Global dynamics of an nonautonomous SEIRS epidemic model with vaccination and nonlinear incidence

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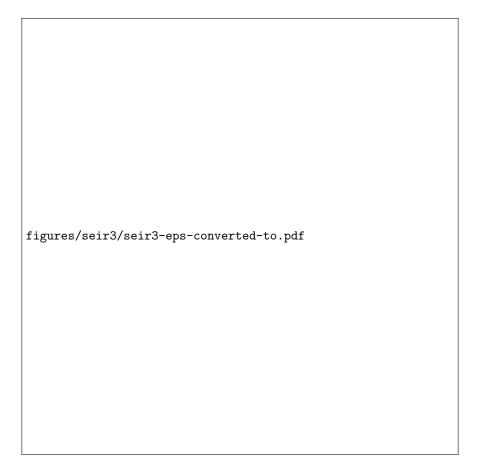[2]Xinjiang Institute of Engineering

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Abstract

In this paper, a class of nonautonomous SEIRS epidemic models with vaccination and nonlinear incidence is investigated. Under some quite weak assumptions, a couple of new threshold values in the form of integral, i.e., R_1, R^*_1, R_2 and R^*_2 on the extinction and permanence of disease for the model are established. As special cases of our model, the autonomous, periodic and almost periodic circumstances are discussed respectively. The nearly necessary and sufficient criteria of threshold on the extinction and permanence of disease for above cases are obtained as well. Numerical examples and simulations are presented to illustrate the analytic results.
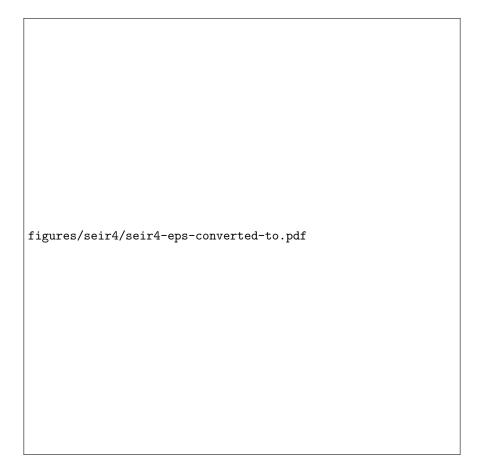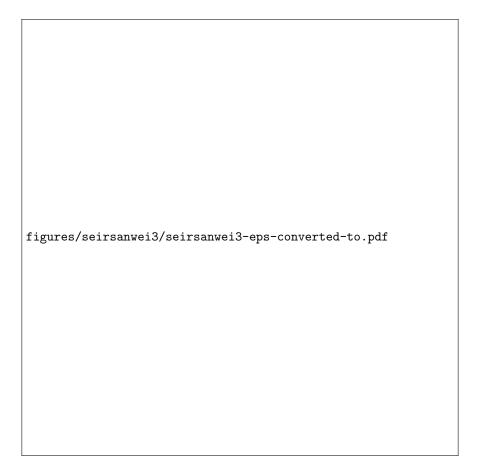
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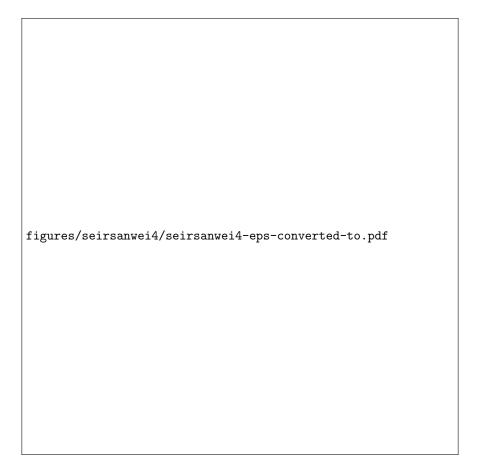`MMA-ZFT.pdf` available at https://authorea.com/users/301064/articles/430843-global-dynamics-of-an-nonautonomous-seirs-epidemic-model-with-vaccination-and-nonlinear-incidence

