Forecasting of coronavirus COVID19 epidemic (SIR model)

DISCLAIMER: The model may fail is some situations. In particular, 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.
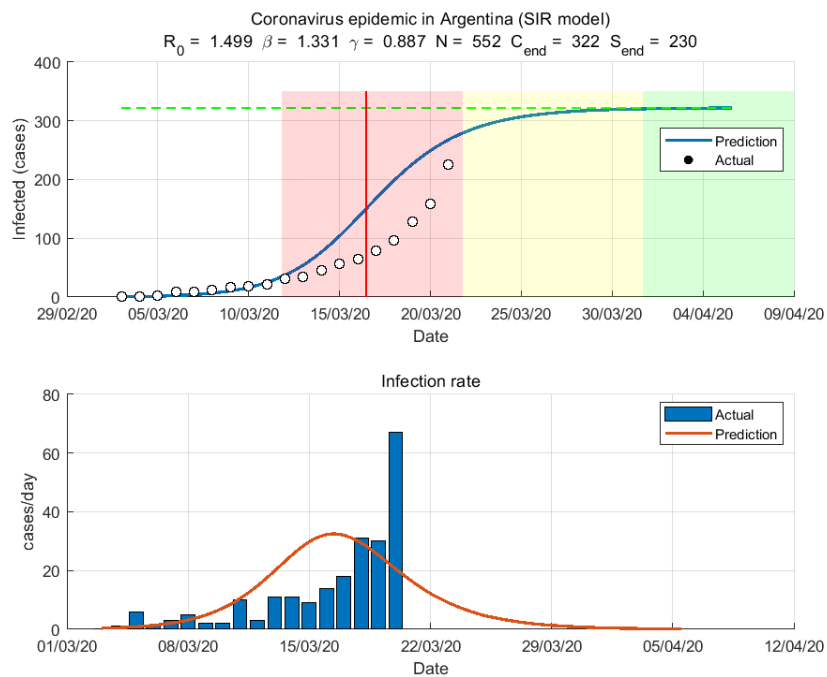
Report

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Date: 22-Mar-2020
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Argentina

