

# Crank-Nicholson difference scheme for the system of nonlinear parabolic equations observing epidemic models with general nonlinear incidence rate

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## Abstract

Crank-Nicholson difference scheme for the system of nonlinear parabolic equations observing epidemic models with general nonlinear incidence rate is investigated. The theorem on the existence and uniqueness of a bounded solution of Crank-Nicholson difference scheme uniformly with respect to time step is established. Applications of the theoretical results are presented for the four systems of one and multidimensional

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