

Study and Analysis of a Susceptible Infective Susceptible Mathematical Model with Density Dependent Migration

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Abstract : In this paper, a susceptible infective susceptible mathematical model is proposed and analyzed where the migration of human population is given by migration function. It is assumed that the disease is transmitted by direct contact of susceptible and infective populations with constant contact rate. The equilibria and their stability are studied by using the stability theory of ordinary differential equations and computer simulation. The model analysis shows that the spread of infectious disease increases when human population immigration increases in the habitat but it decreases if emigration increases.

Keywords : SIS (Susceptible Infective Susceptible) model, migration function, susceptible, stability

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