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Fail to obtain parameters. Use initial values.
1.33104 0.88736 552.272 0.264908
***Warning: R2 = 0.303395
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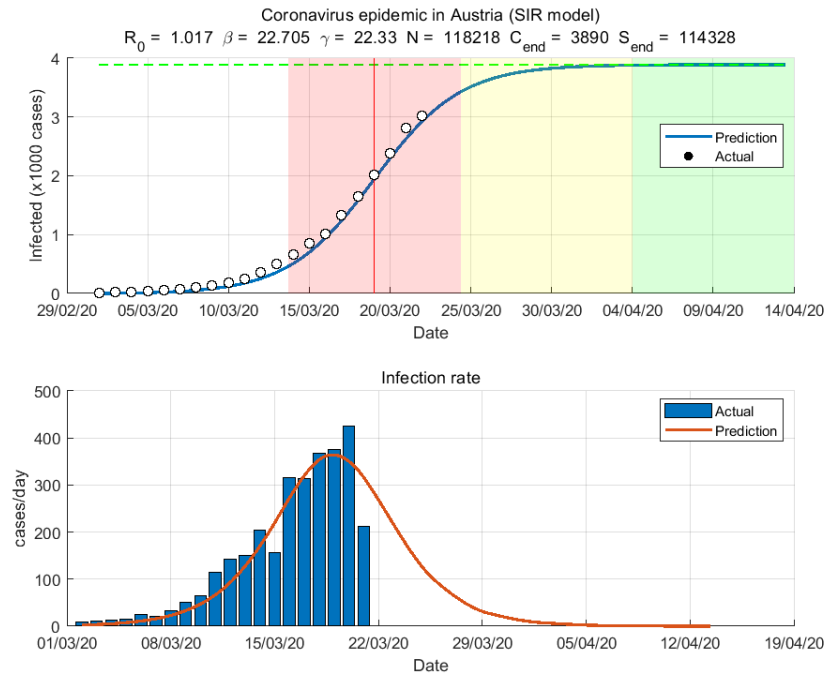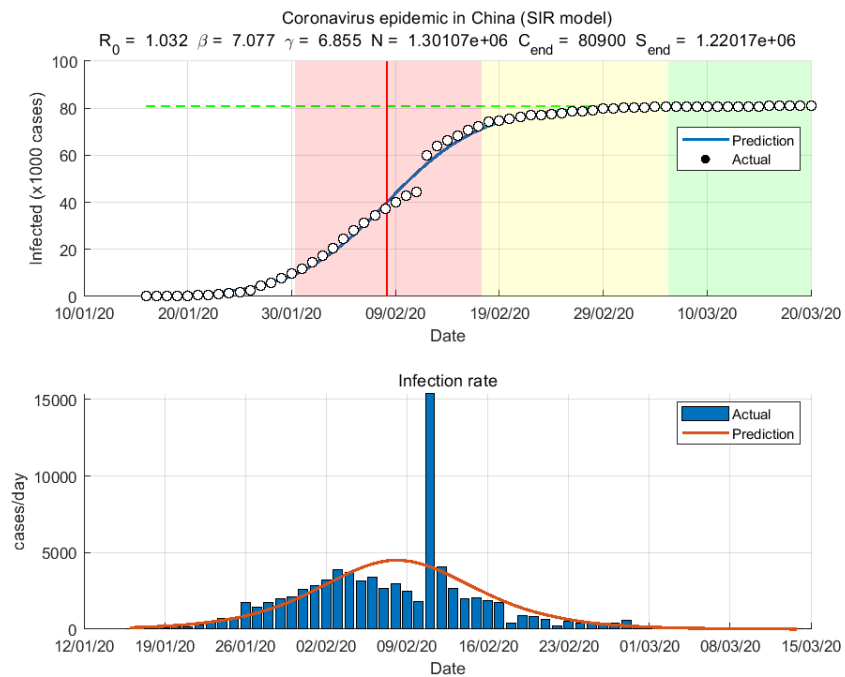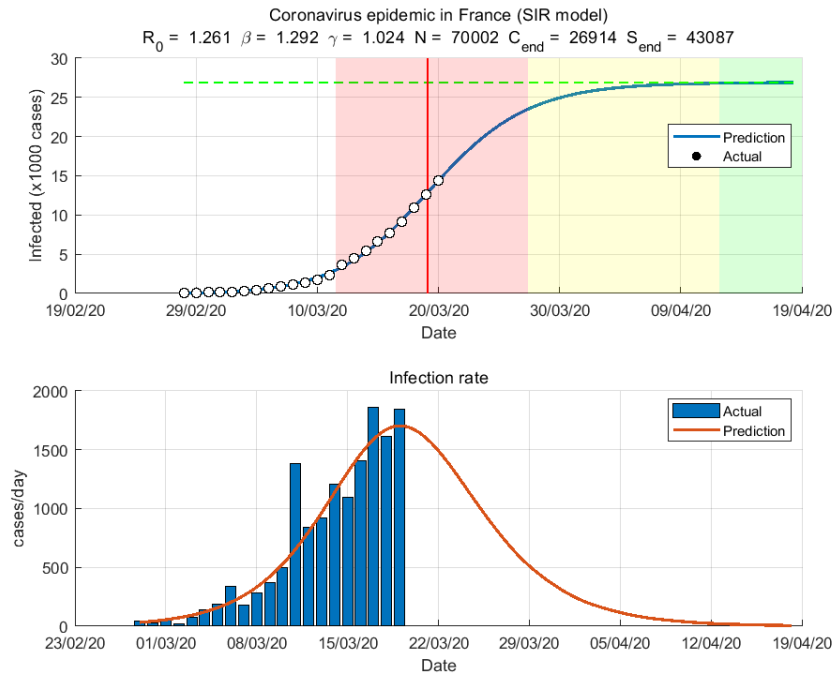

