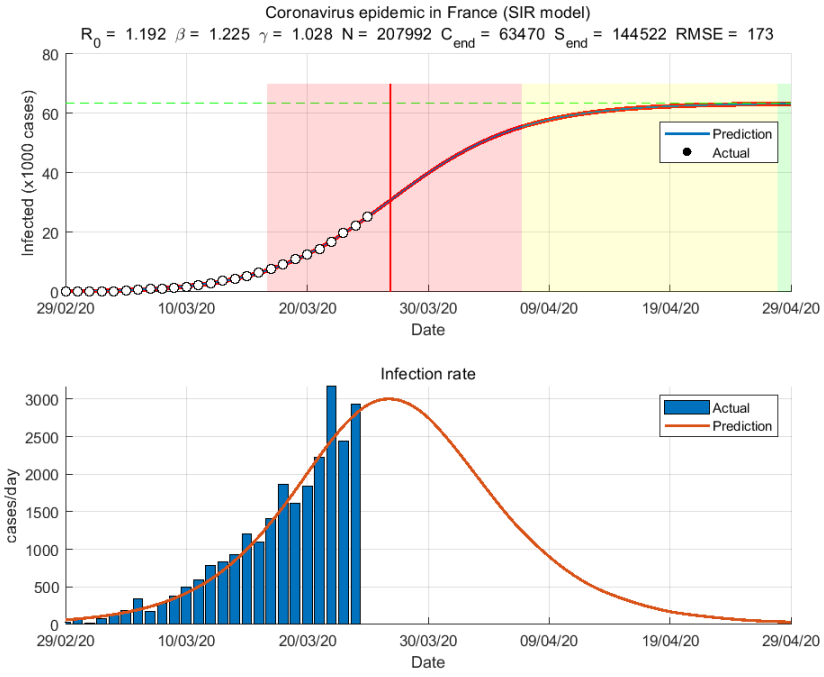

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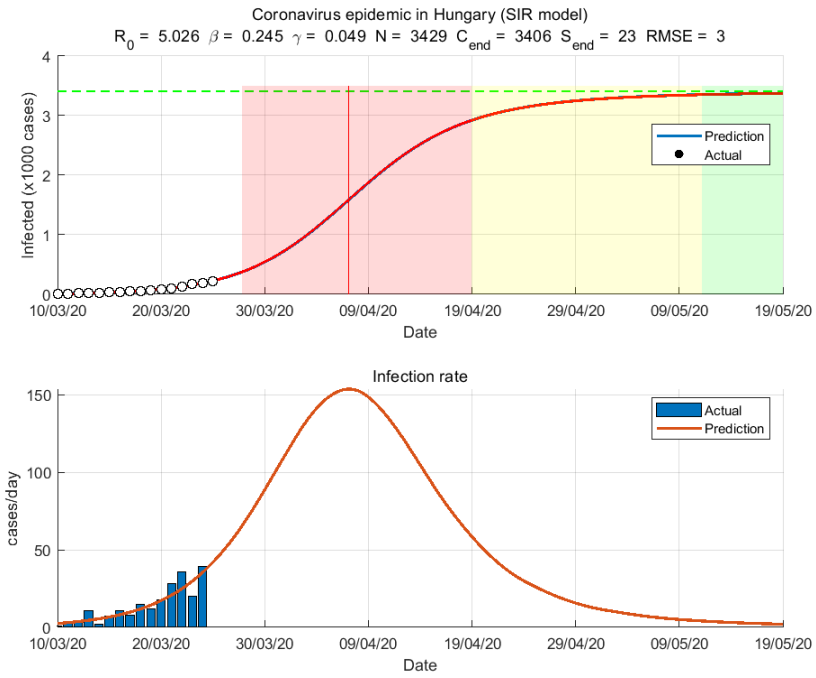

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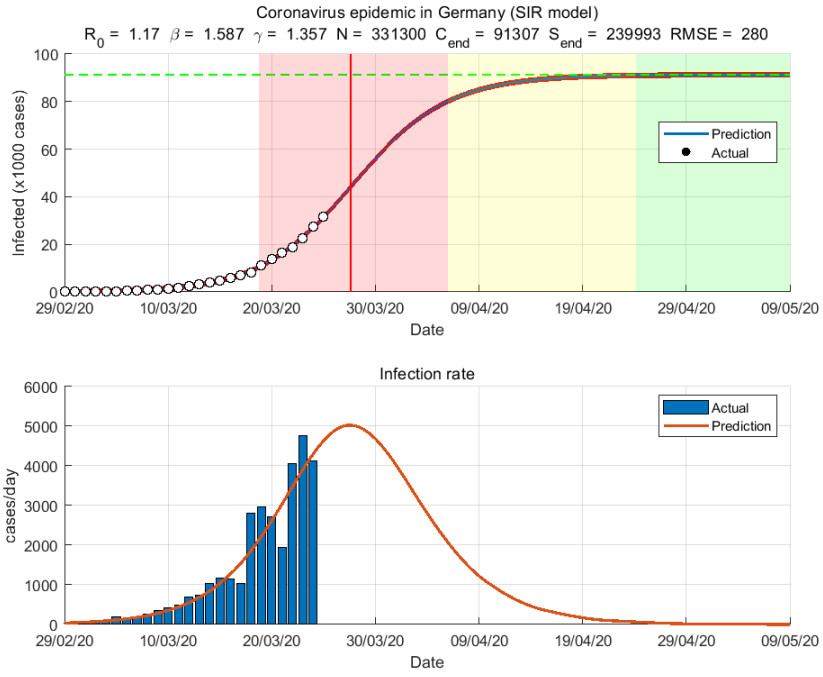

