

Lyapunov Functions for Extended Ross Model

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Abstract : This paper gives a survey of results on global stability of extended Ross model for malaria by constructing some elegant Lyapunov functions for two cases of epidemic, including disease-free and endemic occasions. The model is a nonlinear seven-dimensional system of ordinary differential equations that simulates this phenomenon in a more realistic fashion. We discuss the existence of positive disease-free and endemic equilibrium points of the model. It is stated that extended Ross model possesses invariant solutions for human and mosquito in a specific domain of the system.

Keywords : global stability, invariant solutions, Lyapunov function, stationary points

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