



Seminario de Matemática Aplicada

Conferencia

por

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"Modeling Dengue Dynamics: The Role of Homologous
Reinfections"

Abstract:

Dengue transmission is shaped by complex immune interactions among co-circulating serotypes, including temporary cross-immunity and antibody-dependent enhancement during heterologous reinfections. While most models assume lifelong immunity against the infecting serotype, recent evidence suggests that homologous reinfections can occur, although they are often mild or asymptomatic. I will present a modeling framework that links antibody-mediated immune dynamics with dengue transmission, incorporating both homologous and heterologous reinfections. The model reproduces key patterns of viral load and antibody production observed in primary and secondary infections and provides a basis for studying how rare homologous reinfections may influence dengue persistence, outbreak dynamics, and emergence risk, including in temperate regions such as Europe.

Día: Viernes 8 de mayo de 2026

Hora: 10:30

Lugar: Seminario Rafael Cid, tercera planta, edificio de matemáticas.