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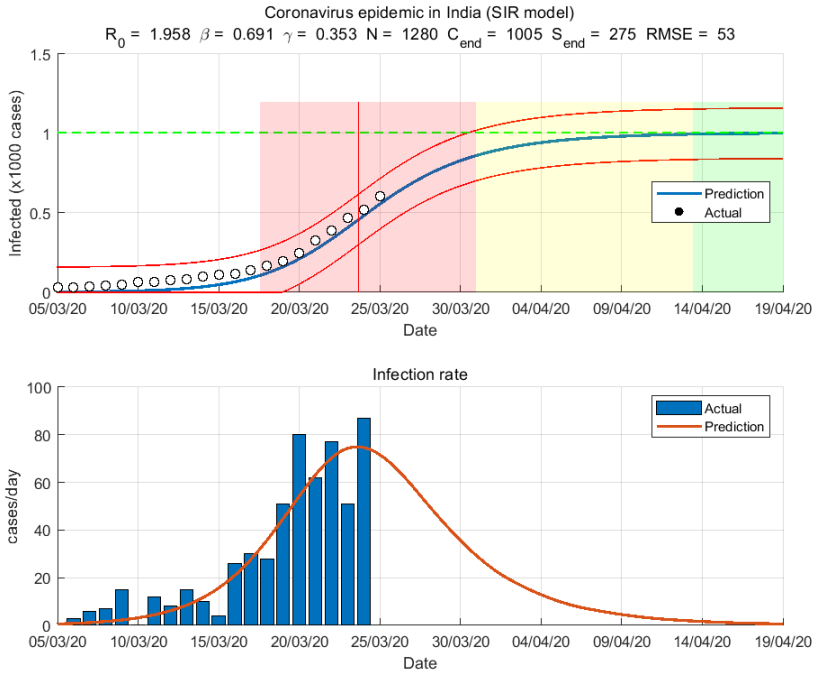

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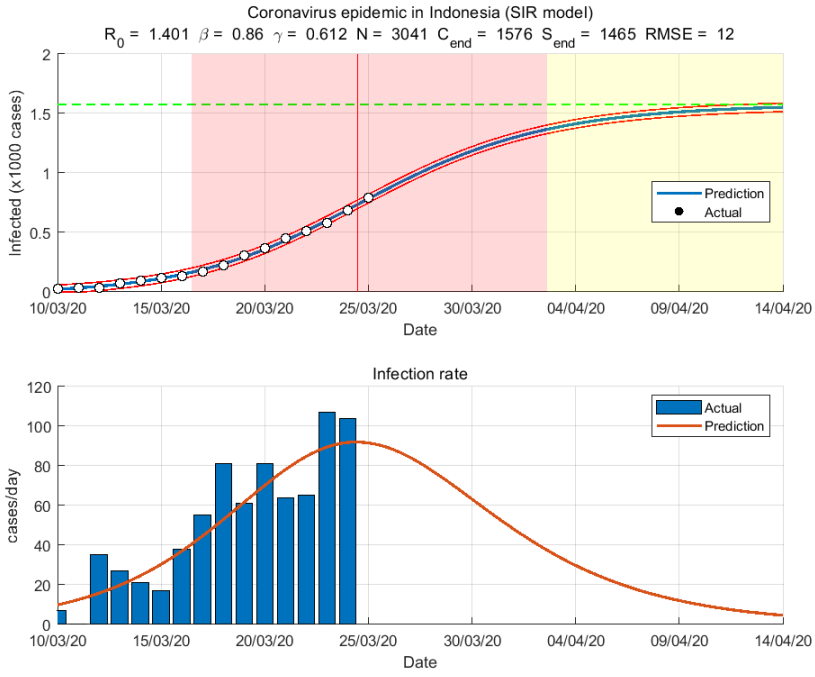

