Epidemiology Project

Consider the dataset assigned to your team "project$_data.xlsl" (where $ is one of numbers 1,2,3,...,10) that contains two time series: detected Covid infections and cumulative deaths for a particular county or city. Your project has been assigned a validation data set as well called "Validation.xlsx".

Your project should perform the following tasks. Run each implementation on the two data sets linked to your project.

1. Implement and run the SIR calibration algorithm as discussed in class and included in exercise 1 of the second team homework.

2. Run the SIR calibration algorithm on the first 1/3 data starting with t_0 (i.e., set $T_{max,new} = 40$) and predict if and when the infections should die down, i.e., when the number of infections should fall back below $V_{min} = 5$. Compare your findings with the measured data set.

3. Implement and run the SEIR calibration algorithm as discussed in class and included in exercise 2 of the second team homework.

4. Run the SEIR calibration algorithm on the first 1/3 data starting with t_0 (i.e., set $T_{max,new} = 40$) and predict if and when the infection should die down, i.e., when the number of infections should fall bach below $V_{min} = 5$. Compare your findings with the measured data set.