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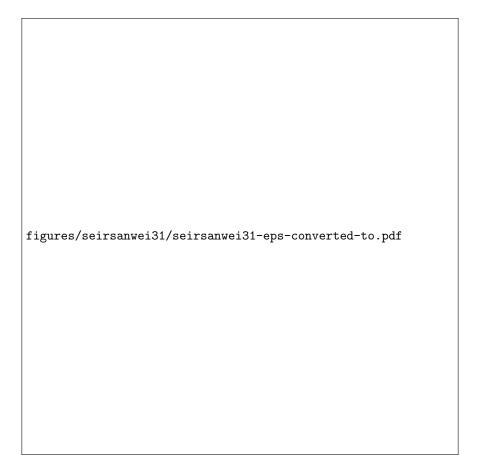
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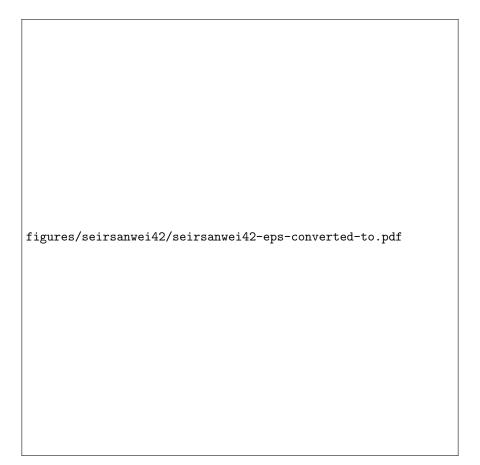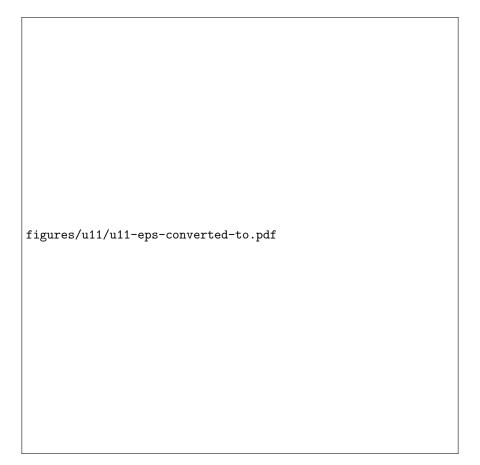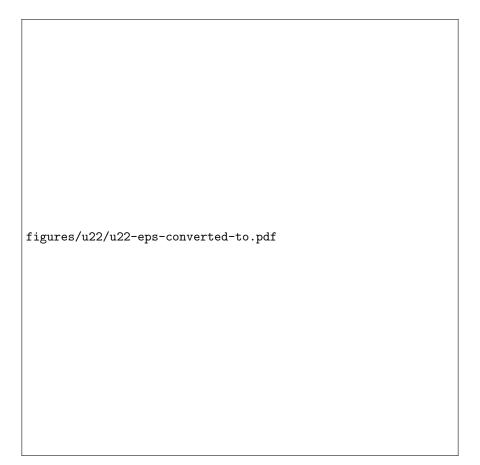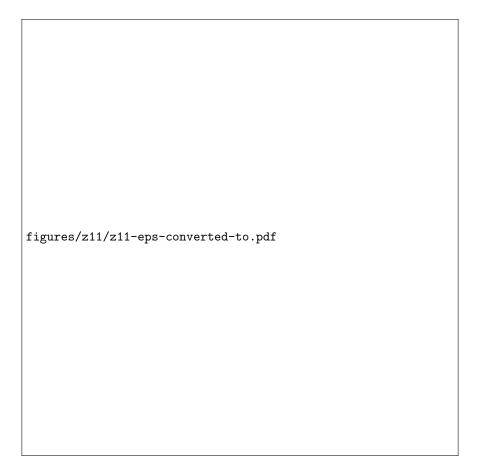figures/u22/u22-eps-converted-to.pdf

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