Mathematics > Dynamical Systems

Traveling wave dispersal in partially sedentary age-structured biological populations

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In this paper we present a thorough study on the existence of traveling waves in a mathematical model of dispersal in a partially sedentary age-structured population. This type of model was first proposed by Veit and Lewis in [{\it Am. Nat.}, {\bf 148} (1996), 255-274]. We choose the fecundity function to be the Beverton-Holt type function. We extend the theory of traveling waves in the population genetics model of Weinberger in [{\it SIAM J. Math. Anal.}, {\bf 13} (1982), 353-396] to the case when migration depends on age groups and a fraction of the population does not migrate.

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