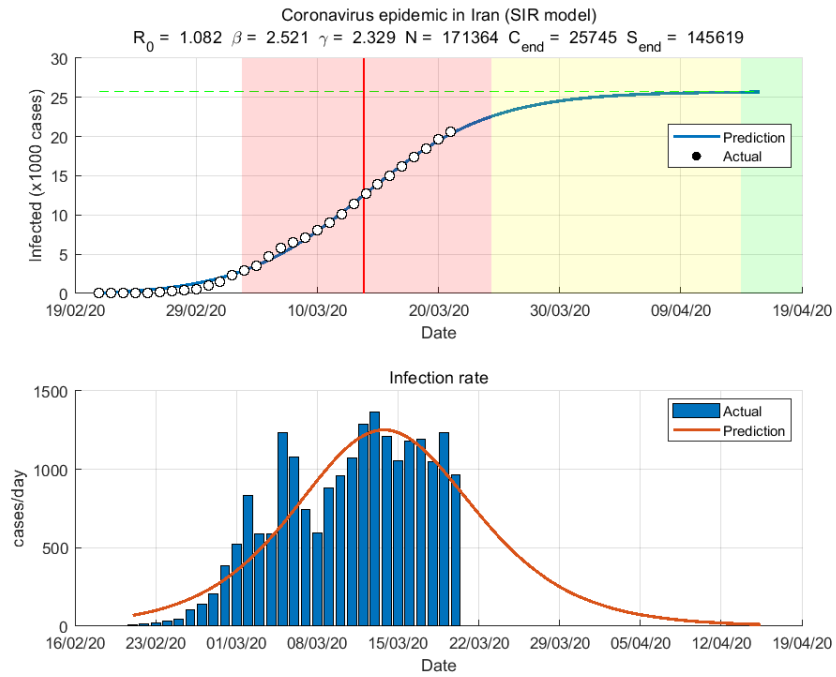Coronavirus epidemic in Argentina (SIR model)
$R_0 = 1.499$ $\beta = 1.331$ $\gamma = 0.887$ $N = 552$ $C_{end} = 322$ $S_{end} = 230$

Infection rate

Austria

Coronavirus epidemic in Austria (SIR model)
$R_0 = 1.017$ $\beta = 22.705$ $\gamma = 22.33$ N = 118218 $C_{end} = 3890$ $S_{end} = 114328$

China

Coronavirus epidemic in China (SIR model)
$R_0 = 1.032$ $\beta = 7.077$ $\gamma = 6.855$ N = 1.30107e+06 $C_{end} = 80900$ $S_{end} = 1.22017e+06$

France

Coronavirus epidemic in France (SIR model)
R_0 = 1.261 β = 1.292 γ = 1.024 N = 70002 C_{end} = 26914 S_{end} = 43087