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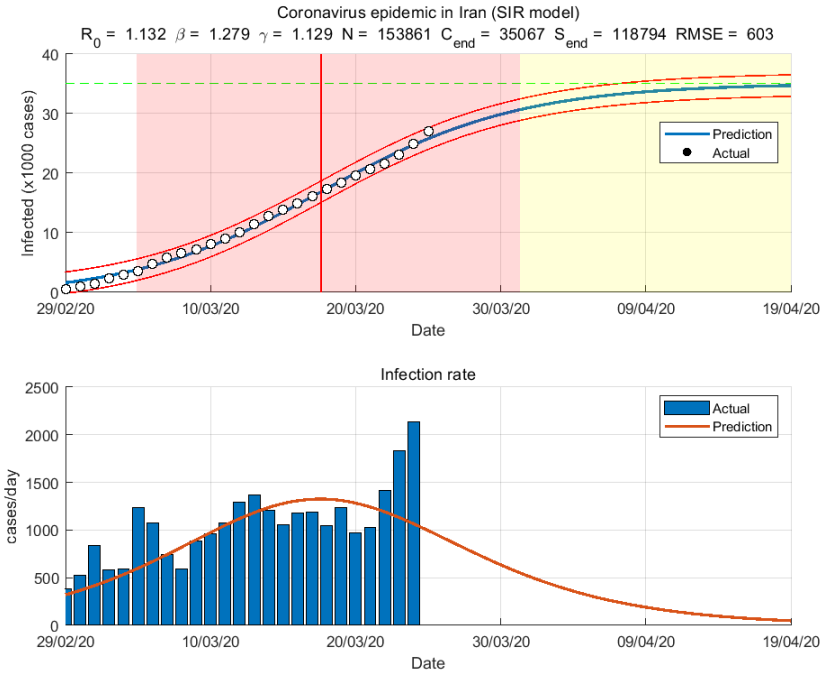
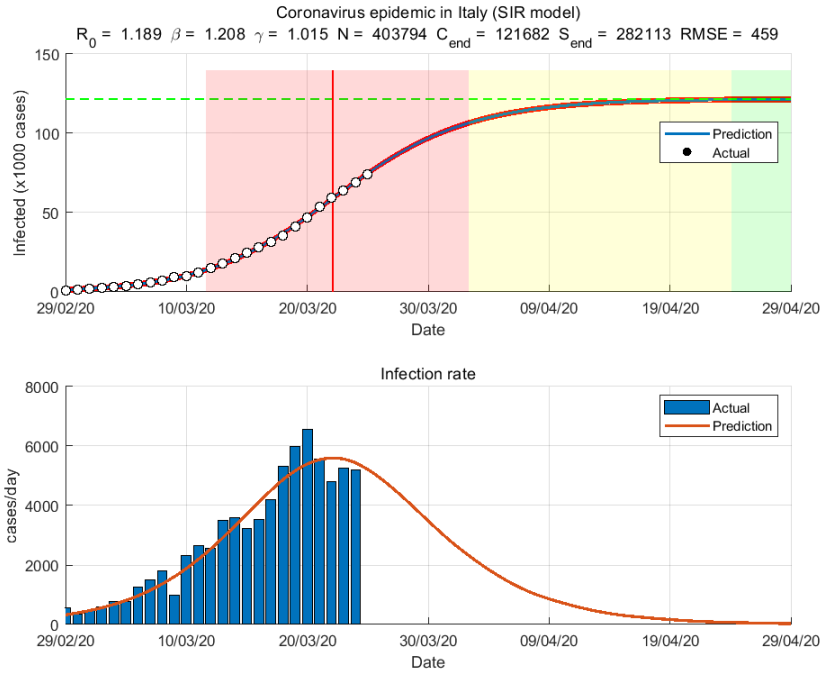

Coronavirus epidemic in Iran (SIR model)
R0 = 1.132 β = 1.279 γ = 1.129 N = 153861 Cend = 35067 Send = 118794 RMSE = 603
Infected (x1000 cases)
Prediction
Actual
29/02/20
10/03/20
20/03/20
30/03/20
09/04/20
19/04/20
Date
Infection rate
cases/day
Actual
Prediction
Date

Italy


Coronavirus epidemic in Italy (SIR model)
R0 = 1.189 β = 1.208 γ = 1.015 N = 403794 Cend = 121682 Send = 282113 RMSE = 459
Infected (x1000 cases)
Prediction
Actual
29/02/20
10/03/20
20/03/20
30/03/20
09/04/20
19/04/20
29/04/20
Date
Infection rate
cases/day
Actual
Prediction
Date

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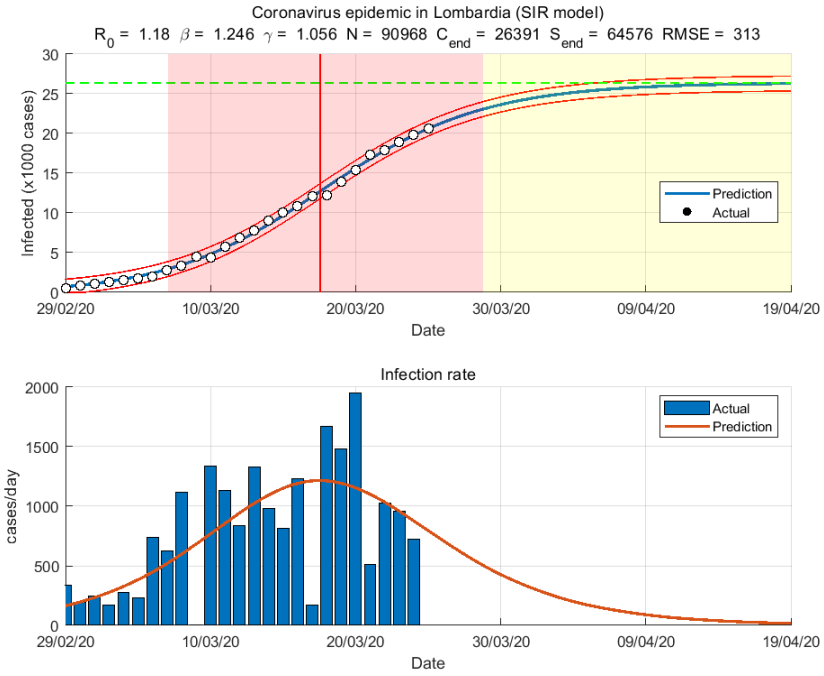
Lombardia



