

The background features a dark gray grid pattern. In the top right and bottom left corners, there are decorative wavy lines in a gradient of purple and magenta, creating a modern, digital aesthetic.

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**japan covid19
epidemiology**

Datasets

source : <https://covid19.mhlw.go.jp/en/>



dataset1 :

period : 2020-02-06 - 2020-05-08

columns : new cases , discharged , fetal , hospital

dataset2 :

period : 2021-04-12 - 2021-07-29

columns : total dose , first dose , second dose

sir model && seir model

itMO

datasets period : 2020/02/01 - 2020/06/30

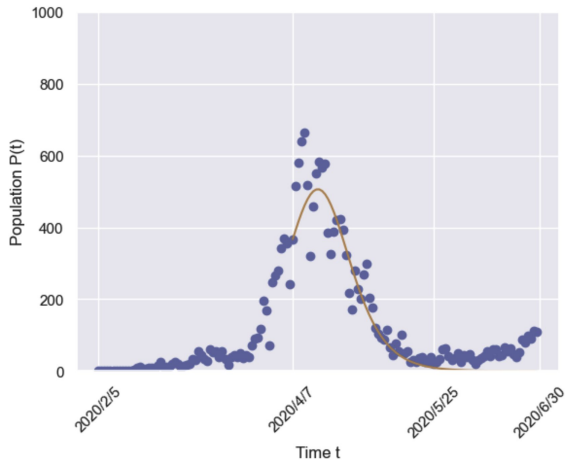
purpose : to check if city lock down works



