COVID-19 SIR Model Dynamics (N=1000000,R0=2.200,1/gamma=4.500, beta=0.489)

Left panel — y-axis: Rt (Effective Reproductive Rate), x-axis: Time[days]

$$\mathscr{R}_t \equiv \left(\frac{S(t)}{N(t)}\right)\mathscr{R}_0$$

$\mathscr{R}_t + 2\sigma$

$\mathscr{R}_t$

$\mathscr{R}_t - 2\sigma$

Critical (Rt=1.00)

40 52 79

Est. error [39.00 days]

Right panel — y-axis: rI (temporal growth rate), x-axis: Time[days]

$r_I(t) + 2\sigma$

$r_I(t)$

$r_I(t) - 2\sigma$

$$r_I \equiv \gamma[\mathscr{R}_t - 1]$$

$$\frac{dI}{dt} = r_I I$$

Critical (r_I=0.00)

40 52 79

Est. error [39.00 days]