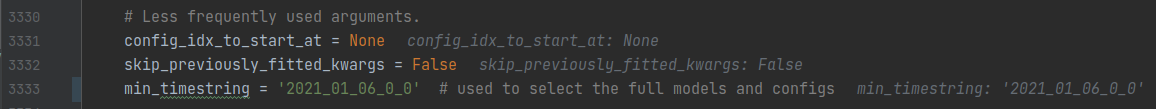
Analysis model\_experiments.py

*run\_many\_models\_in\_parallel* will write the configs into a pkl file, and the following *fit\_and\_save\_one\_model* will select one config from teh pkl file according to the config idx.



1. Read the arguments

set necessary arguments



Psi is what?

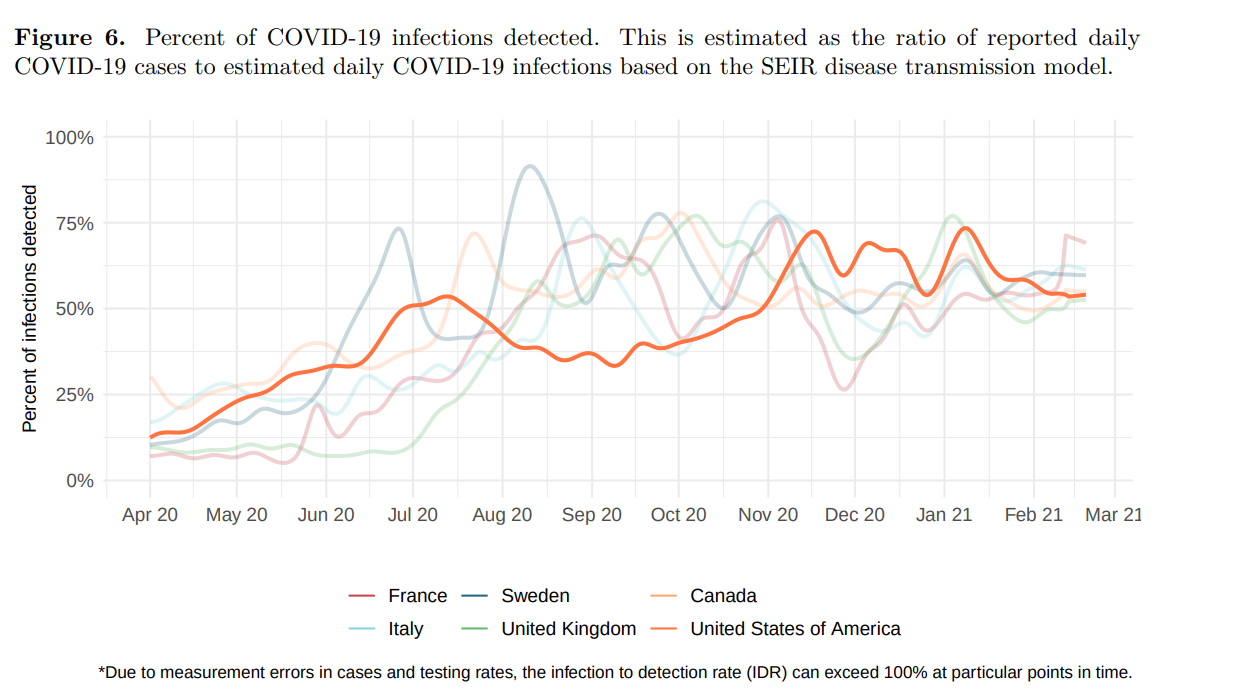
fit\_disease\_model\_on\_real\_data()

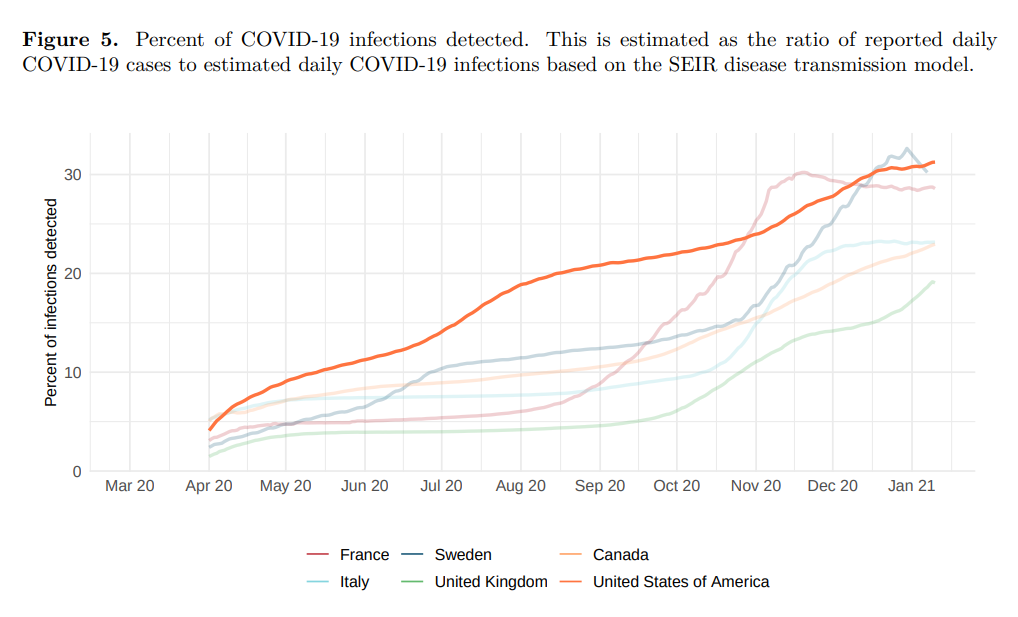
init\_exogenous\_variables():

initial\_conditions: ['E', 'I', 'R']

num\_seeds: seems the iteration times of simulation.

Different daily rates:





http://www.healthdata.org/sites/default/files/files/Projects/COVID/2021/briefing\_US\_20210114.pdf

<http://www.healthdata.org/sites/default/files/files/Projects/COVID/2021/102_briefing_United_States_of_America_2.pdf>

daily\_E\_to\_I = smoothed\_daily\_counts / rate\_over\_time

hourly\_E\_to\_I[t] = daily\_E\_to\_I[d] / 24

I\_s = E[s\_index - latency\_period]

R\_s = np.sum(hourly\_E\_to\_I[:s\_index - infectious\_period])

S\_s = total\_pop - E\_s - I\_s - R\_s

total\_pop = np.sum(pop\_sizes)

conda run python model\_experiments.py run\_many\_models\_in\_parallel calibrate\_r0

conda run python model\_experiments.py run\_many\_models\_in\_parallel normal\_grid\_search

conda run python model\_experiments.py run\_many\_models\_in\_parallel test\_retrospective\_counterfactuals

conda run python model\_experiments.py run\_many\_models\_in\_parallel rerun\_best\_models\_and\_save\_cases\_per\_poi

#### PARAMETERS FOR 2021 EXPERIMENTS #### # Huan: for: python model\_experiments.py run\_many\_models\_in\_parallel calibrate\_r0  
# MIN\_DATETIME = datetime.datetime(2020, 12, 28, 0) # the acutall data date.  
MIN\_DATETIME = datetime.datetime(2021, 1, 1, 0) # the acutall data date.  
  
MAX\_DATETIME = datetime.datetime(2021, 1, 17, 23) # the acutall data date.