

Mathematical Modeling on Co-infection: Transmission Dynamics of Zika Virus and Dengue Fever



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Abstract

Infectious diseases, often known as communicable diseases, have long been recognised as a constant hazard to people everywhere. The practise and theory of disease control and management are increasingly influenced by mathematical modelling of the spread of communicable illnesses. Infectious diseases are heavily influenced by mosquito-borne infections. In this talk, discuss about a deterministic mathematical model for Dengue Fever (DF) and Zika virus (ZIKV) co-infection and also shows the clear picturization of disease transmission dynamics.

Biography

Sayooj Aby Jose is a PhD student in mathematics at Alagappa University in India. His work focuses on epidemiology, stability analysis, and mathematical modeling. In 2021 he became the first ever Indian to receive the renowned IMU breakout fellowship. He earned his undergraduate and graduate degrees in mathematics from Mahatma Gandhi University in Kerala, India, in the years 2014 and 2016, respectively and pursued M.Phil in mathematics from the Bharathiar University in 2019. Furthermore, he has worked with both domestic and foreign professionals in research. From September 2021 to September 2022, he worked as a junior research fellow in DST-SERB national projects. He has been a co-researcher on

international projects funded by TSIR since January 2021. From there onwards he has also committed to additional professional obligations, including serving as Academic Partner of the Faculty of Science and Technology at Universitas Airlangga in Indonesia and as the Academic Ambassador for the Mahatma Gandhi University's Schools of Mathematics and Statistics and School of Data Analytics in Kottayam, Kerala. Having written over 19 papers alone and in collaborations he has won four national and international honours. He has delivered 12 talks in India, Indonesia, Colombia, South America, and Turkey, as an invitee. He has delivered 14 papers at conferences around the world, including those in Thailand, Indonesia, Turkey, Romania, and India. He has had the experience of organising four robust conferences in roles such as convenor of 10 days International Research Outreach Programme (IROP - 2022) in Dong Thap University, Vietnam, as organising secretary of ICMSDS-2022 in Mahatma Gandhi University, Kerala, India, as a member of organising committee of ICMMCMSE-2020 and IDENA-2020 in Alagappa University and IIT Guwahati, India respectively. He spent three months in Vietnam as a visiting research fellow (FMITE) at Dong Thap University and participated in CIMPA summer research programme at the University of Dhaka in Bangladesh. He has participated in over 70 offline and online conferences both domestic and abroad.