Infection rate

Germany

Coronavirus epidemic in Germany (SIR model)
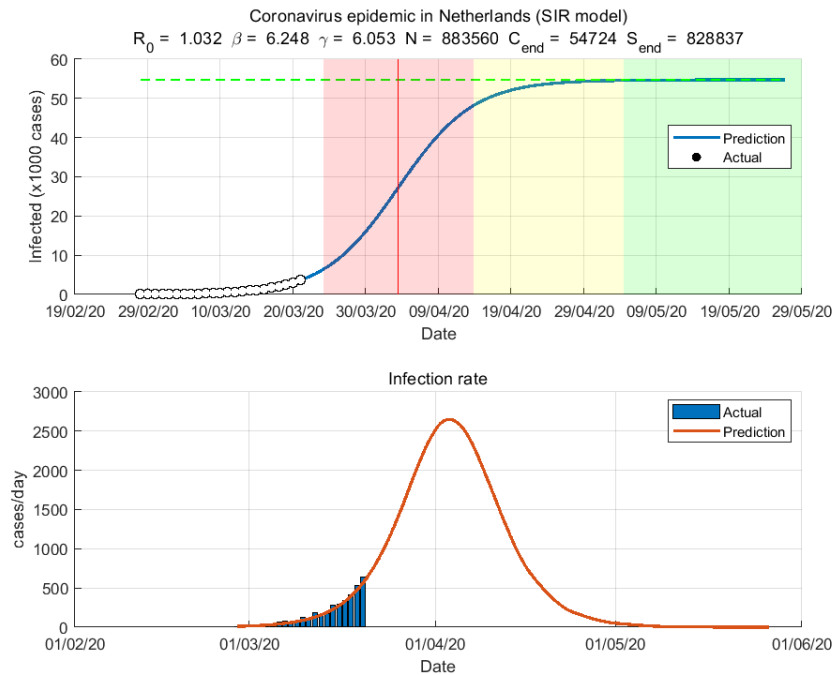R_0 = 1.44 β = 0.849 γ = 0.589 N = 94226 C_{end} = 51053 S_{end} = 43173

Infection rate

Iran

Italy

Lombardia

Netherlands

Portugal

Slovenia

South Korea

Coronavirus epidemic in South Korea (SIR model)
$R_0 = 2.697$ $\beta = 0.585$ $\gamma = 0.216$ N = 9427 C_{end} = 8651 S_{end} = 776

Spain

Coronavirus epidemic in Spain (SIR model)
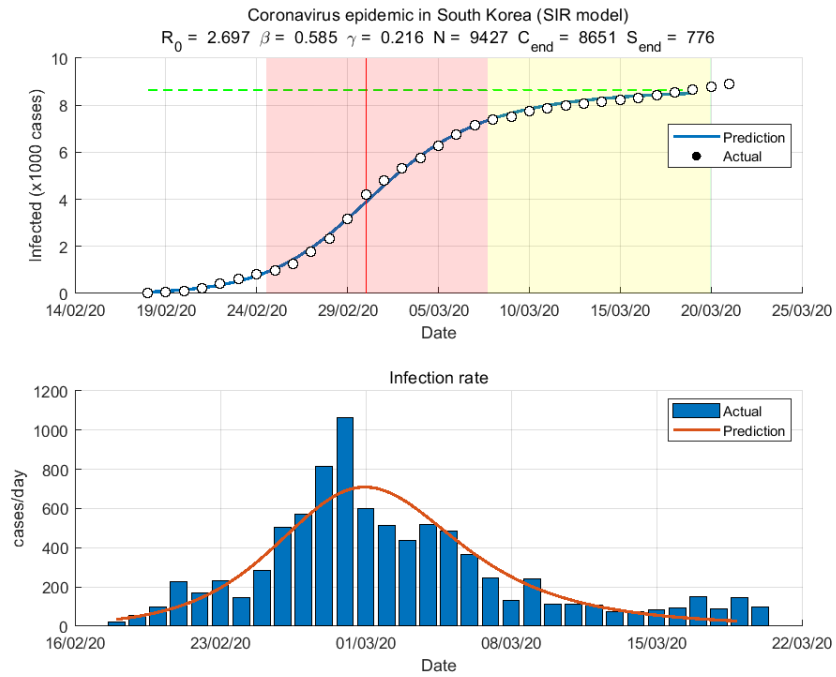$R_0 = 1.106$ $\beta = 3.051$ $\gamma = 2.759$ N = 268700 C_{end} = 49796 S_{end} = 218904

