

A Computational Model of Dengue Transmission by Cellular Automata

Neisser Pino Romero @ (Universidad Peruana Cayetano Heredia),
Gabriel Wainer

R 1.23 Tue Z3 11:50-12:00

In this work, we present a computational model by Cellular Automata (Cell-DEVS) applied to the transmission of Dengue disease, spreads by mosquitoes to a susceptible population. This model has a multilevel approach to consider exogenous interactions such as temperature. It allows to be able to visualize the critical points (infectious foci) where the mosquito reproduction is much greater at high temperatures, in consequence it carries out adequate control strategies.

This disease affects quite a lot the community of the Peruvian jungle as well as the Colombian and Brazilian. Being a problem of collaborative work to prevent an epidemic caused by the mosquito that currently transmits three diseases (dengue, Zika and Chikungunya).

Keys Words: Mathematical Epidemiology. Cellular Automata. DEVS Formalism. Computational Simulations.