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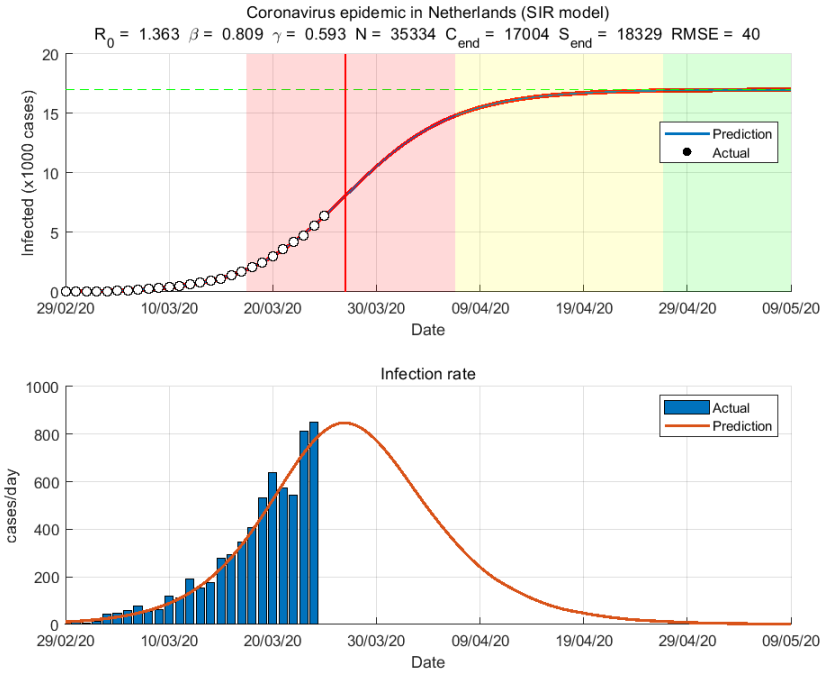

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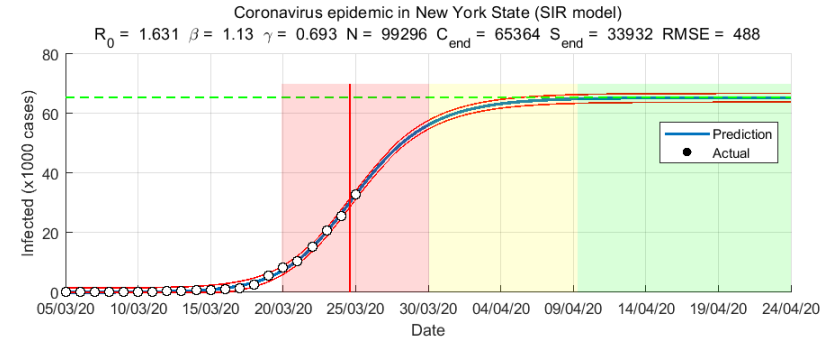

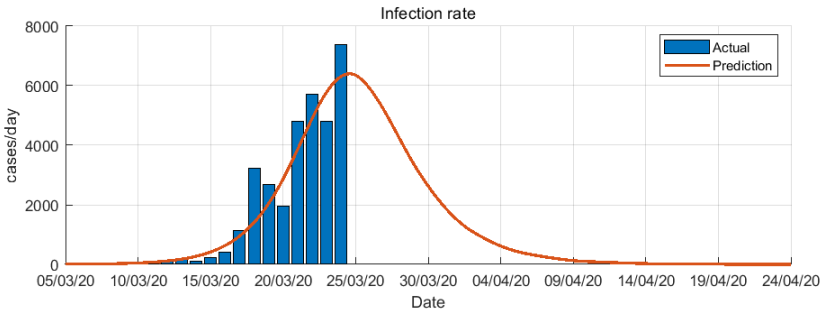

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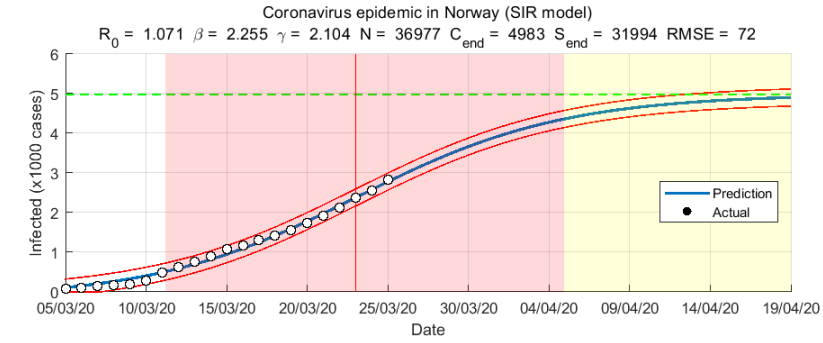