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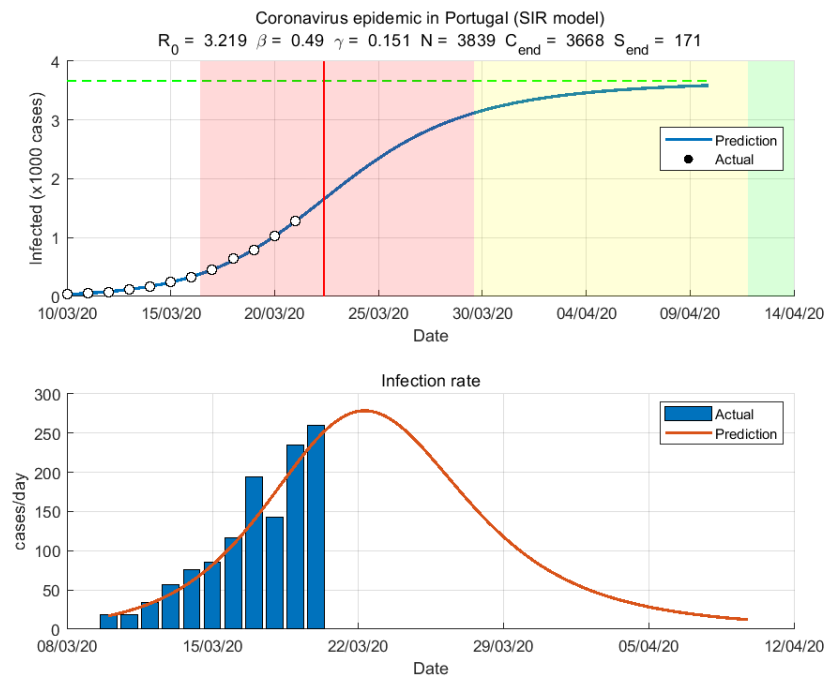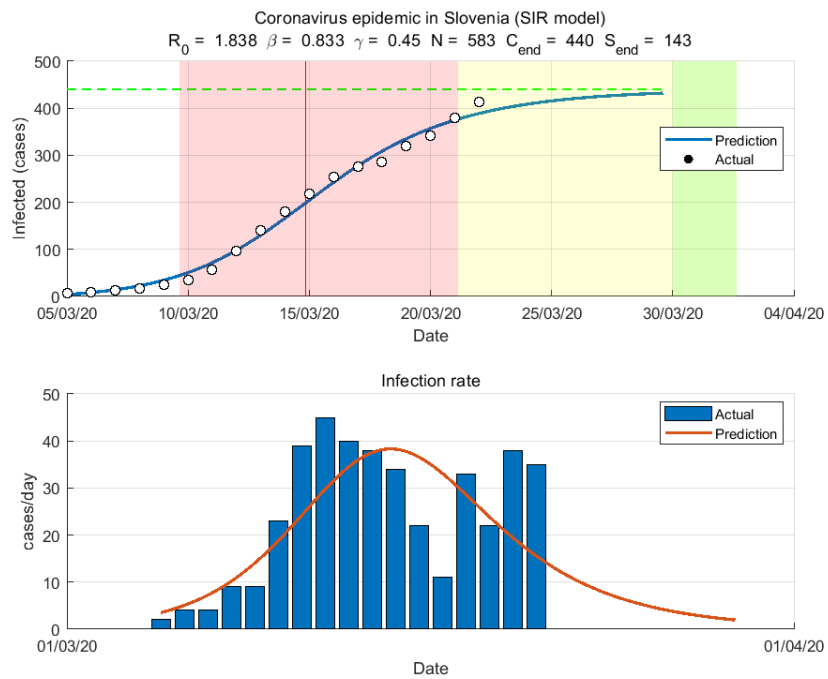
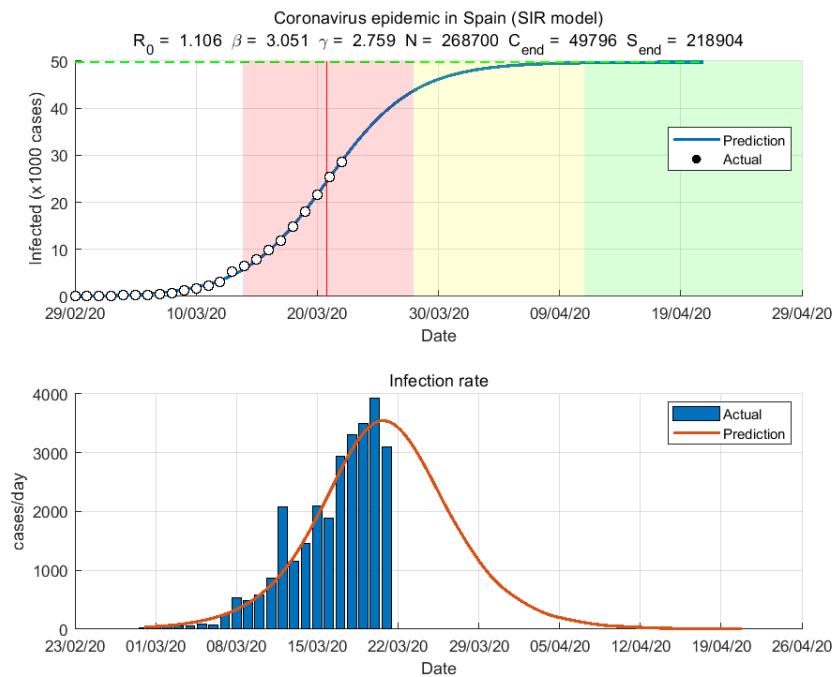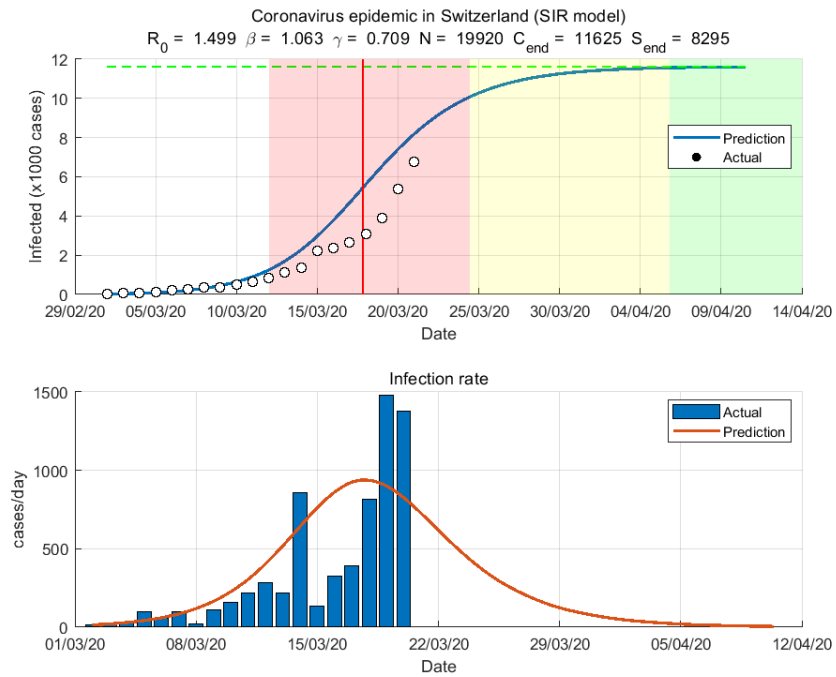## Switzerland

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Fail to obtain parameters. Use initial values.
1.06312 0.708745 19920.3 13.8515
***Warning: R2 = 0.602464
```


Coronavirus epidemic in Switzerland (SIR model)
R_0 = 1.499 β = 1.063 γ = 0.709 N = 19920 C_{end} = 11625 S_{end} = 8295

Infection rate

USA

Coronavirus epidemic in USA (SIR model)
R_0 = 1.054 β = 8.586 γ = 8.143 N = 769001 C_{end} = 77909 S_{end} = 691092

Infection rate