

CRITICAL ANALYSIS ON BIFURCATION OF SPR_SODE MODEL FOR THE SPREAD OF DENGUE

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ABSTRACT

A ordinary differential equation with stochastic parameters, called SPR_SODE model for the spread of dengue fever is considered. Critical Values of bifurcation and the boundary of the above said model are discussed. In this paper, the different parameters are considered for further analysis. The bifurcation at the characteristic value of the non-linear eigen value equation is supercritical if $\Gamma_1 > 0$ and subcritical if $\Gamma_1 < 0$. The equilibrium solution pair in the positive octant of \mathbb{R}^7 is also discussed.

KEYWORDS: Boundary, Critical Values, ODE, SPR_SODE Model, Stability