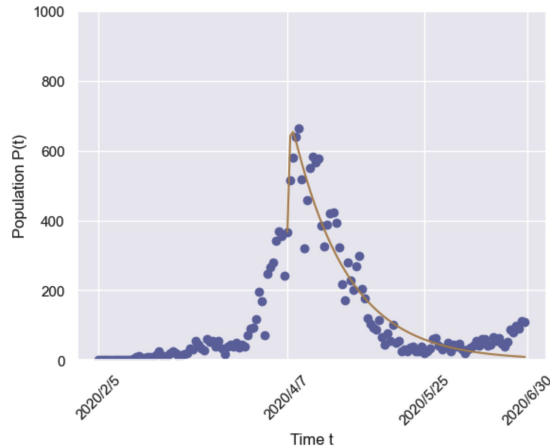
sir : $R^2 = 0.865$

seir : $R^2 = 0.888$

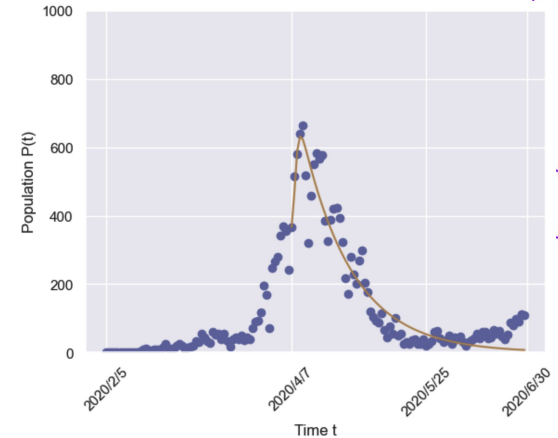
seirq : $R^2 = 0.896$



0.8651590020313282



0.8884050451288074



0.8967575474006497

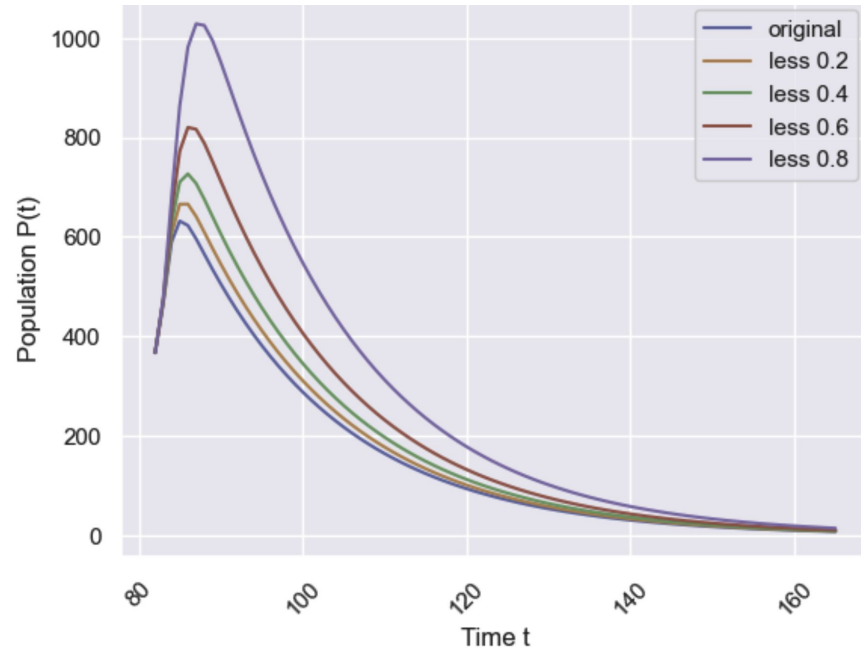
seirq model

original lockdown rate : 1.46377811

method : to reduce by 0.2 each time

conclusion :

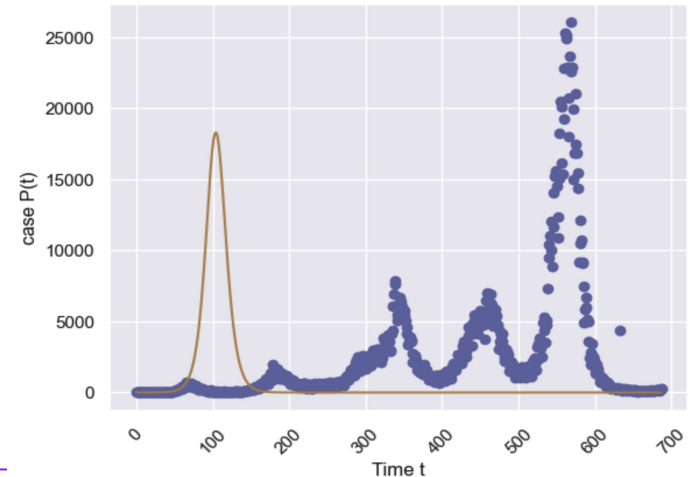
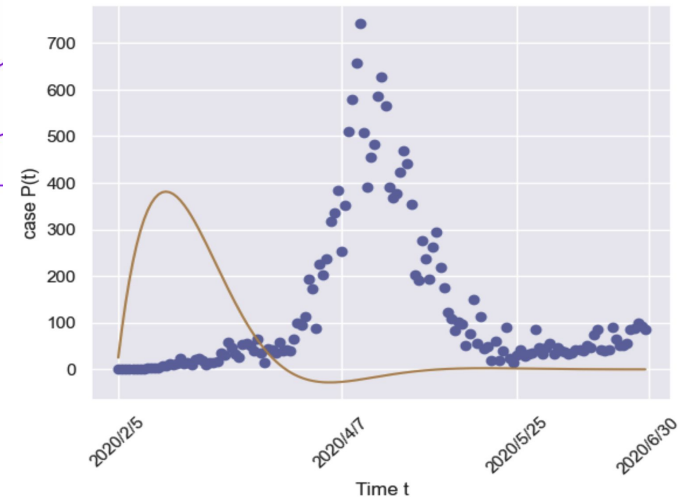
by reducing rate , the peak could be higher and cause worse situation, which we can say lockdown is one successful temporary solution



hypothesis

If measure could be taken immediately
here is possible result in fig 1 to possibly
lead
to minimum fetal