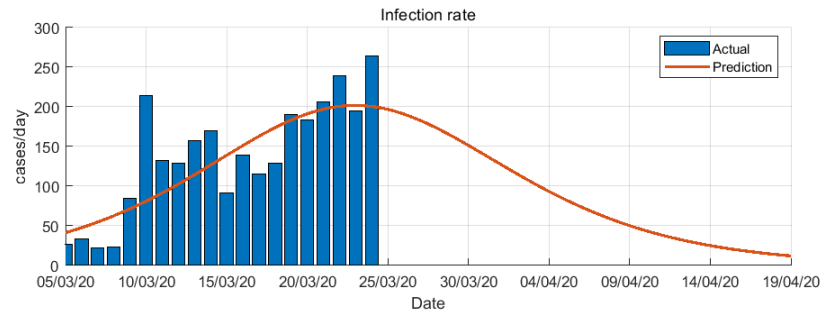

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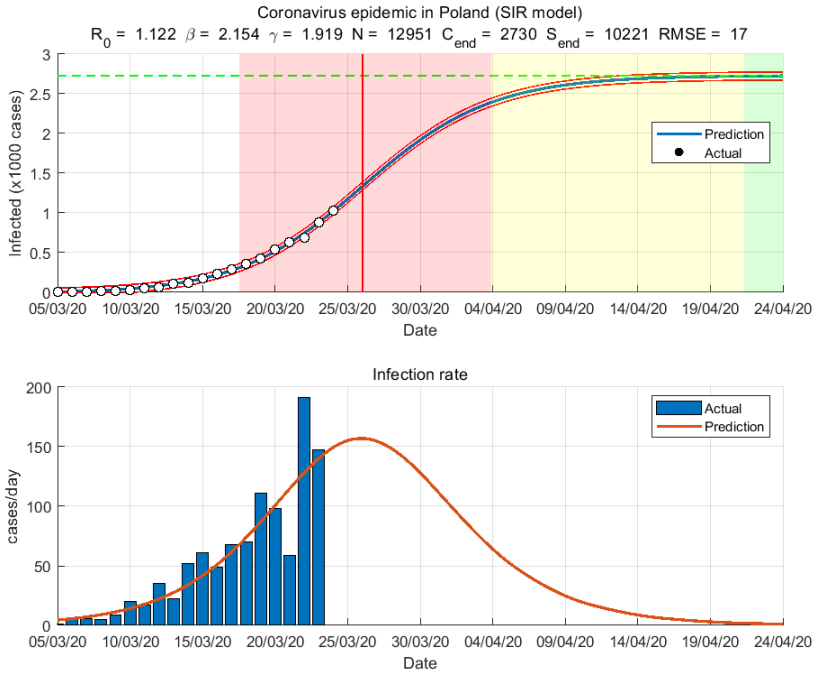

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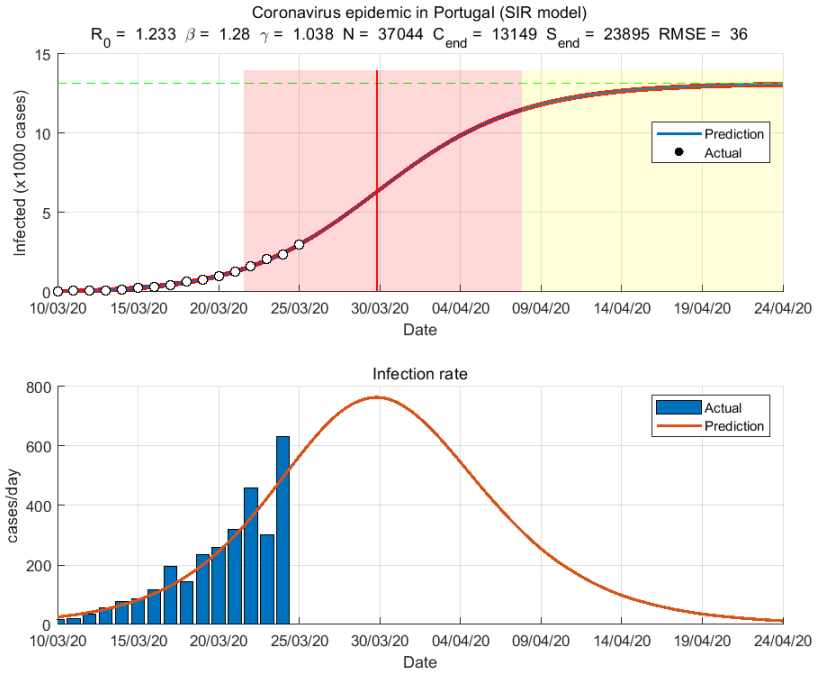

