

Dynamical analysis of an SEIT epidemic model with application to Ebola virus transmission in Guinea

Highlights (for review)

- This paper introduces an SEIT epidemic model (susceptible, exposed in the latent period, infectious, treatment) to analyze the dynamical transmission of Ebola virus.
- The basic reproduction number is defined. The mathematical analysis on the existence and stability of the disease-free equilibrium and endemic equilibrium is given.
- By the least squares method and the recognized infectious and death cases in Guinea, parameters of the model are estimated and the estimated value of the basic reproduction number is obtained.
- The sensitivity and uncertainty property of the basic reproduction number is discussed by partial rank correlation coefficients.