otherwise in fig 2

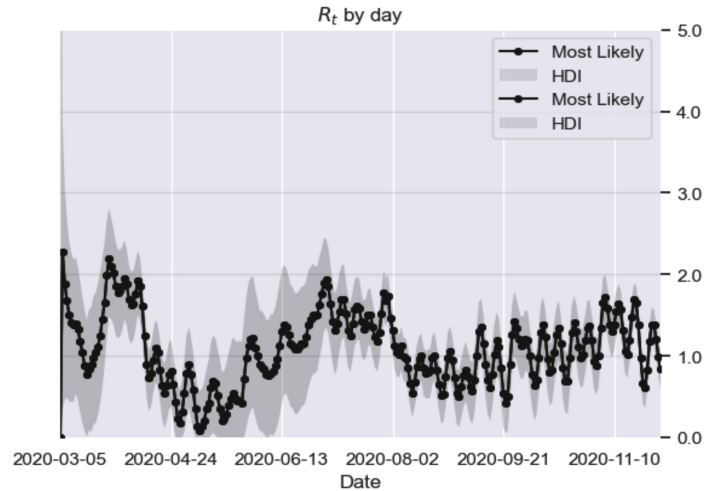
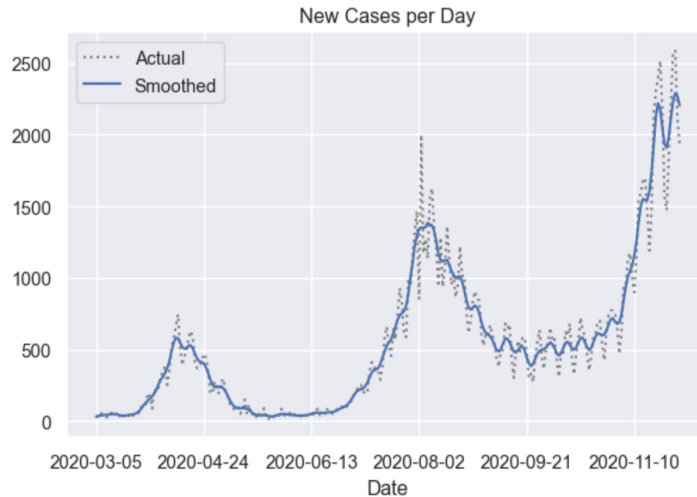


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reproduction rate (R_t) analysis

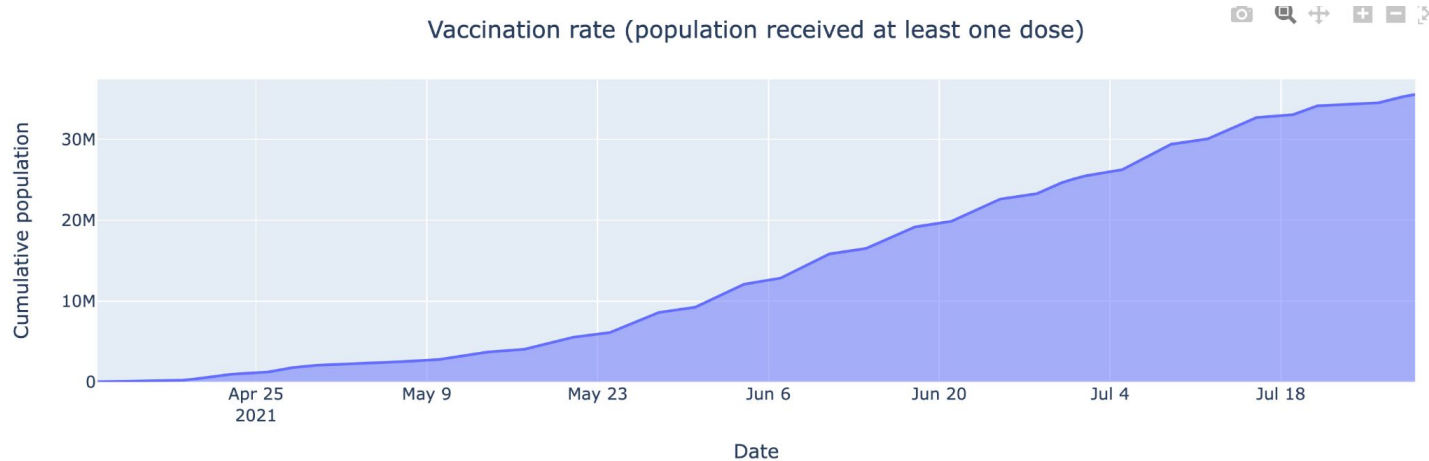
when R_t is above 1, we consider this virus could have severe spread



