A model of rabies among wild dogs

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Rabies is caused by a virus that affects the central nervous system, particularly causing inflammation in the brain. The virus is transmitted from an infected dog through a bite or by saliva of an infected animal touching an open wound of an uninfected animal. Dogs are the most common reservoir of the virus. There is no effective treatment or cure of rabies once symptoms show. A system of differential equations representing an epidemic model with oscillatory solutions is presented. We begin by investigating the qualitative properties of the proposed continuous model. The role of various parameters is investigated. Numerical simulations will be presented to support the theoretical results. The aim of this study is to understand the dynamics of rabies among dogs as well as seek to predict if the proposed model can help to control the disease.

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