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Qualitative properties of some discrete models of a general SEIR model

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Studying epidemic models plays an important role both in a biological and in a mathematical point of view. In this talk we analyze an SEIR type compartmental model with a constant recruitment and natural death rate. We observe the case when the incidence rate function is given in a general form. This function describes how quickly the disease spreads in a population.

Some qualitative properties of the continuous models have been investigated. It is also important to define such models that preserve qualitative properties of the continuous problem: such as nonnegativity and the preservation of the amount of the members. We investigate these attributes using strong stability preserving (SSP) Runge–Kutta methods.