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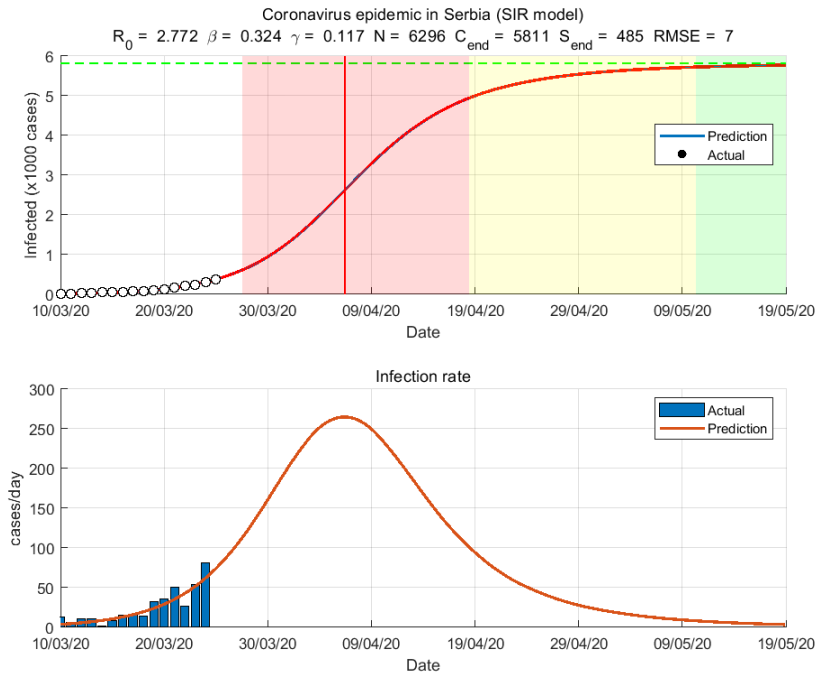

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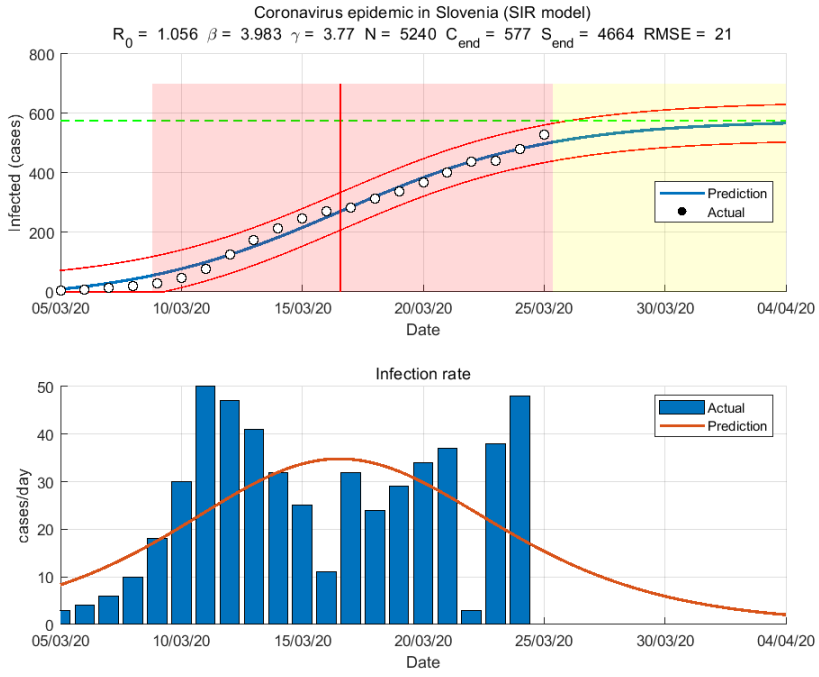

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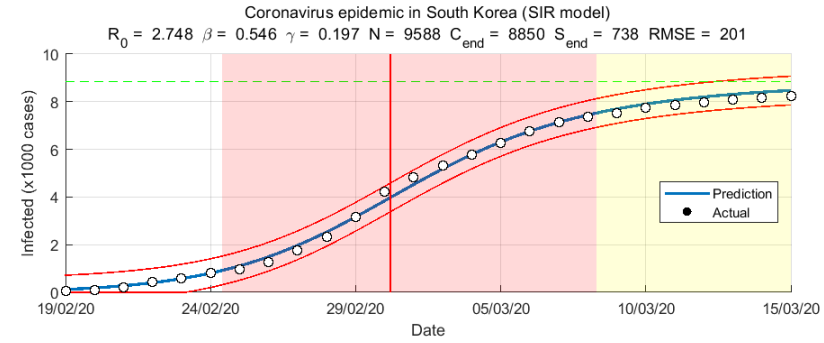

