

Discrete models of epidemic spread in a heterogeneous population

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We will present discrete models of epidemic spread in a population in which we consider two groups of people: with a low risk of an infection and with a high one. These models are built with the use of the explicit Euler method and the non-standard discretization. We will focus on stability analysis of stationary states appearing in the systems. In the case of the non-standard discretization we will also consider a simplified version of the model in which we assume that there is no transmission of the infection from the group of the low risk of the infection to the group of the high one. The theoretical results will be complemented with numerical simulations.

Keywords

epidemiology, the explicit Euler method, non-standard discretization

References

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