vaccination

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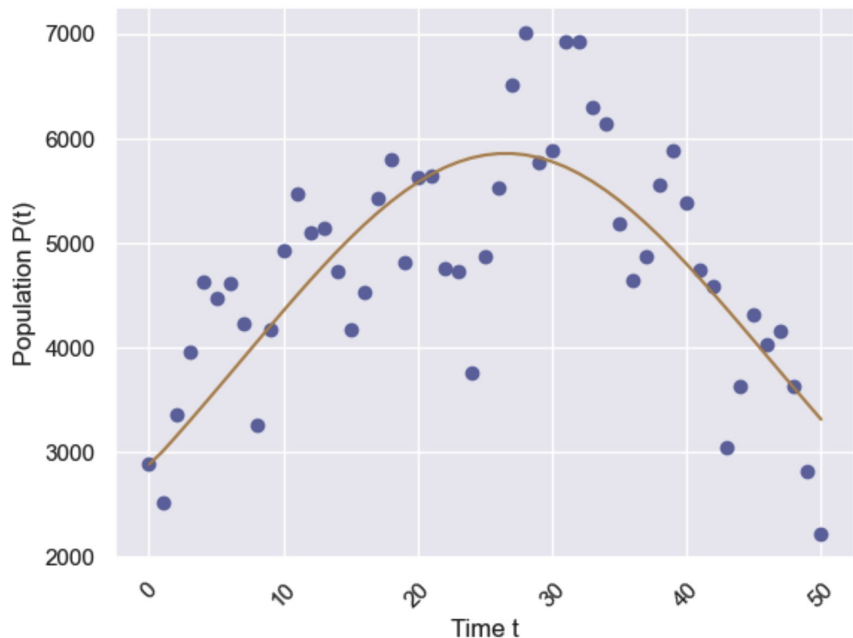
here is graph to show vaccination rate with at least one vaccine



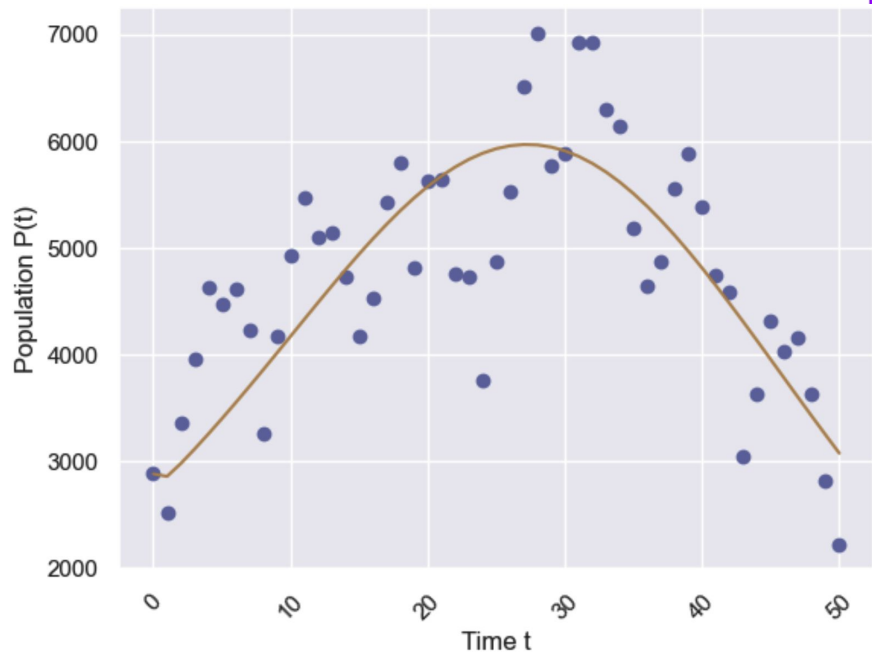
new cases (2021-4-21 – 2021-06-01)

