

University of Hyderabad
School of Mathematics and Statistics,



Seminar on

**“Modelling Infectious Diseases:
Temporal Analysis of COVID-19 Pandemic Data”**

By

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Abstract

This talk will cover a brief perspective of infectious diseases and different mathematical as well as statistical modelling approaches to understand the transmission pattern. We will also discuss our recent study on the COVID-19 pandemic. The COVID-19 pandemic has affected millions of people and claimed numerous lives already. As of now, there are no available treatments and it has become both imperative and challenging to forecast the COVID-19 cases.

Most of the existing methodologies work well for the short term but perform poorly when it comes to predicting the long term. With the objective to forecast the COVID-19 cases and Basic Reproductive Number (R_0), we have proposed a data driven approach that employs Multiple Aggregation Prediction Algorithm (MAPA) for temporal predictions.

The main idea is to provide a range of values which contain the number of cases over a long duration. The strategy and workflow have been validated for long term predictions with 51 countries and 37 Indian states and UT in different growth phases. Our predictions can also be used as data for analysis by other fellow scientists as this provides insights into the daily new number of cases which is an important indicator of the growth of the COVID-19 cases in a region.