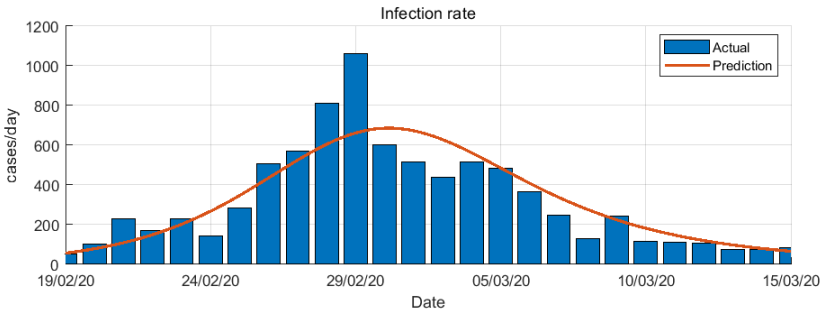

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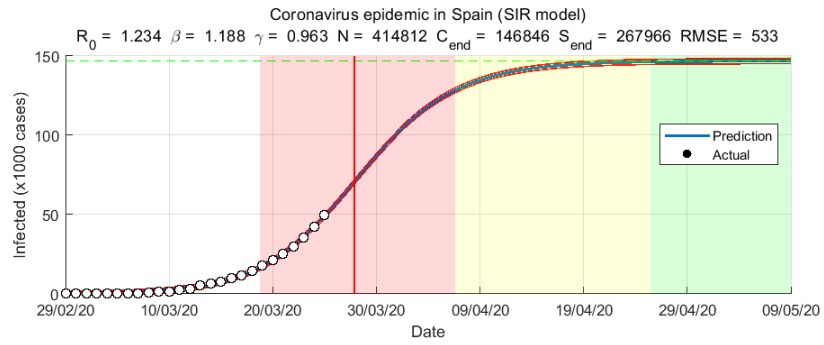

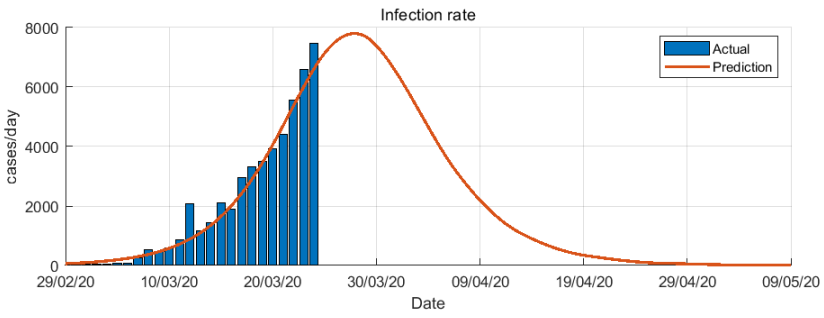

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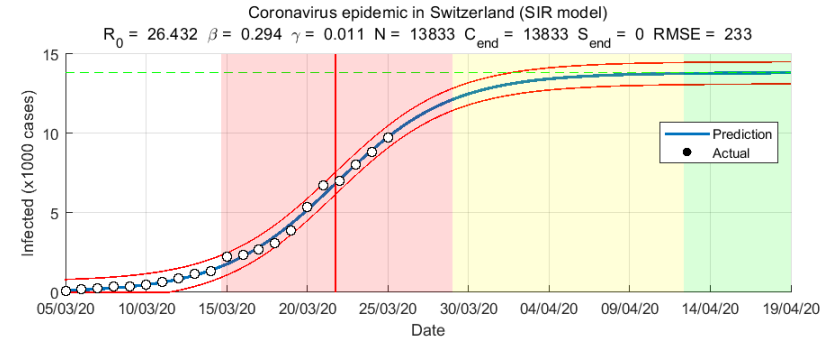

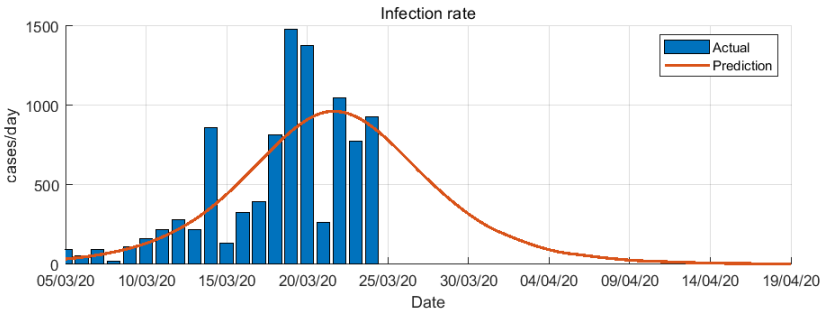

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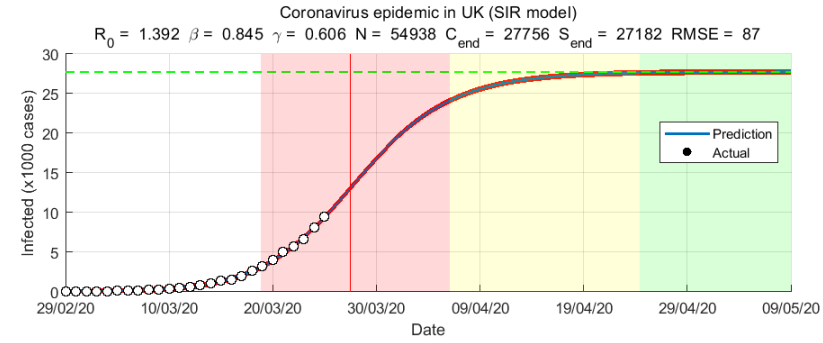