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seir : $R^2 = 0.576$



seirv : $R^2 = 0.561$



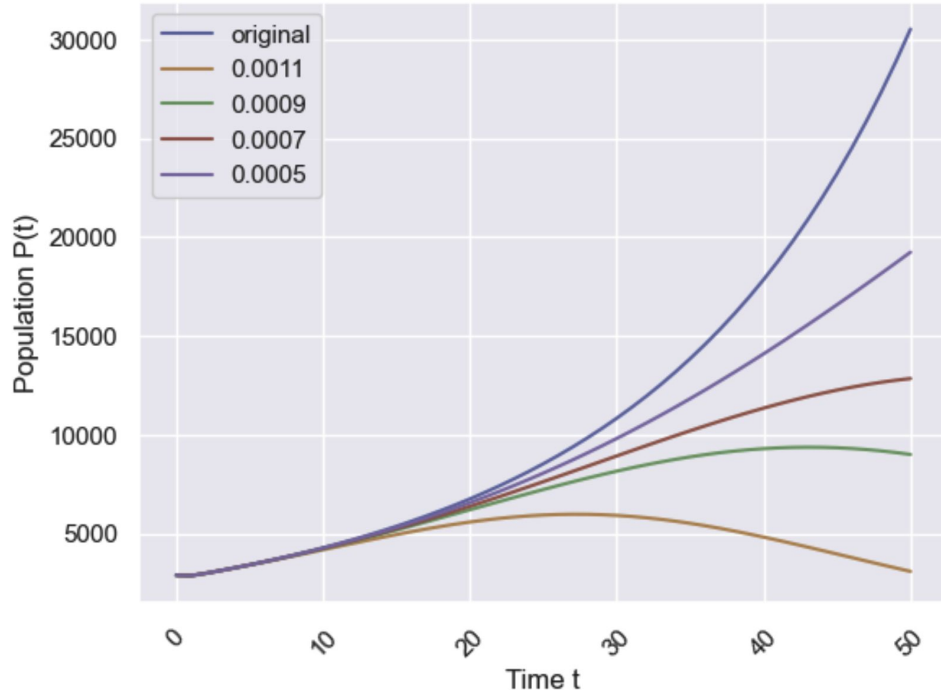
seirv model

original lockdown rate :
0.001314

method : to reduce by 0.0002
each time

conclusion :

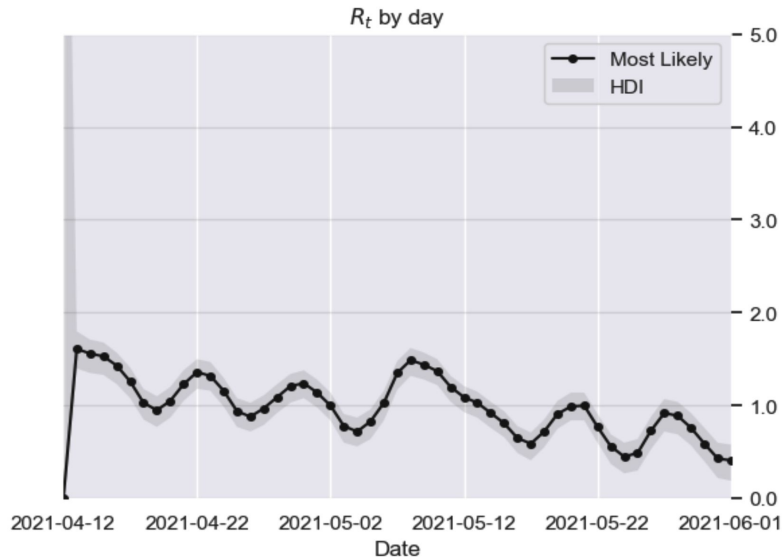
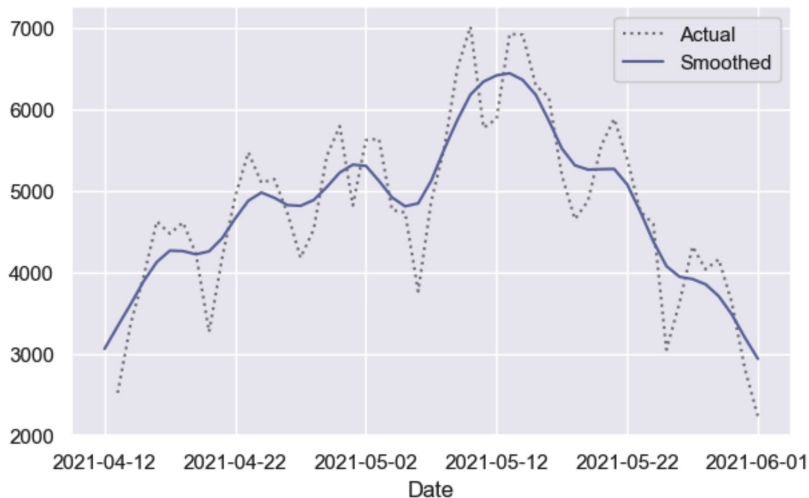
by reducing rate , the new
cases could become
higher,
which we can say vaccine is
one factor to restrain the
pandemic



reproduction rate (R_t) analysis

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when R_t is above 1, we consider this virus could have severe spread



The background features a dark, almost black, grid pattern. Overlaid on this grid are several wavy, glowing purple lines that create a sense of movement and depth. These lines are more prominent in the corners, with a large, bright purple area in the top right and another in the bottom left.

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**Thank you for
attention**