Summary :

I Different model

1.1 Explanation of each model

- SIR
- SEIR
- SEIRD
- SEIRDV

1.2 The different methods to solve them

- EULER
- RK2
- RK4

1.3 Which method is the best for our system ?

- Compare the different method

II How to compare differents transmission rate ?

2.1 The simple case Beta = cte

- How the beta impact the evolution

2.2 Different B depending on time for different disease

- Gaussian pulse
- Periodical
- Piecewise function of Beta

2.3 Solve the model for Beta depending on time.

- SEIR for Gaussian pulse
- Model SLIAR influenza

III **Model Fitting to Real Data**

3.1 How to find the data

- COVID-19 cases from a specific country
- Seasonal influenza

3.2 How estimate properly the different parameter

3.3 Comparison of the model to real data

- Is the model valid?

- Possible discrepancies: behavior, age structure, mobility, etc.

3.4 Model improvement