

## IMPACT OF COVID-19 ON FILM INDUSTRY

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**Abstract.** During the COVID-19 pandemic, almost every sector has paid the price; from which the film industry cannot be excluded. As lockdown and social distancing were imposed during this phase, film industry was also being put on halt. Film industry restored restricted activities in unlock phase. This led to physical working instead of digital. During the shoot, the intensity of spread of COVID-19 among crew members advances through asymptomatic infected individuals. In response to ongoing situation in film industry, a mathematical model is designed. This model suggests that people work in film industry are at the high risk of COVID-19 exposure. Stability analysis along with bifurcation are observed to uphold the findings.

**Keywords.** COVID-19, Mathematical model, Threshold, Stability analysis, Bifurcation

**AMS (MOS) subject classification:** 37Nxx

### 1 Introduction

Coronavirus is a collection of viruses which affects the health of humans and animals. Especially, in humans, some of the coronavirus damages respiratory system with the symptoms of common cold and can extend to more critical diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). A new gender of coronavirus is rolled out few months back globally. This new virus is discovered first in Wuhan, China in the end of the year 2019 i.e. December, 2019. COVID-19 is infectious disease can spread directly through human to human. An asymptomatic individual can also spread the disease and hence in the result of it, COVID-19 is now turned into pandemic and has affected almost every country. The symptoms of COVID-19 are very common like fever, dry cold, sore throat. Some of the individual also complains of having headache, diarrhoea, losses the ability to taste or smell. These symptoms are mild in primary stage and can gradually become severe which lead to difficulty in breathing. Coronavirus attacks every group of age but older individual along with the individual those underlying medical issues such as high blood pressure, diabetes, cancer, heart and lung problems, are at excessive risk for getting exposed.