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AN SIRS EPIDEMIC MODEL WITH EMIGRATION RATE AND STANDARD INCIDENCE

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Abstract

In this paper, an SIRS epidemic model with emigration rate and standard incidence is formulated and studied. Equilibrium and threshold are determined for the system of ordinary differential equations and discussed. For both, disease free and endemic equilibrium point, stability conditions are determined to see whether the disease dies out or approaches an endemic equilibrium state. Our results generalize the results of Mena-Lorca and Hethcote [Dynamic models of infectious diseases as regulators of population sizes, J. Math. Biol. 30: 693-716].

Key Words : *Epidemiological model, Threshold, Hurwitz Criterion, Stability, Equilibrium point.*