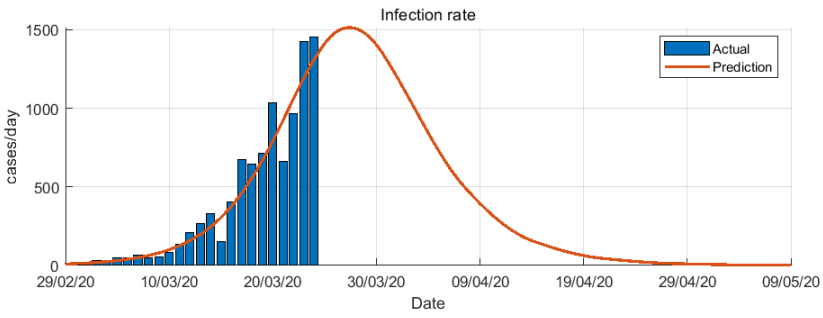

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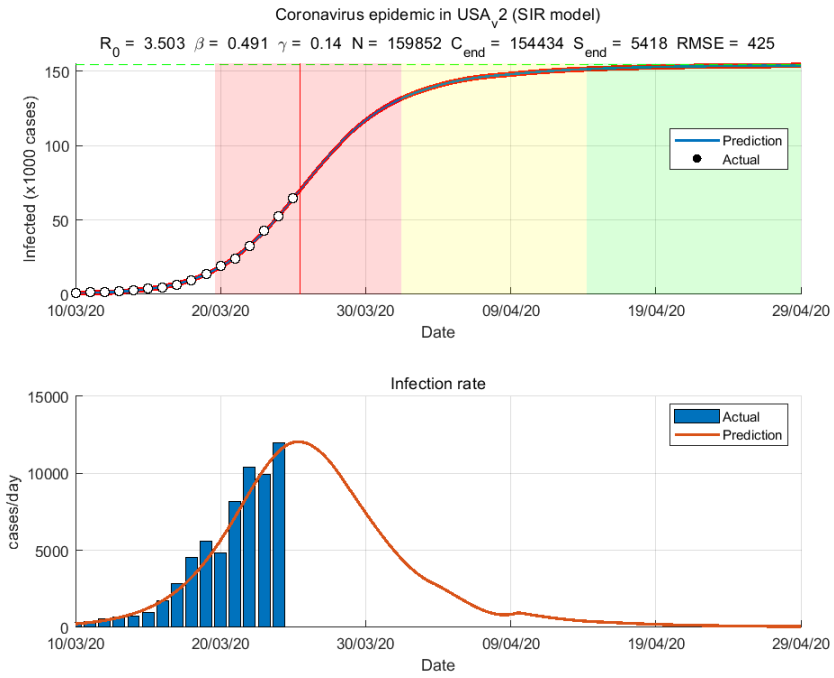
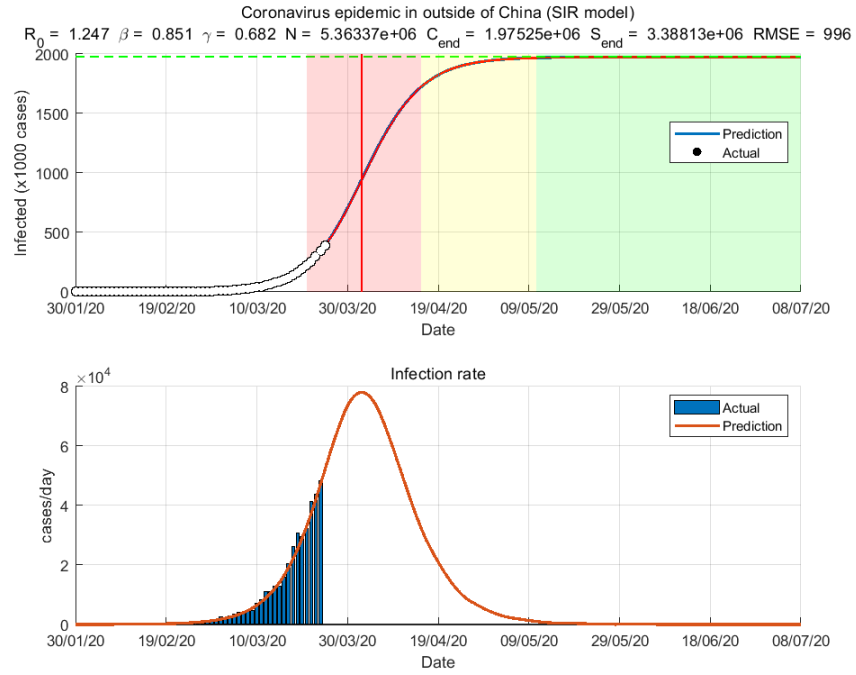
Countries outside of China